

INLAND PACIFIC HUB

Transportation Study



The Inland Pacific Hub Regional Transportation Study is a collaborative effort by the Inland Pacific Hub Advisory Board, representing membership from the states of Idaho and Washington including the Washington State Department of Transportation (WSDOT), Idaho Transportation Department (ITD), Spokane Regional Transportation Council (SRTC), and Kootenai Metropolitan Planning Organization (KMPO). The purpose of the Inland Pacific Hub Advisory Board is to assist in establishing the Inland Pacific Region as a multimodal global gateway designed to increase international commerce and enhance the regional economy. The board promotes, advocates and provides information on infrastructure projects and policies that will facilitate the efficient and environmentally sound movement of freight and people throughout the region.



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Transportation Study



Technical Memorandum 1

Inland Pacific Hub Multimodal Infrastructure Report

Final

WilburSmith
ASSOCIATES

In Association with

Halcrow

and

HNTB

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GLOSSARY OF TERMS AND ACRONYMS

Term	Definition
BNSF	Burlington Northern Santa Fe (BNSF) Railway Company - One of several Class I railroads operating primarily between Chicago and the west coast of the U.S. Today's BNSF Railway is the product of some 390 different railroad lines that merged or were acquired during more than 150 years.
Carload	A loaded railcar—typically used in descriptions of freight traffic activity moved in box cars. Also refers to the minimum weight of a specific commodity qualifying as a carload of that commodity in railroad shipping rates
CCTV	Closed Circuit Television – a component of intelligent transportation systems (ITS)
Class I Railroad	Railroad classification is determined by the U.S. Surface Transportation Board (STB). The classifications are based on revenue dollars. In 2006 dollars, a railroad with revenues greater than \$277.7 million for at least three consecutive years is considered a Class I railroad.
COFC/TOFC	These acronyms mean “Container on Flat Car” and “Trailer on Flat Car”, respectively. These are the two common types of intermodal freight.
Container	A typical container is 20, 40 or 48 feet long, 8 feet tall and 8 feet wide. These steel boxes are used to transport freight by sea, rail and highway. Container volumes are typically measured in twenty-foot equivalent units (TEUs)
DMS	Dynamic Message Signs – An element of ITS systems
Fatality Analysis Reporting System (FARS)	The FARS is a census of crashes involving any motor vehicle on a trafficway, <i>but only fatal crashes</i> . It is generally considered to be the most reliable national crash database. A large truck is defined in the FARS as a truck with a gross vehicle weight rating (GVWR) of more than 10,000 pounds. FARS is maintained by the National Highway Traffic Safety Administration (NHTSA).
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
HAR	Highway Advisory Radio – An element of ITS
HSS	WSDOT – Highways of Statewide Significance
ITD	Idaho Transportation Department
Intermodal	Freight that travels from origin to destination on more than one mode of transportation such as a container that arrives from Asia by sea and is transferred to rail for the remainder of its journey.
ISTEA	Intermodal Surface Transportation Efficiency Act
ITS	Intelligent Transportation Systems - ITS improves transportation safety and mobility and enhances productivity through the use of advanced information and communications technologies. Intelligent transportation systems (ITS) encompass a broad range of wireless and wire line communications-based information and electronics technologies. When integrated into the transportation system's infrastructure, and in vehicles themselves, these technologies relieve congestion, improve safety and enhance American productivity.

Term	Definition
Motor Carrier Management Information System (MCMIS)	The Federal Motor Carrier Safety Administration (FMCSA) operates and maintains the MCMIS. MCMIS contains information on the safety fitness of commercial motor carriers and hazardous material (HM) shippers subject to the Federal Motor Carrier Safety Regulations (FMCSRs) and the Hazardous Materials Regulations (HMRs). MCMIS is a collection of safety information including state-reported crashes, compliance review and roadside inspections results, enforcement data, and motor carrier census data.
NHS	National Highway System - Approximately 160,000 miles (256,000 kilometers) of roadway important to the nation's economy, defense, and mobility. The NHS was developed by the Department of Transportation (DOT) in cooperation with the states, local officials, and metropolitan planning organizations (MPOs) as mandated by ISTEA
Rail weight reference	Weights of rail are expressed in weight per yard of length. Thus “136-pound rail” weighs 136 pounds per yard.
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
Short line railroad	An independently operated branch line that connects a Class I railroad—or another short line—with customers located off line.
Siding	A short section of track parallel to the main line and connected to the main line by switches to allow one train to wait for and be passed by another.
STRAHNET	Strategic Highway Network - A network of highways which are important to the United States' strategic defense policy and which provide defense access, continuity and emergency capabilities for defense purposes. STRAHNET is one element of the NHS
TEA-21	Transportation Equity Act for the 21 st Century
Transload	The practice of transferring product between truck and rail transportation. In most instances, a transload facility operator, third-party logistics company, or broker facilitates transloading for both the shipper and the consignee. These companies coordinate truck and rail connections and frequently offer warehousing and other services to facilitate storage and delivery.
UP	Union Pacific (UP) Railroad - the largest railroad in North America, covering 23 states across two-thirds of the United States.
vpd	Vehicles per day
WSDOT	Washington State Department of Transportation
Yard	A classification “yard” or hierarchical arrangement of tracks that facilitates the classification of rail cars and the assembling of blocks of cars into trains.

INTRODUCTION

The “Inland Pacific Hub” is a nineteen-county region located in eastern Washington and northern Idaho. The economic interests of this region are represented in part by the Inland Pacific Hub Advisory Board, a public-private partnership established by and consisting of representatives from both states. The Board’s objective is “to establish the Inland Pacific Hub as a multimodal global gateway to increase international commerce”.

The Board has partnered with the Washington State Department of Transportation and the Idaho Transportation Department to study the region’s capacity for economic development. The Inland Pacific Hub Transportation Study has two objectives: 1) to identify the Inland Pacific Hub’s capacity as a globally-connected, multimodal transportation gateway; and, 2) to identify the critical infrastructure requirements needed to drive the Inland Pacific Hub’s future economic growth.

To accomplish these objectives, a team consisting of Wilbur Smith Associates, Halcrow, and HNTB were contracted to conduct six discrete tasks:

- Task 1: Existing transportation market analysis
- Task 2: Profile existing multimodal transportation infrastructure
- Task 3: Profile regional economic assets
- Task 4: Profile commercial and technology assets
- Task 5: Identify public education and stakeholder involvement
- Task 6: Compile a final report and make recommendations

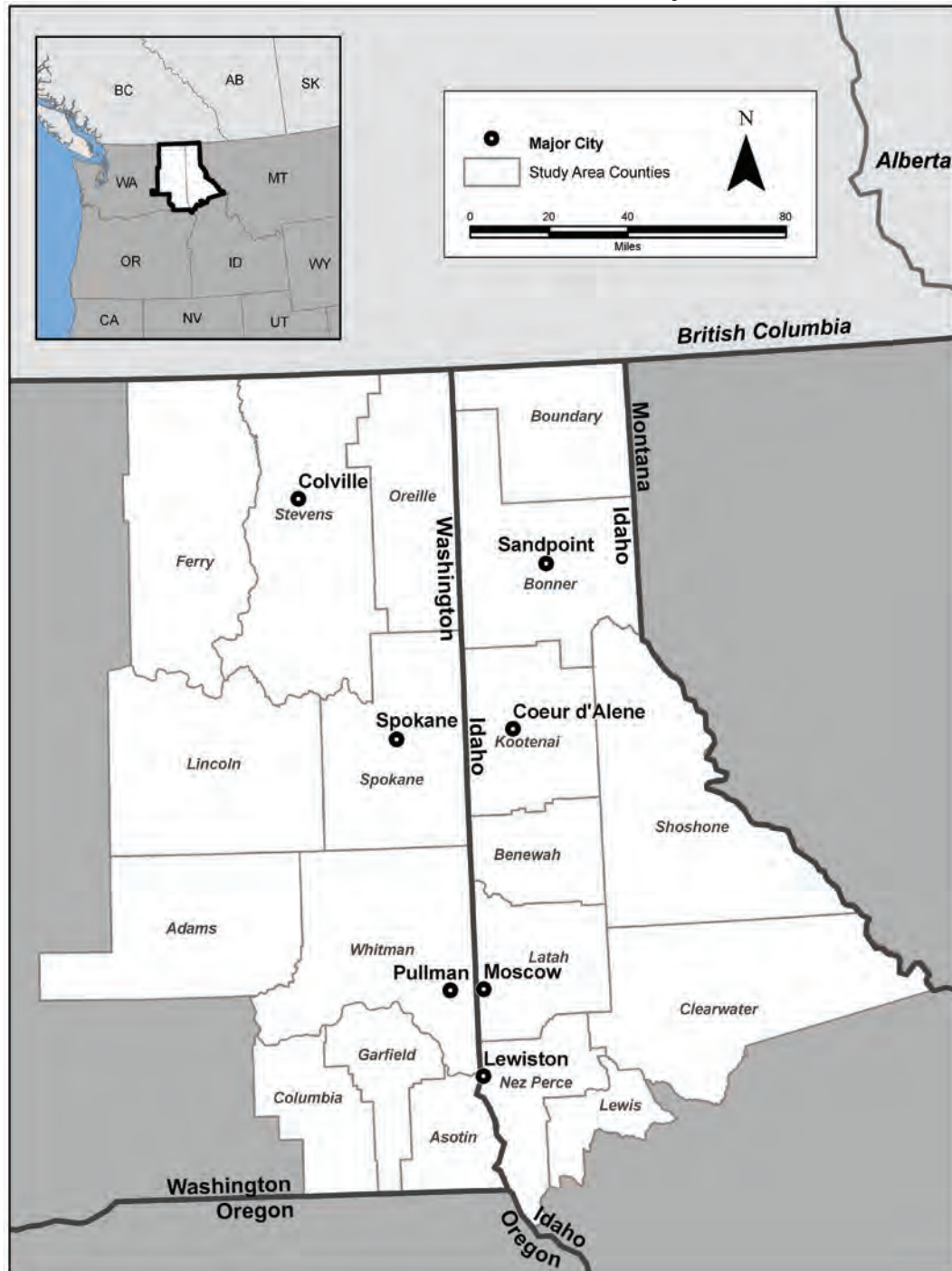
This Technical Memorandum is the first of four reports to be developed for the Inland Pacific Hub Freight Study.

- Technical Memorandum #1: Inland Pacific Hub Infrastructure Report identifies the Inland Pacific Hub bi-state study region’s existing multimodal transportation infrastructure, including the primary distribution system, the major nodes for transfer and storage, and the local network between the distribution system and the nodes.
- Technical Memorandum #2 will analyze the region’s economic data in terms of commodities, trade, and logistics.
- Technical Memorandum #3 will inventory the Inland Pacific Hub’s commercial properties and technological resources and identify the region’s economic strengths and weaknesses.
- The Final Report will incorporate and summarize the information presented in the three technical memoranda.

The Inland Pacific Hub comprises the eastern third of Washington and the panhandle of Idaho (**Exhibit 1**). The region has a landmass of nearly 30,000 square miles and a population of approximately 875,000. It includes ten counties in Washington (Ferry, Stevens, Pend Oreille, Lincoln, Spokane, Adams, Whitman, Columbia, Garfield, and

Asotin) and nine counties in Idaho (Boundary, Bonner, Kootenai, Benewah, Shoshone, Latah, Clearwater, Nez Perce, and Lewis). The Inland Pacific Hub is bordered by British Columbia to the north and Montana to the east. Southern Idaho and northeastern Oregon are situated to the south, while central Washington lies to the west.

Exhibit 1: Inland Pacific Hub Study Area



Source: HNTB Corporation and Wilbur Smith Associates, January 2010.

In terms of physical makeup, the Inland Pacific Hub study area is divided primarily into timberland and farmland. The region is heavily forested in Ferry, Stevens, and Pend Oreille counties, as it is in certain portions of Spokane, Columbia, Garfield, and Asotin counties. In the Idaho panhandle, heavily forested counties include Boundary, Bonner, Kootenai, Benewah, Shoshone, and Clearwater counties, as it is in certain portions of Latah, Nez Perce, and Lewis counties. (The region includes nine national forests.) The residual area includes the Palouse, a vast expanse of rolling hills stretching from Lincoln to Latah counties, known primarily for its agricultural capacity. Whitman County, located in southeastern Washington, has been the top wheat-producing county in the nation each year for 30 consecutive years.

Numerous rivers and lakes are located in the Inland Pacific Hub. The region's major rivers include the Columbia and the Snake. Other rivers include the Spokane, the Pend Oreille, and the Clearwater. (Several smaller rivers also wind their way through the region.) The Grand Coulee Dam, located northwest of Lincoln County, impounds the northern reach of the Columbia River to form Lake Roosevelt. Lake Roosevelt is the largest lake in Washington, stretching over 150 miles and comprising over 600 miles of shoreline. Other lakes in the region include Priest Lake, Lake Pend Oreille, and Lake Coeur d'Alene.

The Inland Pacific Hub's climate may be classified as semi-arid. The normal July maximum temperature is 84°F; the minimum, 55°F. The normal January maximum temperature is 31°F; the minimum, 20°F. Extremes range from 108°F to -30°F, but temperatures of more than 95°F and less than -10°F are rare. Spokane, located near the geographical mid-point of the region, averages 50 inches of snow and 17 inches of rain per year.

Spokane is the region's largest city with a population of approximately 205,000. Coeur d'Alene, located 30 miles to the east, has a population of nearly 50,000. Of the Inland Pacific Hub's 875,000 inhabitants, nearly 600,000 live in Spokane and Kootenai counties. Other cities in the region include Sandpoint, Pullman, Moscow, Lewiston, and Clarkston. Peripheral cities include the Tri-Cities (Kennewick-Richland-Pasco), Walla Walla, Moses Lake, and Missoula. (Additional discussion of regional demographics and economic composition is addressed in Technical Memorandum #2).

THE INLAND PACIFIC HUB HIGHWAY NETWORK

NATIONAL HIGHWAY SYSTEM/STRATEGIC HIGHWAY NETWORK¹

The National Highway System (NHS) was developed by the United States Department of Transportation in cooperation with states, municipalities and metropolitan planning organizations. The NHS includes the Interstate Highway System and the Strategic Highway Network (STRAHNET), which is a system of public highways that provides access, continuity and emergency capabilities for military personnel and equipment. Other principal arterials and connector routes are also part of the NHS.

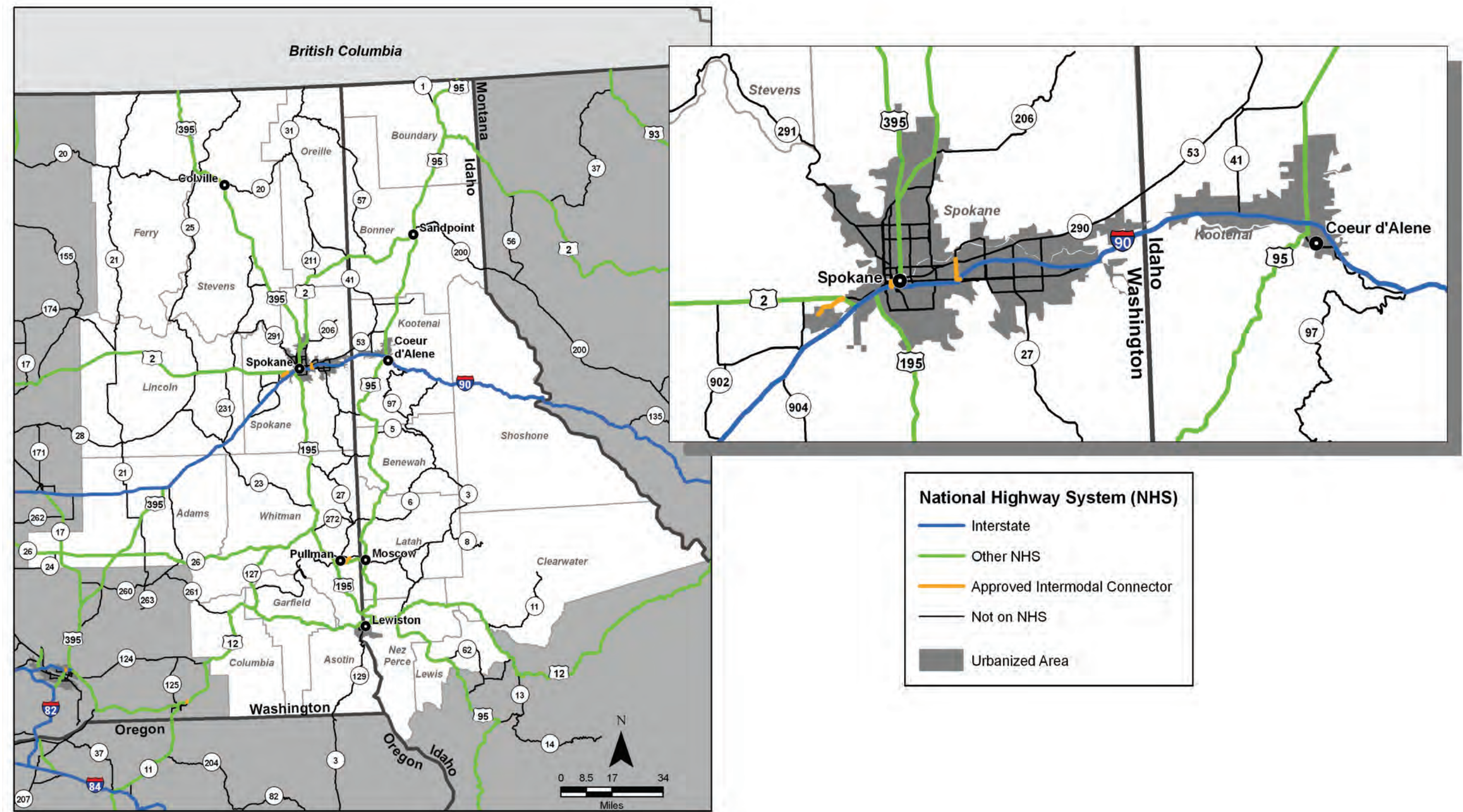
The NHS system nationwide is approximately 160,000 miles of roadways important to the nation's economy, defense, and mobility. The NHS includes the following subsystems of roadways:

- **Interstate:** The Eisenhower Interstate System of highways retains its separate identity within the NHS.
- **Other Principal Arterials:** These are highways in rural and urban areas which provide access between an arterial and a major port, airport, public transportation facility, or other intermodal transportation facility.
- **Strategic Highway Network:** This is a network of highways which are important to the U.S.' strategic defense policy and which provide defense access, continuity and emergency capabilities for defense purposes.
- **Major Strategic Highway Network Connectors:** These are highways which provide access between major military installations and highways which are part of the Strategic Highway Network.
- **Intermodal Connectors:** These highways provide access between major intermodal facilities and the other four subsystems making up the NHS.

Exhibit 2 shows the extent of the NHS in the Inland Pacific Hub study area.

¹ Program description taken from: <http://www.fhwa.dot.gov/planning/nhs/>

Exhibit 2: The National Highway System (NHS) in the Inland Pacific Hub Study Area

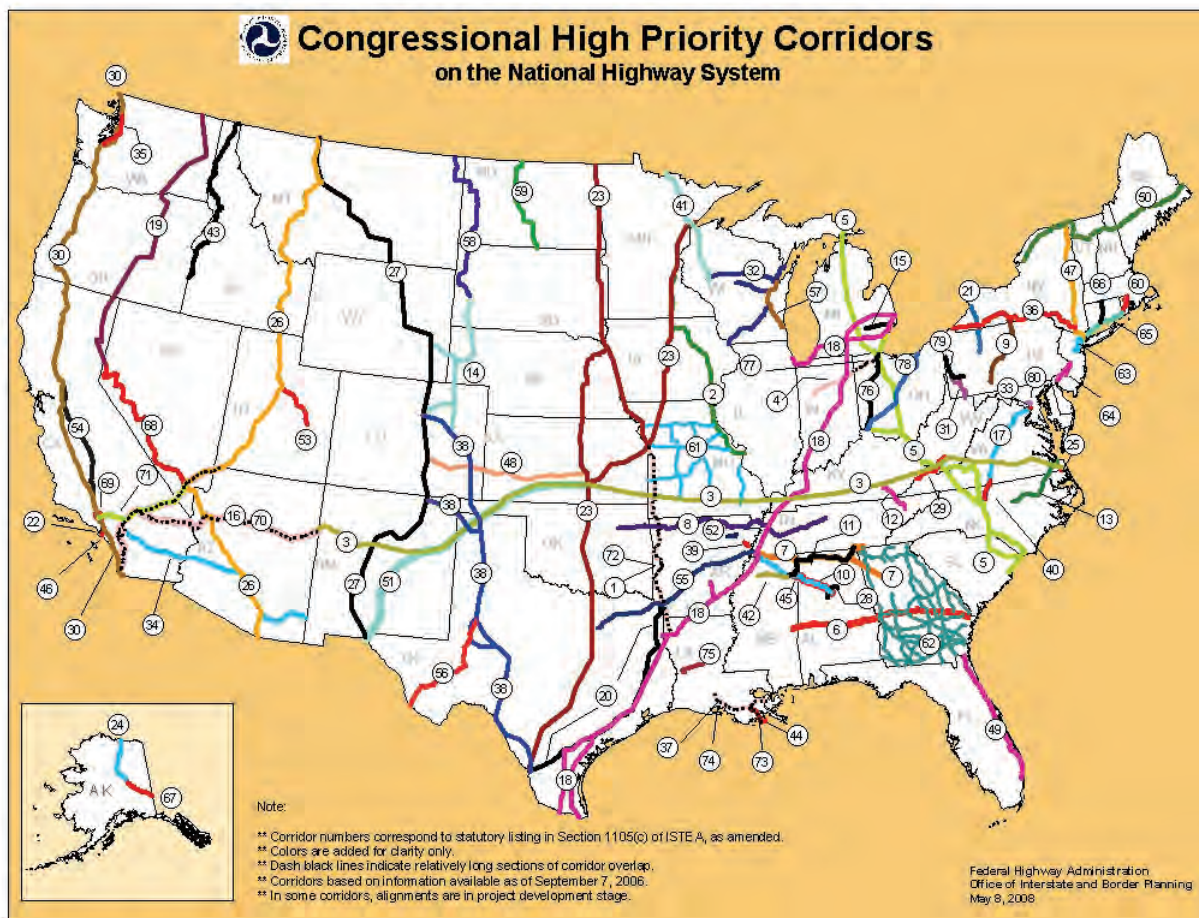


Source: FHWA, National Highway Planning Network and US Census Bureau-BTS, National Transportation Atlas Data (NTAD), 2009.

NHS HIGH PRIORITY CORRIDORS²

Beginning with the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), corridors have been designated in Federal transportation legislation as high priority corridors on the NHS for inclusion in the 163,000-mile approved NHS as specific routes or general corridors. The ISTEA designated 21 corridors. Subsequent legislation added additional corridors and by the end of 2005, there were over 80 such corridors (including corridors that are subsumed or partly subsumed in other high priority corridors.) Some of the corridors are entirely within a single State such as Urban Highway Corridor along M-59 in Michigan. Other corridors are multi-State such as Corridor #19 identified as US-395, extending from Reno, Nevada north through California, Oregon and Washington to the Canadian border at Laurier, Washington. **Exhibit 3** shows the current designation of NHS High Priority Corridors.

Exhibit 3: Congressionally Designated NHS High Priority Corridors



Source: FHWA - <http://www.fhwa.dot.gov/planning/nhs/hipricorridors/>

Some high priority corridors are along highways that are already essentially completed and carrying traffic such as Economic Lifeline Corridor along I-15 and I-40 in California, Arizona, and Nevada. Other corridors are generally along the path of anticipated future highways such as the corridor from Sarnia, Ontario, Canada, to the Lower Rio Grande

² Program description taken from: <http://www.fhwa.dot.gov/planning/nhs/hipricorridors/>

Valley between Texas and Mexico. Finally, some of these corridors are described in detail in legislation, such as the Dalton Highway from Deadhorse, Alaska to Fairbanks, Alaska. Others are broadly defined such as the Everett-Tacoma FAST [Freight Action Strategy for Everett-Seattle-Tacoma] Corridor in Washington State and some are defined by reference to other legislation such as the Georgia Developmental Highway System Corridors identified in section 32-4-22 of the Official Code of Georgia, Annotated.

Criteria and Funding for High Priority Corridors: These corridors are congressionally designated. The only criterion for being a congressionally designated High Priority Corridor is that it is what Congress designates. Funding was provided either directly or indirectly for these corridors in the current (SAFETEA-LU) and the two previous multiyear surface transportation authorizations (ISTEA and TEA-21). Section 1105(f) of ISTEA authorized funding for fiscal years 1992 through 1997 for some specific high priority corridor segments, and Section 1105(h) authorized some additional funding for high priority corridor feasibility and design studies. Section 1602 of Transportation Efficiency Act of the 21st Century (TEA-21) authorized funding for fiscal years 1998 through 2003 for some specific high priority corridor segments. Also, formula funds for the NHS, STP, Bridge Program, and in certain instances, Interstate Maintenance authorized by TEA-21 were used to fund improvements to high priority corridors. In addition, beginning in FY 1999, the planning and development of high priority corridors was eligible for funding under the discretionary National Corridor Planning and Development Program. Various sections for SAFETEA-LU provide funds for these high priority corridors. For example, formula funds for the NHS, STP, Bridge Program, the Coordinated Border Infrastructure Program and in certain instances, Interstate Maintenance may be used to fund improvements to high priority corridors. Also, some projects specifically identified under section 1301 (Projects of Regional and National Significance), 1302 (National Corridor Infrastructure Improvement program) and 1701 (High Priority Projects program) will support improvements to these corridors. In Section 1304(d) of SAFETEA-LU, the following phrase appears, "There are authorized to be appropriated to carry out, in accordance with title 23, United States Code, projects on corridors identified in section 1105(c) of the Intermodal Surface Transportation Efficiency Act of 1991 (101 Stat. 2032) such sums as may be necessary." However neither Section 1101 of SAFETEA-LU (Authorization of appropriations) nor any other Section of SAFETEA-LU provided any funding to carry out this provision.

TRADE CORRIDOR #19³

High Priority Corridor #19 consists of US-395, from Reno, Nevada, north to the Canadian border at Laurier, Washington. US-395 is freeway grade from the Interstate 80 junction in Reno north to Hallelujah Junction, California. From there north to Pendleton, Oregon, US-395 is mostly two- to four-lane rural highway or expressway grade. Most of US-395 in Northern California and Oregon is two-lane. In Washington, US-395 merges with Interstate 82 near Hermiston, Oregon, and splits from the freeway around Richland and Pasco, Washington. US-395 continues from Pasco to Spokane and north to Laurier, WA at the Canadian border.

³ Corridor 19 description taken from: <http://www.aaroads.com/high-priority/corr19.html>

Most of the Washington portion of US-395 had been built as a two-lane expressway between the late 1950s and late 1970s. Between 1986 and 1996 two additional lanes were added. Interchanges were built in places, grade crossings remain at others. There are eight or nine grade crossings between Pasco and Eltopia, approximately 15 miles north of Pasco. There are only three grade crossings left between Eltopia and Ritzville, a distance of approximately 60 miles.

TRADE CORRIDOR 43⁴

The US-95 Corridor extends from the Canadian border at Eastport, Idaho, to the Oregon State border. US-95 is the main north-south route in Idaho. Avoiding the metro area of Boise, US-95 serves the communities of Homedale, Payette, Grangeville, Lewiston, Moscow, Coeur d'Alene, Sandpoint, Bonners Ferry, and Eastport. Since there are no north-south Interstates that connect the panhandle of Idaho with the farming regions to the south, US-95 carries most intra-state north-south traffic.

NHS INTERMODAL CONNECTORS

“Freight connectors” are roadways that tie together all the elements of an intermodal freight transportation system. Connectors link major freight activity nodes to arterial highway systems and enable efficient networks serving ports, rail yards, airports and other freight intensive nodes. When designed, maintained, and operated with freight in mind, connector routes facilitate the best use of individual modes, as well as improve the overall efficiency of regional highway networks.

The importance of freight connectors gained prominence in 1995 with the passage of the National Highway System Designation Act, which called upon the U.S. Secretary of Transportation to submit a list of intermodal connectors as part of the NHS. In 1998, the TEA-21, Section 1106(d) further directed the Secretary to review of the condition of, and improvements to, NHS connectors serving seaports, airports, and other intermodal freight and passenger transportation facilities. To date, Idaho has designated eight facilities as NHS Intermodal Connectors, and Washington has designated 84. Of the eight NHS Intermodal Connectors in Idaho two serve freight facilities, and in Washington 18 of the 84 connector routes serve freight facilities. The listing of NHS Intermodal Freight Connectors for Idaho and Washington are identified in **Exhibit 4**, just two of the nineteen freight facilities are in the Inland Pacific Hub study area.

Designated NHS connectors are often referred to as the first and last miles of roadway used by truckers to travel between the major highways of the NHS and the nation’s ports, rail terminals, and air cargo hubs. The physical condition of the intermodal connectors is a cause for concern as potholes, narrow roadways, and tight turns increase wear and tear on trucks while slowing traffic and aggravating congestion. A number of national study efforts have been undertaken to document the impact of connector routes on efficient freight movements and many states are now beginning to look beyond NHS connectors to facilities and routes that handle large volumes of freight.

⁴ Description of the corridor taken from: <http://www.aaroads.com/high-priority/corr43.html>

Exhibit 4: NHS Intermodal Freight Connectors and Related Facilities

FACILITY	FACILITY ID- CONNECTOR ID	TYPE	CONNECTOR DESCRIPTION	CONNECTOR LENGTH
Idaho (● – indicates location in Inland Pacific Hub study area)				
Curtis Rd Pipeline Terminal	ID2L	Truck/Pipeline Terminal	Served by an existing NHS route	0
● Port of Lewiston	ID5P	Port Terminal	Served by an existing NHS route	0
Washington (● – indicates location in Inland Pacific Hub study area)				
● BN - Yardley (Spokane)	WA73R	Truck/Rail Facility	No Additional Connector Needed - Direct Access from Fancher Road (see WA2A-01)	0
BN-SIG Yard (Seattle Intl Gateway)	WA30R	Truck/Rail Facility	Served by an existing NHS route	0
BN-South Seattle Yard	WA64R-01	Truck/Rail Facility	From Boeing Access Rd (just off I-5): North on Airport Way S to Facility Entrance at Hardy Street	3.1
BN-UP Port of Tacoma Yards	WA29R	Truck/Rail Facility	Served by an existing NHS route	0
UP-Argo Yard (Seattle)	WA10R	Truck/Rail Facility	Served by an existing NHS route	0
BN-Interbay Yard (Seattle)	WA28R	Truck/Rail Facility	Served by an existing NHS route	0
Elliot Bay-Alaskan Way Port (Seattle)	WA45P	Port Terminal	Served by an existing NHS route	0
Elliot Bay-Florida St. Port (Seattle)	WA38P-01	Port Terminal	11th Ave (Spokane St to Port), SW Spokane St (Chelan to E Marginal Way)	1.3
Port of Anacortes	WA23P	Port Terminal	Served by an existing NHS route	0
Port of Bellingham	WA26P-01	Port Terminal	From I-5: Southerly on Meridian St, Squallicum Way, Roeder Ave., Chestnut St and Cornwall Ave	4.2
Port of Everett	WA31P-01	Port Terminal	W Marine View Dr. (Port to Pacific), Pacific Av. (Marine View to I-5S) and Maple St ramps to I-5N	2.2
Port of Kalama	WA12P	Port Terminal	Served by an existing NHS route	0
Port of Longview	WA13P-01	Port Terminal	SR 432 (SR 4 to -5), SR 433 (SR 432 to Port)	11
Port of Olympia	WA17P-01	Port Terminal	From I-5: Via Henderson Blvd. and Plum Street to Port Entrance at State Street	1.1
Port of Port Angeles	WA19P	Port Terminal	Served by an existing NHS route	0

FACILITY	FACILITY ID-CONNECTOR ID	TYPE	CONNECTOR DESCRIPTION	CONNECTOR LENGTH
Port of Tacoma	WA44P-01	Port Terminal	Port of Tacoma Rd (I-5 to E 11th St)	1.1
Port of Vancouver	WA11P-01	Port Terminal	SR 501 (I-5 to Port)	3.8
• Spokane International Airport	WA3A-01	Airport	Airport Dr (US 2 to Airport)	1.9
• Felts Field Municipal Airport (Spokane)	WA2A-01	Airport	From I-90: Sprague Ave. and North on Fancher Rd to Airport	2.5
• Pullman Airport	WA1A-01	Airport	From SR 270: North on Airport Road to Airport	3.2
Sea-Tac International Airport	WA41A	Airport	No Additional Connector Needed - Direct Access from Airport Access Road off of SR 518	0

Source: FHWA Official NHS Intermodal Connector Listing, January 6, 2010.

<http://www.fhwa.dot.gov/planning/nhs/intermodalconnectors>

KEY TRADE ROUTES OF THE INLAND PACIFIC HUB STUDY AREA

INTERSTATE 90

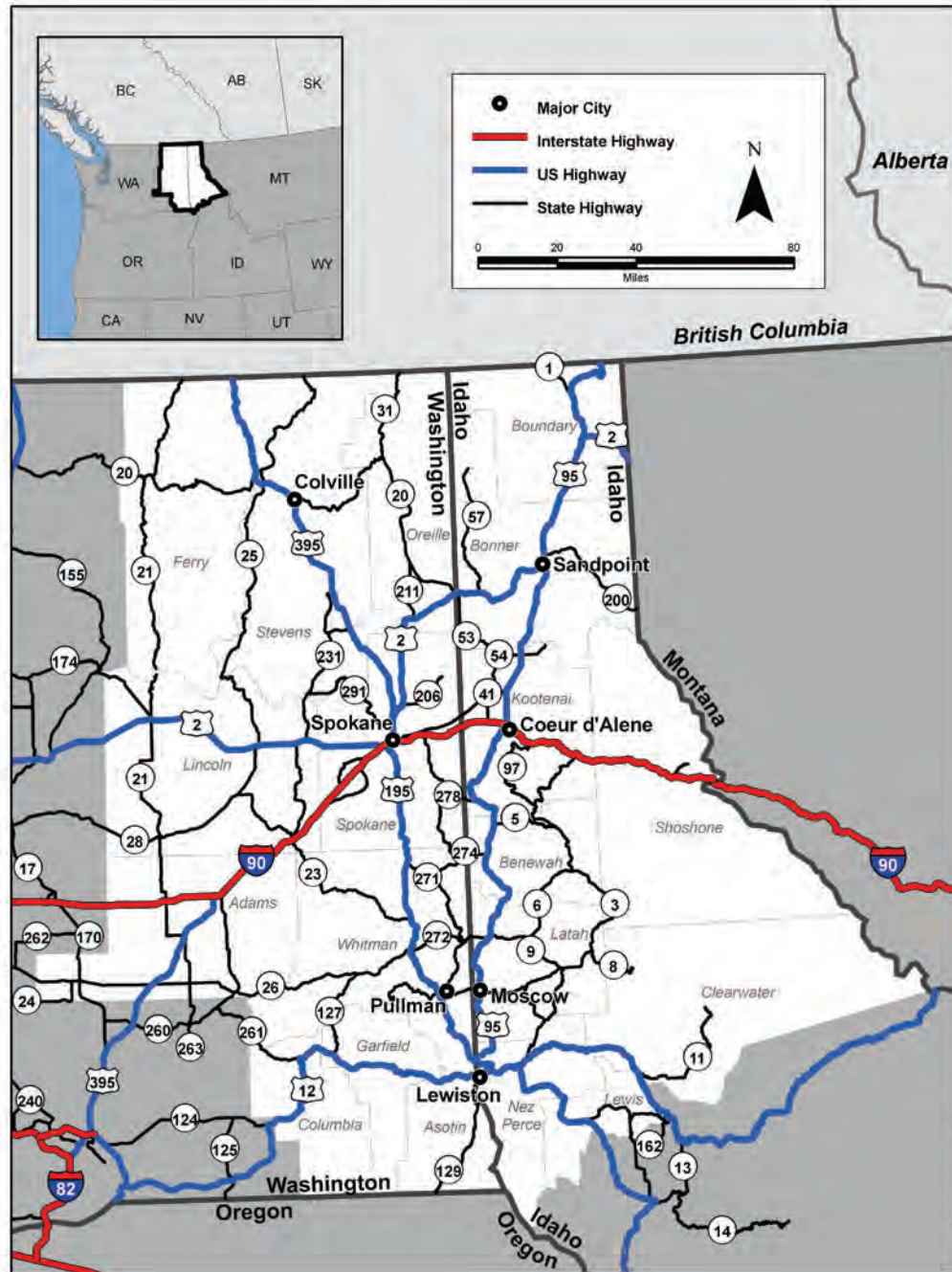
I-90 is the longest interstate highway in the U.S., spanning a total of 3,099 miles. It is the northernmost transcontinental interstate. Its western terminus is in Seattle, Washington, at 4th Avenue S. next to Safeco Field and Qwest Field, and its eastern terminus is in Boston, Massachusetts, at Route 1A near Logan International Airport. Between Seattle and Boston, I-90 serves the cities of Spokane, Washington; Missoula, Montana; Rapid City, South Dakota; Chicago, Illinois; Buffalo, New York; and Albany, New York.

I-90 spans a total of 153 miles across the Inland Pacific Hub and functions as the primary east-west route for the region (**Exhibit 5**). I-90 enters the region at Ritzville in Adams County. From Ritzville, it proceeds in a northeasterly direction for 79 miles to the Idaho border, passing through the cities of Sprague, Spokane, Spokane Valley, and Liberty Lake. I-90 then proceeds in a somewhat southeasterly direction for 74 miles across the Idaho panhandle, passing through the cities of Post Falls and Coeur d'Alene, over Fourth-of-July summit, and through the Silver Valley. I-90 continues east, entering Montana at Lookout Pass.

For most of its length across the Inland Pacific Hub, I-90 functions as a four-lane, rural interstate highway. The typical cross section includes four-foot inside shoulders, 12-foot travel lanes, 10-foot outside shoulders, and a 40-foot median. Access is fully controlled, with all cross traffic grade-separated. In Washington, the posted speed limit is typically 70 mph for all vehicles. In Idaho, the posted speed limit ranges between 55 mph in the east to 75 mph in the Cataldo area, with over half the corridor posted at 65 or 70 mph.

Within the greater Spokane area, I-90 functions as a six-lane urban interstate highway from Garden Springs Road to Sullivan Road. The posted speed limit in this vicinity is 60 mph. Near Coeur d'Alene, I-90 is posted for 65 mph.

Exhibit 5: Highway Network in the Inland Pacific Hub Study Area



Source: HNTB Corporation and Wilbur Smith Associates, January 2010.

U.S. ROUTES SERVING THE INLAND PACIFIC HUB STUDY AREA

A total of five U.S. Routes cross the Inland Pacific Hub study area: US-2, US-12, US-95, US-195, and US-395. As indicated by the route numbers, US-2 and US-12 operate as

east-west routes and US-95, US-195, and US-395 operate as north-south routes. These routes primarily function as undivided two-lane rural principal arterials. (Exceptions are detailed below.) All these routes are classified as part of the NHS by their respective State. The typical cross section includes 12-foot lanes and four- to eight-foot shoulders. Access is partially controlled, with some cross traffic approaching at-grade. The posted speed limit is typically 65 mph. In Washington, I-90, US-2, US-12, US-195, and US-395 are also designated as Highways of Statewide Significance.

US-2

US-2 spans a total of 2,579 miles across the northern continental U.S.. As its number indicates, it is the nation's northernmost east-west U.S. route. US-2 is divided into two segments, east and west. The western terminus of the western segment is at WA SR-529 (Maple Street) in Everett, Washington. The eastern terminus of the western segment is at I-75 in St. Ignace, Michigan. The western terminus of the eastern segment is at US-11 in Rouses Point, New York. The eastern terminus of the eastern segment is at I-95 in Houlton, Maine.

US-2 enters the Inland Pacific Hub near the town of Almira in Lincoln County. It proceeds east for approximately 70 miles to Airway Heights, passing through the farming communities of Wilbur, Creston, Davenport, and Reardan. Within Airway Heights, US-2 functions as a four-lane principal arterial with a center two-way left turn lane. Access is partially controlled, although numerous approaches exist due to the vicinity's commercial nature. From Airway Heights, US-2 proceeds east, junctions with I-90, and runs concurrently with I-90 for approximately three miles to the Division Street exit in downtown Spokane. Through Spokane, US-2 (Division Street) functions as a divided, six-lane, urban street. From downtown, US-2 proceeds north to the Newport Y. From the Y, it proceeds northeast for 40 miles to the town of Newport on the Idaho border.

Upon entering Idaho, US-2 follows the Pend Oreille River for approximately 30 miles to the city of Sandpoint. From there, US-2 continues north for another 30 miles, running concurrently with US-95, to Bonners Ferry, then turns southeast and proceeds to the Montana border.

US-12

US-12 spans 2,483 miles from Aberdeen, Washington on the Pacific coast to Detroit, Michigan in the northern Midwest. As a cross-state thoroughfare, it has mostly been supplanted by I-90 and I-94, but nevertheless remains an important road for local travel.

US-12 spans a total of 133 miles across the Inland Pacific Hub. It enters the region near the town of Dayton in Columbia County. From Dayton, it proceeds east for 70 miles to Clarkston on the Idaho border. At the border, US-12 crosses the Snake River and enters the city of Lewiston. From Lewiston, US-12 follows the Clearwater River for 45 miles to the town of Orofino. It proceeds another 31 miles to Kamiah, where it leaves the Inland Pacific Hub and enters Idaho County.

Within Idaho County, US-12 continues east for 75 miles before entering Montana at Lolo Pass. This span of US-12 is entirely within the Clearwater National Forest. Few, if any,

services exist within this vicinity. Note that US-12 is the primary route between Lewiston and Missoula. It is also an essential route connecting Lewiston to both Walla Walla and the Tri-Cities.

US-95

US-95 stretches for 1,574 miles through the western U.S., beginning at San Luis, Arizona, on the U.S.-Mexico border and ending at Eastport, Idaho, on the U.S.-Canada border. Outside of Arizona and Idaho, US-95 passes through a small portion of southern California, the entire length of Nevada, and the southeastern corner of Oregon.

The total length of US-95 within the Inland Pacific Hub study area is approximately 265 miles. US-95 enters the region near the town of Craigmont in Lewis County. It proceeds northwest, crosses the Clearwater River, junctions with US-12, then runs concurrently with US-12 to Lewiston. At Lewiston, US-95 proceeds north, passing through Moscow, Coeur d'Alene (crossing I-90), Sandpoint, and Bonners Ferry, before terminating at Eastport at the British Columbia border. Between Sandpoint and Bonners Ferry, US-2 runs concurrently with US-95. (The highway continues as BC 95 to the city of Cranbrook.)

US-95 functions as a four-lane divided principal arterial along the Clearwater River and north to the top of the Lewiston Hill. Between this point and Moscow, it is a two-lane facility. Access is partially controlled, with some cross traffic at-grade. The posted speed limit in this vicinity is typically 60 mph for all vehicles. Through Coeur d'Alene, US-95 functions as a four-lane urban street with a center two-way left-turn lane.

US-195

US-195 exists entirely within the Inland Pacific Hub, stretching for 94 miles through the heart of the Palouse. The southern terminus is located at US-95 north of Lewiston. From there it travels north, bypassing Pullman and passing through Colfax, Rosalia, and Spangle before terminating at I-90 in Spokane. Between Watt Road in Spangle and I-90 in Spokane, a distance of 15 miles, US-195 functions as a four-lane divided principal arterial. Access is partially controlled, with some cross traffic approaching at-grade. The posted speed limit in this vicinity is typically 65 mph for all vehicles.

US-395

US-395 stretches for 1,305 miles through the western U.S., beginning at I-15 near Hesperia, California and ending at Laurier, Washington on the U.S.-Canada border. Outside of California and Washington, it passes through a small portion of Nevada and all of eastern Oregon.

The total length of US-395 in the Inland Pacific Hub is 172 miles. It enters the region at Ritzville in Adams County, from which it runs concurrently with I-90 for 61 miles to the Division Street exit in Spokane. US-395 runs concurrently with US-2 through downtown Spokane to the Newport Y. At the Y, US-395 branches from US-2 and proceeds northwest for 105 miles to the town of Laurier at the British Columbia border, passing through the cities of Deer Park, Chewelah, Colville, and Kettle Falls.

Through Spokane, North Division Street/US-395/US-2 is Spokane's busiest corridor with over 40,000 vehicles per day traversing this “non-limited access” facility. It currently provides the primary continuation to and from I-90 for both US-395 and US-2.

STATE ROUTES SERVING THE INLAND PACIFIC HUB STUDY AREA

Numerous state routes serve the Inland Pacific Hub, totaling approximately 1,700 miles. North-south routes are shown in **Exhibit 6**, and east-west routes are described in **Exhibit 7**. These routes function almost entirely as rural, undivided, two-lane principal, and minor arterials. The typical cross section includes 12-foot lanes and four-foot shoulders. The posted speed is typically 65 mph, although posted speeds of 60 mph and 55 mph are not uncommon. Access on these routes is partially controlled with the majority of cross traffic approaching at-grade.

Exhibit 6: Inland Pacific Hub North-South State Highway Routes

North-South State Routes					
Route		From	To	Miles	Counties
WA	SR-17	Grant County Line	Franklin County Line	14	Adams
WA	SR-21	Kahlotus	B.C. Border	191	Adams, Lincoln, Ferry
WA	SR-23	Steptoe	Harrington	66	Whitman, Lincoln
WA	SR-25	Davenport	B.C. Border	121	Lincoln, Stevens
WA	SR-27	Pullman	Spokane Valley	90	Whitman, Spokane
WA	SR-31	Tiger	B.C. Border	27	Pend Oreille
WA	SR-127	Dodge	Dusty	27	Whitman
WA	SR-129	Oregon Border	Asotin	43	Asotin
WA	SR-193	Clarkston	WA SR-194	2	Asotin, Whitman
WA	SR-211	US-2	Usk	15	Pend Oreille
WA	SR-231	Sprague	Chewelah	75	Lincoln, Stevens
WA	SR-261	Washtucna	Ritzville	62	Lincoln
WA	SR-271	Oakesdale	Rosalia	9	Whitman
WA	SR-291	WA SR231	Spokane	33	Stevens, Spokane
ID	SH-1	US-95	B.C. Border	11	Boundary
ID	SH-3	Spalding	I-90	117	Nez Perce, Latah, Shoshone, Benewah, Kootenai
ID	SH-5	Plummer	St. Maries	19	Benewah
ID	SH-7	Ahsahka	Idaho County Line	30	Clearwater
ID	SH-9	Deary	ID- SH-6	14	Latah
ID	SH-11	Greer	Headquarters	43	Lewis, Clearwater
ID	SH-41	I-90 Post Falls	Oldtown	39	Kootenai, Bonner
ID	SH-53	WA SR290	US-95 near Rathdrum	14	Kootenai
ID	SH-57	Priest River	Nordman	36	Bonner
ID	SH-97	ID SH-3	I-90	35	Kootenai
ID	SH-99	Kendrick	Troy	12	Latah

Source: HNTB Corporation and Wilbur Smith Associates, January 2010.

Exhibit 7: Inland Pacific Hub East-West State Highway Routes

Route		From	To	Miles	Counties
WA	SR-20	Republic	Newport	140	Ferry, Stevens, Pend Oreille
WA	SR-26	US-395	Colfax	83	Adams, Whitman
WA	SR-28	Grant County Line	Davenport	50	Lincoln
WA	SR-128	Clarkston	Lewiston	2	Asotin, Nez Perce
WA	SR-194	Almota	Pullman	21	Whitman
WA	SR-206	US-2	Mt. Spokane	15	Spokane
WA	SR-270	Pullman	ID SH-8	5	Whitman, Latah
WA	SR-272	Colfax	Palouse	17	Whitman
WA	SR-274	Tekoa	ID SH-60	2	Whitman
WA	SR-278	Rockford	ID SH-58	5	Spokane
WA	SR-290	Spokane	ID SH-53	18	Spokane
WA	SR-902	I-90	Medical Lake	12	Spokane
WA	SR-904	I-90	Cheney	17	Spokane
ID	SH-6	Palouse	Santa	41	Latah, Benewah
ID	SH-8	Moscow	Elk River	54	Latah, Clearwater
ID	SH-54	Spirit Lake	Bayview	19	Kootenai
ID	SH-58	WA SR-278	US-95	3	Benewah
ID	SH-60	WA SR-274	US-95	6	Benewah
ID	SH62/64	Craigmont	Kamiah	29	Lewis
ID	SH-66	Palouse	US-95	5	Whitman, Latah
ID	SH-200	US-95 Sandpoint	Montana Border	33	Bonner

Source: HNTB Corporation. February 2009.

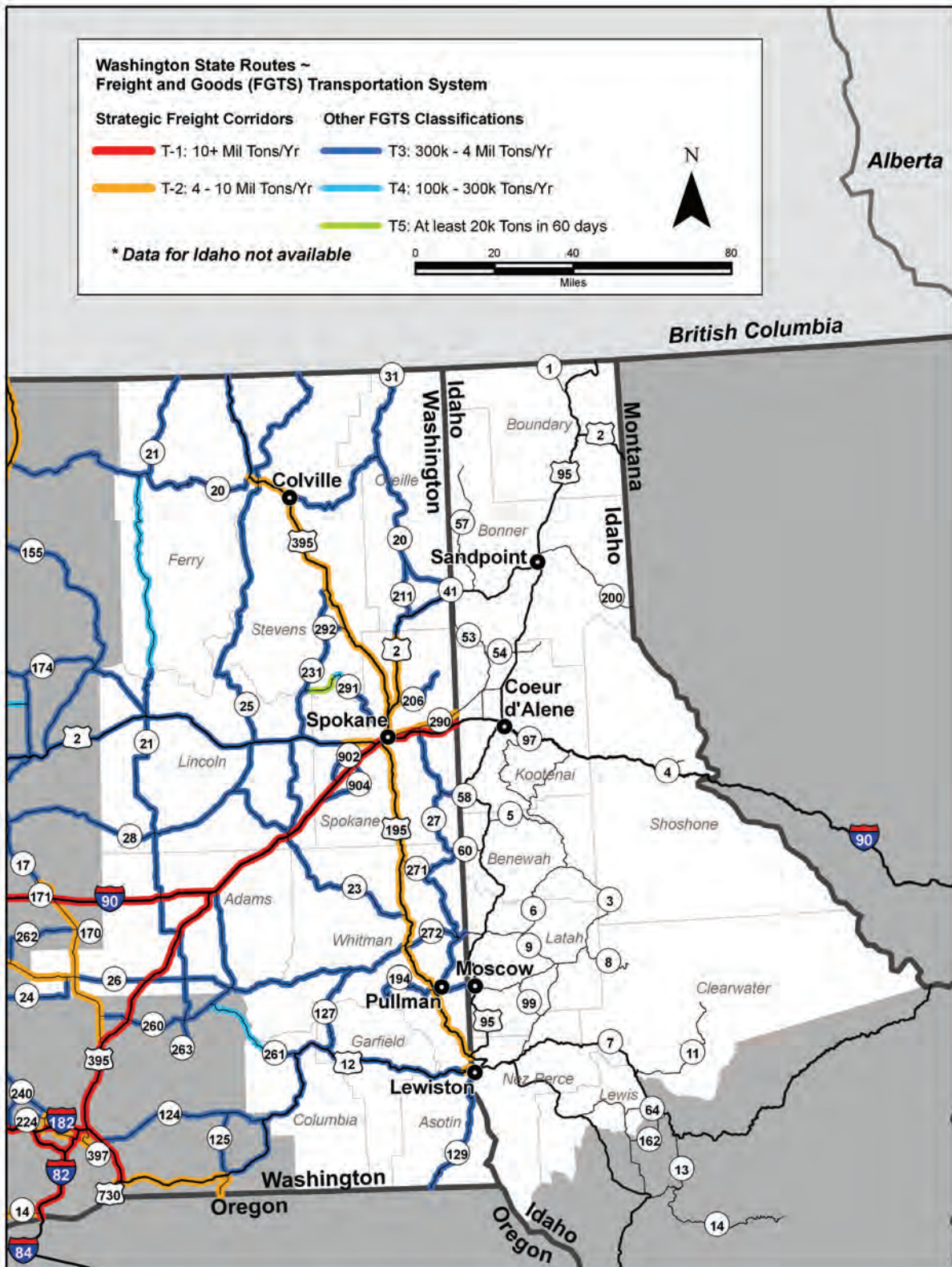
STRATEGIC FREIGHT CORRIDORS

WSDOT's Freight and Goods Transportation System (FGTS) categorizes the state's roadways according to the annual truck tonnage carried. To do this, the FGTS uses five classifications:

- T-1 routes: Greater than 10 million tons/year
- T-2 routes: Four million to 10 million tons/year
- T-3 routes: 300,000 to four million tons/year
- T-4 routes: 100,000 to 300,000 tons/year
- T-5 routes: At least 20,000 tons in 60 days

Routes that carry at least four million tons annually (T-1, T-2) are identified as "Strategic Freight Corridors". In Washington, the Strategic Freight Corridors are I-90, US-2, US-195, US-395, WA 290, WA 17, WA 26, WA 128, Argonne Road and Sullivan Road - Bigelow Gulch Road in Spokane (**Exhibit 8**). The T-3, T-4, and T-5 routes serving local communities also are shown. **Exhibit 9** lists the Average Annual Daily Truck Traffic (AADTT) for both Washington's Strategic Freight Corridors and Idaho's principal truck routes in the study area.

Exhibit 8: Washington State - Strategic Freight Corridors



Source: WSDOT Geodata Services, January 2010.

Exhibit 9: Inland Pacific Hub Average Annual Daily Truck Traffic

Highway	State	Location	Data Station	Strategic Freight Corridor	Annual Average Daily Traffic 2007	Annual Average Daily Traffic 2008	Percent of Trucks	Annual Average Daily Truck Traffic 2007	Annual Average Daily Truck Traffic 2008
I-90	WA	Ritzville West	P10	T-1	10,000	9,400	25%	2,500	2,350
I-90	WA	Fishtrap	R014	T-1	17,000	16,000	25%	4,250	4,000
I-90	WA	Idaho Border	P24	T-1	49,000	47,000	12%	5,880	5,640
I-90	ID	Post Falls East	-	-	51,000	48,000	7.45%*	3,800	3,576**
I-90	ID	Kellogg East	-	-	15,000	12,000	16.67%*	2,500	2,000**
I-90	ID	Montana Border	-	-	6,700	6,100	32.84%*	2,200	2,003**
US-2	WA	Davenport	R064	T-2	2,900	2,700	15%	435	405
US-2	WA	Chattaroy	P28	T-2	18,000	17,000	11%	1,980	1,870
US-2	ID	WA Border	-	-	11,000	11,000	9.09%*	1,000	1,000**
US-2	ID	Priest River East	-	-	6,400	6,000	9.84%*	630	590**
SH-200	ID	Clark Fork East	-	-	1,300	1,100	13.08%*	170	144**
US-12	WA	Dayton West	P05	No	2,100	1,900	26%	546	494
US-12	WA	Garfield Co. / SR 127 West	R067	No	2,100	1,900	23%	483	437
US-12	ID	Lewiston West	-	-	21,000	20,000	5.24%*	1,100	1048**
US-12	ID	Lewiston East	6	-	13,000	13,000	15%	1,950	1,950
US-12	ID	Orofino East	19	-	3,000	2,800	27%	810	756
US-12	ID	Lowell East	85	-	570	490	34%	194	167

Highway	State	Location	Data Station	Strategic Freight Corridor	Annual Average Daily Traffic 2007	Annual Average Daily Traffic 2008	Percent of Trucks	Annual Average Daily Truck Traffic 2007	Annual Average Daily Truck Traffic 2008
US-12	ID	MT Border	84	-	730	570	26%	190	148
US-95	ID	Craigmont North	139	-	3,300	3,200	18%	594	576
US-95	ID	Genesee North	98	-	4,300	4,200	13%	559	546
US-95	ID	Potlatch South	15	-	4,300	4,100	20%	860	820
US-95	ID	Worley North	-	-	4,700	6,000	-	-	-
US-95	ID	Coeur d'Alene South	-	-	11,000	10,500	-	-	-
US-95	ID	Coeur d'Alene North	48	-	31,000	33,000	4%	1,240	1,320
US-95	ID	Sandpoint South	310	-	23,000	22,000	9%	2,070	1,980
US-95	ID	Sandpoint North	119	-	15,000	14,500	13%	1,950	1,885
US-95	ID	Bonniers Ferry	16	-	11,000	7,500	11%	1,210	825
US-95	ID	Canada Border	46	-	1,100	1,000	39%	429	390
US-195	WA	Colton South	P13	T-2	4,800	4,300	17%	816	731
US-195	WA	Pullman	P14	T-2	3,100	2,900	21%	651	609
US-195	WA	Spokane South	P15	T-2	8,600	8,100	12%	1,032	972
US-395	WA	Ritzville South	P7C	T-1	7,100	6,600	30%	2,130	1,980
US-395	WA	Loon Lake	R063	T-2	8,600	8,100	12%	1,032	960
US-395	WA	Kettle Falls	R070	T-2	7,900	7,600	14%	1,106	1,064

Highway	State	Location	Data Station	Strategic Freight Corridor	Annual Average Daily Traffic 2007	Annual Average Daily Traffic 2008	Percent of Trucks	Annual Average Daily Truck Traffic 2007	Annual Average Daily Truck Traffic 2008
US-395	WA	Orient	P26	T-2	730	No Data	18%	131	-
SR-290	WA	Idaho border	P33	T-2	7,600	7,100	19%	1,444	1,349
SH-53	ID	Rathdrum South	-	-	10,000	9,800	7.30%*	730	715**

Notes1: *Percentage calculated using cross tabulation of provided 2007 counts, rounded to two decimals.

Notes2: **AADTT 2008 Truck counts calculated using cross tabulated percentages (see Notes1 above).

Source: WSDOT, 2007 Annual Traffic Report, 2008 Annual Traffic Report. <http://www.wsdot.wa.gov/mapsdata/tdo/annualtrafficreport.htm>
 ITD, 2007 Yearly Traffic Flow Maps, 2008 Yearly Traffic Flow Maps. <http://www.itd.idaho.gov/planning/roadwaydata/RTFMaps/index.html>

Note that in the previous table, US-395 is a T-1 route between Spokane and the Tri-Cities. Although located outside the Inland Pacific Hub, the Tri-Cities is nevertheless a major freight hub for eastern Washington due to its accessibility to Portland by way of I-84, rail, and the Columbia River.

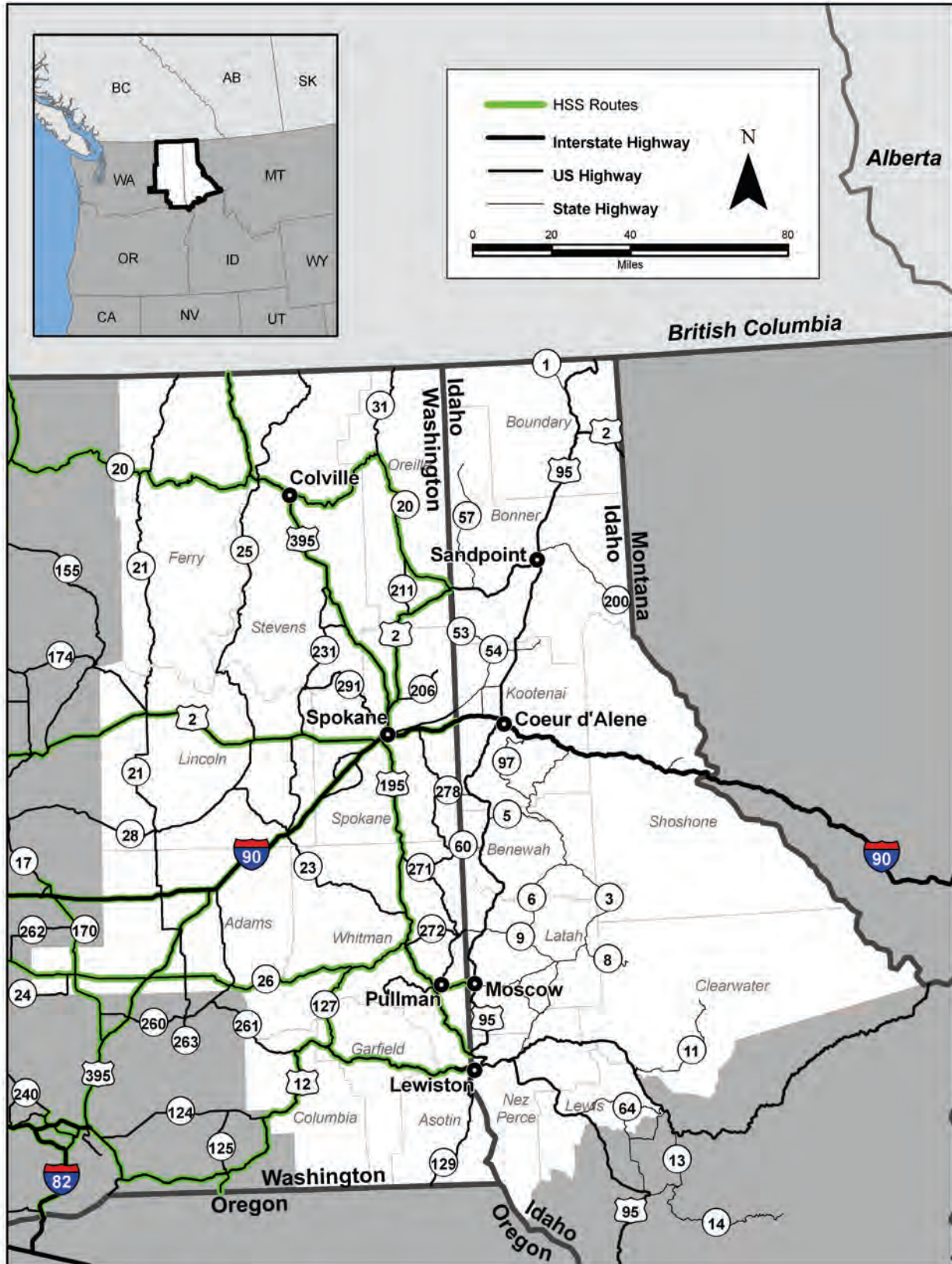
HIGHWAYS OF STATEWIDE SIGNIFICANCE

Highways of Statewide Significance (HSS), designated by the Washington State Transportation Commission, was approved by the Legislature to identify significant state-owned transportation facilities and establish that HSS routes:

- Have standardized levels of service (LOS) for mobility.
- Receive a higher priority for WSDOT mobility improvement funding.
- Are specifically exempt from concurrency requirements (except in Island County).
- Will be the focus of Regional Transportation Improvement District funding (King, Pierce, and Snohomish counties).

HSS routes include the interstate highway system, interregional state principal arterials, and ferry connections that serve statewide travel. The designation helps assist with the allocation and direction of funding. **Exhibit 10** displays the occurrence of HSS designations within the Washington portion of the IPH study area.

Exhibit 10: Washington State - Highways of Statewide Significance (HSS)



Source: Washington State Legislature, July 26, 2009. WSDOT GeoData Distribution, January 2010.

OPERATIONAL CHARACTERISTICS

HIGHWAY CAPACITY

Volume-to-Capacity (v/c) is a measurement of roadway travel performance. The v/c ratio is calculated by dividing a roadway segment's demand flow rate by its capacity. The demand flow rate is the number of vehicles passing a point on a lane or roadway during an established time interval. The capacity is the maximum rate of flow of the roadway under ideal conditions. The v/c ratio is typically measured for critical peak hours.

Level of service (LOS) is also a measurement of roadway travel performance. LOS qualitatively rates a roadway segment's ability to serve traffic by assigning letters, with A being the best and F being the worst. **Exhibit 11** lists the LOS categories and their associated v/c ratios.

Exhibit 11: Highway Capacity Metrics

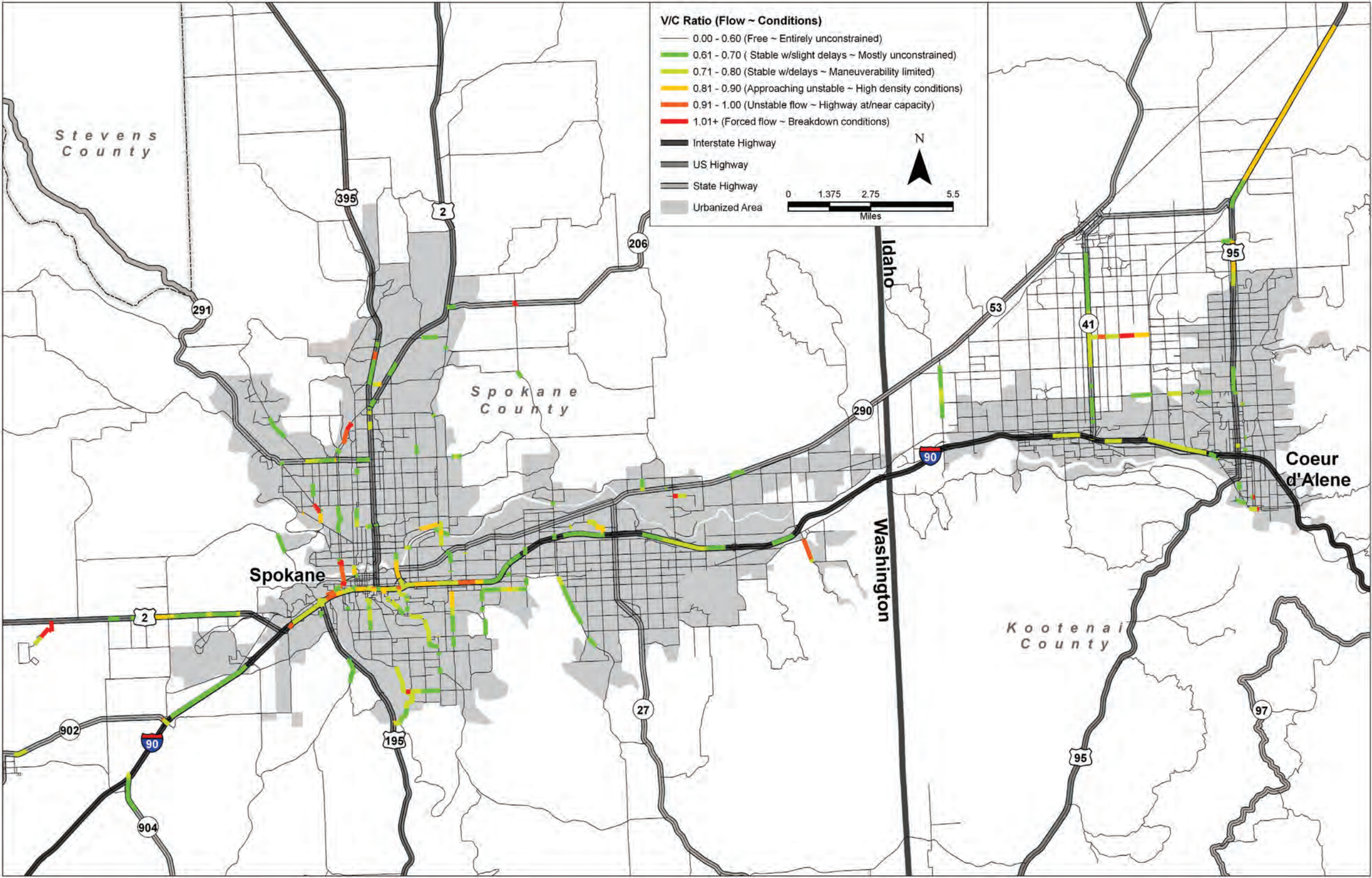
LOS	V/C Ratio		Description	
	From	To	Flow	Conditions
A	0.00	0.60	Free	Entirely unconstrained
B	0.61	0.70	Stable w/ slight delays	Mostly unconstrained
C	0.71	0.80	Stable w/ delays	Maneuverability limited
D	0.81	0.90	Approaching unstable	High density conditions
E	0.91	1.00	Unstable flow	Highway at/near capacity
F	1.01	<	Forced flow	Breakdown conditions

Source: HNTB Corporation. February 2009.

Within the Inland Pacific Hub, the majority of roadways operate at LOS B or higher due to the region's predominately rural nature. Traffic typically flows freely and vehicles generally travel at (or above) the posted speed limit. On the interstate highways, vehicles typically have complete mobility between lanes. On the two-lane highways, vehicles generally encounter very little traffic.

In the greater Spokane-Coeur d'Alene area, most of the roadways operate at LOS C or better (v/c = 0.80 or less). However, in Spokane County, I-90 operates at LOS D and E on various segments between US-2 and Liberty Lake. US-2 operates at LOS E in Airway Heights. US-2 and US-395 operate at LOS D and E north of the Newport Y. WA 290 (Trent Avenue), a T-2 route, operates at LOS D and E west of Sullivan Road. Certain segments, Argonne Road and Bigelow Gulch Road, also T-2 routes, operate at LOS D. **Exhibit 12** displays the volume to capacity ratios for the Spokane and Coeur d'Alene urban area.

Exhibit 12: Spokane and Coeur d'Alene Urban Area Volume to Capacity



Source: Spokane Regional Transportation Council, June 2009 (Idaho KMPO 2007 Base VC Model and Washington 2006 Base VC Model). US Census Bureau-BTS, National Transportation Atlas Data (NTAD), 2009. Wilbur Smith Associates, January 2010.

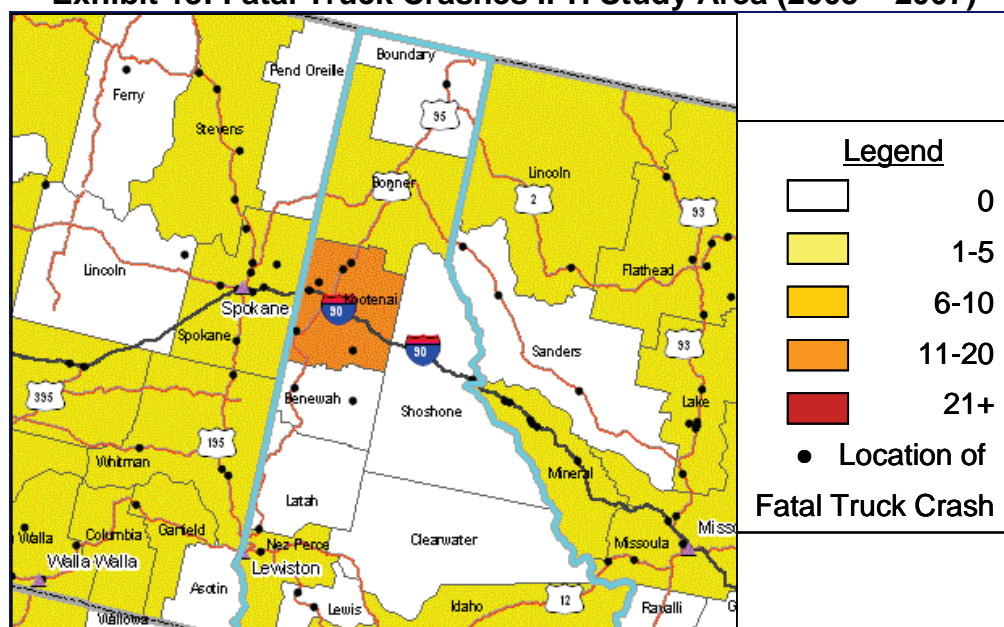
The primary congestion concerns in Idaho are centered on the Post Falls and Coeur d'Alene areas. Many signalized locations on US-95 operate over 75 percent of capacity, with substantial delays during weekday peak-hour commute conditions. The adverse impacts on travel speeds have initiated discussions of a north-south bypass route. Consideration of frontage roads along I-90 also has arisen. US-95 and US-2 in Sandpoint also experience congested operation at several intersection locations.

Travel delay is related to volume-to-capacity ratios, with the poorest operations typically occurring during weekday commute periods. Congested operation increases the cost and decreases the reliability of truck deliveries. Future growth in travel demand is expected to expand the severity and duration of congestion related to urban commute travel. Strategies effective in reducing congestion include increasing corridor capacity, attracting commuters to transit, and managing travel demand at major employment centers. Planning for future transportation infrastructure in the urban regions is conducted by the regional Metropolitan Planning Organizations in partnership with State and local agencies.

TRUCK CRASH DATA

The Federal Motor Carrier Safety Administration (FMCSA) maintains an on-line data and analysis tool regarding large trucks and buses involved in fatal and non-fatal crashes that occur in the U.S. The FMCSA crash statistics are derived from two sources: the Fatality Analysis Reporting System (FARS) and the Motor Carrier Management Information System (MCMIS). The FMCSA crash reporting web site also has a mapping feature that allows crashes to be mapped by location. **Exhibit 13** displays a map created from the online application for the IPH study area, showing the location of fatal crashes involving large truck from 2005 to 2007. **Exhibit 14** on the following page displays a more complete crash data set for the IPH study area.

Exhibit 13: Fatal Truck Crashes IPH Study Area (2005 – 2007)



Source: FMCSA website: <http://ai.fmcsa.dot.gov/CrashProfile/CrashProfileMainNew.asp>

Exhibit 14: Large Truck Crash Counts by County for the Inland Pacific Hub Study Area (2004-2008)

Fatal and Non-Fatal Crashes Involving a Large Truck							Fatal Crashes Involving a Large Truck						
Idaho COUNTY	Calendar Year					Five Year Total	Calendar Year					Five Year Total	Percent Fatal
	2004	2005	2006	2007	2008		2004	2005	2006	2007	2008		
BENEWAH	11	8	7	17	8	51	0	1	1	0	0	2	3.9%
BONNER	20	24	18	22	16	100	1	0	0	0	3	4	4.0%
BOUNDARY	13	10	4	3	9	39	1	1	0	0	0	2	5.1%
CLEARWATER	7	7	5	4	9	32	0	0	0	0	0	0	0.0%
KOOTENAI	57	57	59	61	50	284	1	4	0	2	6	13	4.6%
LATAH	17	9	11	6	16	59	0	0	0	0	0	0	0.0%
LEWIS	4	7	2	4	5	22	0	2	0	1	0	3	13.6%
NEZ PERCE	20	9	16	21	9	75	2	0	2	0	1	5	6.7%
SHOSHONE	14	13	19	19	12	77	1	0	0	1	0	2	2.6%
Idaho IPH Totals	163	144	141	157	134	739	6	8	3	4	10	31	4.2%
Washington COUNTY	Calendar Year					Five Year Total	Calendar Year					Five Year Total	Percent Fatal
	2004	2005	2006	2007	2008		2004	2005	2006	2007	2008		
ADAMS	40	31	20	25	43	159	1	1	0	1	2	5	3.1%
ASOTIN	0	2	3	2	2	9	0	0	0	0	0	0	0.0%
COLUMBIA	0	0	0	3	4	7	0	0	0	0	1	1	14.3%
FERRY	8	3	6	1	0	18	0	0	1	0	0	1	5.6%
GARFIELD	3	2	1	6	5	17	0	0	0	1	2	3	17.6%
LINCOLN	6	8	10	8	15	47	0	4	1	0	0	5	10.6%
PEND OREILLE	6	6	6	7	8	33	1	0	0	0	0	1	3.0%
SPOKANE	72	61	56	65	69	323	0	1	2	5	1	9	2.8%
STEVENS	6	11	18	16	15	66	0	0	2	3	1	6	9.1%
WHITMAN	9	11	13	9	17	59	0	2	2	2	1	7	11.9%
Washington IPH Totals	150	135	133	142	178	738	2	8	8	12	8	38	5.1%
Data Source: FARS; MCMIS (June 26, 2009 data snapshot)							Data Source: FARS						
Calendar year - the 12-month period starting January 1st through December 31st.							Calendar year - the 12-month period starting January 1st through December 31st.						
Fiscal year - the 12-month period starting October 1st through September 30th.							Fiscal year - the 12-month period starting October 1st through September 30th.						

The table in **Exhibit 14** shows that from 2004 through 2008 a total of 1,477 crashes involving large trucks were reported in the nineteen counties comprising the IPH Region. Of that total, 69 crashes involved a fatality, or about 5 percent of all truck related crashes. As might be expected Spokane and Kootenai counties experienced the largest number of fatal and non-fatal, large truck involved crashes. However, in both of these counties the percentage of fatal crashes involving trucks was below the regional average. Of some concern is the high ratio of fatal to non-fatal crashes in Lewis County, ID, Columbia County, WA, Garfield County, WA, Lincoln County, WA, and Whitman County, WA.

FMCSA also evaluates states on the timeliness and quality of their crash data submissions. Both Idaho and Washington are rated “Good” on their overall reporting, but Washington State did receive a “Poor” rating in the most recent evaluation of non-fatal crash reporting completeness. It is possible that the high ratio of fatal to non-fatal crashes in some counties results from incomplete reporting of non-fatal crashes by local authorities.

Exhibit 15 lists the highway collision data for Washington’s Strategic Freight Corridors and Idaho’s principal truck routes. This data covers commercial vehicle collisions for the three full years 2005, 2006, and 2007.

Exhibit 15: Inland Pacific Hub Highway Truck Accidents

Route		All Crashes	PDO	Injury	Fatality
I-90	WA	240	171	67	2
I-90	ID	180	129	49	2
US-2	WA	164	118	44	2
US-2	ID	35	21	14	0
US-12	ID	95	62	32	1
US-95	ID	254	173	73	8
US-195	WA	58	36	17	5
US-395	WA	66	37	26	3
SH-200	ID	10	6	4	0

Notes: 2005-2007 Reported Accidents, PDO=Property Damage Only

Source: WSDOT Transportation Data Office, ITD

HIGHWAY RESTRICTIONS

The Inland Pacific Hub’s highway network has a number of restrictions with respect to the height and weight of trucks, as shown in **Exhibit 16**. Overhead clearances of less than 15 feet exist at many locations, and weight limits of less than 20,000 pounds per axle are not uncommon. Furthermore, restrictions on Sherman Pass are typical in the winter and spring.

Exhibit 16: Inland Pacific Hub Highway Restrictions

Route		Milepost		Description	Restriction
I-90	EB	221.95		Bridge	All loads must travel on centerline
I-90	WB	270.55		Four Lakes vicinity	Clearance < 16 ft.
I-90	Both	276.00	299.00	Spokane vicinity	16 ft. < W prohibited
I-90	EB	283.36		Ped. U/C at Regal St.	Clearance < 15 ft.
I-90	WB	283.39		Ped. U/C at Regal St.	Clearance < 16 ft.
I-90	WB	284.59		Ped. U/C at Custer St.	Clearance < 16 ft.
I-90	EB	292.96		U/C at Flora Rd.	Clearance < 15 ft.
I-90	Both	293.95		U/C at Barker Rd.	Clearance < 15 ft.
I-90	EB	294.92		U/C at Greenacres	Clearance < 15 ft.
I-90	WB	294.92		U/C at Greenacres	Clearance < 15 ft.
I-90	EB	11.29	14.78	Coeur d'Alene vicinity	Clearance < 16 ft, two locations.
US-2	Both	25.4		Dover	Clearance < 16 ft, Width
US-2	EB	275.10		RR U/C at Fairchild AFB	Clearance < 15 ft.
US-2	EB	287.18		RR U/C on Browne St.	Clearance < 15 ft.
US-12	Both	360.28		Bridge	Overweight loads must travel on centerline
US-195	Both	37.46		Bridge	18,500 lb per axle
US-195	NB	81.46	81.46	RR U/C at Spangle	Clearance < 15 ft.
US-395	Both	13.05	20.57	I-82 - I-182 I/C	10 ft. < W must detour on I-182.
US-395	Both	241.59		Bridge	20,500 lb per axle
WA SR-20	Both	342.08	331.32	Sherman Pass	Seasonal weather
WA SR-20	Both	423.75		Bridge	21,500 lb per axle
WA SR-21	Both	28.78		Bridge	20,500 lb per axle
WA SR-21	Both	106.65		Keller Ferry	80,000 lb limit
WA SR-27	Both	69.01		WA-278 junction	Clearance < 15 ft.
WA SR-124	Both	0.00	44.98	Pasco to Waitsburg	12 ft < W < 16 ft. by permit only
WA SR-124	Both	0.00	44.98	Pasco to Waitsburg	16 ft. < W prohibited
WA SR-206	Both	11.09		Bridge	21,500 lb per axle
WA SR-231	Both	44.65		Bridge	18,000 lb per axle
WA SR-261	Both	14.80		Bridge	20,000 lb per axle
ID SH-97	Both	93.92	96.00	Beauty Creek Rd. to I-90	18,000 lb per axle
ID SH-200	Both	42.3		Trestle Creek	Width
ID SH-200	Both	54.70		Lightning Creek	Clearance < 14 ft, Width.

Notes: U/C=undercrossing, RR=railroad, I/C=interchange, W=width, AFB=Air Force Base

Source: Washington State Department of Transportation Commercial Vehicle Services, Road Restrictions for Oversize/Overweight Motor Vehicles. Accessed February 2009 at <http://www.wsdot.wa.gov/CommercialVehicle/roadlist.cfm>. (Adapted by HNTB Corporation.)
Idaho Transportation Department, Online 511 Services. Accessed February 2009 at <http://511.idaho.gov/default.asp?display=cov&area=Central&textOnly=False> (Adapted by HNTB Corporation.)

BORDER CROSSINGS

In Washington, there are four international border crossings within the study area served by State highways: SH-21 at Danville/Grand Forks, BC; US-395 at Laurier/Cascade, BC; SR-25 at Frontier/Paterson, BC; and SR-31 above Metaline Falls at Nelway, BC. An additional crossing using local roads also is provided at Boundary/Waneta, BC, northeast of Northport. In Idaho, two border crossings are served by State highways: US-95 at Eastport/Kingsgate, BC and SH-1 at Porthill/Rykerts, BC.

Among the border crossing sites, only the Frontier, WA/Paterson, BC (SR-25) and Eastport, ID/Kingsgate, BC (US-95) stations provide 24-hour service year round within the study area. The Laurier, WA/Cascade, BC (US-395) and Metaline Falls, WA/Nelway, BC (SR-31) stations operate between 8 AM and midnight. The Porthill, ID/Rykerts, BC (SH-1) crossing is open from 7 AM to 11 PM. Other locations are typically staffed only for daytime service.

Among the seven border crossings, activity is highest at the Eastport and Porthill, ID locations. Average annual daily traffic (AADT) volume reaches about 670 vehicles per day (vpd) at Eastport and 530 vpd at Porthill. None of the Washington crossings serve daily volumes exceeding 350 vpd. The BTS Border Crossing/Entry Data also gives counts for Truck Container Crossings, defined as any conveyance entering the U.S. used for commercial purposes, full or empty. The series only includes containers moving as inbound shipments.

Commercial truck traffic is highest at the Eastport, ID (US-95) crossing, with nearly 50,000 annualized incoming truck container crossings for the three year period 2006 thru 2008. This volume represents 50 percent of all truck container crossings over the seven study area crossings. The next highest truck container crossing is located at Frontier, WA/Paterson, BC (SH-25) with 22,287 crossings, representing a 22 percent share of all crossings.

Together the Porthill, ID (SH-21) crossing which feeds off of US-95 and the Eastport (US-95) crossing represent 60 percent of all truck container crossings in the IPH study area. In terms of a connectedness comparison based on the NHS, the Laurier, WA/Cascade, BC (US-395) and the Frontier crossing which feeds off of US-395, together represent a 30 percent share of all truck container crossings.

Summaries of the commodities shipped through the Washington border crossings was conducted in 2007 (*Projections of Washington-British Columbia Trade and Traffic by Commodity, Route, and Border Crossing*, H Galloway et al, Strategic Freight Transportation Analysis, WSU, May, 2007). It notes the highly variable nature of commodity flows, depending on shifting commodity prices and modal fare competition. Among the significant findings of the survey were:

- Usage of the Laurier crossing on US-395 is low because few population centers are located north of the border in this vicinity. Wood products are the predominant commodity at Laurier.

- The preference for the Frontier crossing may be related to the smelting and metals refining industries located in southern British Columbia in proximity to this crossing. Chemicals and wood products dominate at the Frontier crossing.
- The primary commodities observed at Metaline Falls include primary and fabricated metal products, and wood products.
- Commodities moving across the border at Boundary are dominated by chemicals and machinery.

The Eastport border crossing consistently ranks among the top 20 U.S./Canada commercial ports of entry by dollar volume. For Washington, Oregon, and California destinations, it provides a shorter, more efficient route compared to the I-15 crossing at Sweetgrass, Montana. The primary products crossing the border include lumber and wood products, livestock, and fertilizer.

WEIGH FACILITIES AND REST AREAS

The Inland Pacific Hub has 22 weigh system locations and 17 rest areas, as shown in **Exhibit 17**. Eight of the weigh facilities use weigh-in-motion (WIM) technology. WIM allows trucks to be weighed at highway speeds without having to stop. All eight of the region's WIM facilities are located in Idaho. WSDOT is currently upgrading the I-90 Port of Entry weigh station at the Idaho border to utilize this technology. This project is expected to be completed in Spring, 2011. Idaho has also established two automated "virtual" ports of entry on SH-1 and US-95 in Boundary County. The federally funded "real-time" traffic project captures weight and other information about the trucks as well as a photo allowing the department and Idaho State Police to insure international trucks are operating within the law and safely.

<http://www.wsdot.wa.gov/mapsdata/geodatacatalog/default.htm>
<http://www.wsdot.wa.gov/planning/wtp/datalibrary/facilitiesystems/WeighStations.htm>
http://www.wsdot.wa.gov/Safety/RestAreas/lat_long.htm <http://www.itd.idaho.gov/planning/gis/MapLibrary/>
<http://itd.idaho.gov/highways/ops/maintenance/RestArea/RestAreaMap/default.htm>
http://www.itd.idaho.gov/planning/roadwaydata/Maps/ATR_WIMmap_map.html

INTELLIGENT TRANSPORTATION SYSTEMS (ITS)

The Inland Pacific Hub highway network includes a complex array of ITS equipment, including fiber-optic lines, wireless transmitters, closed-circuit television cameras, roadway sensors, weather gauges, and other devices (**Exhibit 18 - 20**). These devices function collectively to gather and process traffic and weather data. This information is conveyed to the public by way of variable message signs, highway advisory radio broadcasts, television broadcasts and real-time web casts.

Central to the Inland Pacific Hub's ITS capacity is the Spokane Regional Traffic Management Center (SRTMC). The SRTMC was created as a multi-jurisdictional control facility to implement advanced transportation management capabilities. The SRTMC is controlled and funded by WSDOT, the Cities of Spokane and Spokane Valley, the Spokane Transit Authority, Spokane County, and the Spokane Regional Transportation Council.

Located in downtown Spokane at the Intermodal Center, the SRTMC is a 900 square-foot facility with three full workstations for operators, two 84-inch rear projection LCD displays, and nine analog video monitors. The center currently employs six operators, one operations manager, and one information technology manager.

The SRTMC operates 24 hours a day, seven days a week, 365 days a year. The center's operators coordinate closely with local first response agencies, the regional 911 center, and the state patrol agencies from Washington and Idaho. From the center's Advanced Traffic Management System (ATMS), the operators can access and control most of the area's devices, which include nearly three dozen closed-circuit television cameras, six dynamic message signs, twenty traffic measurement stations, and three highway advisory radio stations.

The SRTMC provides real-time traffic data, camera views, construction alerts and incident data to the public. An incident response team works jointly with WSP to clear stalled and disabled vehicles. The ITS capabilities of the region are being expanded with new camera locations in the City of Spokane, City of Spokane Valley, and Spokane County.

The Coeur d'Alene area is not served by a dedicated traffic management center, but the Idaho Transportation Department (ITD) website provides access to traffic cameras, weather data, and construction information. Incident management guidelines and detour routes for State highways have been developed by ITD.

The map displays the Coeur d'Alene and Spokane region, highlighting the locations of various traffic management technologies. The main map shows the area from British Columbia to the south and Oregon to the west. The inset map provides a detailed view of the Spokane area, showing the locations of CCTV, Dynamic Message Signs, and HAR along major highways. The legend indicates that orange squares represent Closed Circuit TV (CCTV), green squares represent Dynamic Message Signs (Permanent), and yellow triangles represent Highway Advisory Radio (HAR). A scale bar and north arrow are included for reference.

Land and Pacific Hub Transportation Study

Exhibit 19: CCTV Cameras by Route

Route	Milepost	Location	Route	Milepost	Location
Washington			Washington		
I-90	220.0	Ritzville at US-395	SR-31	16.7	Metalline Falls
I-90	257.0	Spokane Co	SR-395	168.0	Little Spokane Rvr
I-90	264.0	SR-902/Spokane Co	US-12	381.3	Delaney
I-90	274.0	Spokane Co/ Thomas Mallen Rd	US-12	413.0	Alpowa Summit
I-90	276.0	Spokane Co/Geiger Blvd	US-195		Uniontown
I-90	277.0	Spokane Co/US-2	US-195		Colfax
I-90	277.0	Spokane Co/US-2	US-195		Spangle
I-90	278.0	Spokane Arboretum	US-2		Fairchild AFB looking West
I-90	279.0	Spokane/US-195	US-2		Fairchild AFB looking East
I-90	279.5	Spokane 3rd/Maple	US-2		Spokane Co/Farwell Rd
I-90	280.0	Jefferson	US-395	188.0	Loon Lake Summit
I-90	280.2	Spokane 2nd/Monroe	US-395	275.0	Laurier
I-90	280.8	Spokane 3rd/Washington	US-395		Colville Canning
I-90	280.9	Spokane 2nd/Browne	US-395		Colville Birch
I-90	281.0	Spokane Division St #2			Spokane/Spokane River
I-90	281.0	Spokane Division St #1			Pullman
I-90	282.0	Spokane Arthur St			Colfax
I-90	282.5	Spokane Hamilton St	Idaho		
I-90	283.0	Spokane Freya St	I-90	2.1	Kootenai Co/Pleasant View Rd
I-90	284.0	Spokane Valley Havana St	I-90	20.6	Kootenai Co/Vet Mem Bridge
I-90	285.0	Spokane Valley Fancher Rd	I-90	30.0	Kootenai Co/4th of July Summit
I-90	285.5	Spokane Valley Sprague Av	I-90	62.4	Wallace
I-90	286.0	Spokane Valley Broadway Av	I-90	100.2	Shoshone Co/Lookout Pass
I-90	286.5	Spokane Valley Park Rd	SH-3	51.2	Shoshone Co Line
I-90	287.0	Spokane Valley Argonne Rd	SH-3	26.5	Deary
I-90	288.0	Spokane Valley University	SH-41	15.8	Kootenai Co/ Seasons Rd
I-90	289.0	Spokane Valley Pines Rd	SH-57	31.5	Bonner Co/Priest Lake
I-90	291.0	Spokane Valley Evergreen Rd	SH-6	23.2	Harvard Hill
I-90	292.0	Spokane Valley Sullivan Rd	US-12	19.1	Nez Perce Co/ Cottonwood Creek
I-90	296.0	Liberty Lake	US-95	279.6	Winchester
SR-20	320.0	Sherman Pass	US-95	324.5	Nez Perce Co/ Shirrod Hill
SR-290		Spokane Hamilton St	US-95	371.7	Marsh Hill
SR-291	9.0	Charles Rd	US-95	526.0	Boundary Co/Five Mile Hill
			US-95	259.2	Nez Perce Co/ Lewiston Hill

Source: HNTB Corporation, 2009.

Exhibit 20: DMS & HAR Locations by Route

Route	Milepost	Location	Route	Milepost	Location
Washington DMS			Idaho DMS		
SR-2	281.0	Spokane Co/Spotted Rd	SH-8	20.0	Latah Co.
SR-12	410.0	Pomeroy	I-90	9.0	Kootenai Co.
SR-12	419.0	Alpowa	I-90	10.0	Kootenai Co.
SR-26	40.0	Adams County EB/WB	I-90	21.0	Kootenai Co.
I-90	230.0	Adams County EB	I-90	35.0	Kootenai Co.
I-90	230.0	Adams County EB	I-90	58.0	Shoshone Co.
I-90	275.0	Geiger	I-90	61.0	Shoshone Co.
I-90	275.0	Geiger	US-95	311.0	Nez Perce Co.
I-90	281.0	Spokane	US-95	424.0	Kootenai Co.
I-90	281.0	Spokane	US-95	435.0	Kootenai Co.
I-90	282.0	Altamont	US-95	482.0	Bonner Co.
I-90	282.0	Altamont	US-95	504.0	Boundary Co.
I-90	284.0	Havana	US-95	511.0	Boundary Co.
I-90	284.0	Havana	Idaho HAR		
I-90	288.0	Spaldings	I-90	0.0	Kootenai Co.
I-90	288.0	Spaldings	I-90	21.0	Kootenai Co.
SR-395	238.0	Weigh Station at SR-25	I-90	35.0	Kootenai Co.
SR-904	13.0	Cheney/Paradise Rd	I-90	58.0	Shoshone Co.
			SH-3	29.0	Latah Co.
			US-95	490.0	Bonner Co.

Source: HNTB Corporation, 2009.

THE NORTH/WEST PASSAGE ITS CORRIDOR

In 2002, state representatives from Idaho, Minnesota, Montana, North Dakota, South Dakota, Washington, Wisconsin, and Wyoming met to develop a program to help states along the I-90 / I-94 corridors coordinate the development, deployment, and integration of ITS projects. The concept of a multi-state corridor program was discussed and the name North/West Passage Corridor was selected. During initial meetings, a number of transportation problems/issues were identified along these corridors, as well as potential ITS solutions (**Exhibit 21**).

During Phase I of the corridor initiative, Minnesota, North Dakota and Wisconsin were the only active funding partners, but the remaining five states, including Idaho and Washington remained actively involved in planning discussions. More recently, all eight states in the corridor have committed funds towards Phase 2 and Phase 3 efforts. Additional details about these projects are discussed in the Technology Assets working paper.

Exhibit 21: North/West Passage Program Development

Problems and Needs	Potential ITS Priority Programs
Lack of consistent and adequate traveler information	ATIS including an integrated network of transportation information and 511, along with developing coordination with vehicle manufacturers for telemetrics
Weather-related incidents and traffic management	Corridor-wide collection and exchange of weather/pavement conditions data, including predictability and modeling
Lack of communications (cell phone coverage in rural areas)	Investigation and development of corridor-wide communication partnerships
Inconsistent reliability of CVO information and underutilized freight capacity in rural areas	CVO - traveler information Deploy CVO systems
Accidents/Fatalities/Toward Zero Deaths Fatalities	(No specific project, included as part of all programs)
Information Exchange	Rural Transportation Operations and Communications Centers
Lack of agency and management coordination at borders	Deploy Dynamic Message Systems (DMS) and coordinate across borders

Source: North/West Passage Corridor Website: <http://www.nwpassage.info/about/history.php>

PLANNED IMPROVEMENTS

I-90 IMPROVEMENTS

WSDOT is currently widening I-90 from four to six lanes east of Spokane. The I-90 Spokane-Idaho State Line project widens over 12 miles of roadway. In 2005, WSDOT completed the first two segments of the project. I-90 now functions as a six-lane urban interstate highway from Garden Springs Road to Sullivan Road. However, additional funding is needed to widen the final segment from Sullivan Road, through Spokane Valley, Liberty Lake and Spokane County to the Idaho border.

US-395 IMPROVEMENTS

WSDOT is also constructing a North-South Corridor in Spokane. The US-395 North Spokane Corridor (NSC) Project will construct a 60 mph limited access urban freeway along a new alignment starting at the I-90 Thor/Freya Street interchange, running northward 10.5 miles, interchanging with existing US-2 and rejoining the current US-395 route at Wandermere, approximately three miles north of the Newport Y. The project shifts US-395 from Division Street to Market Street, approximately two miles to the east. Other interchanges will be located at Trent Avenue (SR-290), Wellesley Avenue, Francis/Freya Street, Parksmith Drive, and Farwell.

The Francis to Farwell segment between the Francis/Freya and Farwell Interchanges opened to traffic in August, 2009. It is anticipated that the Farwell to Wandermere segment will be open to traffic by late summer 2011. Upon completion of the north end of the NSC corridor, approximately 5.7 miles will then be operational. When completed, the corridor is expected to improve freight and commuter mobility through the metropolitan area. The rest of the freeway will be built as funding is made available.

Spokane County has completed an Environmental Impact Statement for the widening of Bigelow Gulch Road between Francis Avenue on the west and Wellesley Avenue on the east. The first phase of this project, between Francis Avenue and Argonne Road, will serve to connect the North-South Corridor to I-90 until funding for completion of the North-South Corridor is secured.

US-95 IMPROVEMENTS

ITD is currently widening US-95 from two lanes to four lanes between Worley and Setters Corner in Kootenai County, south of Coeur d'Alene. The US-95 Worley North project widens over four miles of roadway. Construction began in 2007 and was completed in 2009, except for through the City of Worley which is expected in 2010 using ARRA funding.

ITD is planning on widening US-95 between Garwood and Sagle in Kootenai and Bonner Counties, north of Coeur d'Alene. The US-95 Garwood to Sagle Corridor project widens over 31 miles of roadway. A Draft Environmental Impact Statement (EIS) was published in December 2006. The EIS is now being finalized. ITD expects the FHWA to issue a Record of Decision on a preferred alternative by mid-2010. Funding has been identified only for US-95 widening within Kootenai County.

The Kootenai MPO recently completed a US-95 Access Management Study that identified 35 specific improvements totaling just over \$6.7 million to balance safety and mobility on US-95 and provide essential community access to and from the highway. In 2006, the Idaho Transportation Board considered closing the unsignalized median crossings along US-95 from I-90 through SH-53. Before taking action, the IT Board asked the Kootenai Metropolitan Planning Organization (KMPO) to evaluate the impacts of median closures and look for ways to improve mobility on US-95. It is anticipated that funding the improvements will involve much ingenuity and close attention to strategic finance opportunities.

WSDOT and ITD have many other projects within the Inland Pacific Hub. Information on these projects is available at each agency's respective website.

LONG RANGE PLANS

In Washington, the long-range plans for highway corridors are defined in the Statewide Highway System Plan and Route Development Plans (RDP). The RDP developed for US-2 north of Spokane identifies widening to four lanes within Spokane County, with interchanges and frontage roads to serve local access. Interim strategies on this route could include provisions for turn lanes, access management, and other safety improvements. Along US-395, the RDP identified a long-term need for a limited access facility, with widening to four lanes or development of bypass routes at Deer Park, Chewelah, Colville, and Kettle Falls. Interim improvements in this corridor could include turning lanes, acceleration/deceleration lanes, truck climbing lanes, and passing lanes. On US-195, within the city limits of Spokane, a controlled access facility is envisioned, with grade-separated interchanges and elimination of at-grade intersections. Development of a new City arterial may provide some relief in the short term. A bypass route west of Coeur d'Alene is under consideration to alleviate truck traffic and urban congestion on US-95.

Idaho may make future improvements to portions of US-95 as traffic volumes, safety factors and funding availability warrant.

Funding for long-range transportation improvements has not been identified at the system planning stage. Revenues under the traditional gas tax system have been declining, and are generally acknowledged to be inadequate to respond to future needs. WSDOT and ITD both are conducting studies to identify sources of funding to provide for long-range transportation needs.

DISTRIBUTION AND WAREHOUSE CENTERS

The Inland Pacific Hub study area provides a range of support facilities for transportation distribution and warehousing. The major focus of this activity is in the cities of Spokane and Spokane Valley, with smaller centers in Airway Heights, Lewiston, Coeur d'Alene, Post Falls and Sandpoint. Twenty-seven distribution centers were identified in the Washington study area, with most located within Spokane County. In the Idaho study area, twelve distribution centers were counted, including three in Lewiston, three in Coeur d'Alene, and two in Post Falls.

Warehousing space also is more widely distributed, reflecting the influence of agricultural products. Excluding grain elevators, 25 warehouse locations were identified in the Washington study area, including 10 in Spokane County.

The attraction for warehousing and distribution uses in the region is related to the presence of a major Interstate Highway, access to two Class I railroads, and an international airport. The region is well situated to serve as an inland port, where cargo can be directed and divided for shipping. There is an adequate supply of land for distribution and warehouse uses. These factors provide an environment where port and distribution center activities would combine to produce efficiencies compared to congested coastal ports.

THE INLAND PACIFIC HUB RAIL NETWORK

RAILROAD CLASSIFICATION

Railroad classification is determined by the U.S. Surface Transportation Board (STB). The classifications are based on revenue dollars. The STB regularly adjusts the dollar ranges to account for inflation by applying the Bureau of Labor Statistics Railroad Freight Price Index. In 2006 dollars, a railroad with revenues greater than \$277.7 million for at least three consecutive years is considered a Class I railroad. Similarly, a railroad with revenues greater than \$20.5 million, but less than \$277.7 million, is considered a Class II railroad; such railroads are commonly referred to as “regional” railroads.

A railroad not within the Class I or II categories is considered a Class III railroad, also known as a “short line”. As the name indicates, short lines operate over a relatively short distance. Short lines serve the larger railroads by collecting and distributing railcars to individual industrial and agricultural shippers and receivers. They provide a critical service, particularly in lower-density rail corridors and markets where the larger railroads cannot operate cost-effectively. From a historical standpoint, many of the nation’s short lines operate on branches previously owned and operated by the Class I railroads.

CLASS I RAILROADS SERVING THE INLAND PACIFIC HUB STUDY AREA

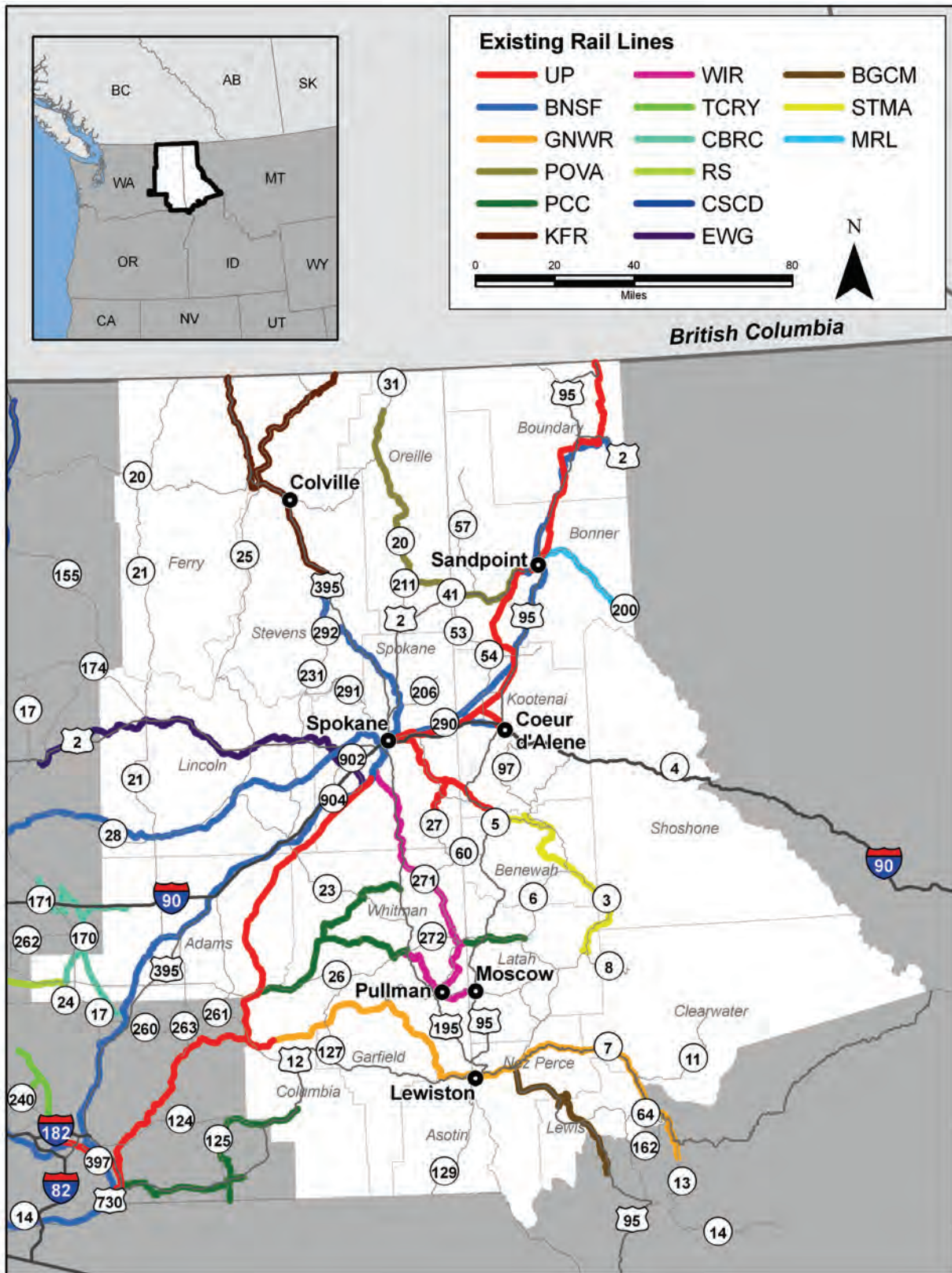
BURLINGTON NORTHERN SANTA FE RAILWAY (BNSF)

BNSF’s Everett-Spokane line, which passes through the Cascade Tunnel at Stevens Pass, is the railway’s primary route for double-stack intermodal traffic. The line enters the Inland Pacific Hub west of Odessa in Lincoln County (**Exhibit 22**). It follows WA SR-28, passing through the towns of Odessa and Harrington, then proceeds east to Spokane, passing through the towns of Edwall, Waukon, and Espanola.

The BNSF operates two lines connecting to West Coast marine ports that converge at the Tri-Cities. The first line is the Auburn-Pasco route, which crosses the Cascade Range through the Stampede Pass tunnel. (The ceiling of the Stampede Pass tunnel is too low for double-stack intermodal container trains, limiting the capacity of this route.) After crossing the pass, the line proceeds southeast through the Yakima Valley to Pasco. The second line is the Vancouver-Pasco line, which runs through southern Washington along the north side of the Columbia River. This route is the primary route for export grain trains inbound to the Columbia River ports.

From Pasco, the BNSF runs northeast, paralleling US-395. The railway also enters the Inland Pacific Hub at Ritzville and follows I-90 to Spokane, passing through the towns of Sprague, Tyler, and Cheney.

Exhibit 22: Inland Pacific Hub Rail Network



Source: WSDOT GeoData Distribution, January 2010. ITD Map Library, January 2010. Wilbur Smith Associates, February 2010.

The Everett-Spokane and Pasco-Spokane lines converge at the Spokane-Latah Junction. From Spokane, the BNSF's main line continues northeast to Sandpoint (a branch line extends to Coeur d'Alene). From Sandpoint, the BNSF follows US-2 to the Montana border, passing through Bonners Ferry.

The BNSF operates a branch line from Spokane to connect to the Kettle Falls International Railway (KFI). From Spokane, the branch line proceeds northwest to Chewelah, passing through the towns of Deer Park, Loon Lake, Springdale, and Valley. At Chewelah, it connects with the KFI. The KFI then proceeds to Kettle Falls. From there it splits and runs two lines to British Columbia: one proceeds northwest to Laurier, paralleling US-395; the other runs northeast to the town of Boundary.

From Marshall, southwest of Spokane, the BNSF also connects to two lines into Latah County via the Washington and Idaho Railway. The first line begins at the Washington border near Potlatch and extends to Princeton, ID. The second line extends to Moscow.

UNION PACIFIC RAILROAD (UP)

The UP operates an east-west route in northern Oregon, between Portland and Hinkle along the south side of the Columbia River. From Hinkle, the UP proceeds northeast, following the Columbia and Snake Rivers for several miles. The UP enters the Inland Pacific Hub in southeastern Adams County, proceeds north, then parallels I-90 to Spokane. For the last 12 miles of the Hinkle-Spokane line (from Fish Lake to Spokane), the UP operates on the BNSF Lakeside Subdivision via trackage rights.

From the Hinkle-Spokane main line, the UP operates two branch lines: one branch extends from the Tri-Cities to Yakima; the other runs to Riparia in Whitman County to connect to the Great Northwest Railroad into Lewiston.

At Spokane, the UP splits. One line runs northeast to the town of Eastport on the British Columbia border, passing through the cities of Sandpoint and Bonners Ferry (a branch line extends to Coeur d'Alene). At Eastport, the UP links with the Canadian Pacific Railway. The other line runs southeast, passing through the towns of Mica and Freeman. The line then proceeds southeast to Plummer, where it connects to the St. Maries River Railroad. Another branch extends from Manito to Fairfield in southeast Spokane County.

CLASS II RAILROADS SERVING THE INLAND PACIFIC HUB STUDY AREA

The Montana Rail Link (MRL) is the Inland Pacific Hub's only Class II railroad. The MRL connects with the BNSF at Spokane. From Spokane it runs northeast to Sandpoint over BNSF trackage, where it connects with the UP. From Sandpoint the MRL parallels ID SH-200 and proceeds into Montana. The MRL then runs east to Billings, passing through the cities of Missoula, Helena, and Bozeman. MRL serves no shippers in Washington or Idaho.

SHORT LINES SERVING THE INLAND PACIFIC HUB STUDY AREA

A total of eight short line railroads serve the Inland Pacific Hub (**Exhibit 23**). Short line railroads serving the region include the Kettle Falls International Railway, the Pend Oreille Valley Railway, the Eastern Washington Gateway Railroad, the Washington & Idaho Railroad, the Palouse River & Coulee City Railroad, the Great Northwest Railroad, the St. Maries River Railroad, and the Bountiful Grain and Craig Mountain Railroad. These railroads collectively operate nearly 900 miles of track and reach all parts of the region, with the exception of certain areas within Ferry and Clearwater counties.

Exhibit 23: Inland Pacific Hub Short Line Railroads

Railroad		From	To	Miles	Counties	Serves	
						BNSF	UP
Kettle Falls International	KFI	Chewelah Kettle Falls Kettle Falls	Kettle Falls Laurier Boundary	160	Stevens, Ferry	X	
Pend Oreille Valley	POVA	Dover	Metaline Falls	88	Bonner, Pend Oreille	X	X
Eastern Washington Gateway	EWG	Coulee City	Cheney	110	Grant, Lincoln, Spokane	X	
Washington & Idaho	WIR	Marshall Palouse Colfax	Moscow Idaho Border Pullman	91	Spokane, Whitman, Latah	X	X
Palouse River & Coulee City	PCC	Thornton Colfax Dayton Walla Walla	Winona Hooper Welston, OR Wallula	300	Whitman, Walla Walla, Franklin		X
Great Northwest	GRNW	Lewiston	Riparia	77	Nez Perce, Asotin, Garfield, Columbia, Whitman	X	X
St. Maries River	STMA	Plummer	Bovill	71	Benewah, Latah, Shoshone		X
Bountiful Grain and Craig Mountain	BG & CM	Lewiston Orofino	Orofino Kooskia	106	Nez Perce, Lewis, Clearwater, Idaho	X	X

Source: Washington State Department of Transportation, *Washington Transportation Plan Update Freight Movement – Appendix B*. Draft August 18, 2008. Retrieved February 2009 from <http://www.wsdot.wa.gov/freight/>. (Adapted by HNTB Corporation.)

SPECIALIZED TRAINS SERVING THE INLAND PACIFIC HUB STUDY AREA

WASHINGTON GRAIN TRAIN

The Washington Grain Train is a transportation program managed by WSDOT, the Port of Walla Walla, the Port of Moses Lake, and the Port of Whitman County. The Grain Train serves over 2,500 cooperative members and farmers throughout southeastern

Washington. It collects wheat and barley from grain elevators in eight cities: Warden, Schrag, La Crosse, Prescott, Endicott, Willada, St. John, and Thornton.

Currently, the Grain Train is split into two different operations. The first operation originates from Moses Lake and transports grain to export facilities on the Columbia River and the Puget Sound. The second operation originates from the Palouse and transports grain to the Wallula barge terminal on the Columbia River. Through these operations, grain is transported to export facilities in Seattle, Tacoma, Vancouver, Kalama, and Portland.

The Grain Train currently owns 89 grain cars (71 are owned by WSDOT; 18 are owned by the Port of Walla Walla). The cars are operated jointly by the BNSF, the UP, and the various short line railroads.

RAILEX TRAIN

Railex, LLC is a transport and warehousing company based out of Schenectady, New York. Railex operates unit trains dedicated to transporting fresh produce. (Other products shipped include frozen foods, dried goods, and beverages.) The Railex trains consist of 55 64-foot series cars with fresh air exchange, GPS tracking and temperature control. The trains stay intact from origin to destination, reducing time delays and minimizing the effects of bruising, shifting, and temperature fluctuations.

Railex has a facility at Wallula, located south of the Tri-Cities in Walla Walla County on the Columbia River. This facility includes 220,000 square feet of refrigerated space, 17,500 racked pallet positions, six distinct computer-controlled temperature zones, 19 enclosed refrigerated rail docks, 38 refrigerated truck docks, and a two-mile rail loop track. Railex also has terminals in Rotterdam, New York and Delano, California.

Railex guarantees five-day service between Wallula and Rotterdam. To accomplish this, Railex has agreements in place with the UP and the CSX. From Wallula, Railex runs southwest on the UP to Hinkle, then east on the UP to Chicago. From Chicago, Railex runs northeast on the CSX to Rotterdam. Although Railex operates outside the Inland Pacific Hub, the company could conceivably expand its operations within the region by further utilizing the UP's Hinkle-Spokane line.

GRAIN ELEVATORS AND GRAIN SHUTTLE TRAINS

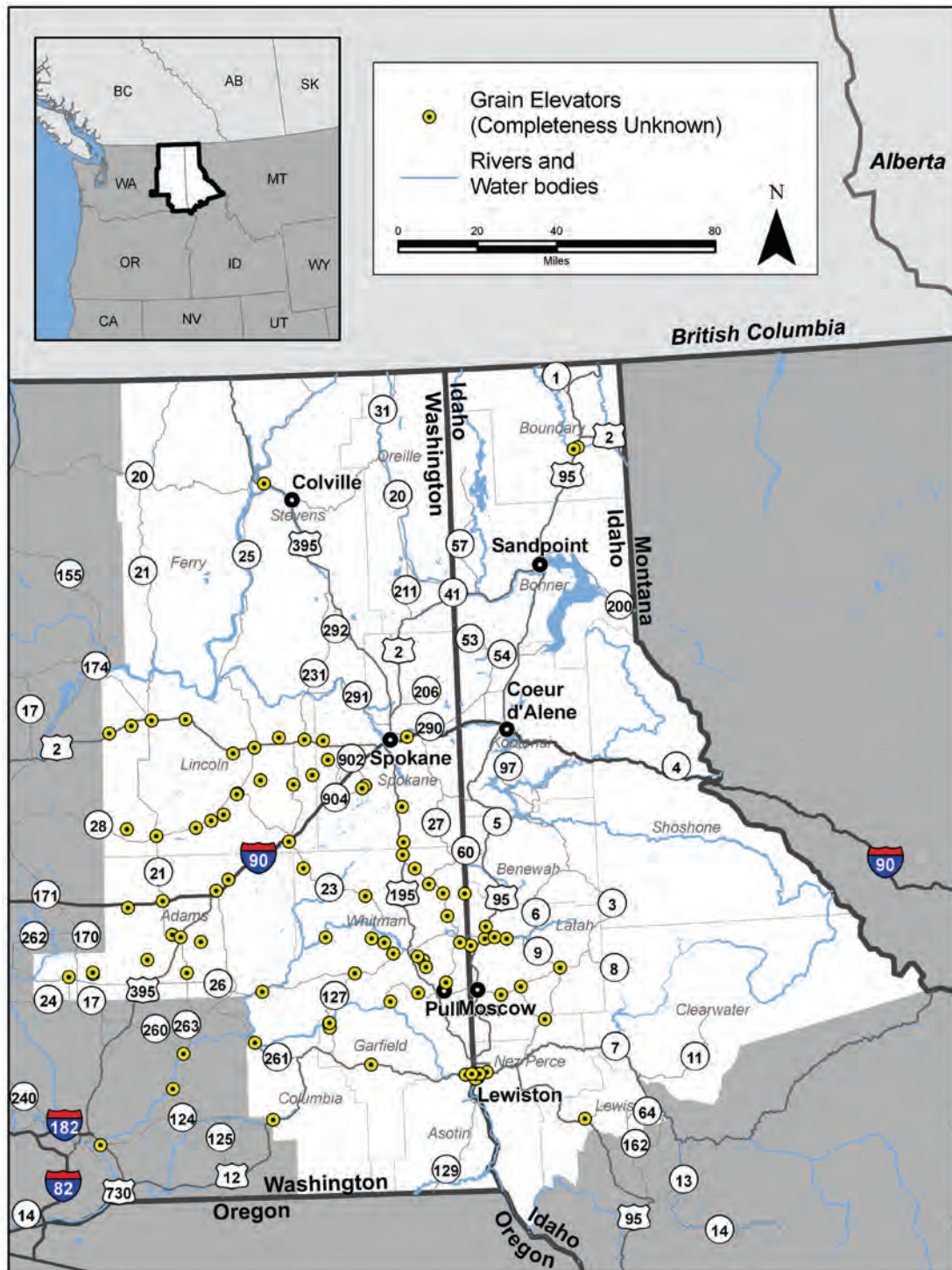
GRAIN ELEVATORS

Grain elevators are buildings used to store large quantities of wheat, barley, and any other dry commodities. These buildings are characterized by their large, cylinder-shaped storage holds. Grain elevators are fundamental to the economies of farming communities. During harvest, grain trucks transport the grain from the fields to the local elevator. The elevator lifts (elevates) the grain into the storage hold. Eventually, the grain is deposited into rail hopper cars. Thus, grain elevators are usually positioned next to railroads.

The map in **Exhibit 24** displays 100 grain elevators in the Inland Pacific Hub study area. Presumably, more elevators exist along local roads in southern Lincoln and western

Whitman counties. A representative sample of grain elevator capacity is provided in **Exhibit 25**. With the exception of one reciprocally served record, this BNSF Railway Company database extract identifies grain elevators that are directly served by BNSF.

Exhibit 24: Inland Pacific Hub Grain Elevators



Source: HNTB Corporation, February 2009. BNSF Railway Company, *Grain Elevator Directory dBASE File*, 2006. Farm Net Services, *Grain Elevators Directory By State*, December, 2010. Wilbur Smith Associates, January 2010.

Abandonments of short-line railroads over the years have reduced access to some grain elevators by rail. A significant amount of grain is now shipped by truck to barge ports and grain elevators still served by rail, increasing the cost for some shippers.

Exhibit 25: BNSF Serviced Grain Elevators by County

ID	Elevator	Station	County	Capacity
1461	CHS Inc.	Bruce	Adams	275,000
1462	Union Elevator & Warehouse Co.	Bruce	Adams	850,000
1497	Union Elevator & Warehouse Co.	Lind	Adams	3,500,000
1523	Ritzville Warehouse Co.	Ritzville	Adams	3,700,000
1527	Union Elevator & Warehouse Co.	Schrag	Adams	1,838,000
2355	Templin Terminal, LLC	Templin	Adams	762,000
48	General Feed & Grain, Inc.	Bonniers Ferry	Boundary	357,000
62	CHS Inc.	Kennedy Ford	Latah	100,000
1455	Almira Farmers Warehouse Co.	Almira	Lincoln	2,283,000
1456	Central WA Grain Growers, Inc.	Almira	Lincoln	783,000
1459	Davenport Union Whse. Co.	Bluestem	Lincoln	610,000
1469	Central WA Grain Growers, Inc.	Creston	Lincoln	754,000
1470	Davenport Union Whse. Co.	Davenport	Lincoln	2,979,000
1471	Odessa Union Whse. Co-op	Davenport	Lincoln	799,000
1472	Odessa Union Whse. Co-op	Downs	Lincoln	392,000
1473	Odessa Union Whse. Co-op	Downs	Lincoln	439,000
1474	Ritzville Warehouse Co.	Edwall	Lincoln	922,000
1480	Sheffels Co.	Govan	Lincoln	105,000
1481	Central WA Grain Growers, Inc.	Govan	Lincoln	404,000
1485	Odessa Union Whse. Co-op	Harrington	Lincoln	1,076,000
1486	Odessa Union Whse. Co-op	Harrington	Lincoln	1,379,000
1490	Odessa Union Whse. Co-op	Irby	Lincoln	235,000
1496	Odessa Union Whse. Co-op	Lamona	Lincoln	638,000
1505	Odessa Union Whse. Co-op	Mohler	Lincoln	683,000
1506	Odessa Union Whse. Co-op	Mohler	Lincoln	349,000
1507	Davenport Union Whse. Co.	Mondovi	Lincoln	1,073,000
1511	Ritzville Warehouse Co.	Odessa	Lincoln	225,000
1512	Odessa Union Whse. Co-op	Odessa	Lincoln	1,910,000
1522	Reardan Grain Growers, Inc.	Reardan	Lincoln	1,700,000
1524	Odessa Union Whse. Co-op	Rocklyn	Lincoln	325,000
1533	Ritzville Warehouse Co.	Sprague	Lincoln	330,000
1543	Reardan Grain Growers, Inc.	Waukon	Lincoln	377,000
1548	Central WA Grain Growers, Inc.	Wilbur	Lincoln	2,495,000
1549	Central WA Grain Growers, Inc.	Wilbur	Lincoln	2,495,000
2278	Reardan Grain Growers, Inc.	Sprague	Lincoln	698,000
2393	Almira Farmers Warehouse Co.	Govan	Lincoln	308,000
2402	Sheffels Co.	Bluestem	Lincoln	88,000
64	CLD Pacific Grain LLC	Lewiston	Nez Perce	1,000,000
65	CHS Inc.	Lewiston	Nez Perce	384,000
66	Columbia Grain Inc.	Lewiston	Nez Perce	4,500,000
1465	Cooperative Agriculture Producers, Inc.	Cheney	Spokane	674,000

ID	Elevator	Station	County	Capacity
1476	Reardan Grain Growers, Inc.	Espanola	Spokane	400,000
1489	Reardan Grain Growers, Inc.	Hite	Spokane	697,000
1516	Cooperative Agriculture Producers, Inc.	Plaza	Spokane	836,000
1529	Spokane Seed Company	Spangle	Spokane	1,235,000
1530	Cooperative Agriculture Producers, Inc.	Spangle	Spokane	421,000
1495	Flour Mill Farm & Hardware Co.	Kettle Falls	Stevens	197,000
1477	Whitman County Growers, Inc.	Fallon	Whitman	1,148,000
1501	Cooperative Agriculture Producers, Inc.	McCoy	Whitman	376,000
1508	Cooperative Agriculture Producers, Inc.	Oakesdale	Whitman	217,000
1509	Cooperative Agriculture Producers, Inc.	Oakesdale	Whitman	1,259,000
1510	RMK Farms Inc.	Oakesdale	Whitman	239,000
1513	Palouse Grain Growers, Inc.	Palouse	Whitman	960,000
1514	Wallace Grain & Pea Co.	Palouse	Whitman	496,000
1526	Cooperative Agriculture Producers, Inc.	Rosalia	Whitman	551,000

Source: HNTB Corporation, 2009. BNSF Railway Company, *Grain Elevator Directory dBASE File*, 2006.

SHUTTLE TRAIN ELEVATORS

A “shuttle” is a 110-car train of dedicated, high-capacity rolling stock that can both load in 15 hours and unload in 15 hours. The BNSF operates two such trains in the Inland Pacific Hub; one from the grain elevator in Ritzville, the other from the grain elevator in Templin. The BNSF also operates a shuttle train from Attalia in Walla Walla County, located south of the Tri-Cities on the Columbia River.

RAILROAD OPERATIONS

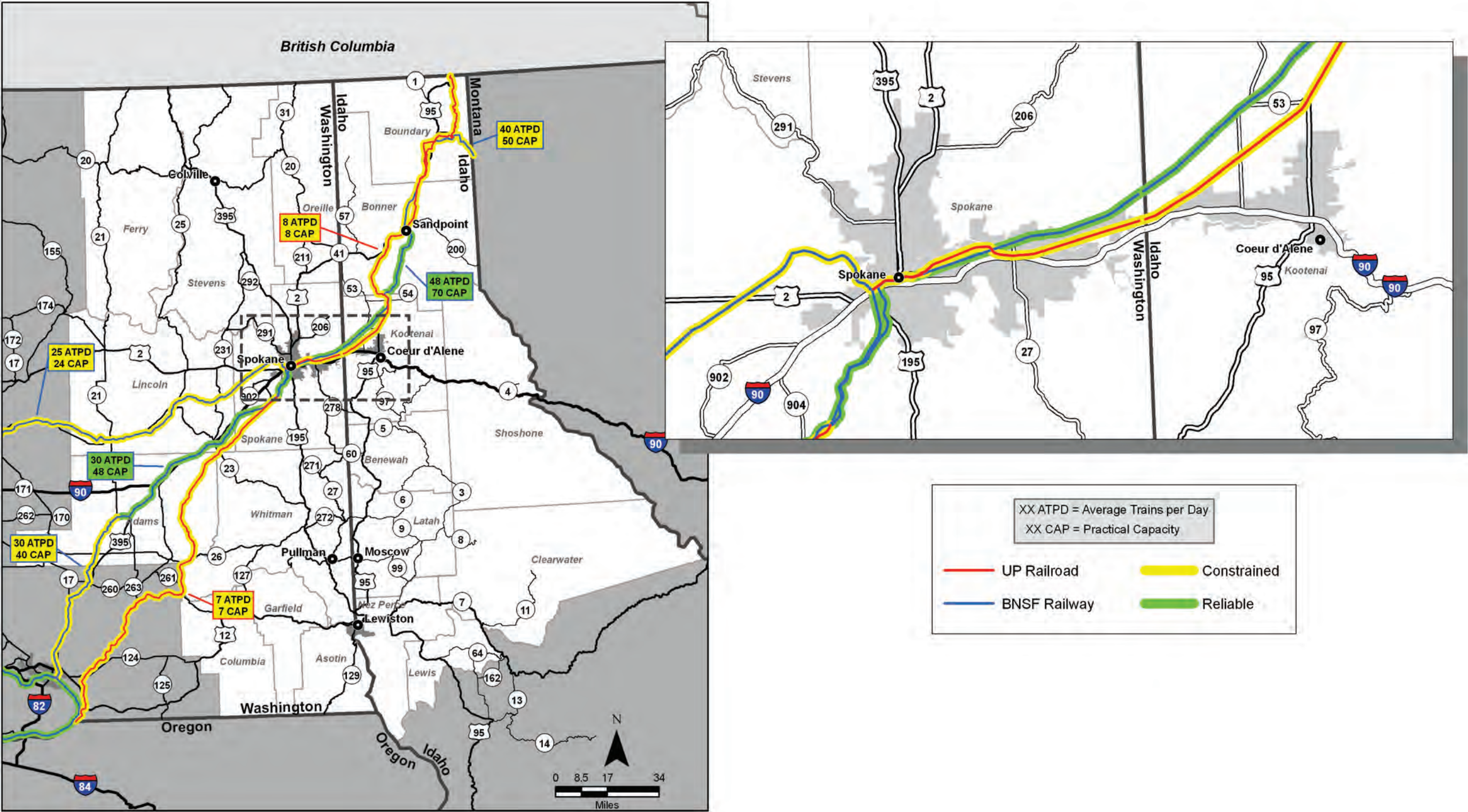
RAILROAD CAPACITY

Rail Capacity is calculated in a two-step process. First, a “theoretical capacity” is determined, assuming perfect conditions and operations. Second, “practical capacity” is determined by considering factors such as possible disruptions, signal needs, human decisions, weather, possible equipment failures, supply and demand imbalances, and seasonal demand. Practical capacity is roughly 60 percent of the theoretical capacity and provides reliable service. At higher percentages, rail congestion increases rapidly and service reliability deteriorates quickly. **Exhibit 26** illustrates the rail capacity and activity on the Inland Pacific Hub’s Class I main lines.

Sandpoint, Idaho is the junction of two inter-continental railways, the BNSF and UP and one regional railroad, the Montana Rail Link. Near downtown Sandpoint, the BNSF and UP lines over-cross and continue north along US-95 and US-2. The 70-Mile BNSF corridor between Sandpoint and Spokane, WA, known as the “funnel”, is somewhat constrained with numerous at-grade crossings and remaining sections of single track along its mainline. Conversion to double-track mainline is planned for most of or the entire BNSF corridor between Spokane and Athol. This conversion and a series of grade crossing improvements are comprehensively known as the “Bridging the Valley Project.” When fully funded and implemented, the project will separate vehicle traffic from train traffic in the 42-mile corridor between Spokane, WA and Athol, ID.

The Union Pacific Railroad (UPRR) secondary mainline extends about 150 miles between Spokane and Eastport, ID, where it connects to the Canadian Pacific system. It consists of the former Spokane International Railway (SI) alignment, with numerous at-grade crossings. With the completion of double-tracking along the BNSF alignment, it is anticipated the UPRR may shift operations to the BNSF mainline, and the SI alignment will be used only for local deliveries if trackage rights agreements between the two railroads are agreed upon.

Exhibit 26: Inland Pacific Hub Class I Railroad Capacity (2007)



The BNSF typically serves 60 to 80 trains per day in “The Funnel,” and the UP/SI route typically serves up to eight trains daily. The BNSF mainline across Stampede Pass serves about 25 trains daily, and the Columbia River route, about 30 trains daily. The UP route to the Tri-Cities serves about seven trains daily.

The BNSF operates under constrained conditions on its Everett-Spokane line, as well as between Pasco and Lind and between Sandpoint and Montana. From Lind to Sandpoint, including the Spokane vicinity, the BNSF operates under reliable conditions. The UP operates under constrained conditions on its entire run through the Inland Pacific Hub, from Hinkle to Eastport.

AT-GRADE RAILROAD CROSSINGS

The Inland Pacific Hub’s highway and railway networks intersect at numerous locations. Of the region’s 887 at-grade railroad crossings, shown in **Exhibit 27**, 878 provide some form of warning. Of these, 507 have cross-bucks only, 158 have flashing lights with gates, 122 have stop signs, and 87 have flashing lights only.

Exhibit 27: Inland Pacific Hub At-Grade Railroad Crossings

County	Total Number of Crossings	Type of Highway Warning						
		None	Cross Bucks Only	Stop Signs	Special Warning	Highway Traffic Signals, Wig-Wags, Bells	Flashing Lights Only	Flashing Lights with Gates
Adams	48	1	24	3			6	14
Columbia	10		10					
Ferry	26		20				4	2
Lincoln	97		69	2			5	21
Pend Oreille	26		19				7	
Spokane	214	2	111	16		1	19	65
Stevens	54	1	37	1			5	10
Whitman	109	3	84	1		2	15	4
Benewah	21		17	3			1	
Bonner	70		6	38			8	18
Boundary	37		3	30			2	2
Clearwater	24		17	4			2	1
Kootenai	66		29	19	1		5	12
Latah	31	1	20				5	5
Lewis	12		10				2	
Nez Perce	37	1	30	2				4
Totals	887	9	507	122	1	3	87	158

Source: HNTB, 2009

The region had a total of 37 highway-railway accidents during the three full years 2005, 2006, and 2007 and the 11 months through November 2008 (**Exhibit 28**). Of these 37

accidents, 34 involved motor vehicles. Four of the accidents resulted in fatalities, three resulted in non-fatal injuries, and 27 resulted in property damage only.

Exhibit 28: Inland Pacific Hub Highway-Railway Collisions

County	Motor Vehicle			Non-Motor Vehicle		
	Count	Fatality	Injury, non-fatal	Count	Fatality	Injury, non-fatal
Adams	1					
Spokane	8		1	1		
Stevens	1					
Whitman	2					
Bonner	3					
Boundary				1	1	
Kootenai	19	4	2	1	1	
Totals	34	4	3	3	2	

Source: Federal Railroad Association Office of Safety Analysis. Retrieved February 2009 from <http://safetydata.fra.dot.gov/officeofsafety/>.

The majority of the region's highway-railway accidents occurred in Spokane and Kootenai counties, **Exhibit 29** summarizes the accidents for these two counties.

Exhibit 29: Spokane and Kootenai County Rail Crossing Collisions

Spokane County	Total		Total Year Counts			2008 to Nov.
	Count	Percent	2005	2006	2007	
Automobile	4	44.4%	1	1	1	1
Truck	2	22.2%	1	1		
Truck-trailer	1	11.1%				1
Other motor vehicle	1	11.1%	1			
Other	1	11.1%			1	
Total	9	100%	3	2	2	2
Kootenai County						
Automobile	5	25%	2	2	1	
Pick-up truck	4	20%	1	1	2	
Truck	2	10%	1	1		
Truck-trailer	6	30%		1	2	3
Other motor vehicle	2	10%			2	
Pedestrian	1	5%			1	
Total	20	100%	4	5	8	3

Source: Federal Railroad Association Office of Safety Analysis. Accessed February, 2009 at <http://safetydata.fra.dot.gov/officeofsafety/>.

RAILROAD BOTTLENECKS

Exhibit 30 illustrates the primary and secondary sources of bottlenecks on the Inland Pacific Hub's Class I main lines.

On the BNSF's Pasco-Spokane line, the primary source of bottlenecks is the distance between passing sidings. This manifests in the vicinity of Connell near the Franklin-Adams county line. On the BNSF's Everett-Spokane line, the distance between passing sidings is a secondary source. This occurs in the vicinity of Medical Lake near the Lincoln-Spokane County line. Similar conditions exist between Spokane and Sandpoint near Rathdrum.

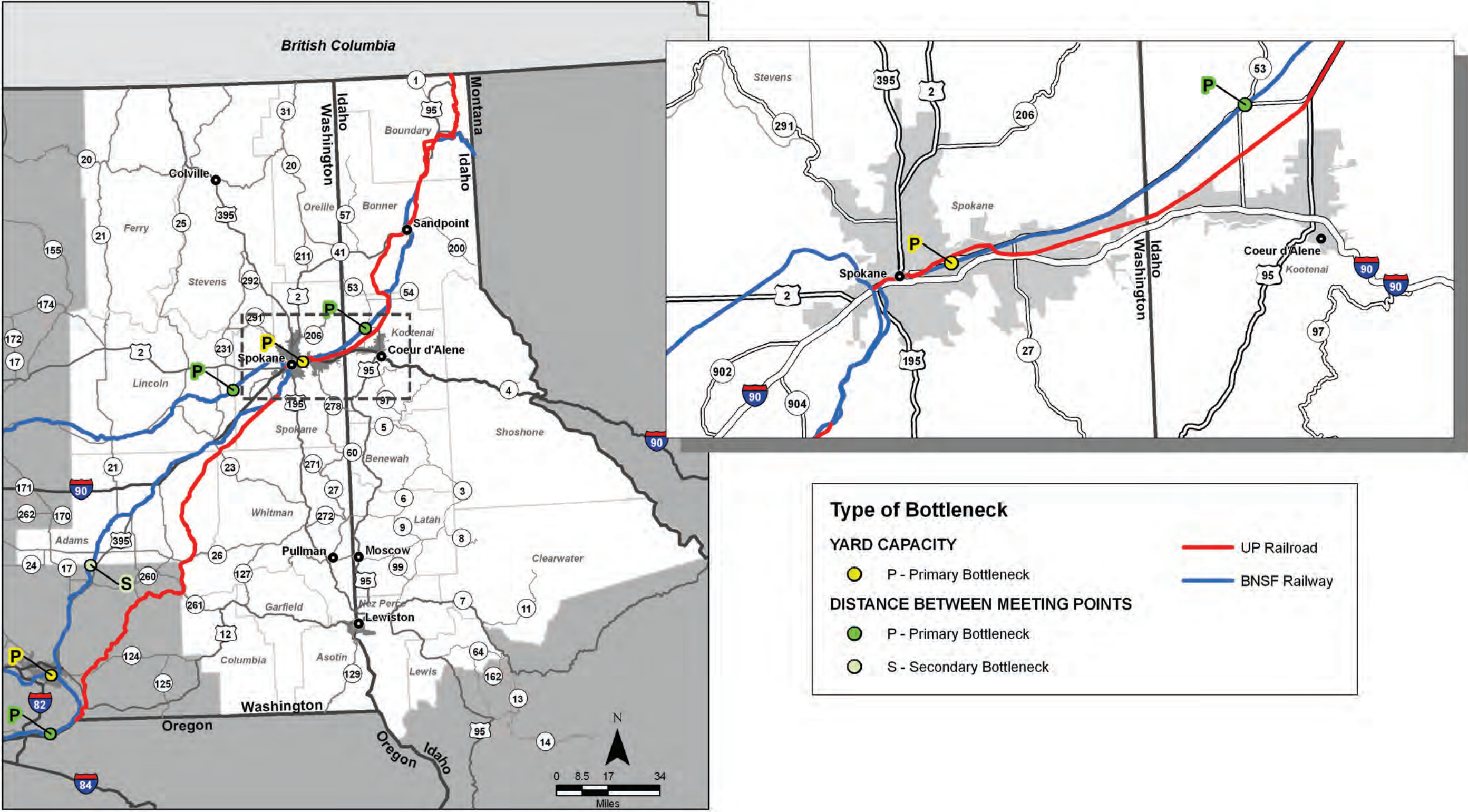
The Bridging the Valley project, when fully funded and implemented will separate vehicle traffic from train traffic in the 42-mile corridor between Spokane, WA and Athol, ID. Double-tracking of the BNSF route will provide increased rail capacity. The project will also provide grade separation of 19 existing at-grade rail crossings, and a new UP yard in Spokane. The first funded projects under this program are a grade separation at Havana Street in Spokane and at Main Street in Rathdrum, ID.

RAIL YARDS

BNSF operates a major yard at Spokane known as Yardley, adjacent to overcrossings at Havana Street and Fancher Road. Yardley processes cars to and from local industries and is a block swap location for intermodal trains. Traffic is a mix of originating, terminating, and through trains. It is also a crew change point.

UP operates its Spokane Yard for local industry access, originating, terminating, and through trains. It also serves as a crew change point. For both the BSNF and the UP, yard capacity at Spokane is a secondary source of bottlenecks.

Exhibit 30: Inland Pacific Hub Class I Railroad Sources of Bottlenecks



Source: HDR, Inc., 2007-2026 Washington Transportation Plan. Prepared for WSDOT. Retrieved February 2009 from <http://www.wsdot.wa.gov/planning/wtp/datalibrary/DocumentLibrary.htm>. (Adapted by HNTB Corporation). WSDOT, Washington State 2010-2030 Freight Rail Plan, December 2009.

TRANSLOAD FACILITIES SERVING THE INLAND PACIFIC HUB STUDY AREA

Transloading is the process by which a shipment is transferred from one mode of transportation to another. It is most commonly employed when one mode cannot be used for the entire trip, for instance when goods must be shipped internationally from one inland point to another.

Since transfer requires handling of the goods, it causes expense and risk of damage. Therefore, transload facilities are designed with the intent of minimizing the handling. Due to differing capacities of the different modes, the facilities typically require some storage facility such as warehouses or rail yards. For bulk goods, specialized material handling and storage are typically provided (e.g., grain elevators). Intermodal transport limits handling by using standardized containers which are handled as units, and which also serve for storage if needed.

The Inland Pacific Hub currently has one transload facility. Inland Empire Distribution Systems, Inc. (IEDS) is located in the Spokane Industrial Park on Sullivan Road, two miles north of I-90 and immediately south of SR-290 (Trent Avenue). The IEDS facility includes 400,000 square feet of warehouse space, 120,000 square feet of uncovered space, an overhead crane, a 16-ton forklift and segregated facilities for consumer, chemical, industrial, and forest products. Both the BNSF and the UP serve the IEDS facility.

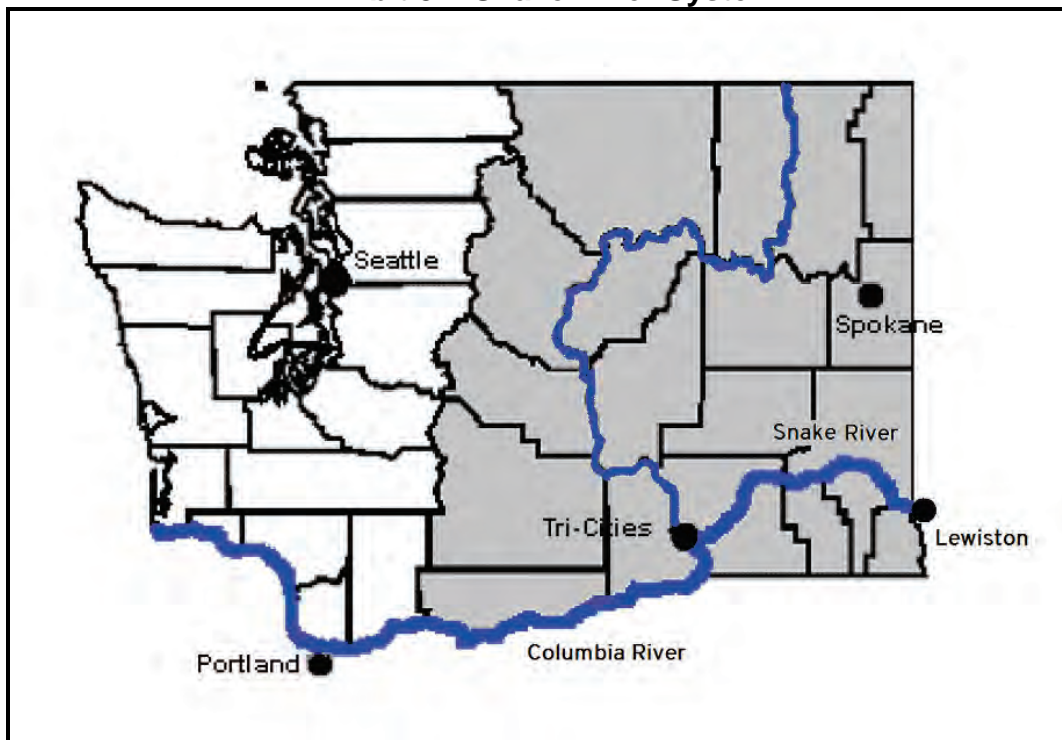
Currently, the IEDS facility is accessible from the north by Bigelow Gulch Road and Sullivan Road. With the completion of the North-South Corridor, access from the north should be improved. Trucks will travel southbound on US-395 and will have the option of exiting either at Francis Avenue or Trent Avenue. Also, access from the east should be improved with the completion of the I-90 Spokane-Idaho State Line Widening project.

THE INLAND PACIFIC HUB WATERWAY NETWORK

SNAKE RIVER SYSTEM

The Snake River flows for 1,040 miles from northwestern Wyoming through southern Idaho and then traversing the Idaho/Oregon and Idaho/Washington borders to Lewiston-Clarkston. As the Snake River passes Lewiston-Clarkston, it receives the Clearwater River, its largest tributary. From there the Snake River winds west for 160 miles through the Palouse before joining the Columbia River near the Tri-Cities (**Exhibit 31**).

Exhibit 31: Snake River System



Source: WSDOT, *Washington Transportation Plan Update Freight Movement*. Draft August 18, 2008. Retrieved February 2009 from <http://www.wsdot.wa.gov/freight/>. (Adapted by HNTB Corporation.)

Shipping on the Snake River is enabled by four large dams. From east to west, proceeding downriver, these include the Lower Granite Lock and Dam, the Little Goose Lock and Dam, the Lower Monumental Lock and Dam, and the Ice Harbor Lock and Dam (**Exhibit 32**). The dams accommodate a shipping channel four feet deep and 250 feet wide. They are owned and operated by the U.S. Army Corps of Engineers. Prior to their completion in the 1970s, products from the region were transported by truck and rail to the Tri-Cities, Portland, and other destinations.

Agricultural products are among the main goods transported on the Snake River. Grain, mainly wheat, accounts for more than 85 percent of the cargo. Other products include peas, lentils, forest products, and petroleum.

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Inland Pacific Hub Transportation Study

Snake River Ports

Within the Inland Pacific Hub, five port authorities have substantial freight operations on the Snake River. These include the Ports of Lewiston, Whitman County, Garfield, Columbia, and Clarkston (**Exhibit 32**).

Port of Lewiston

The Port of Lewiston is located at the confluence of the Snake and Clearwater Rivers. It is the easternmost port on the Columbia/Snake River system. Located 465 miles from the Pacific Ocean, it is the most inland port on the west coast.

The Port's intermodal connections include highway and rail. US-12 provides connections to Montana to the east and both Walla Walla and the Tri-Cities to the west, while US-95 and US-195 provide connections to I-90 and Spokane-Coeur d'Alene to the north. US-95 provides connections to I-84 and southwest Idaho to the south. The Great Northwest Railroad connects the Port to the main lines of the BNSF and the UP.

The Port's waterfront facilities are served by both barge and tug lines and accommodate the transfer of both containerized cargo and a variety of bulk commodities. The facilities include four components:

- Port of Lewiston Container Terminal Dock
- Inland 465 Warehousing & Distribution
- CLD Pacific Grain, LLC Dock
- Lewis-Clark Terminal, Inc. Dock

The Port's transfer equipment includes a 240-ton Manitowac 4100 mobile crane with 120-foot boom, three 35-ton diesel container top lifts, three four-ton forklift trucks and a 15-ton forklift truck.

Inland 465 Warehousing & Distribution operates Terminal 2, the Port's 150,000 square foot storage and distribution facility. The facility provides both indoor and outdoor storage and includes ten truck bays and five rail bays.

Grain shipments are the Port of Lewiston's chief export. Lewis-Clark Terminal and CLD Pacific Grain have a combined storage capacity of 6.2 million bushels (186,000 tons).

Port of Whitman County

The Port of Whitman County, headquartered in Colfax, has three waterfront facilities on the Snake River: Wilma, Central Ferry, and Almota.

Wilma Facility

The Wilma facility is the easternmost site, located on the north side of the Snake River directly across from Clarkston. Of the Port's three facilities on the Snake River, Wilma is the largest and busiest. Wilma's service area covers an estimated 200-mile radius. The full spectrum of products transported to the facility include wood chips, hog fuel, timber, soft

white and hard red wheat, dry peas and lentils, and other grains. Wilma's grain storage capacity is approximately 4.6 million bushels (138,000 tons).

Wilma's intermodal connections include highway and rail. SR-128 connects Wilma to US-12 to the south and US-95 to the east. The Great Northwest Railroad connects it to the UP branch line at Riparia.

The average annual daily truck traffic to and from Wilma is approximately 100 trucks per day, peaking at 300 trucks per day during harvest.

Almota Facility

The Almota facility is located thirty miles downriver from Wilma, west of the Lower Granite Lock and Dam. Of the Port's three sites, Almota is the smallest. Almota's service area covers a 50-mile radius encompassing farming communities in Whitman, Garfield, and Latah Counties. Almota serves as a major trans-shipment point for local white wheat. Almota's grain storage capacity is approximately 3.7 million bushels (111,000 tons).

The Almota facility is recognized by some stakeholders in the Palouse Region grain market as an alternative to direct rail service. Grain currently moving by rail is trucked to river ports and transferred to barge for subsequent movement to Columbia River seaports. In turn, this could mean a shift from dispersed domestic grain market shipments to export grain market shipments.

Almota's connections include highway and a potential for rail. SR-194 and Almota Road connect Almota to US-195 to the east and SR-26 to the west. Through construction of a siding, the Great Northwest Railroad would connect the facility to Lewiston to the east and the UP branch line at Riparia to the west. However, the Almota site, consisting of 11 acres, is constrained with no capacity for expansion.

The average annual daily truck traffic to and from Almota is approximately 25 trucks per day, peaking at 100 trucks per day during harvest.

Almota Road, which all truck traffic must use to access the facility, poses certain problems. The road comprises a seven percent grade and drops 1,250 feet, resulting in several truck accidents each year. Numerous visitors use the road to access the Boyer Park and Lower Granite Dam recreation areas, adding to the risks. The road is closed to truck traffic each year during the spring thaw, slowing the local economy. Local authorities believe the Port's functions could be greatly enhanced with the completion of the Wawawai - Lower Granite Dam road project. It is believed completion of this project would greatly increase Almota's service area and boost its capacity for grain intake.

Central Ferry Facility

The Central Ferry facility is located twenty miles downriver from Almota. Central Ferry's service area reaches into Whitman, Spokane, Garfield, and Columbia counties. Like Almota, Central Ferry is a major trans-shipment point for local white wheat. Central Ferry has a grain storage capacity of approximately 4.6 million bushels (138,000 tons).

Central Ferry's intermodal connections include highway and rail. SR-127 connects to SR-26 to the north and US-12 to the south. The Great Northwest Railroad connects Central Ferry to Lewiston to the east and the UP branch line at Riparia to the west.

The average annual daily truck traffic to and from Central Ferry is approximately 60 trucks per day, peaking at 125 trucks per day during harvest.

PORT OF GARFIELD

The Port of Garfield, headquartered in Pomeroy, operates a grain elevator directly across from Central Ferry on the south side of the river. The elevator has no intermodal connections and is accessible only by highway. SR-127 connects the elevator to WA SR-26 to the north and US-12 to the south. The facility dock is exclusively leased for barging grain to market.

PORT OF COLUMBIA

The Port of Columbia, headquartered in Dayton, operates a grain elevator barge loading facility at Lyons Ferry, located approximately 20 miles downriver from Central Ferry. Connections include highway and potential for rail. The facility has direct access from SR-261 to SR-260. SR-260 connects with east-west SR-26 or north-south US-395. SR-261 also connects with US-12 to the south. The UP's Hinkle-Spokane mainline passes directly through Lyons Ferry, and a branch line runs east to Riparia to connect the Great Northwest Railroad. The rail line could be accessed through the construction of a siding. Lyons Ferry would then have direct rail connections to Spokane, the Tri-Cities, and Lewiston.

PORT OF CLARKSTON

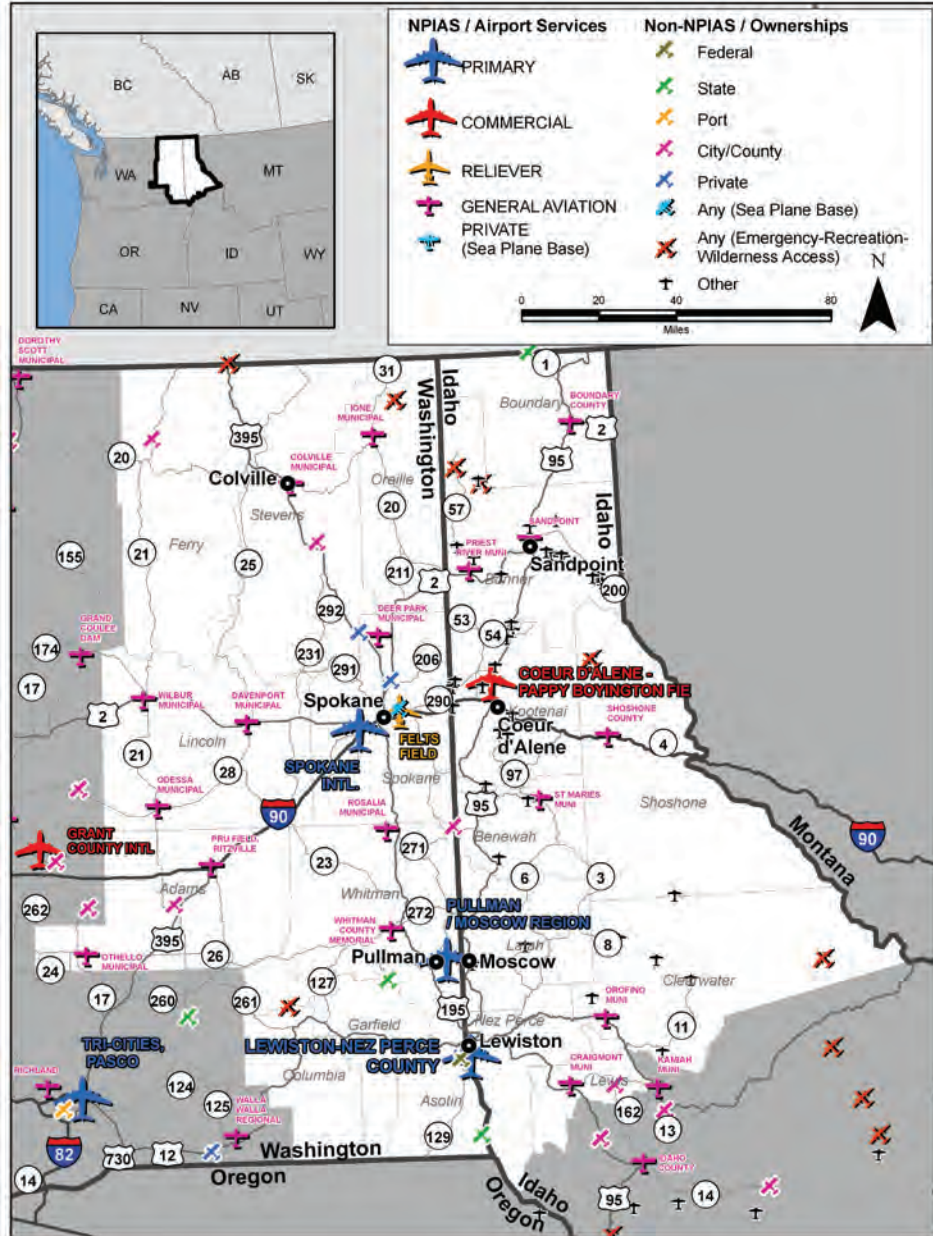
The Port of Clarkston, headquartered in the City of Clarkston, Asotin County, is the farthest inland port in Washington State, approximately 460 miles from the mouth of the Columbia River. The port resides on the south side of the Snake River between the Port of Whitman County-Wilma Facility and the Port of Lewiston, Idaho, both of which are located on the north side of the river. The port has intermodal connections to highways but no rail access. US-12 runs east-west along the southern boundary of the port property and SR-128 borders on the west.

The port operates a grain terminal and has one of the largest cranes on a navigable river east of Portland. While operation of the double cable pedestal crane (originally constructed in 1938) is not currently active, the crane is capable of moving logs, containers, and other cargo. As a far inland seaport, many large yachts are sent up the river from Portland and loaded on trucks bound for Texas, Indiana, and other inland states. Boats have been moved that are up to 78 feet in length and weigh more than 90,000 pounds.

THE INLAND PACIFIC HUB AIR CARGO NETWORK

The Inland Pacific Hub has a total of 38 civilian airports, 25 in Washington and 13 in Idaho (**Exhibit 33**). These airports are dispersed throughout the region. All but three of the counties have at least one airport. The Inland Pacific Hub's airports cover the spectrum of federal classifications, including three Primary Commercial Service airports, one Reliever airport, and 34 General Aviation airports.

Exhibit 33: Inland Pacific Hub - National Plan of Integrated Airport Systems (NPIAS)



Source: WSDOT GeoData Distribution, January 2010. ITD Map Library, January 2010. Idaho data was adapted by Wilbur Smith Associates, January 2010, and is based on the following sources:
<http://www.itd.idaho.gov/planning/GIS/MapBook/2008MapBook/Section4Maps/IdahoAirports.pdf>
<http://www.itd.idaho.gov/planning/gis/maps/StateMaps/airport.pdf>, August 1994.

Primary airports are defined as Commercial Service airports that have more than 10,000 passenger enplanements each year. Commercial Service airports enplane at least 2,500 passenger enplanements each calendar year and receive scheduled passenger service. Commercial Service airports are publicly-owned.

Reliever airports are designated to relieve congestion at Commercial Service airports and to provide improved general aviation access to the overall community. Reliever airports may be either publicly or privately owned.

General Aviation airports comprise the remaining airports. General Aviation is by far the largest of the classifications. Such airports may be either publicly or privately owned. General Aviation airports include privately-owned airports that enplane 2,500 or more passengers annually and receive scheduled airline service.

Airport activity is designated by the number of operations annually. An operation is defined as a takeoff or landing.

PRIMARY COMMERCIAL SERVICE AIRPORTS SERVING THE INLAND PACIFIC HUB STUDY AREA

SPOKANE INTERNATIONAL AIRPORT – GEIGER FIELD (GEG)

General Description

Spokane International Airport's 5,400 acres are strategically located in the heart of Spokane County's largest remaining tract of industrial land as well as having immediate access to Washington State's two most important East/West routes - Interstate 90 and Highway 2 - through multiple entrance points. Over the last ten years, the Spokane Airport Board has invested over \$30 million developing the 80-acre Pacific Northwest Inter-Mountain Region Logistics Center. A combination of Federal funds and airport general revenues have been invested constructing 13 acres of airfield parking apron designed for heavy aircraft, a new entrance road created with wide turning radius for truck-trailer traffic, and a new U.S. Customs and Border Protection for an international flight clearance facility. In 1998, the Regional USPS Processing and Distribution Center was constructed adjacent to this site. UPS and FedEx will be relocated to this site in 2008 and 2009, respectively. Adjacent to the airport property are extensive refrigerated storage and distribution centers operated by private sector operators as well as a Burlington-Northern Santa Fe spur line. On the passenger side of the airport's business, they annually process 3.5 million travelers from an 80,000 mile market area that is populated by 1.7 million people.

Spokane International has two runways:

- Runway 3/21 is 9,001 feet long, 150 feet wide, has a grooved asphalt-concrete surface, and is equipped with high-intensity lights. It includes a Category III all-weather precision instrument landing system.
- Runway 7/25 is 8,199 feet long, 150 feet wide, has a grooved asphalt surface, and is equipped with high-intensity lights.

The airport has an air traffic control tower which is staffed 24 hours per day and seven days per week year round.

The following information provided by the Spokane International Airport staff describes the capability of the physical infrastructure to accommodate aircraft size and process international freight/cargo.

Airspace: Class C
Location: 5 miles SW of Spokane city center
Lights: High intensity
Runways: 3/21, 150' x 9,001' (11,001' in 2010) 7/25, 150' x 8,199'

Instrument Landing Systems:

- Runway 3, CAT III 600' RVR
- Runway 21, CAT III 700' RVR
- Runway 7, VFR
- Runway 25, VFR
- Approved Surface Movement Guidance
- Control System Plan

Wheel loadings, Runways 3/21 and 7/25:

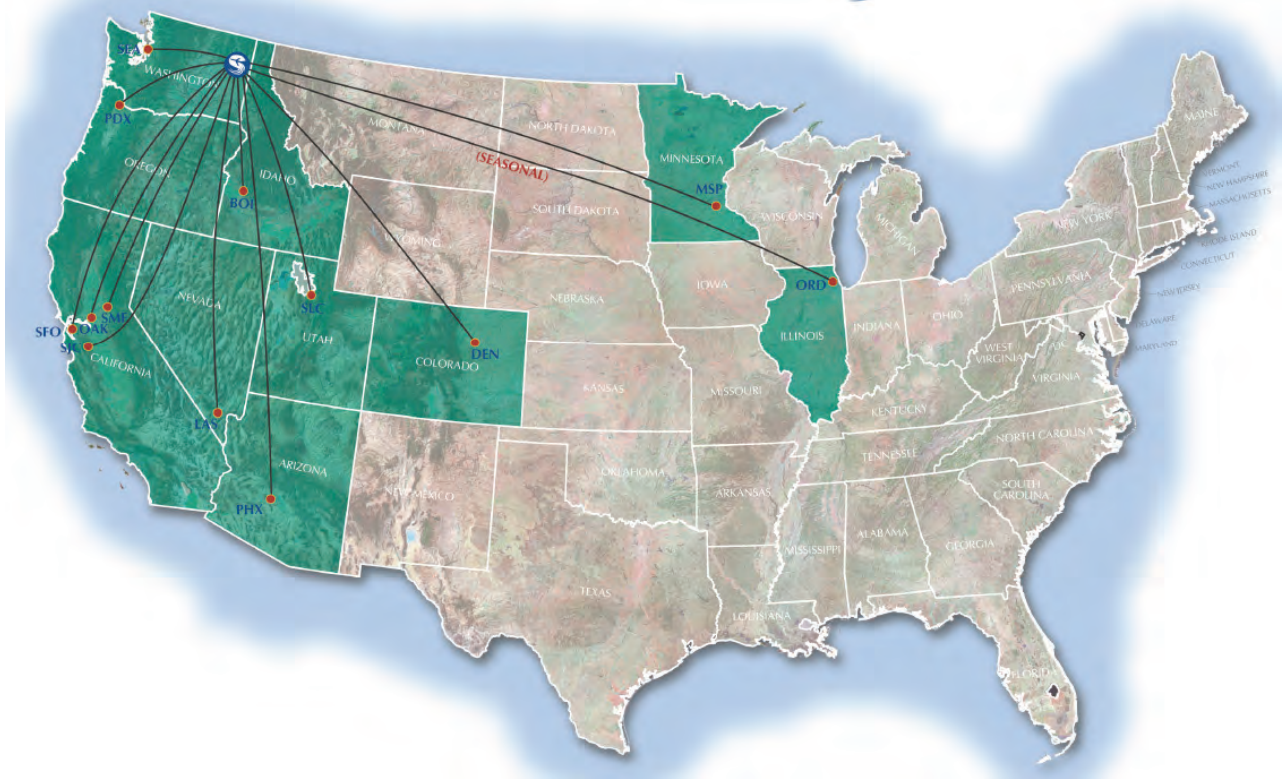
	<u>R3/21</u>	<u>R7/25</u>
Single wheel:	200,000 lbs.	150,000 lbs.
Tandem:	200,000 lbs.	180,000 lbs.
Dual tandem:	400,000 lbs.	280,000 lbs

Fueling Capability: 24 hours/day, attended 1400 to 0600Z
Fuel Capacity: 800,000 gallons Jet-A
24,000 gallons Avgas

On-site U.S. Customs Port of Entry facilities
Authorized Foreign-Trade Zone No. 224

In 2008, Spokane International enplaned 1.72 million passengers, down slightly from 1.74 million in 2007. Commercial airlines include Alaska, Delta, Frontier, Horizon, Northwest, Southwest, United Airlines, United Express, and US Airways. Non-stop destinations include Seattle, Portland, Boise, San Francisco, Oakland, Phoenix, Las Vegas, Salt Lake City, Denver, Minneapolis, and Chicago. A flight map of the airports existing routes is shown in **Exhibit 34**. Aircraft on these routes range in size from Embrier 170s to MD 88s, with the Boeing 737 as the most common aircraft.

Exhibit 34: Spokane International Flight Map



Source: Spokane International Airport Staff. Retrieved February 2, 2010 from <http://www.spokaneairports.net/images/nonstop.jpg>

The airport handled over 52,000 tons of air cargo in 2008. Cargo carriers include United Parcel Service and FedEx. Cargo flights utilize the Airbus 300 and Boeing 767, both wide-bodied aircraft.

The most current data⁵ indicates that Spokane International has 94,681 annual operations, averaging 259 per day. These operations can be broken down further as follows:

• Aircraft with 70-seats or greater	43,272	(46%)
• Aircraft with 69-seats or less	19,123	(20%)
• Itinerant corporate or GA	16,251	(17%)
• Local (based) corporate or GA	14,083	(15%)
• Military	1,952	(2%)
	94,681	100%

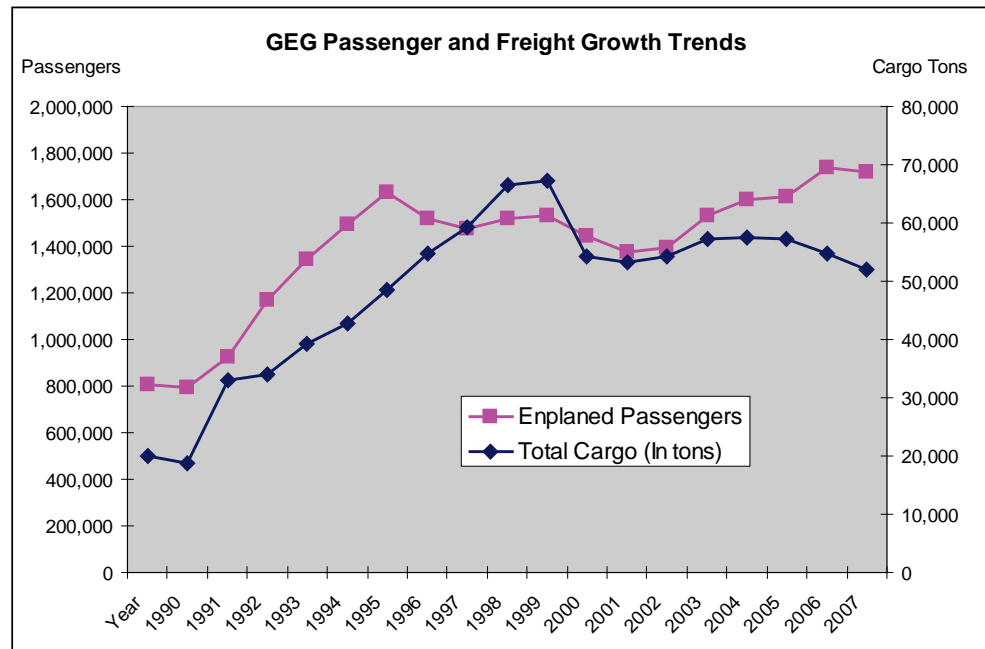
Recent Historical Growth Trends

Exhibit 35 displays data supplied by the Spokane International Airport for emplaned passengers and air cargo activity. The terrorist attacks to the U.S. on September 11, 2001, had a dramatic impact on aviation for both passenger transport and air cargo nationwide. In 2000, GEG experienced its highest volume of air cargo activity, 67,264 tons. Since that time, air cargo volumes have fluctuated around 55,000 tons per year. In 2008, air cargo

⁵ January 25, 2009, 2008 Traffic and Operations Report.

tonnage dipped to its lowest level since 1996. These conditions are attributable to the escalation of fuel prices and airfares experienced during 2008.

Exhibit 35: Spokane International Historical Passenger & Air Cargo Trends



Source Data provided by Neal Sealock, Director Spokane International Airport.

Planned Improvements

Spokane International has planned various improvements to its airfield, terminal, and air cargo facilities. These improvements are detailed as follows.

Airfield improvements:

- Extend Runway 3/21 to 11,000 feet to accommodate air cargo aircraft.
- Construct a new 8,100 by 150 feet runway to the west of Runway 3/21.
- Relocate the Aircraft Rescue and Fire Fighting Building in conjunction with the development of a third runway.
- Recently completed projects include:
 - Taxiway G relocation
 - The parallel taxiway system
 - Commissioned the new Air Traffic Control Tower
 - Installation and upgrade of nav aids
 - Have constructed significant aprons for GA and Cargo

Recent terminal improvements include:

- Grade-separated intersection improvements via signalization or other methods.

Planned terminal improvements include:

- Provide for potential development of light rail or other mass transit access to the airport.

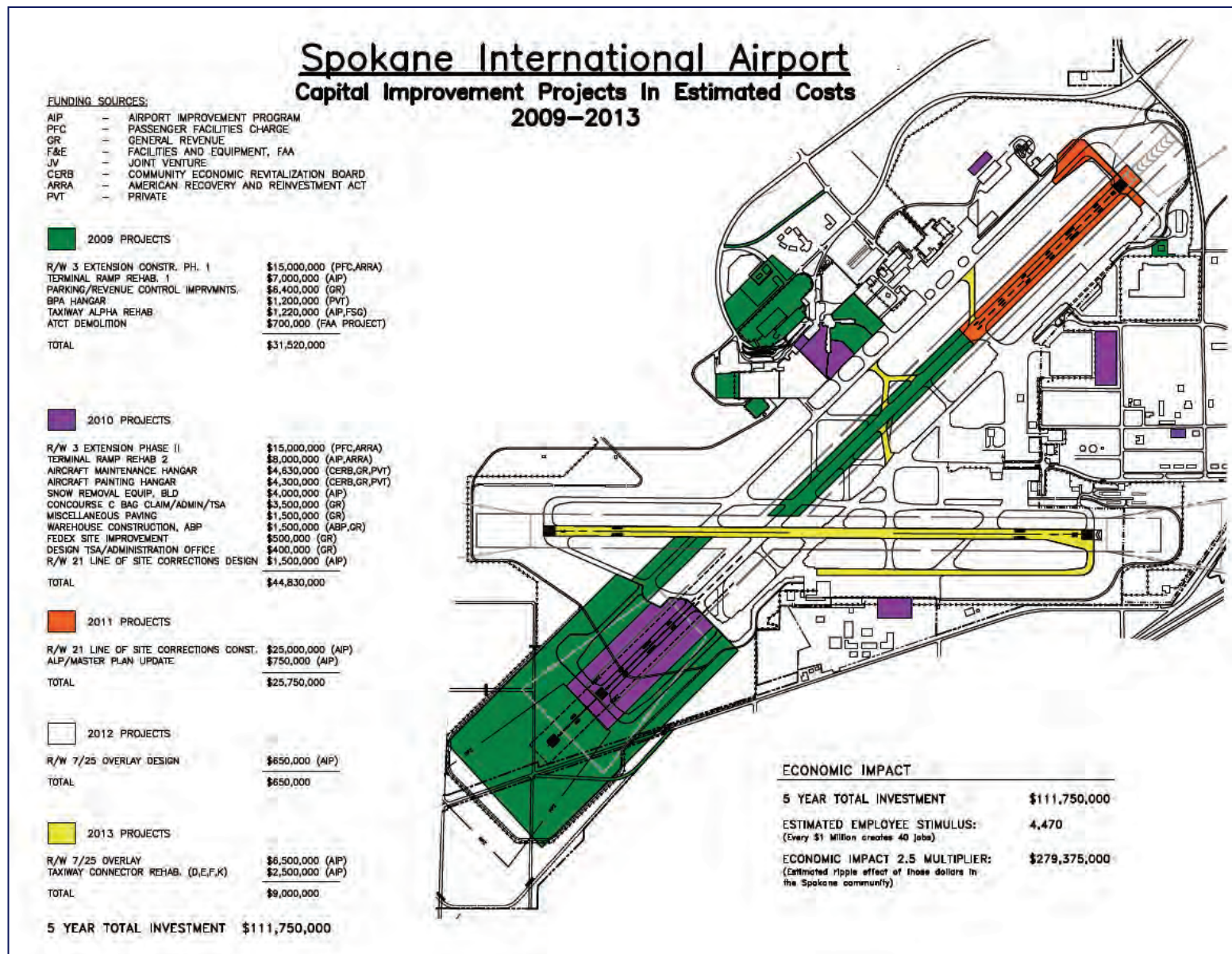
Air cargo improvements:

- Move existing all-cargo carriers to the east side of the airfield.
 - Apron construction completed
 - Adjacent property for support facilities has been reserved

A summary of planned airport improvements for the period 2009-2013 is provided in **Exhibit 36**.

The *Washington Aviation System Plan* (September, 2008) indicates that Spokane International Airport will reach the threshold for additional terminal expansion by 2020. No constraints to air cargo capacity were identified, but the Airport Master Plan includes plans to consolidate air cargo activity on the east side of the airfield.

Exhibit 36: Spokane International Planned Improvements Program (2009 – 2013)



LEWISTON-NEZ PERCE COUNTY REGIONAL AIRPORT

Lewiston-Nez Perce County Airport is located near the city center of Lewiston. The airport has two runways. Runway 8/26 is 6,511 long, 150 feet wide. Runway 11/29 is 5,002 long and 100 feet wide. Both runways have asphalt surfaces and are equipped with medium-intensity lights.

In 2007, total enplanements at Lewiston were about 68,500 passengers, representing an annual growth rate of about 2.3 percent over the last five years. The latest available data indicates that Lewiston-Nez Perce has 36,700 annual operations, averaging 100 per day, comprising 5 percent commercial, 89 percent general aviation, four percent air taxi and two percent military. The airport has 144 based aircraft, including 117 single-engine, 12 multi-engine, one jet-propulsion, and 14 helicopters.

PULLMAN-MOSCOW REGIONAL AIRPORT

Pullman-Moscow Regional Airport is located on WA-270, three miles east of Pullman. The airport has one runway. Runway 5/23 is 6,730 feet long, 100 feet wide, has an asphalt surface, and is equipped with high-intensity pilot-controlled lights.

In 2007, the airport enplaned 24,100 passengers, representing a decline of about eleven percent since 2002. The latest available data indicates that Pullman-Moscow has a total of 73,200 annual operations, averaging 200 per day comprising 14 percent commercial, 85 percent general aviation, and one percent air taxi. Service to Seattle is provided by Alaska Airline's regional carrier, Horizon, using deHavilland Dash 8 aircraft. Air cargo service is provided by United Parcel Service and FedEx. The airport has 70 based aircraft, including 60 single-engine, five multi-engine, and three jet-propulsion.

RELIEVER AIRPORTS SERVING THE INLAND PACIFIC HUB STUDY AREA

FELTS FIELD

Felts Field is located four miles northeast of Spokane on WA SR-290 (Trent Avenue). The airport has two paved runways. Runway 3L/21R is 4,500 feet long, 150 feet wide, has a concrete surface, and is equipped with medium intensity lights. Runway 3R/21L is 3,059 feet long, 75 feet wide, and has an asphalt surface. Felts Field has an air traffic control tower which operates between 6 AM and 8 PM. Key features of Felts Field include:

Airspace:	Class D & E after 8 p.m.
Tower operations:	6:00 a.m. – 8:00 p.m.
Location:	4 miles NE of downtown Spokane
Lights:	Medium Intensity Pilot Controlled 21R MALSR when Tower is closed
CAT I ILS:	300' ceiling and $\frac{3}{4}$ mile visibility
Runway 3L-21R Size:	4,500' x 150'
Runway 3R-21L Size:	3,059' x 75' (Daylight only VFR)
Turf Strip, 21T – 3T	1,700' x 50' (Summer months only)

Felts handled 50.5 tons of freight and had 65,834 aviation operations in 2008. Of those operations, 34,089 or 52 percent of the operations were itinerant corporate or general

aviation aircraft and 31,745 or 48 percent were from based corporate or general aviation aircraft.

In 2007, fewer than 3,000 passengers were enplaned at Felts Field. The latest available data indicates that Felts Field has a total of 65,834 annual operations, an average of 180 per day, comprised entirely of general aviation activity. The airport has 149 based aircraft, including 106 single-engine, 32 multi-engine, three jet-propulsion, and eight helicopters.

GENERAL AVIATION AIRPORTS SERVING THE INLAND PACIFIC HUB STUDY AREA

COEUR D'ALENE AIRPORT– PAPPY BOYINGTON FIELD

Coeur d'Alene Airport is located in Hayden, nine miles northwest of Coeur d'Alene. The airport covers an area of 1,140 acres and includes two asphalt runways. Runway 5/23 is 7,400 feet long and 100 feet wide and has high-intensity runway lights. Runway 1/19 is 5,400 feet long and 75 feet wide and is equipped with medium-intensity lights.

The latest available data indicates that Coeur d'Alene has a total of 123,048 annual operations, an average of 337 per day, comprising 77 percent general aviation, 22 percent air taxi and one percent military. The airport has 187 based aircraft, including 143 single-engine, 18 multi-engine, 12 jet-propulsion, and 14 helicopters.

SANDPOINT AIRPORT – DAVE WALL FIELD

The Sandpoint Airport is located on US-95, two miles north of the Sandpoint city center. The airport has 85 based aircraft, including 71 single-engine, 11 multi-engine, two helicopters, and one jet. The latest available data indicates the airport has a total of 29,930 annual operations. Runway 1/19 is the airport's sole runway. This runway is 5,501 feet long, 75 feet wide, has an asphalt surface, and is equipped with medium-intensity lights.

COLVILLE MUNICIPAL AIRPORT

Colville Municipal Airport is located on WA US-2, one mile east of the Colville city center. Runway 1/19 is the airport's sole runway. This runway is 2,700 feet long, 45 feet wide, has an asphalt surface, and is equipped with pilot-controlled medium-intensity runway lights. The latest available data indicates the airport has a total of 19,200 annual operations. The airport has 30 based aircraft, including 29 single-engine and one multi-engine.

BOUNDARY COUNTY AIRPORT

The Boundary County Airport is located at the junction of US-2 and US-95, three miles north of Bonners Ferry. Runway 2/20 is the airport's sole runway. This runway is 4,002 feet long, 75 feet wide, has an asphalt surface, and is equipped with medium-intensity lights. The latest available data indicates the airport has a total of 18,720 annual operations. The airport has 44 based aircraft, including 39 single-engine, three multi-engine, and two helicopters.

OTHER GENERAL AVIATION AIRPORTS IN THE INLAND PACIFIC HUB STUDY AREA

Exhibit 37 lists the 30 general aviation airports found in the Inland Pacific Hub study area with annual operations of less than 15,000. Roughly two-thirds of these airports have paved runways. Most are served exclusively by single-engine aircraft.

Exhibit 37: Inland Pacific Hub General Aviation Airports - Other

Name	Location	County	Highway	Runway			Annual Ops	
				L	W	Paved		
St. Maries Municipal	St. Maries	ID	Benewah	SH-3	4250	60	Y	12960
Craigmont Municipal	Craigmont	ID	Lewis	US-95	2800	50	Y	12775
Lind	Lind	WA	Adams	SR-21	3200	50	Y	11300
Port of Whitman Business Air Center	Colfax	WA	Whitman	US-195	3175	60	Y	11000
Kamiah Municipal	Kamiah	ID	Lewis	US-12	3000	90	N	9855
Deer Park Municipal	Deer Park	WA	Spokane	US-395	6100 3200	75 60	Y Y	9840 3200
Mead Flying Service.	Mead	WA	Spokane	US-2	2480	30	Y	8800
Odessa Municipal	Odessa	WA	Lincoln	SR-28	3125	60	Y	8200
Willard Field	Tekoa	WA	Whitman	SR-27	2261	25	Y	7800
Priest River Municipal	Priest Riv.	ID	Bonner	US-2	2950	48	Y	7665
Shoshone County	Kellog	ID	Shoshone	I-90	5500	75	Y	7665
Sand Canyon	Chewelah	WA	Stevens	US-395	3515	48	Y	7500
Orofino Municipal	Orofino	ID	Clearwater	US-12	2500	50	Y	7300
Rosalia Municipal	Rosalia	WA	Whitman	US-195	2780	50	Y	7200
Davenport	Davenport	WA	Lincoln	SR-25, SR-28	3126 2185	50 45	Y N	7000
Wilbur Municipal	Wilbur	WA	Lincoln	US-2	3095	36	Y	5700
Pru Field	Ritzville	WA	Adams	I-90	4081	140	Y	4500
Ferry County	Republic	WA	Ferry	SR-21	3480	60	Y	3000
Brooks Seaplane Base	Coeur d'Alene	ID	Kootenai	I-90, US-95	15000 15000	2000 2000	Water Water	1229
Ione Municipal	Ione	WA	Pend Or.	SR-31	4046	45	Y	2700
Nez Perce Municipal	Nez Perce	ID	Lewis	US-95	2400	30	Y	2496
Elk River	Elk River	ID	Clearwater	SH-8	3000	150	N	804
Avery Field State	Laurier	WA	Stevens	US-395	1975	50	N	600
J-Z	Almira	WA	Lincoln	US-2	1900	48	N	50
Cross Winds	Clayton	WA	Spokane	US-395	3800	125	N	NA
					2065	50	N	
Sullivan Lake State	Metaline Falls	WA	Pend Or.	SR-31	1765	150	N	NA
Rogersburg State	Snake River	WA	Asotin	SR-129	1471	50	N	NA
Little Goose State	Snake River	WA	Whitman	SR-261	3400	50	Y	NA
Lower Granite State	Snake River	WA	Whitman	SR-194	3400	50	N	NA

Source: WSDOT, Eastern Region Airports. Accessed February 2009 at http://www.wsdot.wa.gov/aviation/AllStateAirports/WashAirports_Eastern.htm. (Adapted by HNTB Corporation.)
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INLAND PACIFIC HUB

Transportation Study



Working Paper 3.1

Economic Base Analysis / Freight Dependent Industries

Final

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GLOSSARY

Term	Definition
BEA	Bureau of Economic Analysis, U.S. Department of Commerce
BTS	Bureau of Transportation Statistics, U.S. DOT, Research and Innovative Technology Administration
Class I Railroad	The largest rail carriers in the U.S., classified by operating revenue. In 2008 Class I carriers had operating revenue exceeding \$401.4 million. Currently seven railroads operating in the U.S. are classified as Class I, including BNSF and Union Pacific in the Western U.S.
Container	A typical container is 40 or 48 feet long, 8 feet tall and 8 feet wide. These steel boxes are used internationally to transport freight by sea, rail and highway. Container traffic is measured in twenty-foot equivalent units (TEUs).
Containerization	The technique of using a boxlike device in which a number of packages are stored, protected, and handled as a single unit in transit.
Distribution Center	Warehousing facilities, where typically like commodities in containers or truck-load lots are resorted into mixed truck loads for distribution to retail outlets or customers.
Drayage Carrier	The service offered by a motor carrier for pick-up and delivery of ocean, rail or air cargo containers.
Intermodal	Freight that travels from origin to destination on more than one mode of transportation such as a container that arrives from Asia by sea and is transferred to rail for the remainder of its journey.
Just-in-Time Inventory System	An inventory and inbound manufacturing strategy that smoothes material flows into assembly and manufacturing plants. The strategy seeks to minimize inventory investment by scheduling delivery of raw materials to the point where they are needed, at the precise time required.
Less Than Truckload (LTL) and Small Package Carriers	LTL carriers consolidate many smaller shipments from multiple shippers located in a common area or region, sort them at dock facilities according to common designation and then line-haul trailers to a destination dock for delivery.
Location Quotient	An index for comparing an area's share of a particular activity with the area's share of some basic or aggregate phenomenon. As applied to economic analysis it is a measure of the relative industrial concentration within a specific region, as compared to a broader base geographic or economic region.
NAICS	The North American Industry Classification System: The North American Industry Classification System (NAICS) is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy. NAICS was developed under the auspices of the Office of Management and Budget (OMB), and adopted in 1997 to replace the Standard Industrial Classification (SIC) system. It was developed jointly by the U.S. Economic Classification Policy Committee (ECPC), Statistics Canada, and Mexico's Instituto Nacional de Estadística, Geografía e Informática (INEGI), to allow for a high level of comparability in business statistics among the North American countries.

Term	Definition
Shift-Share Analysis	<p>Shift-share analysis is one way to account for the competitiveness of a region's industries and to analyze the local economic base. This analysis is primarily used to decompose employment changes within an economy over a specific period of time into mutually exclusive factors. It paints a picture of how well the region's current industries are performing by systematically examining the national, local, and industrial components of employment change. A shift-share analysis will provide a dynamic account of total regional employment growth that is attributable to growth of the national economy, a mix of faster or slower than average growing industries, and the competitive nature of the local industries.</p> <p>Source: Career Development Resources, Shift-Share Analysis Narrative, socrates.cdr.state.tx.us/iSocrates/files/ShiftShareNarrative.pdf</p>
SIC	Standard Industrial Classification system - An industry classification system used by the U.S. Census Bureau in the Economic Census up to 1997, when the SIC was replaced by the North American Industry Classification System (NAICS)
Supply Chain	A group of physical entities such as manufacturing plants, distribution centers, conveyances, retail outlets, people and information which are linked together through processes (such as procurement or logistics) in an integrated fashion, to supply goods or services from source through consumption.
Third Party Logistics (3PL)	A firm that specializes in logistics services that are provided to other companies.
Transload	The practice of transferring product between truck and rail transportation. In most instances, a transload facility operator, third-party logistics company, or broker facilitates transloading for both the shipper and the consignee. These companies coordinate truck and rail connections and frequently offer warehousing and other services to facilitate storage and delivery.
Transloading	The practice of transferring product between truck and rail transportation. It allows shippers and their customers to enjoy much of the cost benefits of rail transportation without having a rail siding at their door-at the least an expensive proposition, and for many companies, a physical impossibility. In most instances, a transload facility operator, third-party logistics company, or transportation broker facilitates transloading for both the shipper and the consignee. These companies coordinate truck and rail connections and frequently offer warehousing and inventory management services to facilitate storage and delivery.
Truckload Carrier	The truckload (TL) motor carrier segment generally does not operate across a regular route, but rather deliver shipments directly to a recipient and try to pick up another truckload shipment at or near the first delivery point for a "backhaul" load. TL carriers generally have little need for extensive terminal or warehousing facilities.
TSA	Transportation Satellite Accounts: An extension of the U.S. input-output (I-O) accounts. Satellite accounts rearrange information from the basic economic accounts for the purpose of analyzing important economic activities more completely than is otherwise possible.

INTRODUCTION

The Inland Pacific Hub (IPH) study area is comprised of nineteen counties located in eastern Washington and northern Idaho. The economic interests of this region are represented in part by the Inland Pacific Hub Advisory Board, a public-private partnership established by and consisting of representatives from both states. The Board's objective is to establish the Inland Pacific Hub study area as a multimodal global gateway to increase international commerce.

The Board has partnered with the Washington State Department of Transportation and the Idaho Transportation Department to study the region's capacity for economic development. The Inland Pacific Hub Transportation Study has two objectives: 1) To identify the Inland Pacific Hub study area's capacity as a globally-connected, multimodal transportation gateway; and, 2) To identify the critical infrastructure requirements needed to drive the IPH study area's future economic growth.

REPORT ORGANIZATION AND COMPOSITION OF TASK 3

To accomplish the objectives established by the IPH Advisory Board, Wilbur Smith Associates, in association with HNTB and Halcrow, proposed a work plan based on six tasks:

- Task 1: Analyze Existing Transportation Market
- Task 2: Profile Existing Multimodal Transportation Infrastructure (Tech Memo 1)
- Task 3: Profile Regional Economic Assets (Tech Memo 2)
- Task 4: Profile Commercial and Technology Assets (Tech Memo 3)
- Task 5: Identify Public Education and Stakeholder Involvement
- Task 6: Compile Final Report and Phase II Recommendations

Several tasks (2, 3 and 4) have Technical Memoranda as final task deliverables. Technical Memoranda 2 and 3 are each made up of several internal working papers that break the analysis associated with these tasks into discrete work elements, to allow study team members to work concurrently on sub-tasks.

THIS WORKING PAPER

This Working Paper (3.1), *Economic Base Analysis/Freight Dependent Industries* is associated with Work Element 3.1. The purpose of this analysis is to identify robust and competitive industries in the study region and in other regions that are supporting these respective economies. The analysis determines which of these industries may be weakening and identifies industries that show potential for growth. Key measures of the analysis include jobs, wages, and economic value of traded sectors in the IPH study area.

This paper presents the results of a quantitative analysis of the Inland Pacific Hub (IPH) study area's economy, and addresses the key transportation-related factors that affect the region's economic conditions. The working paper serves as an introduction to the IPH study area economy and establishes key trends affecting the regional economy, and important industries in the study area that are analyzed further in four subsequent working papers:

- Working Paper 3.2: Regional Freight Profile (Commodity Flow Analysis)
- Working Paper 3.3: Regional Competitiveness
- Working Paper 3.4: Trade Opportunities
- Working Paper 3.5: Modal Issues

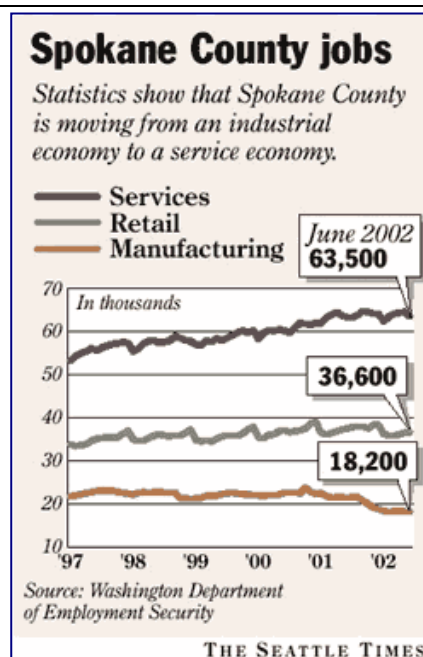
These five working papers under Task 3 will be integrated into a comprehensive description of the IPH Study Area's Economic Assets (Technical Memorandum #2). A more in-depth examination of the study area economy, at the county level is presented in Technical Memorandum #3.

This working paper is organized as follows:

1. Economic Base Analysis of the IPH Study Area
2. Freight Dependent Industries
3. National and Regional Trends Affecting IPH Freight-Intensive Industry Sectors
4. International and National Trends Shaping Freight Transport Needs in the IPH Study Area
5. Concluding Remarks

ECONOMIC BASE ANALYSIS

In recent decades the make-up of the U.S. economy has been undergoing a significant structural shift. In the early 1980's, manufacturing was the leading sector of the U.S. economy, roughly equal in economic contribution to the Services and "FIRE" (finance, insurance, and real estate) sectors combined. Over the course of the last three decades the services sector of the U.S. economy has significantly outpaced manufacturing growth as a percentage of Gross Domestic Product (GDP). **By 2005, the Services sector had increased its share of the U.S. national economy to account for 68 percent of current-dollar GDP¹.** These structural changes in the U.S. economy can also have profound effects on regional economies such as the IPH study area. As the U.S. economy changes, the service sector is becoming an increasingly larger share of jobs and output, and the IPH study area is no exception to the trend, as shown in the chart published by the Seattle Times in 2002 regarding employment growth in Spokane County on the right.



EMPLOYMENT

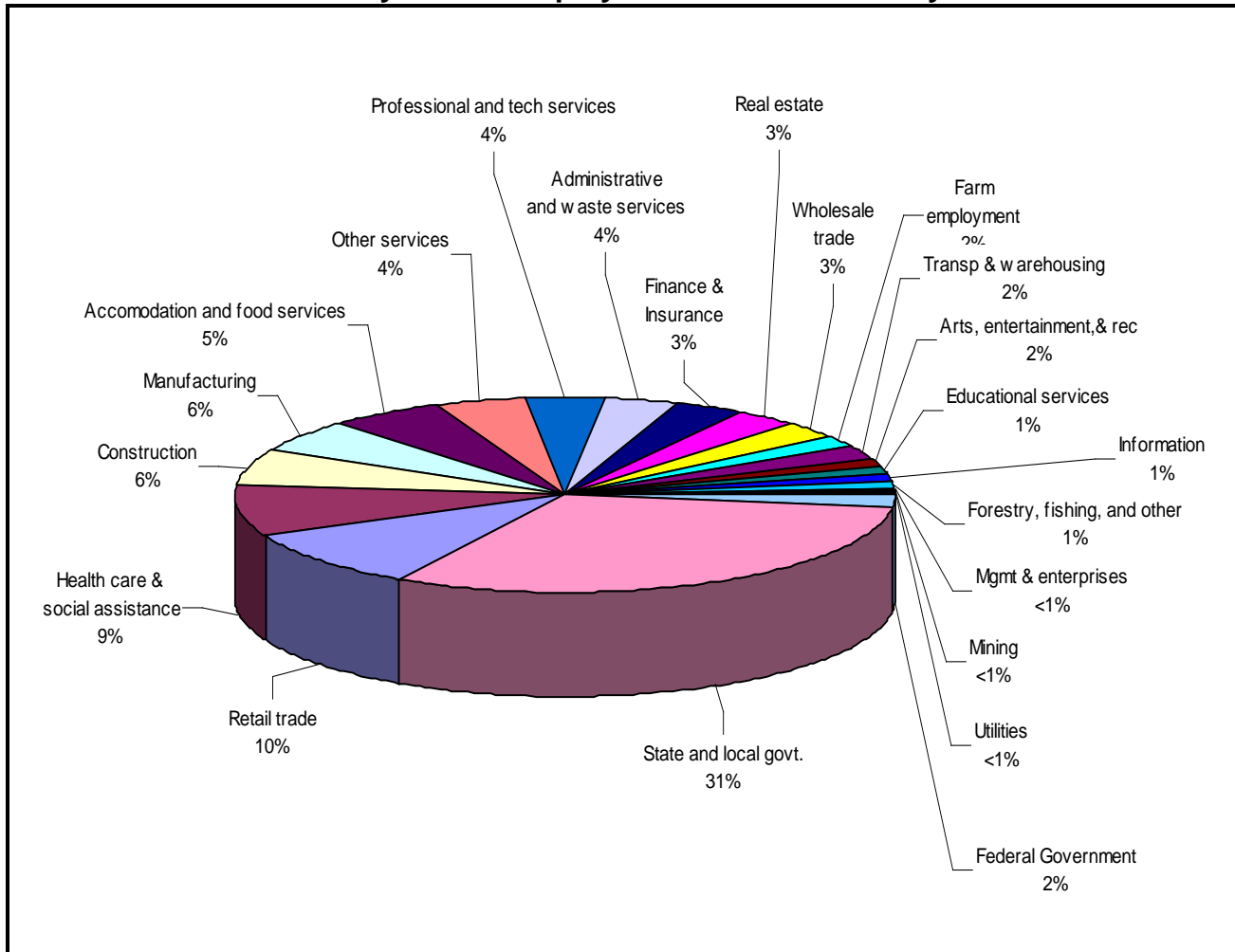
Exhibit 1 shows regional employment by industry² for the IPH study area. Using 2008 data, the top employment sectors in the nineteen-county region are:

- State and Local Government (211,740 employees)
- Retail Trade (65,200 employees)
- Health Care and Social Assistance (57,560 employees)
- Construction (40,710 employees)
- Manufacturing (37,350 employees)

¹ BEA News, "Gross Domestic Product by Industry for 2003" www.bea.doc.gov/bea/newsrel

² Industry employment is classified using the North American Industrial Classification System (NAICS). NAICS is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy. Additional information about NAICS codes is provided in **Appendix A**.

Exhibit 1: Industry Sector Employment for the IPH Study Area - 2008



Source: Woods and Poole Complete Economic Data Source - 2008

Currently, *State and Local Government* is the largest employment sector in the IPH study area (31 percent). Three of the top five employment sectors in the IPH study area are service industries: *Retail Trade* (10 percent); *Health Care and Social Assistance* (9 percent); and *Construction* (6 percent). The *Manufacturing* sector ranks fifth in terms of regional jobs, comprising 6 percent of the regional work force.

EARNINGS BY INDUSTRY

Exhibit 2 shows industry earnings for the for the IPH study area. Using 2008 data, the top earnings industry sectors in the nineteen-county region are:

- State and Local Government (\$3.2 billion)
- Health Care and Social Assistance (\$2.2 billion)
- Manufacturing (\$1.9 billion)
- Retail Trade (\$1.7 billion)
- Construction (\$1.4 billion)

Exhibit 2: Earnings Share by Industry Sectors for the IPH Study Area - 2008

Industry	2008 Earnings (millions)	Share
Farm	\$201.98	1.1%
Forestry, Fishing, and Other	\$211.52	1.2%
Mining	\$109.46	0.6%
Utilities	\$124.90	0.7%
Construction	\$1,421.20	7.7%
Manufacturing	\$1,867.94	10.2%
Wholesale Trade	\$803.09	4.4%
Retail Trade	\$1,677.07	9.1%
Transportation and Warehousing	\$548.04	3.0%
Information	\$275.09	1.5%
Finance and Insurance	\$1,042.78	5.7%
Real Estate and Rental and Lease	\$319.27	1.7%
Professional and Tech Services	\$1,028.86	5.6%
Management and Enterprises	\$300.28	1.6%
Administrative and Waste Services	\$536.33	2.9%
Educational Services	\$207.60	1.1%
Health Care and Social Assistance	\$2,209.79	12.0%
Arts, Entertainment, and Recreation	\$147.76	0.8%
Accommodation and Food Services	\$586.87	3.2%
Other Services	\$572.64	3.1%
Private Sector Sub-Total		77.2%
Federal Civilian Govt.	\$621.25	3.4%
Federal Military Govt.	\$350.79	1.9%
State and Local Govt.	\$3,214.80	17.5%
Government Sector Sub-Total		22.8%
Total	\$18,379.27	100.0%

Source: Woods and Poole Complete Economic Data Source - 2008

Currently, *State and Local Government* accounts for the largest industry earnings in the IPH study area (18 percent). Two of the top five earnings industry sectors in the IPH study area are service industries: *Health Care and Social Assistance* (12 percent) and *Retail Trade* (9 percent). The *Manufacturing* sector ranks third, comprising 10 percent of the total industry earnings, and the *Construction* sector ranks fifth, representing almost 8 percent of the total industry earning in the IPH study area.

These shares suggest that, among the private sectors, *Health Care and Social Assistance*, *Manufacturing*, *Retail Trade*, and *Construction* sectors play an important role in the regional economy by accounting for over 45 percent of the employment and almost 40 percent of the earnings of the IPH study area.

EMPLOYMENT TRENDS

Exhibit 3 shows the change in employment across industry sectors from 1990 through 2008. The table compares the percentage change by industry sector for the nineteen counties of the IPH study area to change in employment by sector to the U.S. economy as a whole.

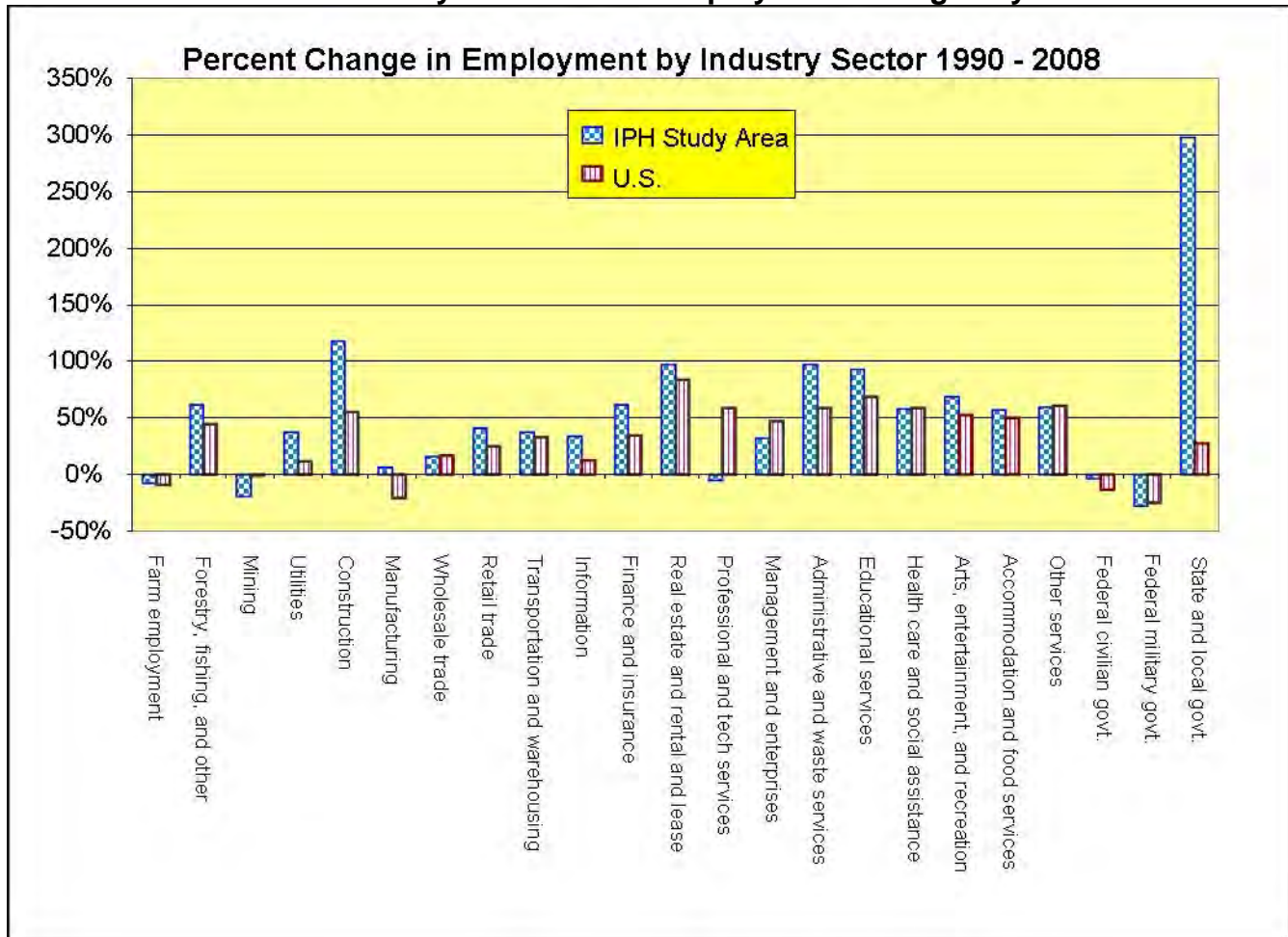
Exhibit 3: Employment by Industry 1990 and 2008

Industry	IPH Study Area Employment (thousands)			National Employment (thousands)		
	2008	1990	% Change	2008	1990	% Change
Farm Employment	11.4	11.8	-3%	2882.0	3153.0	-9%
Forestry, Fishing, and Other	6.4	3.2	99%	1031.0	712.7	45%
Mining	1.8	2.2	-20%	894.7	905.8	-1%
Utilities	1.3	1.0	34%	582.4	523.6	11%
Construction	40.9	18.5	121%	11895.7	7650.0	55%
Manufacturing	35.9	34.3	5%	14701.7	18469.7	-20%
Wholesale Trade	17.6	14.5	21%	6647.3	5674.3	17%
Retail Trade	64.4	45.3	42%	19572.7	15672.7	25%
Transportation and Warehousing	13.2	9.7	36%	5894.1	4418.5	33%
Information	7.3	5.5	34%	3675.5	3276.5	12%
Finance and Insurance	22.4	13.8	62%	8659.7	6407.2	35%
Real Estate and Rental and Lease	20.6	10.4	97%	7990.9	4350.1	84%
Professional and Tech Services	25.9	27.4	-5%	12165.4	7665.7	59%
Management and Enterprises	3.9	3.0	32%	1937.5	1312.9	48%
Administrative and Waste Services	24.8	12.6	97%	11039.3	6955.9	59%
Educational Services	9.2	4.8	92%	3885.0	2296.4	69%
Health Care and Social Assistance	56.8	35.7	59%	18268.5	11480.8	59%
Arts, Entertainment, and Recreation	11.1	6.6	69%	3737.4	2453.7	52%
Accommodation and Food Services	36.0	23.0	57%	12318.8	8220.3	50%
Other Services	29.8	18.6	61%	10496.8	6549.1	60%
Private Sector Subtotal	440.5	301.7	46%	158276.4	118148.8	34%
Federal civilian govt.	7.8	8.0	-3%	2805.7	3233.0	-13%
Federal military govt.	6.0	8.2	-27%	2044.9	2718.0	-25%
State and local govt.	209.7	52.5	300%	19530.7	15281.0	28%
Government Sector Subtotal	223.4	68.7	269%	24381.3	21232.0	15%
Total	528.2	358.5	47%	182657.7	139380.8	31%

Source: 2008 Woods and Poole Economics, Inc. and Wilbur Smith Associates

Exhibit 4 provides the data from Exhibit 3 in a chart format. The bar chart suggests that for most industry sectors the economy of the IPH study area has closely mirrored industry changes in employment at the national level. Between 1990 and 2008 non-government employment in the IPH study area grew 46 percent as compared to 34 percent employment growth in non-government sectors nationally. There are only two private sectors where the overall direction in employment change differs between the IPH study area and the nation as a whole. They are *Manufacturing*; and *Professional and Technical Services*. Nationally, employment in *Manufacturing* decreased by approximately 20 percent, while in the IPH study area, employment in the *Manufacturing* sector grew approximately 5 percent. In contrast, U.S. employment in the *Professional and Technical Services* increased by 59 percent but decreased by 5 percent in the IPH study area.

Exhibit 4: IPH Study Area vs. U.S. Employment Changes by Sector



Source: 2008 Woods and Poole Economics, Inc. and Wilbur Smith Associates.

The top 10 employment sectors in the IPH study area have remained nearly the same with the exception of *Wholesale Trade* and *Farm Employment* being replaced by *Administrative and Waste Services* and *Finance and Insurance* in 2008 employment estimates. Industry sectors in the IPH study area that experienced employment declines included:

- Farm Employment (-3 percent)
- Mining (-20 percent)
- Professional and Tech. Services (-5 percent)
- Federal Civilian Government (-3 percent)
- Federal Military Government (-27 percent)

While the percentage declines in *Mining* and *Professional and Technical Services* were considerably steeper in the study area as compared to the national level, *Mining* employment in particular is often cyclical and tied to demand in other industries such as construction, electronics, transportation, and jewelry.

INDUSTRY CONCENTRATION

A “location quotient” (LQ) used for economic analysis is a measure of industrial concentration within a specific geographic area (e.g., the IPH study area) as compared to a broader base geography or economic region (e.g., the U.S. economy). The LQ is calculated as the ratio of an industry’s share of the local economy to the respective industry’s share of the base economy. Industrial share of the economy is calculated as a percentage of employment in the industry, to the total employment within the economy. Relative employment, though imperfect, serves as a good proxy for the industrial composition of an economy.

An industry with a LQ of less than 1.0 suggests that the industry’s role in the local economy is proportionally smaller than the same industry’s share in the base economy. A LQ less than 1.0 further suggests that that the local economy is likely to be a net importer of the goods and/or services from that industry. An industry with a LQ greater than 1.0 has a share of the local economy proportionally larger than the same industry’s share in the base economy. And, a LQ greater than 1.0 suggests local output from that industry exceeds local demand for those goods and services, allowing the excess production to be exported. **Exhibit 5** shows industries ranked by LQ for the IPH study area. Those industry sectors with LQs greater than 1.0, in the right hand column of the table, indicate those industries that are relatively more concentrated in the IPH study area than in the U.S. economy. *(Note: LQs for each of the nineteen counties in the IPH study area are provided in Technical Memorandum 3, Appendix A)*

Exhibit 5: Industry Location Quotients for the IPH Study Area

Industry	Location Quotient
State and Local Government	2.93
Forestry, Fishing, and Other	1.82
Farm Employment	1.29
Construction	0.93
Retail Trade	0.90
Health Care and Social Assistance	0.85
Accommodation and Food Services	0.81
Arts, Entertainment, and Recreation	0.80
Federal Military Government	0.80
Other Services	0.78
Wholesale Trade	0.74
Federal Civilian Government	0.74
Finance and Insurance	0.71
Real Estate, Rental and Lease	0.70
Manufacturing	0.69
Educational Services	0.66
Utilities	0.63
Transportation and Warehousing	0.62
Administrative and Waste Services	0.61
Professional and Technical Services	0.58
Management and Enterprises	0.55
Information	0.54
Mining	0.52

Source: 2008 Woods and Poole Economics, Inc. and Wilbur Smith Associates.

Concentrated industries in the IPH study area (those with a LQ greater than 1.0) include *State and Local Government*; *Forestry, Fishing and Other*; and *Farm employment*. The concentration of *State and Local Government* employment in the IPH study area is nearly 3 times that of the national economy.

Industries less concentrated in the IPH study area (those with a LQ significantly less than 1.0) include *Mining, Information, Management and Enterprises, Professional and Technical Services*, and *Administrative and Waste Services*.

Industries that are similarly concentrated in the IPH study area and the national economy (those industries with a LQ equal or close to 1.0) include *Construction, Retail Trade*, and *Health Care and Social Assistance*.

COMPETITIVENESS OF THE IPH STUDY AREA'S INDUSTRIES (INDUSTRY SHIFT-SHARE ANALYSIS)

What is a Shift-Share Analysis?³

Shift-share analysis is one way to account for the competitiveness of a region's industries and to analyze the local economic base. The underlying purpose of this analytical tool is to assist local planners and analysts in describing and documenting changes in their local employment in a way that enables them to support business and community leaders in making sound and informed decisions. This analysis is primarily used to decompose employment changes within an economy over a specific period of time into mutually exclusive factors. It paints a picture of how well the region's current industries are performing by systematically examining the national, local, and industrial components of employment change. A shift-share analysis will provide a dynamic account of total regional employment growth that is attributable to growth of the national economy, a mix of faster or slower than average growing industries, and the competitive nature of the local industries.

Between 1990 and 2008 the IPH study area grew in employment by 118,000 non-governmental jobs, and 169,400 government jobs. Shift-share analysis is a method for disaggregating changes in employment over time into several components for the purpose of gaining insights into the potential forces driving employment changes in a regional economy. The shift-share analysis for the IPH study area is presented for two time periods, from 1990 to 2000 and from 2000 to 2008, in an effort to evaluate the region's historical job growth as well as its more recent competitive outlook. The shift share analysis investigates changes in industry employment in the IPH study area using three components of a traditional shift-share model. For the purpose of this analysis, the shift-share model disaggregates the change in employment into three sources that contribute to employment growth or decline:

- The National Growth Effect - explains how much of the industrial job growth within the IPH study area is the result of the overall health of the national economy (If the regional industry grew at the industry's national growth rate, what would be the result?)

³ Source: Texas Work Force Commission: Standardized Occupational Components for Research and Analysis of Trends in Employment System (SOCRATES), <http://socrates.cdr.state.tx.us/iSocrates/Shshare/SSwhatis.asp>

- The Industrial Mix Effect - explains how much of the industrial job growth within the IPH study area is the result of the growth within a specific industry or cluster at the national level (How much growth can be attributed to the region's mix of industries?)
- The Regional Competitiveness Effect - explains how much of the change in a specific industry sector is the result of unique competitive advantages within the region (How many jobs are created as a result of the region's competitiveness?)

Interpretations of the shift-share results and potential policy implications are discussed in light of guidelines adapted from existing research on this topic.⁴ They do not include employment in federal, state, or local government agencies.

Exhibit 6 and **Exhibit 7** display the results for the shift-share analysis in total for the periods between 1990 and 2000 and between 2000 and 2008. It is broken out into the three subcomponents: the National Growth Effect; Industrial Mix Effect and Regional Competitiveness Effect. Shift-Share analysis provides a more robust interpretation of employment growth within the IPH study area. Those industries with high regional competitiveness effects underscore the region's competitive assets or disadvantages, highlighting those industry sectors where the IPH study area is competing well compared to the country as a whole.

⁴ Mitchell, William, and Ellen Carlson (November 2003). *Why do disparities in employment growth across metropolitan and regional space occur?* Working Paper No. 03-09. Centre of Full Employment and Equity. The University of Newcastle. Callaghan NSW 2308, Australia

Exhibit 6: Shift-Share Analysis for the Inland Pacific Hub Study Area, 1990 – 2000⁵

Industry	National Share (Thousands)	Industry Mix (Thousands)	Regional Shift (Thousands)	Total Shift (Thousands)
Farm Employment	3.3	-3.5	0.6	0.4
Forestry, Fishing, and Other	0.9	0.8	1.3	3.0
Mining	0.5	-0.6	-0.2	-0.4
Utilities	0.2	0.0	0.0	0.2
Construction	4.1	1.4	5.8	11.3
Manufacturing	7.6	-8.8	5.2	4.0
Wholesale Trade	3.4	-1.5	0.3	2.2
Retail Trade	10.0	-1.7	5.1	13.5
Transportation and Warehousing	2.1	0.3	-0.6	1.8
Information	1.2	0.1	0.4	1.7
Finance and Insurance	3.0	-0.2	2.1	4.9
Real Estate and Rental and Lease	2.3	0.3	1.5	4.1
Professional and Tech Services	6.0	4.0	-15.7	-5.8
Management and Enterprises	0.6	0.4	0.1	1.1
Administrative and Waste Services	2.7	1.9	0.4	5.0
Educational Services	1.1	0.5	0.3	1.8
Health Care and Social Assistance	7.9	4.5	1.3	13.7
Arts, Entertainment, and Recreation	1.4	0.6	0.6	2.6
Accommodation and Food Services	5.1	2.1	0.9	8.0
Other Services	4.1	2.7	0.7	7.5
Total	67.6	3.0	10.2	80.8

Source: 2008 Woods and Poole Economics, Inc. and Wilbur Smith Associates

⁵ Bureau of Labor Statistics, Census of Employment and Wages; U.S. Census Bureau, Local Employment Dynamics; Workforce Explorer, Washington Department of Labor; Idaho Workforce Trend Profiles, WSA analysis

Exhibit 7: Shift-Share Analysis for the Inland Pacific Hub Study Area, 2000 – 2008⁶

Industry	National Share (Thousands)	Industry Mix (Thousands)	Regional Shift (Thousands)	Total Shift (Thousands)
Farm Employment	1.6	-2.7	-0.7	-1.8
Forestry, Fishing, and Other	0.7	-0.5	-0.6	-0.4
Mining	0.2	-0.1	-0.1	0.0
Utilities	0.1	-0.2	0.2	0.1
Construction	3.0	3.1	4.6	10.8
Manufacturing	3.9	-10.9	5.1	-1.8
Wholesale Trade	1.8	-1.0	-0.5	0.3
Retail Trade	6.0	-2.5	2.1	5.5
Transportation and Warehousing	1.2	-0.4	1.1	1.9
Information	0.7	-1.4	0.8	0.1
Finance and Insurance	1.9	0.5	1.4	3.7
Real Estate and Rental and Lease	1.5	5.5	-0.8	6.2
Professional and Tech Services	2.2	1.4	0.8	4.4
Management and Enterprises	0.4	0.0	-0.5	-0.1
Administrative and Waste Services	1.8	1.1	4.4	7.2
Educational Services	0.7	1.3	0.8	2.7
Health Care and Social Assistance	5.0	4.3	-1.9	7.5
Arts, Entertainment, and Recreation	0.9	0.6	0.3	1.9
Accommodation and Food Services	3.2	1.5	0.8	5.4
Other Services	2.7	2.0	-1.0	3.7
Total	39.4	1.6	16.3	57.3

Source: 2008 Woods and Poole Economics, Inc. and Wilbur Smith Associates

National Growth Effect: This component shows the share of regional job growth attributable to growth in the national economy. If the IPH study area industries grew at the overall national rate of growth, job growth in the study area would have been more than 67,000 jobs between 1990 and 2000 (**Exhibit 6**). If the regional industry grew at the industry's national growth rate from 2000 to 2008, the job growth would have been almost 40,000 jobs (**Exhibit 7**). The national growth effect from 2000 to 2008 provides acute evidence of the recent rise and fall of business cycles during recessions and rapid growth periods. The national business climate affects consumer confidence and influences other components of the economy.

Industrial Mix Effect: The industrial mix effect measures how an industry has grown due to differences in industry and total national growth rates. The industrial mix component, from 1990 to 2000, means that the IPH study area had 3,000 more jobs than it would have had if its economic structure were identical to the nations (**Exhibit 6**). The industrial mix component of 1.6, from 2000 to 2008, means that the IPH study area had 1,600 more jobs than it would have had if its structure were identical to the nations during the same period (**Exhibit 7**). The

⁶ Bureau of Labor Statistics, Census of Employment and Wages; U.S. Census Bureau, Local Employment Dynamics; Workforce Explorer, Washington Department of Labor; Idaho Workforce Trend Profiles, WSA analysis

negative industrial mix effect in the manufacturing sector over the 2000 to 2008 period suggests that the IPH study area would have had almost 11,000 fewer manufacturing jobs than it had, if the regions manufacturing sector had followed the national trend. In regions where employment is concentrated in sectors with higher industrial effects, the region can expect more employment growth. In the IPH study area there is a concentration of employment in sectors that are growing nationally in terms of employment. The largest employment growth in this segment of the shift-share analysis is in the *Real Estate Sector*, followed closely by the *Health Care and Social Assistance Sector*.

Regional Competitive Effect: The shift-share regional competitive effect accounts for the growth or decline in employment within the IPH study area that is not attributable to national growth, or growth in the industry sector. The regional competitive effect explains how much of the change in a specific sector results from unique competitive advantages or challenges within the region. In those sectors where the competitive effect is positive, this sector has a regional advantage in fostering employment growth. *Manufacturing, Construction, Administrative and Waste Services, and Retail Trade* represent the most significant regional competitive effects in the IPH study area. The finding suggests that the IPH study area has unique conditions and advantages that are contributing to strong growth in these sectors and can attract additional employment because the region has competitive assets that positively affect these sectors.

COMPARATIVE U.S. INDUSTRY WAGE DATA

Exhibit 8 displays the average annual wages for non-governmental industries in 1997 and 2007, based on the North American Industrial Classification System (NAICS) codes for industry sectors of the U.S. economy.⁷ The information on annual average salaries is provided primarily as a reference to gauge the overall contribution of various industries in the IPH study area towards sustained economic vitality. **Exhibit 8** shows the following:

- *Management of Companies and Enterprises* exhibited the strongest growth in annual income (93.3 percent) among all sectors. However, the shift-share analysis shows that this business sector is not very concentrated in the IPH study area and regional employment growth in this sector lagged behind the national growth in employment for this sector (**Exhibits 6 and 7**).
- The *Finance and Insurance* sector also exhibited the second strongest growth in average annual income (55.1 percent). This sector is more concentrated and exhibited job growth in the region that outpaced the national trend (**Exhibits 6 and 7**).
- Other sectors showing strong growth in average annual incomes included *Utilities* (47.0 percent), and *Real Estate and Leasing* (45.4 percent). All of these industries fall into the broad category of service based industries.
- Many of the more traditional Industries in the IPH study area exhibited weaker income growth such as *Agriculture, Forestry, Fishing and Hunting* (30.0 percent); *Retail Trade*

⁷ Note the previous employment tables use a different data source - Woods and Poole, Inc. Woods and Poole does not publish average wages by industry.

(30.2 percent); *Mining* (30.9 percent); *Manufacturing* (31.2 percent) and, *Transportation and Warehousing* (27.3 percent).

Exhibit 8: Annual Average Wages by NAICS Industry – U.S. (1998 and 2007)

NAICS Code	Industry Code Description	Avg. Annual Salary- 1998	Avg. Annual Salary - 2007	Percent Change
All	All Industries Average	\$30,609	\$41,680	36.2%
55	Mgmt. of Companies and Enterprises	\$48,520	\$93,769	93.3%
22	Utilities	\$55,843	\$82,094	47.0%
52	Finance and Insurance	\$50,259	\$77,961	55.1%
51	Information	\$46,730	\$65,630	40.4%
54	Professional, Scientific, & Tech. Services	\$45,879	\$65,159	42.0%
21	Mining	\$44,074	\$57,704	30.9%
42	Wholesale Trade	\$39,748	\$54,987	38.3%
31	Manufacturing	\$35,840	\$47,036	31.2%
23	Construction	\$34,239	\$46,249	35.1%
53	Real Estate and Rental and Leasing	\$27,520	\$40,021	45.4%
48	Transportation and Warehousing	\$31,363	\$39,923	27.3%
62	Health Care and Social Assistance	\$28,745	\$39,784	38.4%
11	Agriculture, Forestry, Fishing and Hunting	\$24,868	\$32,330	30.0%
61	Educational Services	\$22,500	\$30,964	37.6%
71	Arts, Entertainment, and Recreation	\$22,759	\$30,050	32.0%
56	Admin. / Support and Waste Management	\$21,055	\$30,042	42.7%
81	Other Services (except Public Admin.)	\$19,054	\$25,485	33.7%
44	Retail Trade	\$18,281	\$23,807	30.2%
99	Unclassified	\$18,905	\$21,093	11.6%
72	Accommodation and Food Services	\$11,577	\$15,248	31.7%

Source: U.S. Census Bureau (County Business Patterns – 2007) and Wilbur Smith Associates

FREIGHT DEPENDENT INDUSTRIES

CONSUMPTION OF TRANSPORTATION SERVICES BY INDUSTRY

Within both national and regional economies some sectors use transportation facilities and services more extensively than other sectors. Historically, transportation was undervalued when measuring its impact on the U.S. economy, primarily because up until the 1990's only "for-hire" transport services were measured. The sizeable contribution of in-house transportation services to economic activity was not explicitly identified in early economic data collection activities. In 1991, Congress established the Bureau of Transportation Statistics (BTS) and charged the new agency with compiling better statistics related to transportation's impact on economic activity. In 1998, BTS introduced the Transportation Satellite Accounts (TSA), and in 1999 published research based on TSA that developed cost relationships between transportation services and output for all sectors of the U.S. economy. Even though this ground-breaking research is now over a decade old, the findings about the consumption of transportation services by industry is still widely used today.

The research conducted by BTS used the Standard Industrial Classification (SIC) system, which is the predecessor to NAICS, so the industry descriptions do match directly with more recently industry classifications. **Exhibit 9** lists industries where the direct transportation inputs per dollar of output (as a percentage of total value) are 5 percent or greater. The shaded cells indicate modal divisions of the *Transportation and Warehousing* industry sector that have obvious inter-relationships when moving products across multimodal networks. However, other industries that produce commodities in large volumes (e.g., tissue paper), mass volumes (e.g., paper rolls), or both (e.g., timber and aggregates) generally have low transportation input values per unit, but tend to expend more as a percentage of total commodity value, on transportation. Many of the IPH study area's industries discussed in the next section produce large tonnage volumes of outbound commodity flows. These same industries also experience relatively high expenditures on transportation in relation to their total value of output. Mining, construction, agriculture and transportation are industries in the IPH study area that produce large quantities of outbound commodity shipments and also have high transportation expenditures as a percentage of output value.

Exhibit 9: Transportation Requirements by Industry
(Expressed as a percentage of total output value)

Industry Description (Standard Industrial Classification - SIC)	Rail	Water	Air	Pipeline	Hwy	Total All Transport
Water Transportation	0.0%	19.3%	0.2%	4.7%	0.3%	24.4%
Motor Freight Transportation and Warehousing	0.2%	0.5%	0.9%	3.1%	18.5%	23.2%
Air Transportation	0.1%	0.0%	6.1%	8.5%	0.2%	15.0%
Nonmetallic Mineral Mining	0.5%	0.0%	0.3%	0.0%	9.2%	10.1%
Forestry and Fishing Products	0.1%	2.5%	0.3%	0.0%	6.8%	9.7%
Stone and Clay Products	1.1%	0.3%	0.3%	0.0%	7.7%	9.3%
Coal Mining	3.5%	0.2%	0.4%	0.0%	4.8%	8.9%
Federal Government	1.0%	2.3%	2.1%	0.0%	3.2%	8.6%
Agriculture, Forestry and Fishing Services	0.2%	0.0%	1.3%	0.0%	6.9%	8.5%
Other Ag-products	0.2%	0.0%	0.1%	0.0%	7.9%	8.3%
Maintenance and Repair Construction	0.2%	0.0%	0.1%	0.0%	7.6%	7.9%
New Construction	0.2%	0.0%	0.1%	0.0%	6.9%	7.2%
Ag Fertilizers and Chemicals	1.3%	0.1%	0.3%	0.0%	5.5%	7.1%
Ag Production - Livestock	1.4%	0.0%	0.0%	0.1%	4.7%	6.2%
Railroad Services and Pass Ground Transportation	4.3%	0.0%	0.4%	0.8%	0.7%	6.2%
Paper-board Cont. and Boxes	1.1%	0.0%	0.4%	0.0%	4.1%	5.7%
Primary Iron and Steel Manufacturing	1.5%	0.1%	0.4%	0.0%	3.7%	5.7%
Metallic Ores Mining	0.6%	0.1%	0.3%	0.0%	4.4%	5.4%
Eating and Drinking Places	0.2%	0.0%	0.3%	0.0%	4.5%	5.0%

Source: USDOT, BTS; Transportation Satellite Accounts: A New Way of Measuring Transportation Services in America; BTS99-R-01; Washington, DC: 1999

The TSA describe the reliance of different industries on transportation modes in terms of the value of transportation services each industry must consume to produce a dollar of output (**Exhibit 10**). Beyond the transportation and warehousing sector, the most transportation-intensive sectors at a two-digit SIC industry-level are: *Agriculture, Construction, Wholesale/Retail Trade, Mining and Manufacturing*. Overall, the demand for for-hire and in-house transportation services generated from service sectors grew significantly between 1992 and 1996 (about \$6 billion and \$12 billion, respectively).

Exhibit 10: Transportation Satellite Accounts – Freight Intensive Industries

Industry	In-house services (\$ millions)	For-hire transportation services (\$ millions)	Total transportation (\$ millions)	Industry output (\$ millions)	Transportation costs per \$ output (Cents)
Agriculture, Forestry, Fisheries	13,177	5,720	18,897	237,662	8.0
Construction	38,950	13,286	52,235	679,330	7.7
Wholesale/Retail Trade	42,819	8,963	51,783	1,091,489	4.7
Mining	3,870	2,810	6,680	156,717	4.3
Manufacturing	21,806	80,248	102,054	2,951,303	3.5
Total (all sectors)	164,743	151,835	316,578	9,519,471	3.3

Source: USDOT, BTS; Transportation Satellite Accounts: A New Way of Measuring Transportation Services in America; BTS99-R-01; Washington, DC: 1999

The TSA research provides a general basis for comparing the degree to which various industries may be affected by changes in transportation services, cost, and performance. The dependence of IPH industries on the principle modes of transportation varies by industry since each industry utilizes the transportation system in different ways. Industries vary in the way they utilize transportation modes to expand and capture resources and to create and generate commodity value. To uncover the top freight industry sectors in the IPH study area, this analysis examines the outbound commodity shipments from the IPH study area as well as the *traded* and *non-traded sector businesses* within the IPH study area.

OUTBOUND COMMODITY SHIPMENTS FROM THE IPH STUDY AREA

Exhibit 11 and **Exhibit 12** show the make-up of outbound commodity shipments from the IPH study area by both tonnage and value, respectively.

By weight, the top 5 outbound commodities in 2007 were:

- Lumber or Wood Products (10.9 million tons)
- Secondary Traffic (7.7 million tons)
- Farm Products (5.9 million tons)
- Nonmetallic Minerals (2.9 million tons)
- Food and Kindred Products (2.1 million tons)

By value, the top 5 outbound commodities in 2007 were:

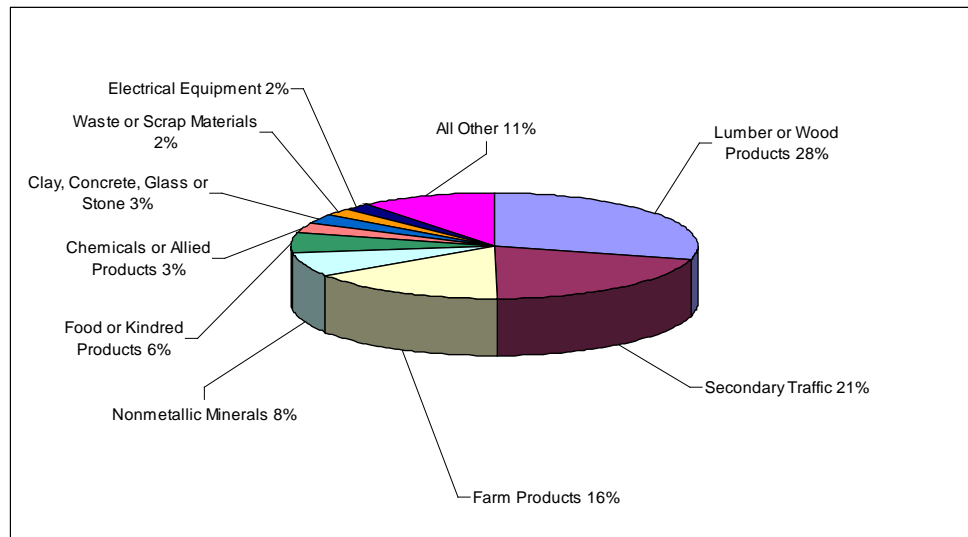
- Secondary Traffic (\$71.7 billion)
- Electrical Equipment (\$19 billion)
- Machinery (\$8.1 billion)
- Lumber or Wood Products (\$5.8 billion)
- Chemicals or Allied Products (\$4.2 billion)

While the commodity classification scheme differs somewhat from that used for employment, charts in **Exhibit 11** and **Exhibit 12** suggest that timber and wood production, agriculture, mining, and manufacturing make up more than eighty percent of all products shipped out of

the region in 2008. While traditional industries such as timber, agriculture and mining ship out of the region a significant amount of volume (about 22 million tons), they produce relatively low value (about \$8 billion) compared to the secondary traffic (around 7.7 million tons and \$71.7 billion) and the manufacturing sector (around 2 million tons and \$31 billion).

The dominant commodities by tonnage and value suggest that there are five industries in the IPH study area that are particularly intensive users of the region's freight system. Lumber or wood products are both associated with the **timber industry**. "Secondary Traffic" represents shipments of customer goods and thus has a strong tie to the **retail sales business**. Farm products are part of the **agricultural sector**. Nonmetallic minerals are associated with the **mining industry**. Finally, electrical equipment, machinery and chemicals or allied products are all associated with the **Manufacturing sector**. These commodities are expected to dominate future freight movements in the IPH study area.

Exhibit 11: 2007 Outbound Commodity Tonnage from the IPH Study Area⁸

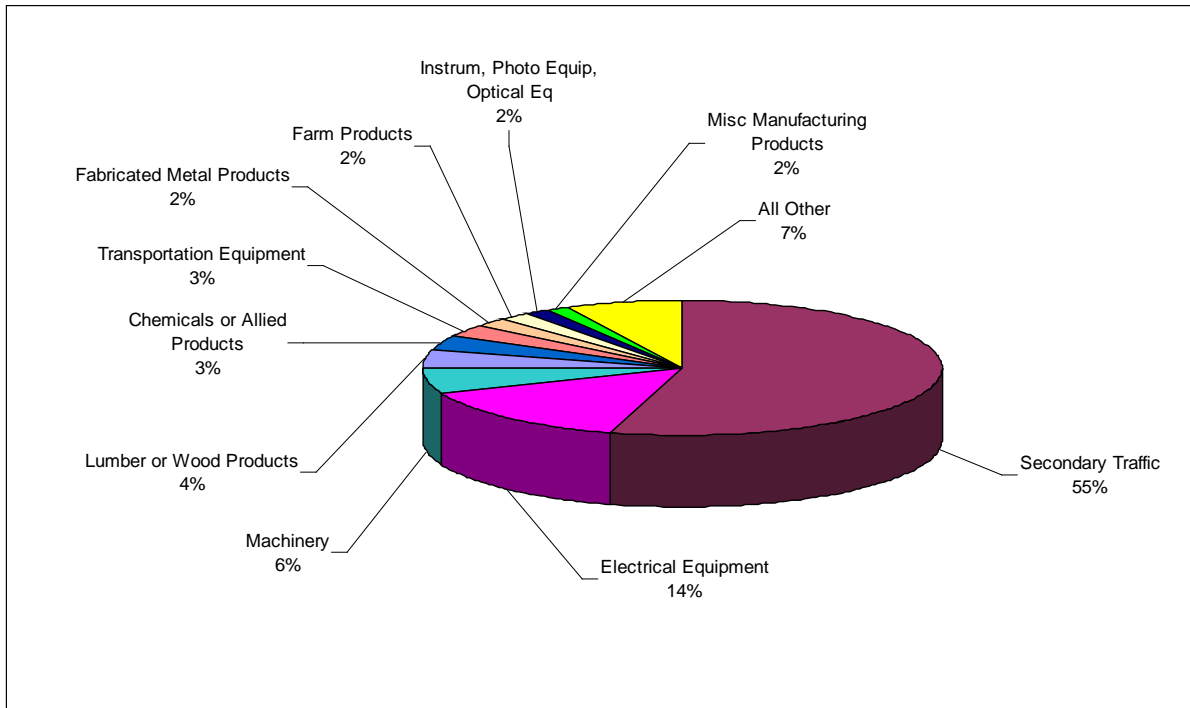


Top Commodities	Tons	%	Cumulative Share
Lumber or Wood Products	10,868,807	27.21%	27.21%
Secondary Traffic	7,687,590	19.25%	46.46%
Farm Products	5,896,688	14.76%	61.23%
Nonmetallic Minerals	2,880,351	7.21%	68.44%
Food or Kindred Products	2,111,329	5.29%	80.19%
Chemicals or Allied Products	1,216,804	3.05%	83.24%
Clay, Concrete, Glass or Stone	1,079,774	2.70%	85.94%
Waste or Scrap Materials	841,258	2.11%	88.05%
Electrical Equipment	700,304	1.75%	89.80%
Pulp, Paper or Allied Products	683,341	1.71%	91.51%
Machinery	665,945	1.67%	93.18%
Fabricated Metal Products	664,982	1.66%	94.84%
Primary Metal Products	521,293	1.31%	96.15%
Transportation Equipment	456,671	1.14%	97.29%
Petroleum or Coal Products	280,996	0.70%	98.00%
Furniture or Fixtures	274,290	0.69%	98.68%
Rubber or Misc Plastics	104,240	0.26%	98.94%
Misc Manufacturing Products	92,609	0.23%	99.18%
Printed Matter	66,079	0.17%	99.34%
Top Outbound Commodity Tons	37,093,351	92.87%	
Total Outbound Commodity Tons	37,356,374	100.00%	

Source: Global Insight 2007 TRANSEARCH™ Data and Wilbur Smith Associates.

⁸ The raw TRANSEARCH data file from Global Insight suggests that *Coal* makes up a significant percentage of the IPH study area's outbound commodity movement. Research by the study determined that *Coal* is actually an overhead product that merely passes through the region but is transferred within the region between two railroads. The transfer of product is recorded on documents used to construct the TRANSEARCH file as the origin for the outbound movement. Since no coal is actually produced in the IPH study area, *Coal* has been removed from the outbound commodity table.

Exhibit 12: 2007 Outbound Commodity Value from the IPH Study Area



Top 20 Commodities	Value	%	Cumulative Share
Secondary Traffic	\$71,667,134,905	54.51%	54.51%
Electrical Equipment	\$18,984,753,181	14.44%	68.95%
Machinery	\$8,126,529,189	6.18%	75.14%
Lumber or Wood Products	\$5,811,651,508	4.42%	79.56%
Chemicals or Allied Products	\$4,193,763,723	3.19%	82.75%
Transportation Equipment	\$3,889,660,245	2.96%	85.71%
Fabricated Metal Products	\$2,691,644,870	2.05%	87.75%
Farm Products	\$2,547,811,548	1.94%	89.69%
Instrum, Photo Equip, Optical Eq	\$2,090,740,593	1.59%	91.28%
Misc Manufacturing Products	\$2,089,712,812	1.59%	92.87%
Food or Kindred Products	\$1,597,097,855	1.21%	94.09%
Furniture or Fixtures	\$1,431,090,107	1.09%	95.17%
Primary Metal Products	\$1,122,454,169	0.85%	96.03%
Rail Intermodal Drayage from Ramp	\$1,014,276,970	0.77%	96.80%
Pulp, Paper or Allied Products	\$984,435,983	0.75%	97.55%
Apparel or Related Products	\$544,305,477	0.41%	97.96%
Rubber or Misc Plastics	\$502,889,779	0.38%	98.34%
Printed Matter	\$409,624,783	0.31%	98.66%
Clay, Concrete, Glass or Stone	\$354,285,835	0.27%	98.93%
Petroleum or Coal Products	\$243,425,766	0.19%	99.11%
Top 20 Outbound Commodity Values	\$130,297,289,298	99.11%	
Total Outbound Commodity Values	\$131,465,897,083	100.00%	

Source: Global Insight 2007 TRANSEARCH™ Data and Wilbur Smith Associates.

While the traditional industries which are very dependent on rail to be competitive are in decline, the industries that are likely to grow in the study area are more likely to be reliant on road transport. As mentioned above, employment in the farm and mining industries declined by 9 percent and 19 percent, respectively, over the 1990 to 2008 period. In contrast, employment in the *Service* and *FIRE* sectors (except the *Professional* and *Tech Service*) and the *Wholesale* and *Retail* sectors (combined) increased by over 50 percent in the same time period. Furthermore, the traditional industries in the IPH study area exhibited weaker income growth over the 1998 to 2007 period compared with both the *Finance and Insurance* sector and the *Real Estate and Rental and Leasing* sector; these two sectors exhibited the second and third strongest growth in the average annual income, respectively, over the same time period.

TRADED AND NON-TRADED SECTORS IN THE IPH STUDY AREA

Within the Inland Pacific Hub study area, certain industries have played a critical role in shaping the economy of the area and its future. Economists refer to the industries that “drive” a region’s economy as *traded sector* businesses. Traded sector businesses produce goods or deliver services that are sold to customers outside of the region and those sales bring new money into the region that is spent within the region.⁹ Traded sector businesses effectively export goods and services from the region, while importing revenue and income.

Traded sectors in the IPH study area include businesses in manufacturing, agriculture, forest products, and mining.¹⁰ These industries have also helped to drive the development of much of the existing transportation infrastructure in the region. A recent analysis of industrial clusters in Eastern Washington, excluding Spokane, found that in the other eight counties in the Washington portion of the study area, the two largest industrial clusters were agriculture/food products and forestry products. Two smaller industry clusters also identified in this analysis as having a concentration of employment and growth in recent years were mining and heating equipment manufacturing.¹¹ Agriculture/food product firms are located primarily in the southern Washington counties while the forest products, mining, and heating equipment firms are clustered primarily in the northern Washington counties.

Traded sector businesses compete with other companies nationally and internationally and there are opportunities for public investments and public policies to enhance the ability of traded sector businesses to compete against businesses located in other places. It is generally the economic growth within traded sector businesses that will ultimately drive the economy of the IPH study area. Because of their dependence on external customers, traded sector businesses often utilize transportation assets differently than non-traded sector businesses within a region.

There are also *non-traded sector businesses* within the IPH study area that are also important to a vibrant regional economy. These businesses serve the local needs of the population and enhance the quality of life in the region. The non-traded sector businesses in

⁹ Corporation for Enterprise Development, Development Report Card for the States, 2006

¹⁰ Commodities resulting from manufacturing activities include *Foods or Kindred Products*, *Primary Metal Products* and some portion of *Secondary Traffic*.

¹¹ “Industrial Cluster Analysis in the Tri-County Region of Washington State”, August 2007, Chase Economics for Tri-County Economic Development District

the IPH study area include retail, most but not all healthcare, consumer services, most government employment, professional services, and other operations whose primary customers are local. The growth and prosperity of non-traded sector businesses is driven by population growth and consumption by the local and regional population. Non-traded sector businesses consume a significant portion of “Secondary Traffic” flows coming into the region. “Secondary Traffic” is defined as freight movements of mixed products typically associated with distribution and warehousing serving as an intermediate re-shipping facility, an example might be a Wal-Mart or similar retail distribution operation.

NATIONAL AND REGIONAL TRENDS AFFECTING IPH FREIGHT-INTENSIVE INDUSTRY SECTORS

Findings from previous sections reveal that the top 5 freight-intensive sectors in the IPH study area are:

- Agriculture and Forestry
- Mining
- Manufacturing
- Retail Trade
- Transportation and Warehousing

These sectors tend to ship large quantities of raw materials and/or finished products relative to other sectors due to the nature of their business and they provide key linkages to other parts of the economy.

This section presents a discussion of trends and issues impacting freight intensive industries in the IPH study area. Information from this section is drawn from national industry reports supplied by *First Research*, a Dunn and Bradstreet Company. Additional information is drawn from reports produced by Washington and Idaho State Agencies and by the Strategic Freight Transportation Analysis (SFTA), compiled by Washington State University.

OVERVIEW OF THE AGRICULTURE SECTOR

TRENDS, DEMAND DRIVING FORCES, AND CHALLENGES

Crop farming is the growing and harvesting of field crops such as grain, oilseed, dry beans, and potatoes; vegetables and melons; fruits and nuts; and floriculture. The U.S. agricultural crop production industry includes over one million farms harvesting about 300 million acres, with combined annual revenue of \$175 billion. As a whole, the industry is fragmented with ten percent of agricultural operations accounting for about one-third of the total industry revenue. Vegetable and melon farms are more concentrated, with the top ten percent of companies representing two-thirds of industry revenue. Crop production is becoming more concentrated: In 2002, 144,000 farms produced 75 percent of the value of U.S. agriculture production; in 2007, just 125,000 farms produced the same 75 percent share of production.¹²

The Washington agriculture industry includes 39,284 farms with combined annual revenue of \$7 billion and an average farm size of 381 acres. Washington is a leading producer of fruits and berries (\$2.1 billion); grains and beans (\$959 million); milk and other dairy products (\$873 million); vegetables and melons (\$810 million); and cattle (\$717 million).¹³ Washington leads the nation in the production of apples, cherries and pears, and is second in the production of potatoes and grapes.¹⁴

The Idaho agriculture industry includes 25,349 farms with combined annual revenue of \$5.8 billion and an average farm size of 454 acres. Idaho is a leading producer of milk and other

¹² 2007 Census of Agriculture, US Dept. of Agriculture;

http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/Fact_Sheets/farm_numbers.pdf

¹³ First Research® - Washington State Profile

¹⁴ Washington Department of Agriculture Website: <http://agr.wa.gov/>

dairy products (\$1.84 billion); cattle (\$1.38 billion); vegetables and melons (\$784 million); and grains and beans (\$806 million).¹⁵ Idaho ranks first among all states in the production of potatoes, food size trout and Austrian winter peas, and second in barley, wrinkled seed peas and sugar beets. Annual industry exports to foreign markets by Idaho farm operations total about \$217 million. A study conducted by the University of Idaho in 2006 examining the broader impacts of agriculture in the state estimated that total sales generated by the agriculture sector equaled \$21 billion.¹⁶

Population and economic growth are two major forces that determine long term agriculture demands. As world population grows, more people need to be fed. As average incomes rise in developing countries, the demand increases for more diverse diets and value-added agriculture, such as processed foods and identity preserved grains. During the 1980's and 1990's, the increase in global trade and foreign investments by manufacturers in third world countries wishing to tap cheap labor supplies, helped raise the standard of living in many poor nations. About the same time, several South American countries with cheap land, labor and improving infrastructure emerged as a major competitor in bulk grain markets. However, the demand for protein and value-added agriculture products created a host of new opportunities for U.S. farmers.

Agriculture product demand in the U.S. is driven by federal policy programs, food consumption trends, and the grain and oilseed export market. Current industry challenges facing U.S. farm operations include:

- **Highly Volatile Crop Prices** - Crop prices can vary sharply due to demand, number of acres planted, resulting yield, and inventory levels. The price of corn, soybeans, and many vegetables has fluctuated considerably in recent years, sometimes swinging ten percent or more in a single month. To reduce exposure to price volatility, many farms rely on futures contracts.
- **Dependence on Government Regulations** - The federal government supports crop production through numerous pricing, conservation, marketing, credit, development, and research programs. Government subsidy programs total around \$15 billion annually, with \$5 billion in direct payments to farmers. The top 10 percent of crop subsidy recipients accounts for two-thirds of total government payouts. Every five years, the federal Farm Bill determines any revisions, updates, or renewals in financial support to farmers; major changes can significantly impact operations.
- **Highly Seasonal Cash Flow** - Cash flow from farming operations is highly seasonal, as farmers typically don't get paid for crops until after harvest. Farm expenses are often highest during harvesting when crop inventories are at a peak and prices are low. Many farms operate with seasonal debt.
- **Liability from GM Crops** - The U.S. is the world's biggest genetically modified (GM) crop producer, primarily of soybeans, corn, cotton, and canola. Farmers increasingly rely on hybridized and GM seeds that increase yield and resist disease, but an over-reliance on one or two types of seeds increases the risk that a single pest or mold can destroy an entire crop. The European Union continues to ban the sale of GM seed,

¹⁵ First Research® - Idaho State Profile

¹⁶ Phillip Watson, Garth Taylor, and Stephen Cooke; *The Contributions of Agriculture to Idaho's Economy: 2006*. University of Idaho Extension. Publication CIS 1144, December 2008.

claiming that it could harm butterflies, modify food chains, and disturb life in rivers and streams. A farm may be liable if its GM crops contaminate non-GM crops through pollen drift or other means.

- Recently an Associated Press report indicated that over supply and low prices for milk is resulting in dairy farmers across the U.S. killing hundreds of thousands of cows in an effort to reduce the milk supply and boost prices. A program run by the National Milk Producers Federation has resulted in more than 225,000 cows being slaughtered during the first three-quarters of 2009. The program pays farmers going out of business to slaughter their cows, rather than sell them to someone else. Agriculture experts say another 55,000 cows are being killed each week outside the program.¹⁷

Consumer demand for assurances that foods are safe has become a major force in the global trade of grains and processed foods. During the 1990's, Europe experienced several crises in the food sector, which created widespread public distrust of government regulators and government science, and cost the food industry billions of dollars. The list includes such widely reported incidents as bovine spongiform encephalopathy (i.e., mad cow disease), foot and mouth disease, dioxin contamination, salmonella outbreaks, antibiotics in poultry, and E-coli in animal meat. More recently, there have been a series of incidents in the U.S. involving salmonella outbreaks associated with peanuts, pistachios and raw tomatoes. As a result, many consumer advocates are now calling for greater ability to trace food shipments when contamination occurs. Loading grain directly into containers at harvest has been one method widely advocated for preserving the identity of crops.

Just as U.S. agriculture in general has undergone significant changes in the past 20 to 30 years, the transportation of grain by rail has changed dramatically and today grain and food transport continues to evolve. One major change has been the concentration of grain shipments on the Class I railroad system. The idyllic vision of country elevators dotting the countryside is being replaced by large "shuttle-train" facilities like the one shown in **Exhibit 13**.

Exhibit 13: Ritzville Warehouse Company – Shuttle Train Elevator on BNSF Rail Line



Source: BNSF Railway Website: <http://www.bnsf.com/markets/agricultural/elevator/bin3/ele1523.html>

¹⁷ Associated Press article accessed on the World Wide Web at:
<http://wcco.com/wireapnewsia/Milk.glut.has.2.1272575.html>

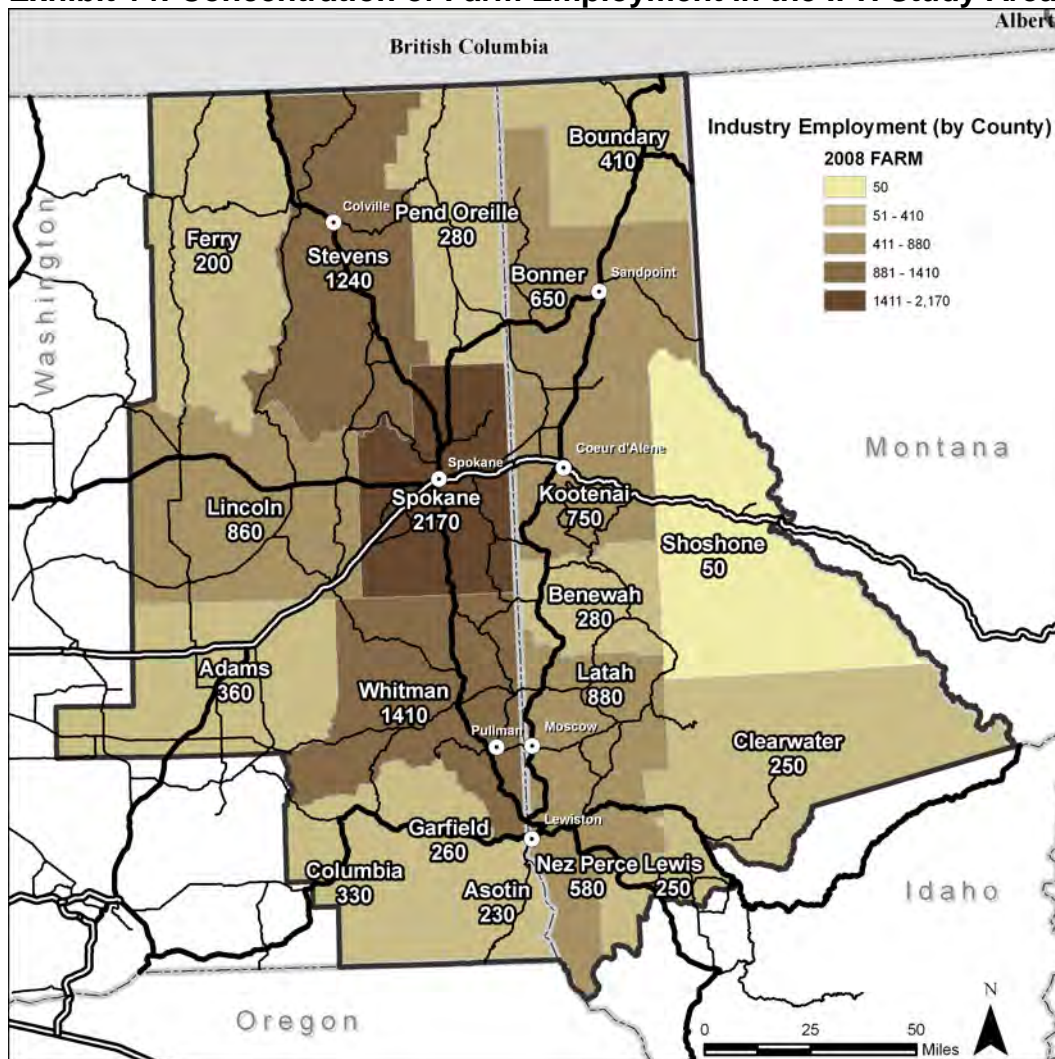
In an effort to boost rail transport efficiency in the agricultural sector, Class I railroads generally offer premium rates to farmers who deliver grain to shuttle train elevators capable of loading 110 to 120 car unit trains in 15 hours or less. The result is that many farmers now transport grain from the field longer distances using 5-axle semitrailer truck combinations. The changes occurring in rail transported agriculture markets are explored further in the Modal Issues Working Paper.

IPH STUDY AREA AGRICULTURE INDUSTRY TRENDS

Major crops in the IPH study area include wheat, barley, hay, potatoes and apples. Cattle are another key product of the region. County agriculture profiles have been assembled and are included in Appendix C.

Exhibit 14 shows 2008 farm employment by county in the IPH study area. The map suggests that farm employment is more heavily concentrated within the central Washington and western Idaho border region of the study area. Counties in the IPH study area with a high concentration of farm employment in 2008 include Spokane County (2,170 jobs), Lincoln County (860 jobs), Whitman County (1,410 jobs) and Stevens County (1,240 jobs). As discussed in the manufacturing section, this finding reflects the more heavily concentrated agricultural and food processing industries noticed within the Washington portion of the study area.

Exhibit 14: Concentration of Farm Employment in the IPH Study Area

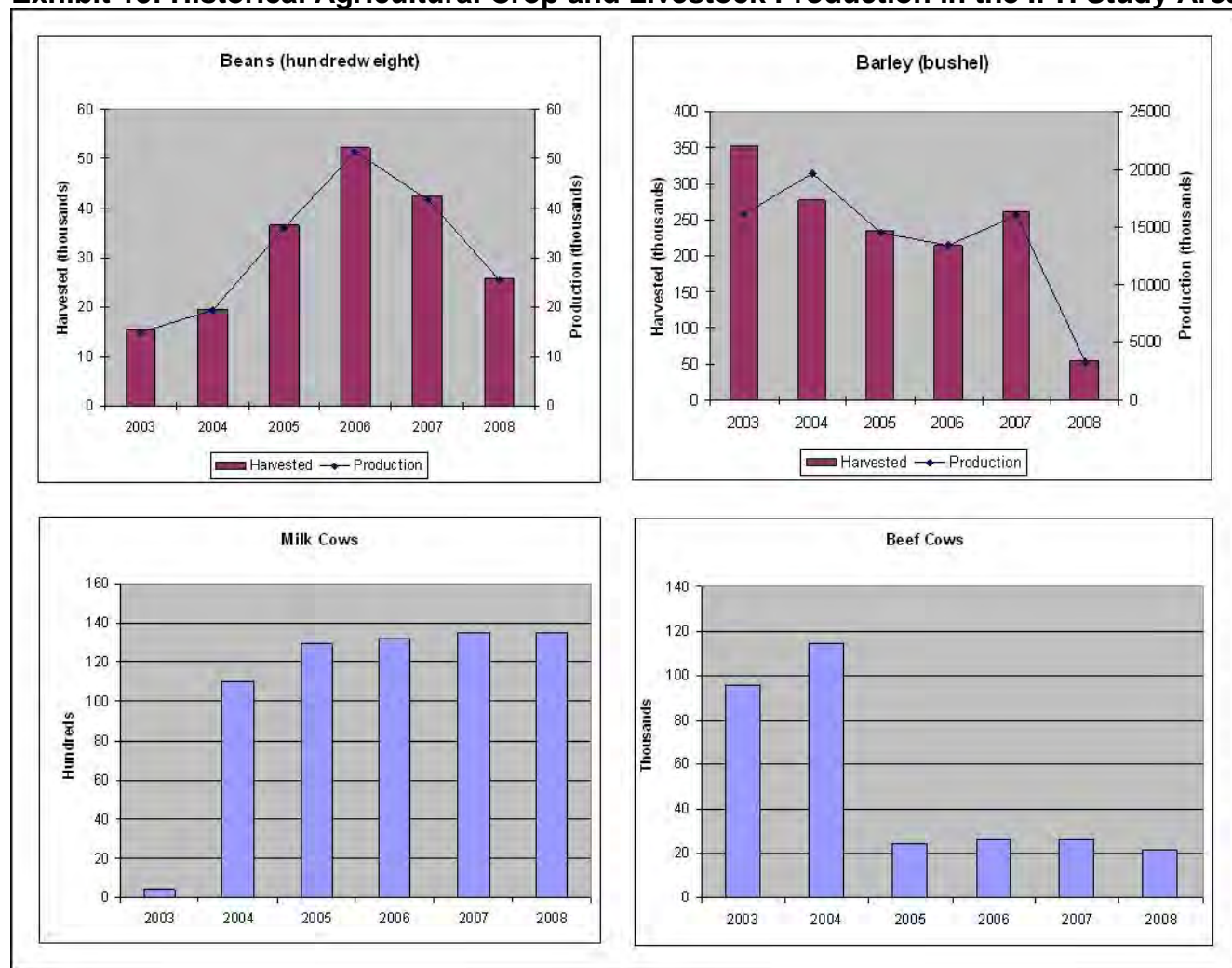


Source: 2008 Woods and Poole Economics, Inc. and Wilbur Smith Associates.

Exhibit 15 shows historical crop and livestock data for the IPH study area. The crop charts show a decrease in the production of beans in the years 2007 and 2008, after reaching a peak in 2006, and a significant decrease in the 2008 barley production compared to the

previous reported years. In terms of livestock production in the IPH study area, the production of milk cows has remained steady, between 120 and 140 hundreds of milk cows in the last four reported years, while production of beef cows suffered a dramatic decrease in 2005 (compared to the previous years) and its production has remained almost the same for the last four reported years.

Exhibit 15: Historical Agricultural Crop and Livestock Production in the IPH Study Area



Source: USDA website. Statistics by State, Accessed: March, 2010

Exhibit 16 presents historical and forecasted outbound commodity flows of farm, food and kindred products from the IPH study area. Figures in this exhibit suggest that, from 2007 to 2027, the agriculture products to be exported by the IPH study area will decrease by 12 percent (in terms of commodity tonnage) and about 5 percent (in terms of commodity values). Although some counties are expected to have a positive growth in agricultural exports, overall, the economic value of this traded sector to the economy vitality of the IPH study area is forecast to diminish over time (from \$4.1 billion in 2007 to \$3.9 billion in 2027).

Exhibit 16: Outbound Commodity Flows of Agricultural Products

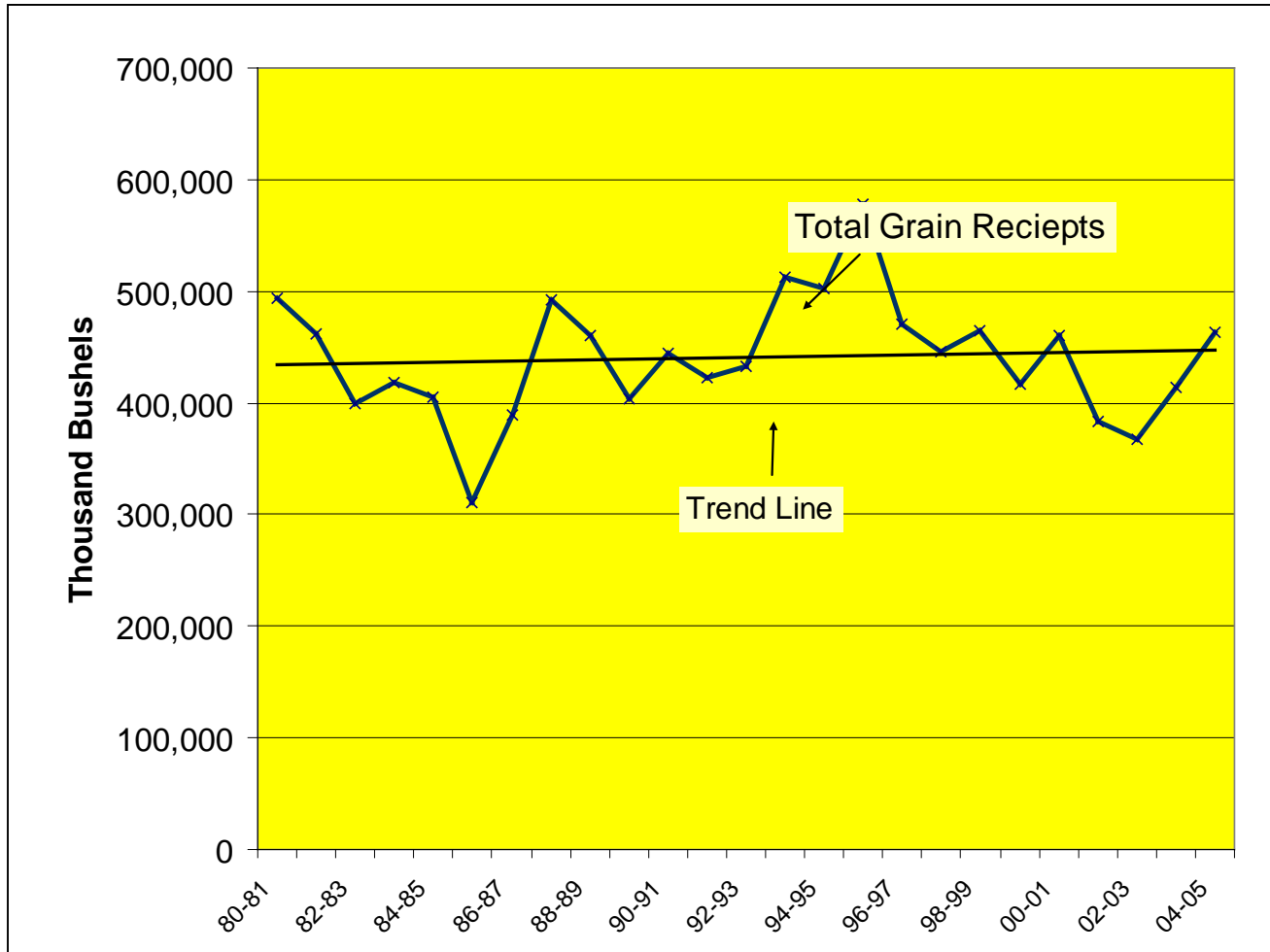
County	Tons			Value		
	2007	2027	Change (%)	2007	2027	Change (%)
Adams County, WA	2,804,560	1,537,839	(45.2%)	\$1,293,232,534	\$827,697,084	(36.0%)
Asotin County, WA	65,819	56,421	(14.3%)	\$22,417,183	\$18,858,953	(15.9%)
Benewah County, ID	34,914	55,716	59.6%	\$6,453,758	\$10,323,003	60.0%
Bonner County, ID	28,988	37,801	30.4%	\$29,307,961	\$36,460,396	24.4%
Boundary County, ID	161,634	185,089	14.5%	\$64,276,317	\$74,863,221	16.5%
Clearwater County, ID	14,309	20,157	40.9%	\$7,669,734	\$10,241,097	33.5%
Columbia County, WA	457,355	419,539	(8.3%)	\$130,197,033	\$117,241,571	(10.0%)
Ferry County, WA	22,180	21,926	(1.1%)	\$15,599,495	\$15,261,344	(2.2%)
Garfield County, WA	367,881	282,252	(23.3%)	\$105,789,862	\$77,077,309	(27.1%)
Kootenai County, ID	76,091	137,987	81.3%	\$45,954,481	\$83,226,882	81.1%
Latah County, ID	135,455	201,890	49.0%	\$37,985,367	\$52,347,534	37.8%
Lewis County, ID	96,684	129,271	33.7%	\$31,227,266	\$39,855,025	27.6%
Lincoln County, WA	861,010	900,848	4.6%	\$308,942,075	\$303,443,763	(1.8%)
Nez Perce County, ID	475,876	643,374	35.2%	\$162,600,588	\$292,690,474	80.0%
Pend Oreille County, WA	22,987	24,506	6.6%	\$16,407,072	\$17,653,317	7.6%
Shoshone County, ID	461	752	63.1%	\$68,407	\$97,207	42.1%
Spokane County, WA	1,602,445	1,357,512	(15.3%)	\$901,921,020	\$806,799,365	(10.5%)
Stevens County, WA	95,431	99,951	4.7%	\$64,010,383	\$66,741,722	4.3%
Whitman County, WA	2,537,840	2,531,071	(0.3%)	\$900,848,868	\$1,097,579,966	21.8%
Total =	9,861,919	8,643,903	(12.4%)	\$4,144,909,403	\$3,948,459,233	(4.7%)

Note: Values in this exhibit include farm, and food and kindred products

Source: Global Insight 2007 TRANSEARCH™ Data and Wilbur Smith Associates.

The anticipated slight decline in grain movements is a trend not necessarily inconsistent with historical data on agriculture for the region. In 2005, Ken Casavant, Marcia Gossard and Eric Jessup of Washington State University examined grain shipments from Columbia River Grain Terminals. Over more than 20 years the total volume of grain moved through these terminals remained almost flat (**Exhibit 17**). As discussed in other sections of the IPH Transportation Study, low land costs, cheap labor and improved transportation systems in countries such as South America will continue to challenge the traditional fungible grain market of the U.S. The trend in U.S. agriculture production is toward more value added products such as ethanol production, livestock and poultry production and food products.

Exhibit 17: Historical Grain Receipts at Columbia River Terminals



Source: Ken Casavant, Marcia Gossard and Eric Jessup of Washington State University and Wilbur Smith Associates

OVERVIEW OF THE FORESTRY AND TIMBER INDUSTRY¹⁸

TRENDS, DEMAND DRIVING FORCES, AND CHALLENGES

The \$30 billion U.S. timber industry includes about 300 companies involved mainly in timber management, and approximately 12,000 firms involved in logging operations. Large companies include Weyerhaeuser, Plum Creek Timber, Rayonier, and Potlatch. The industry is highly fragmented. A large number of companies and individuals are passive owners of timberlands. Vertically integrated companies may combine land ownership, land management, logging, sawmills, and the production of wood or paper products.

Timber is harvested to make paper or wood products (mainly lumber and plywood). Residential construction and repair/remodeling account for nearly 70 percent of all lumber used in the U.S. Demand for paper is driven partly by the general health of the economy, which influences demand for office papers, cardboard boxes, newspapers, magazines, and tissue papers. Large logging companies can have a cost advantage over smaller ones

¹⁸ The information on Forestry and Timber Industry was compiled by First Research, a Dunn and Bradstreet Company.

through the use of more efficient (and more expensive) machinery, but logging is a very local activity, often without significant economies of scale.

The U.S. contains about 750 million acres of forest land, including 500 million acres of timberlands. About 180 million acres are considered highly productive, of which half are located in the South and a quarter in the Pacific Northwest. The federal government, through the USDA Forest Service, is the largest owner of timberland in the U.S., holding about 30 percent of the total; major wood products companies own about 10 percent, states and other government bodies own 10 percent, and private owners hold the rest, about 50 percent. Timber companies may own or lease timberland or hold licenses for logging rights on private or public lands.

Timber operations can be divided into forestry operations and logging operations. Forestry involves the care of growing forests, including planting and tending trees (silviculture); controlling erosion; creating fire breaks; surveying; removing diseased or damaged trees; and marking trees for logging. Logging involves felling trees; removing branches and top; cutting into lengths ("bucking"); hauling the logs out of the forest; sorting logs by type; loading logs onto trucks; and trucking to saw mills or other destinations.

The spot price of crude oil, which affects energy prices for timber operations, dropped 31.1 percent in the week ending September 11, 2009, compared to the same week in 2008. The value of U.S. residential construction spending, a key indicator for timber products demand fell 31.2 percent in the first seven months of 2009 compared to the same period in 2008.

Between 2007 and 2008 output from Washington state mills declined 18.4 percent to 3.89 billion board feet. A 33 percent drop in housing starts shrank U.S. lumber consumption to 41.9 billion board feet, down 19.8 percent from 2007 totals, or a drop of just over 10 billion board feet. Housing starts totaled 906,000 in 2008, the first time starts have dipped below one million since World War II. The downturn in lumber production and demand has continued into 2009. Western lumber production is down 26 percent so far this year and housing starts have declined by 46 percent.¹⁹ Other recent trends compiled by First Research²⁰ are summarized below:

- Canadian Forestry Aid Delayed - Canadian forestry companies may have to wait until late 2009 or early 2010 before \$1 billion CAD (\$900 million USD) in government aid arrives to offset heavy tax subsidies paid to their U.S. competitors. The aid will help timber firms counter the impact of up to \$8 billion in "black liquor" subsidies paid to U.S. pulp manufacturers. The subsidies have allowed U.S. firms to cut prices. Weak pulp prices and the U.S. housing crisis continue to afflict Canadian producers.
- Thinning Gains Traction in Downturn - With many U.S. lumber mills shuttered and loggers being laid off, some are turning to specialty logging projects for work. Regional thinning efforts to reduce wildfire risk are luring jobseekers, especially in parts of the country where the timber industry has shut down completely. The U.S. Forest Service and state agencies provide grants to different states for "fuel reduction" projects,

¹⁹ Western Wood Products Association, News Release: <http://www2.wwpa.org/Portals/9/docs/r-2008%20production.doc>

²⁰ First Research® - Washington State Profile

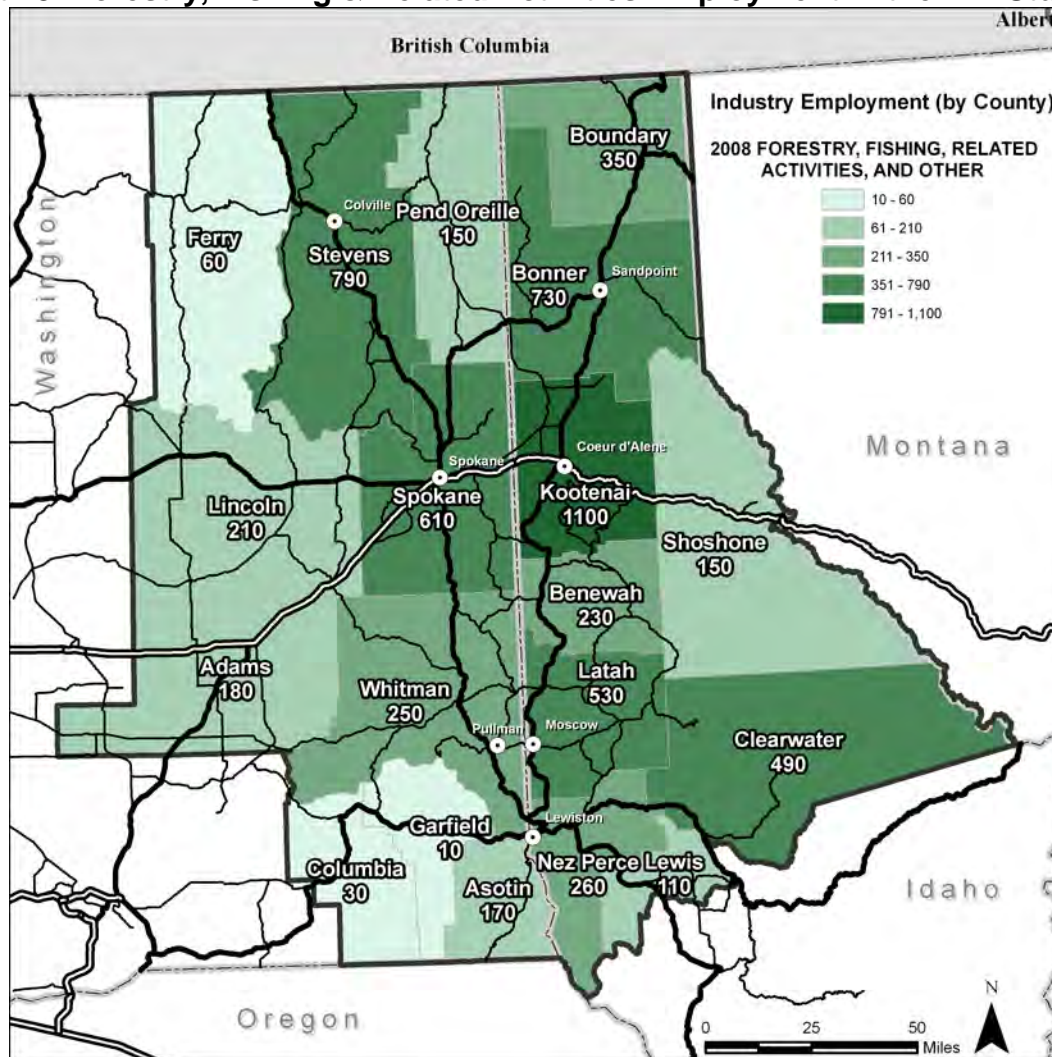
namely the thinning of forestlands. Such projects have been especially popular in states like Montana, where lumber production fell 50 percent between first quarter 2008 and first quarter 2009.

- **Competition from Canadian Imports** - Because of its large forests, Canada can export large quantities of value-added timber products to the U.S. at competitive prices, despite significant transportation costs. In recent years, Canadian lumber products accounted for about a third of U.S. lumber consumption. The U.S. and Canada frequently have trade disputes over timber products, with U.S. producers charging that Canadian stumpage fees are artificially low. (Note a stumpage fee is charged by Canadian governments to logging companies for the right to harvest lumber from public land).
- **Heavy Dependence on Residential Real Estate Construction** - Demand for lumber is strongly affected by the residential real estate construction industry, and demand for new residential buildings can change rapidly, depending on the economy and interest rates. Residential construction accounts for nearly 70 percent of all lumber used in the U.S.
- **Growing Regulations** - Timber operations are subject to numerous federal, state and local laws and regulations related to forestry, the environment, endangered species, health, safety, pollutants, waste generation, disposal, water runoff, and product liability. Harvesting of Pacific Northwest timber has decreased significantly in the last 20 years due to environmental regulations. Federal and state governments own about 40 percent of U.S. timberlands.

IPH STUDY AREA FOREST AND TIMBER INDUSTRY TRENDS

The map in **Exhibit 18** shows *forestry, fishing, and other related activities* employment (see Appendix B) by county in the IPH study area. The spatial distribution of these employment categories points to a moderately larger concentration in Idaho counties. Counties in the IPH study area with a high concentration of forestry and fishing employment in 2008 include Kootenai County (1,100 jobs), Stevens County (790 jobs), Bonner County (730 jobs), Spokane County (610 jobs), and Latah County (530 jobs). Overall, the top five county concentrations encompass 5 of the 6 major cities identified within the region.

Exhibit 18: Forestry, Fishing & Related Activities Employment in the IPH Study Area



Source: 2008 Woods and Poole Economics, Inc. and Wilbur Smith Associates.

Exhibit 19 presents historical and forecasted outbound commodity flows of lumber and wood products from the IPH study area by tonnage and values. Over the 2007 to 2027 period, it is expected a significant decrease of lumber and wood products to be exported by the forestry and timber industries located in the IPH study area. Exports of lumber and wood products are anticipated to decrease by about 24 percent (in terms of commodity tonnage) and about 16 percent (in terms of commodity values). Ferry County, WA appears as an outlier in this table, showing a dramatic increase in outbound timber products in the future. A representative of U.S. Timber, Inc., knowledgeable with the area indicated that recently several mills in the Ferry County had retooled to produce plywood. He also indicated that a large stand of difficult to access timber is located in Ferry County, but until the timber market rebounds it will not likely be harvested. In general, he found the forecast from Global Insight to be overly optimistic.²¹ Overall, although some counties are expected to export more timber products in 2027, overall, the economic value of this traded sector to the economy vitality of the IPH study area will diminish over time (from \$5.8 billion in 2007 to \$4.9 billion in 2027).

²¹Phone discussion with Mike Ebert, US Timber and Eagle Forest Products, Boise ID.

Exhibit 19: Outbound Commodity Flows of Timber Products

County	Tons			Value		
	2007	2027	Change (%)	2007	2027	Change (%)
Adams, WA	8	11	46.1%	\$9,116	\$13,030	42.9%
Asotin, WA	80,948	111,811	38.1%	\$25,214,295	\$28,969,422	14.9%
Benewah, ID	842,643	674,543	(19.9%)	\$261,244,550	\$178,705,502	(31.6%)
Bonner, ID	1,680,553	798,030	(52.5%)	\$845,778,425	\$517,929,596	(38.8%)
Boundary, ID	1,766,635	1,043,796	(40.9%)	\$770,592,558	\$485,327,581	(37.0%)
Clearwater, ID	371,258	168,114	(54.7%)	\$154,440,734	\$103,676,889	(32.9%)
Columbia, WA	644	878	36.5%	\$306,881	\$508,921	65.8%
Ferry, WA	439,427	1,957,845	345.5%	\$252,121,010	\$1,236,055,024	390.3%
Kootenai, ID	1,391,114	817,132	(41.3%)	\$856,248,037	\$589,421,659	(31.2%)
Latah, ID	291,334	102,290	(64.9%)	\$128,258,440	\$65,821,727	(48.7%)
Lewis, ID	200,773	83,369	(58.5%)	\$99,960,182	\$27,059,263	(72.9%)
Lincoln, WA	287	288	0.1%	\$30,304	\$33,121	9.3%
Nez Perce, ID	1,205,392	889,482	(26.2%)	\$591,110,100	\$430,576,806	(27.2%)
Pend Oreille, WA	223,987	236,809	5.7%	\$15,508,246	\$15,894,551	2.5%
Shoshone, ID	186,391	119,996	(35.6%)	\$66,966,240	\$58,602,903	(12.5%)
Spokane, WA	1,559,557	1,172,194	(24.8%)	\$745,661,787	\$511,415,264	(31.4%)
Stevens, WA	2,017,468	1,152,197	(42.9%)	\$997,425,949	\$625,319,284	(37.3%)
Whitman, WA	4,459	7,125	59.8%	\$774,654	\$1,677,387	116.5%
Total =	12,262,876	9,335,910	(23.9%)	\$5,811,651,508	\$4,877,007,931	(16.1%)

Note: Values in this exhibit includes lumber or wood products

Source: Global Insight 2007 TRANSEARCH™ Data and Wilbur Smith Associates.

OVERVIEW OF THE MINING INDUSTRY TRENDS²²

TRENDS, DEMAND DRIVING FORCES, AND CHALLENGES

The nonmetallic mineral mining and quarrying industry in the U.S. includes about 3,500 companies with annual revenues of about \$18 billion. Major companies include Vulcan Materials, Martin Marietta Materials, and subsidiaries of foreign firms such as Lehigh Hanson (Germany); Oldcastle Materials (Ireland); and Rinker Materials (Australia). The industry is highly fragmented, with many small firms serving local geographic markets.

Major products include crushed and broken limestone (30 percent of revenue), construction sand and gravel (20 percent); crushed and broken granite (10 percent); kaolin and ball clay (5 percent); and phosphate rock (5 percent). Other products include soda ash, bentonite, clay, and other broken stone. Phosphates and potassium salts are used to make fertilizers. Crushed stone, sand, and gravel are also referred to as aggregates. Most quarries are open-pit mines where the surface is blasted to reach stone mineral and stone deposits. Benches are cut into the walls to enable access to deeper deposits. The rock is blasted from the mine face, loaded into trucks, and carried to the primary crusher, which breaks it into smaller pieces. These smaller pieces are carried to the surface by conveyor and sorted by size. The aggregate is then transported to customers, usually by truck. Some mines further process onsite, whereas smaller mines may ship the aggregate to third-party processing facilities.

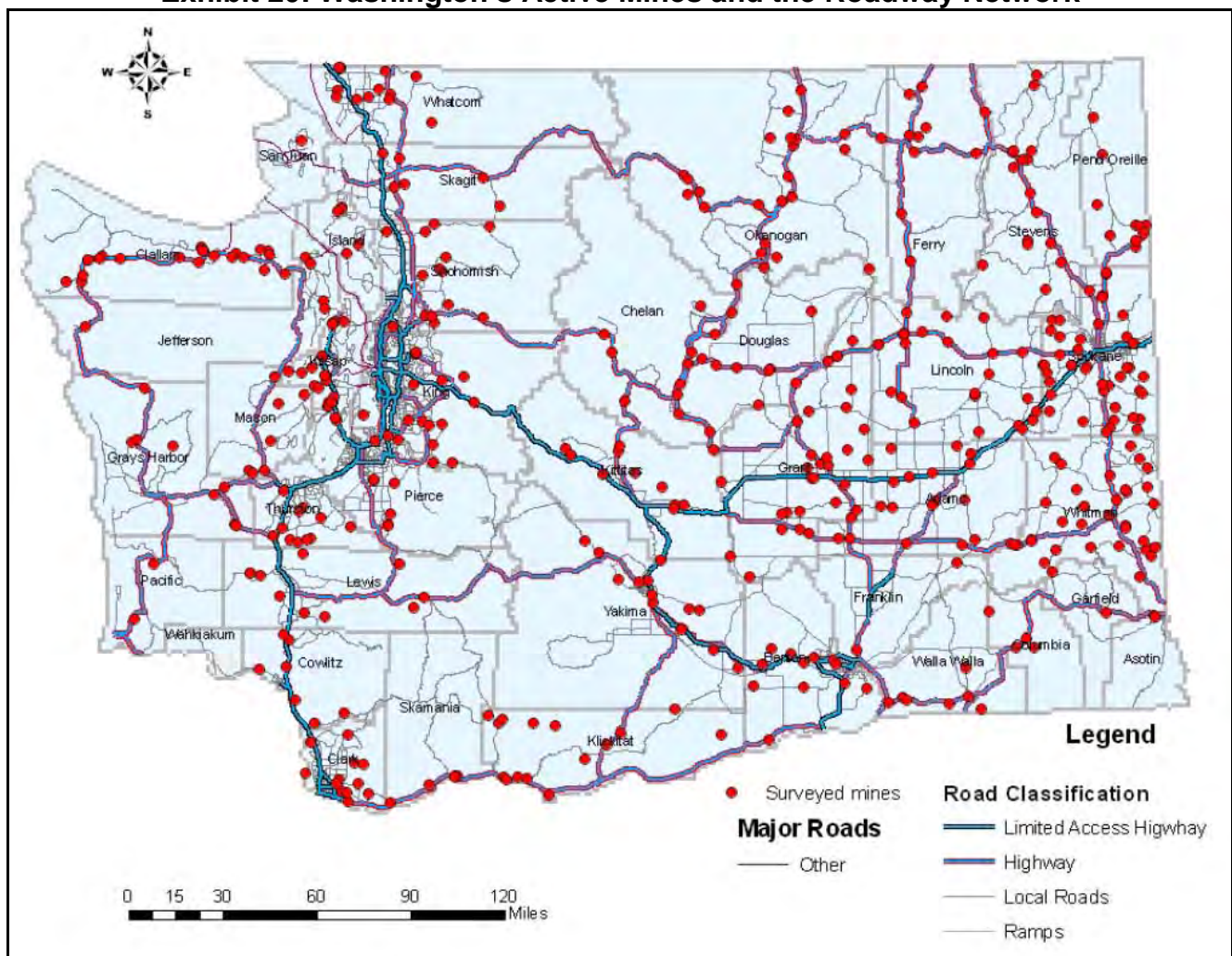
²² Significant portions of the information on the Mining Industry were compiled by First Research, a Dunn and Bradstreet Company.

In 2007 Washington State University published a report on the aggregates industry in the State of Washington:

The aggregates industry in Washington is a major provider of construction materials such as sand and gravel, crushed stone and, as such, plays a vital role in the state's infrastructural development. Availability of aggregates in general can affect the support for regional economic development since one of the biggest consumers of the aggregates industry is the transportation industry.²³

The study examined transportation characteristics of mining Washington's aggregates and analyzed the spatial relationship between mine locations and the roadway network. **Exhibit 20** shows the location of active aggregate mines in Washington. Spokane County had the highest number of active mines surveyed.

Exhibit 20: Washington's Active Mines and the Roadway Network



Source: Strategic Freight Transportation Analysis Research Report #21

²³ Hayk Khachatryan, Eric Jessup and Ken Cassavant: Strategic Freight Transportation Analysis, Research Report #21: 2005 Transportation of Mining/Mineral Survey Summary Report. Washington State University, January 2007, pg. 1.

Demand for nonmetallic minerals is driven by construction spending and agricultural spending on fertilizers. Large companies have some economies of scale in purchasing and administrative systems, and have the production volume to supply large construction projects, such as new highways. Small companies typically own just one mine and compete in a local market based on superior customer service. Total U.S. durable goods manufacturers' shipments, which indicate demand for nonmetallic minerals, fell 19.2 percent in the first seven months of 2009 compared to the same period in 2008. The value of U.S. nonresidential construction spending, a driver for nonmetallic mineral products like construction sand and gravel, fell a slight 0.8 percent in the first seven months of 2009 compared to the same period in 2008. The value of U.S. residential construction spending, which impacts demand for nonmetallic mineral products like construction sand and gravel, fell 31.2 percent in the first seven months of 2009 compared to the same period in 2008.

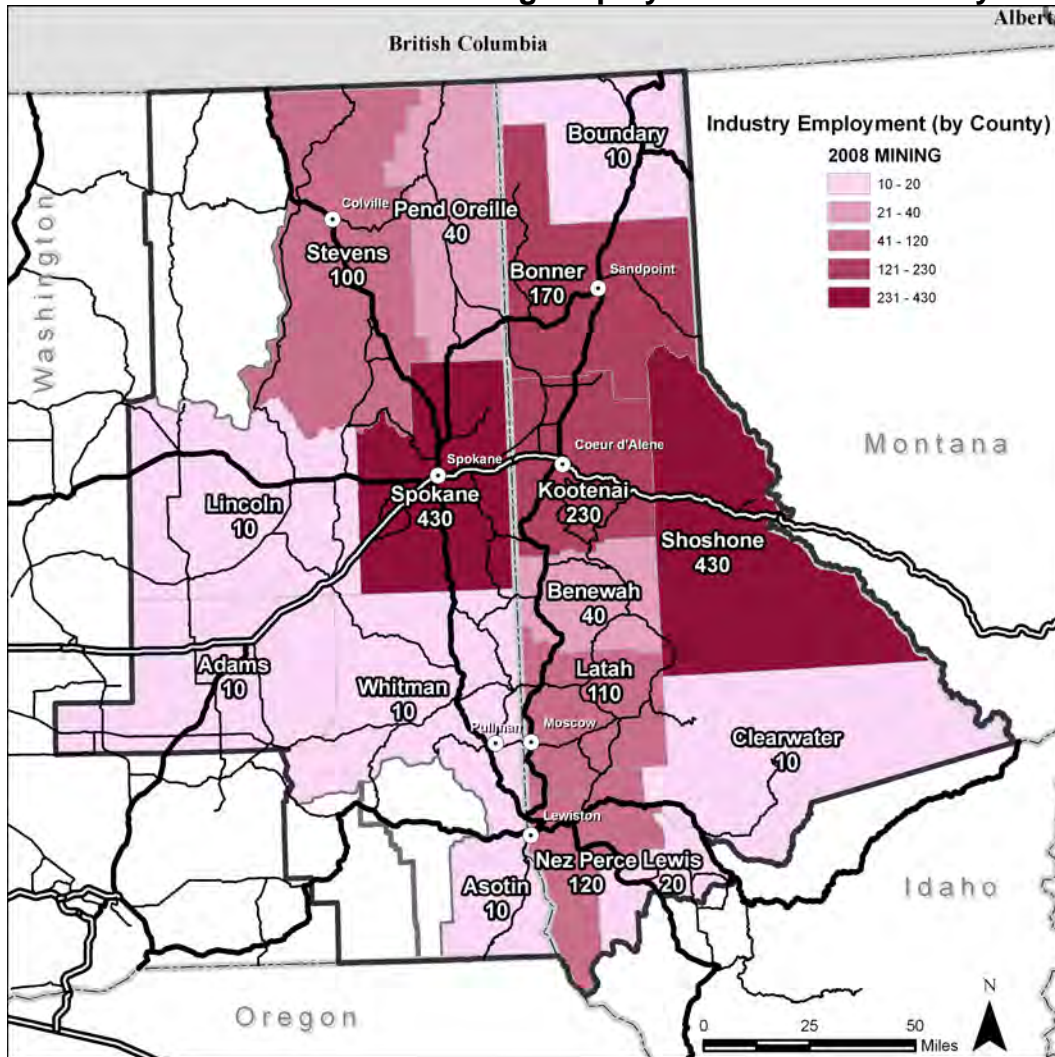
Transportation costs associated with nonmetallic mineral operations can exceed the price of products, so aggregates typically supply local markets. While aggregates have traditionally been transported by truck, some companies also use railroad cars, and to a lesser extent, barges. Federally funded projects, such as road, airport, and municipal building construction, can account for as much as 40 percent of aggregates sales. Fluctuations in energy costs can also influence aggregate prices significantly.

Mines and quarries can be quite large, but their use depends on local demand. Each year hundreds of mines are idled, closed, or abandoned and hundreds more opened or reactivated. The changing locations of construction and highway projects drive these decisions. Environmental regulations require companies to return abandoned quarries back to their original look and use.

IPH STUDY AREA MINING INDUSTRY TRENDS

While a companion study for the State of Idaho is not available, the map of mining industry employment displayed in **Exhibit 21** suggests that Idaho counties in the IPH study area have even higher concentrations of mining activities. Counties in the IPH study area with a high concentration of mining employment in 2008 include Shoshone County (430 jobs), Spokane County (430 jobs), Kootenai County (230 jobs), Bonner County (170 jobs), and Latah County (110 jobs).

Exhibit 21: Concentration of Mining Employment in the IPH Study Area



Source: 2008 Woods and Poole Economics, Inc. and Wilbur Smith Associates.

Exhibit 22 presents historical and forecasted outbound commodity flows of nonmetallic minerals, and clay, concrete, glass or stone products from the IPH study area. Over the 2007 to 2027 period, mining product exports are expected to grow by about 14 percent in terms of commodity tonnage and over 6 percent in terms of commodity values. Although some counties are expected to have a negative growth of mining exports, overall, the economic value of this trade sector business will increase over time, representing about \$439 million in 2027. Thus, this sector will continue to contribute to the economic vitality of the IPH study area over the 2007 to 2027 period.

Exhibit 22: Outbound Commodity Flows of Mining Products

County	Tons			Value		
	2007	2027	Change (%)	2007	2027	Change (%)
Adams, WA	2,986	4,671	56.4%	\$586,226	\$904,624	54.3%
Asotin, WA	156,414	924,433	491.0%	\$2,578,970	\$13,502,383	423.6%
Benewah, ID	987,958	1,025,884	3.8%	\$10,990,347	\$16,748,617	52.4%
Bonner, ID	3,219,144	3,461,473	7.5%	\$19,062,177	\$21,717,586	13.9%
Boundary, ID	26,560	47,008	77.0%	\$2,996,314	\$5,303,087	77.0%
Clearwater, ID	344,472	344,335	0.0%	\$2,417,752	\$3,019,722	24.9%
Columbia, WA	147,017	175,135	19.1%	\$891,061	\$1,062,301	19.2%
Ferry, WA	276	359	29.7%	\$9,437	\$12,241	29.7%
Garfield, WA	275	356	29.7%	\$9,376	\$12,161	29.7%
Kootenai, ID	1,789,003	1,653,398	(7.6%)	\$98,222,119	\$132,617,000	35.0%
Latah, ID	529,603	1,118,477	111.2%	\$2,408,688	\$5,086,946	111.2%
Lewis, ID			0.0%			0.0%
Lincoln, WA	1,691	2,874	69.9%	\$574,315	\$1,016,605	77.0%
Nez Perce, ID	2,434,784	2,974,289	22.2%	\$15,025,548	\$18,755,336	24.8%
Pend Oreille, WA	406,452	227,609	(44.0%)	\$2,449,896	\$1,377,608	(43.8%)
Shoshone, ID	186,706	102,926	(44.9%)	\$1,395,655	\$965,920	(30.8%)
Spokane, WA	873,381	673,381	(22.9%)	\$228,165,005	\$187,485,973	(17.8%)
Stevens, WA	1,121,736	1,212,183	8.1%	\$24,864,527	\$28,249,287	13.6%
Whitman, WA	84,869	54,722	(35.5%)	\$807,307	\$900,206	11.5%
Total =	12,313,326	14,003,510	13.7%	\$413,454,721	\$438,737,604	6.1%

Note: Values in this exhibit includes nonmetallic minerals, and clay, concrete, glass or stone.

Source: Global Insight 2007 TRANSEARCH™ Data and Wilbur Smith Associates.

OVERVIEW OF THE MANUFACTURING SECTOR²⁴

TRENDS, DEMAND DRIVING FORCES, AND CHALLENGES

The U.S. manufacturing sector consists of about 300,000 companies with combined annual sales of over \$4 trillion. Examples of major manufacturing companies include Boeing, Caterpillar, DuPont, Ford, GE, GM, Hewlett-Packard, IBM, Procter & Gamble, Pfizer, and Tyson Foods. The manufacturing sector is fragmented with the largest 50 companies accounting for less than half of all industry sales.

Production operations transform input materials, including unfinished products and components, into finished products, using energy, machinery, and labor. Inputs may be raw materials (iron ore, petroleum feedstock); crops (cotton, rubber, foods); or semi-processed components (steel bars, plastic pellets, electronics, car subassemblies). To ensure availability of input materials, supply contracts are common. Energy, used mainly to power equipment or produce heat, is a major cost for many manufacturers. The steady rise in the cost of energy has encouraged companies to design energy-efficient production processes.

Trends in the Manufacturing Sector include:

- **More Automation, Less Labor** - Productivity has steadily increased in manufacturing because of the increasing use of machines and, especially, computers. Generally, the

²⁴ Significant portions of the information on the Manufacturing Industry were compiled by First Research, a Dunn and Bradstreet Company

U.S. industries that have prospered in the past decade have been those where the most automation has been possible and where technology content is high. In the past 10 years, labor productivity increased 50 percent.

- **Outsourcing and Leasing** - To increase operational efficiency by concentrating resources on primary production and marketing functions, many companies have outsourced services they previously did themselves, such as parts manufacture, maintenance, computer and payroll services, and benefits management. As product life cycles get shorter, building proprietary assembly lines becomes less practical. Contract manufacturers have made it possible for some companies to operate without owning any brick-and-mortar factories. Many manufacturers have also increased the efficiency of their assets by leasing, rather than owning, equipment and facilities.
- **More Service Required** - The greater technological content of many machines and products requires more complicated support such as training, maintenance, operations, and services. Some companies, like IBM, sell more services related to their product than they do the product itself. Large-scale use of computers has created the entirely new support field of Information Technology (IT).
- **Manufacturing Globalization** - The development of international logistics networks that can efficiently deliver raw materials and finished products to many parts of the world has increased the reach of U.S. manufacturers and international competitors. U.S. manufacturers in labor-intensive industries, such as apparel, now have most of their production facilities abroad. Factories are frequently sited in countries for tax purposes, lower labor costs, or political reasons, rather than proximity to raw materials or markets, as was the case previously.
- **More Alliances, Strategic Investments** - The large resources required for many business enterprises, especially in the international sphere, encourage manufacturers to ally with other companies. In some cases, partners produce different components for a product; in others, one partner makes the product while the other provides distribution. Relationships between manufacturers and their suppliers also often take the form of alliances, with strong integration of information systems and regular production consultations. Many large companies now hold "strategic stakes" in smaller companies that are developing new products or markets, enabling them to essentially farm out their R&D efforts.
- **Technological Innovation** - U.S. manufacturers use technology to lower costs, improve products, and optimize supply chain performance. U.S. industry spends almost 75 percent of R&D funds on product development, 20 percent on applied research, and 5 percent on basic science. The U.S. manufacturing sector is evolving toward providing goods that either have a high-tech component or that are produced with technologically advanced equipment. Biotech and fiber optics are recent examples of expensive research technologies that rapidly evolved into manufacturing industries.
- **Improved Logistics** - To minimize inventories and speed distribution, many manufacturers invest in distribution technology and better logistics communication. Advancements include satellite communication links with delivery trucks, cargo containers with communication capabilities, specialized cargo ships that can be unloaded in hours and radio-frequency identification (RFID) tags that allow individual

products to be tracked. Improved communication between suppliers and manufacturers also enable better production scheduling and product flow.

- **Business-to-Business Internet Communication** - Many manufacturers can order parts and products through Internet sites, speeding delivery and cutting out a layer of distributors. Internet auction sites let suppliers bid to fill supply contracts. Because they cut prices and open the supply chain to more potential suppliers, industry-specific Internet sites are expected to grow rapidly. The success of these ventures is closely tied to the continuing growth and refinement of the logistics network, so suppliers can keep delivery costs low.
- **Improved Energy Use** - Because many production techniques were designed in an era of lower energy costs, manufacturers can often redesign processes to reduce energy use. Some manufacturers use large amounts of energy in production. Due to the high cost of converting to energy-efficient systems, manufacturers are reluctant to approve such projects unless energy costs are projected to remain high.
- **"Green" Manufacturing Practices** - In addition to investing in energy efficiency, manufacturers are also redesigning plants and processes to reduce emissions and the company's "carbon footprint." These green investments can provide an attractive return and allow the company to market a positive environmental message to customers and investors.

Demand for manufactured products ultimately depends on consumer spending. The profitability of individual companies depends on efficient production and distribution. Large companies often have large economies of scale in purchasing, production, and marketing. Small companies can compete effectively by producing specialized products. The industry is capital intensive and highly automated: annual revenue per employee varies greatly due to the large variety of production operations but averages more than \$350,000.

Computer systems and controls have steadily increased the labor productivity of U.S. manufacturers, including a 50 percent improvement in the last 10 years. Even so, U.S. labor costs remain high and many labor-intensive manufacturers have moved production operations to lower-cost countries like China.

Major manufactured products include transportation equipment, computers and electronics, food, chemicals, machinery, and products made of metal, plastic, and paper. Cars and planes account for about 16 percent of U.S. manufacturing output, food and beverages for 15 percent, chemicals for 15 percent, and computers and electronics for 9 percent. The net output of the manufacturing sector, after subtracting sales among manufacturers, is about \$1.5 trillion or 16 percent of U.S. GDP.

The U.S. manufacturing industry has become highly automated in all aspects. U.S. manufacturers spend over \$7 billion annually in capital expenditures for computer equipment. Manufacturing was a lead industry in the application of enterprise resource planning (ERP) technology and in its evolution to enterprise services architecture (ESA). Applying these technologies has streamlined business processes and reduced the number of labor hours required per unit of production. Most manufacturers have automated their back-office processes including accounting, order entry, inventory management, and HR. These processes are integrated, operating on common databases. Many companies have

implemented ERP systems having suites of applications adapted to the manufacturing industry and based on industry best practices. Adopting industry standard packages lowers the cost of automation and gives the company flexibility in leveraging third-party applications.

To minimize investment in materials inventory, most manufacturing companies practice some form of just-in-time (or lean) manufacturing. This requires the company to carefully coordinate deliveries from suppliers to minimize raw materials inventory and to coordinate deliveries to customers to minimize finished goods inventory. Supply chain management systems allow manufacturers, suppliers, and customers to share information on orders, schedules, and inventories to reduce inventory costs and maintain timely order fulfillment.

To remain competitive in a global economy, U.S. manufacturers have automated production operations using machinery, robotics, and computer control systems. Much of the equipment used in manufacturing includes programmable logic controllers (PLCs) containing micro-processors that can be programmed. These controllers can be networked to pass status and control information from machine to machine. In some larger operations, controllers are linked to servers that control processes among multiple machines. Factory systems are usually tied together using TCP/IP networking. Some factories are evolving to use wireless technology, driven in part by increasing use of radio frequency identification (RFID) tags.

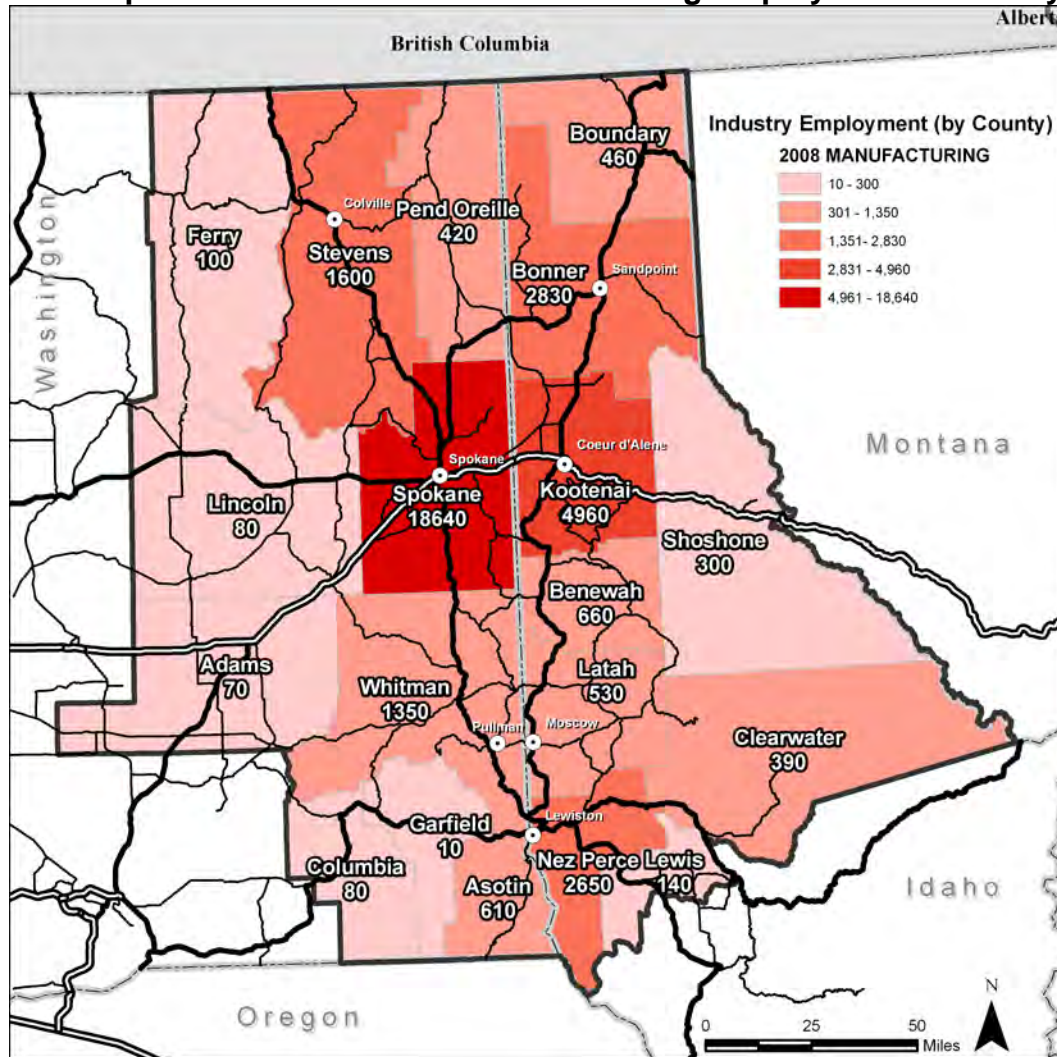
Total U.S. durable goods manufacturers' shipments, which indicate manufacturing sector activity, fell 19.2 percent in the first seven months of 2009 compared to the same period in 2008. Many U.S. exports are goods with high technology content: motor vehicles and parts, planes, semiconductors, computers, drugs, agricultural and construction equipment. Exports of U.S. manufactured goods grew only modestly in the past five years, up just 15 percent. Exports dropped sharply during the last recession because a large portion of exports are components shipped to Canadian and Mexican factories for eventual re-entry into the U.S. as finished products. Canada and Mexico combined take almost 40 percent of U.S. manufacturing exports.

U.S. manufacturing activity grew in August 2009 compared to the previous month, according to the Institute for Supply Management (ISM). The expansion came after 18 consecutive month-over-month declines. Of the 18 manufacturing industries included in the ISM's report, 11 reported growth in August 2009. Overall indicators for new orders, production, and purchasing registered gains. Production in the manufacturing sector depends on consumer spending and retail sales, and can change rapidly during an economic slowdown. For example, U.S. manufacturing grew at an average annual rate of 5 percent during much of the 1990s, but dropped 5 percent during a recent recession. In some sectors, like industrial machinery, production dropped more than 30 percent.

IPH STUDY AREA MANUFACTURING INDUSTRY TRENDS

The map in **Exhibit 23** shows manufacturing employment by county in the IPH study area. Spokane County leads the region in manufacturing jobs with 18,640 followed by Kootenai County (4,960 jobs); Bonner County (2,830 jobs); and, Nez Perce County (2,650 jobs).

Exhibit 23: Spatial Concentration of Manufacturing Employment IPH Study Area



Source: 2008 Woods and Poole Economics, Inc. and Wilbur Smith Associates.

Exhibit 24 presents historical and forecasted outbound commodity flows of manufactured products (i.e., electrical equipment; machinery; chemicals or allied products; transportation equipment; fabricated metal products; instruments, photo equipment, optical equipment; and miscellaneous manufacturing products) from the IPH study area. Over the 2007 to 2027 period, the exports of these manufactured products are expected to grow by almost 50 percent in terms of commodity tonnage and about 37 percent in terms of commodity values. Although two counties are expected to have a negative growth of manufacturing exports (either by tonnage, value or both), overall, the economic value of this trade sector business will increase significantly over time, representing nearly \$58 billion in 2027. Thus, this sector will play an important role in the regional economy by contributing to the economic vitality of the IPH study area over the 2007 to 2027 period.

Exhibit 24: Outbound Commodity Flows of Manufactured Products

County	Tons			Value		
	2007	2027	Change (%)	2007	2027	Change (%)
Adams, WA	5,411	6,639	22.7%	\$10,836,247	\$15,242,619	40.7%
Asotin, WA	31,052	48,178	55.2%	\$309,038,944	\$355,994,418	15.2%
Benewah, ID	11,899	14,124	18.7%	\$152,271,531	\$182,833,220	20.1%
Bonner, ID	34,331	55,482	61.6%	\$282,407,383	\$463,145,815	64.0%
Boundary, ID	78,812	102,453	30.0%	\$147,686,102	\$195,551,282	32.4%
Clearwater, ID	167	384	129.8%	\$611,053	\$1,423,286	132.9%
Columbia, WA	947	1,248	31.7%	\$219,059	\$413,067	88.6%
Ferry, WA	19	32	71.6%	\$38,445	\$66,379	72.7%
Garfield, WA	886	1,324	49.4%	\$457,292	\$858,816	87.8%
Kootenai, ID	511,052	1,143,899	123.8%	\$1,940,828,223	\$5,022,716,952	158.8%
Latah, ID	51,747	310,894	500.8%	\$895,248,986	\$5,756,508,018	543.0%
Lewis, ID	42	85	103.4%	\$26,331	\$53,860	104.5%
Lincoln, WA	89,456	474,405	430.3%	\$305,610,233	\$1,611,837,421	427.4%
Nez Perce, ID	14,902	32,035	115.0%	\$80,264,665	\$167,077,260	108.2%
Pend Oreille, WA	148	280	88.9%	\$376,839	\$690,095	83.1%
Shoshone, ID	3,108	6,542	110.5%	\$18,379,909	\$16,030,072	(12.8%)
Spokane, WA	2,696,478	3,214,898	19.2%	\$23,743,665,318	\$32,054,182,473	35.0%
Stevens, WA	118,330	181,947	53.8%	\$575,164,091	\$895,224,961	55.6%
Whitman, WA	374,504	316,970	(15.4%)	\$13,603,673,965	\$10,892,172,877	(19.9%)
Total =	4,023,293	5,911,819	46.9%	\$42,066,804,614	\$57,632,022,890	37.0%

Note: Values in this exhibit includes electrical equipment; machinery; chemicals or allied products; transportation equipment; fabricated metal products; instruments, photo equipment, optical equipment; and miscellaneous manufacturing products.

Source: Global Insight 2007 TRANSEARCH™ Data and Wilbur Smith Associates.

INTERNATIONAL AND NATIONAL TRENDS SHAPING FREIGHT TRANSPORT NEEDS IN THE IPH STUDY AREA

INTERNATIONAL/NATIONAL ECONOMIC TRENDS

“Developed” countries like the U.S., are undergoing structural changes in their economies that include aging populations, heavier reliance on high-technology, declines in basic manufacturing and national resourced based employment sectors and growth in service-based employment sectors. These structural changes in the U.S. economy can also have profound effects on regional economies such as the IPH study area.

“Developing” countries are by definition changing the structural make-up of their economies as well. Most developing countries are assuming a larger global role in basic manufacturing in an effort to be globally competitive with developed countries.

In general, the basic make-up of the U.S. economy is continuing a shift than began approximately three decades ago. In the early 1980’s, manufacturing was the leading sector of the U.S. economy, roughly equal in economic contribution to the *Services* and “*FIRE*” (finance, insurance, and real estate) sectors combined. Over the course of the last three decades the services sector of the U.S. economy has significantly outpaced manufacturing growth as a percentage of Gross Domestic Product (GDP). **By 2005, the Services sector had increased its share of the U.S. national economy to account for 68 percent of current-dollar GDP²⁵.** This transition to a service-based economy has implications for transportation and logistics:

*"The changes at work in the American economy are profound. The agricultural and manufacturing economy of the 20th Century has evolved. Services are now the fastest-growing sector of the economy. Logistics and transportation sectors are second...The American economy demands increasing volumes of trade if it is to continue to grow. The economic sectors that remain robust will require far more trade and travel per unit of output than was required 30 years ago."*²⁶

The implications resulting from this macroeconomic shift are twofold:

1. In general the shift away from basic manufacturing to a more diverse mix of service and high value-added manufacturing (e.g., microelectronics and aerospace) results in less demand for moving bulk goods via water, rail and truckload and more demand for small, higher-value movements by air freight, courier, and less-than-truckload. This trend is demonstrated in **Exhibit 25**. The table shows that between 2002 and 2008, the value of shipments moved by express modes air, and air and truck, increased approximately 25 percent, as compared to 21 percent for truck and 18 percent for rail. The value of inland water movements declined by 134 percent. In the future express modes are forecast to continue out pacing other modes in the value of freight moved.

²⁵ BEA News, “Gross Domestic Product by Industry for 2003” www.bea.doc.gov/bea/newsrel

²⁶ *Transportation Invest in Our Future: America's Freight Challenge*. American Association of State Highway and Transportation Officials (AASHTO) May 2007.

2. Economies based heavily on trade place greater emphasis on shipment predictability and reliability including increased demand for express package, air freight, and customer-direct truck deliveries. Therefore, transportation system reliability is a key issue not only for industry, but for economic development as well. Local, regional, and state development will be more dependent on access to high-quality multimodal transportation services – for both passengers and freight.

Exhibit 25: Value of Shipments by Mode – U.S. Transportation System

Value of Shipments by Transportation Mode: 2002, 2008, and 2035 (Billions of U.S. dollars)					
	2002 Total	2008 Total	% Change 2002 - 2008	2035 Total	% Change 2002 - 2035
Total	13,228	16,767	21.1%	41,867	68.4%
Truck	8,856	11,193	20.9%	23,767	62.7%
Rail	382	466	18.0%	702	45.6%
Water	103	44	-134.1%	151	31.8%
Air, air & truck	771	1,022	24.6%	5,925	87.0%
Intermodal ¹	1,967	1,881	-4.6%	8,966	78.1%
Pipeline and unknown ²	1,149	2,161	46.8%	2,357	51.3%
Source: USDOT - Freight Facts and Figures 2009					
1) Intermodal includes U.S. Postal Service and courier shipments and all intermodal combinations, except air and truck. Intermodal also includes oceangoing exports and imports that move between ports and interior domestic locations by modes other than water.					
2) Pipeline and unknown shipments are combined because data on region-to-region flows by pipeline are statistically uncertain.					

THE IMPACTS OF GLOBAL TRADE

Over several decades, basic manufacturing and the associated economic activity has been shifting from industrialized countries to developing countries such as China, India, Russia, and other emerging economies throughout Asia and South America. The growing importance of trade in the U.S. economy is a reflection of world economic trends. Between 1960 and 1999, world merchandise trade (exports and imports) grew at an average annualized rate of over 10 percent (in 2002 dollars).²⁷ Globalization was a significant element of growth in the U.S. economy until the recession of 2009. Growth in trade, its significance in the economy, and the changing characteristics of trade partnerships can be traced to a number of factors, including:

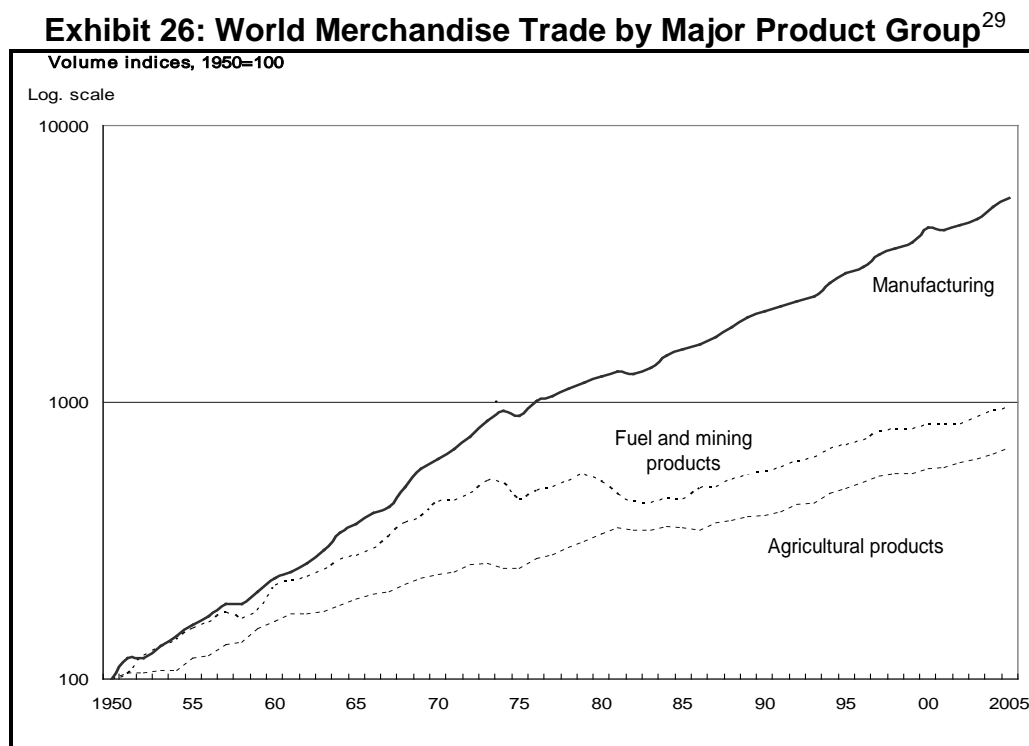
- Liberalization of world trade policies
- Growth of multinational trade blocks and multinational corporations
- Accelerated adoption of advanced information technologies

²⁷ Merchandise Trade Section, Statistics Division, World Trade Organization

LIBERAL WORLD TRADE POLICIES

The U.S. economy, although currently in recession, has grown at a rapid pace over the past several decades in large part due to global trade. Advances in technology and management practices are allowing U.S. firms to develop strategies that enable customized products for mass-market distribution. Many companies today use transportation as a key competitive advantage against both domestic and international competitors. As a result, the ability of state and regional infrastructure planners and managers to deliver robust transportation systems is directly tied to the economic competitiveness within their jurisdiction.

Exhibit 26 summarizes the growth in trade by major product group. As shown, there has been significant growth in *Agricultural Products* and *Fuels and Mining Products*. However, the most dramatic increase has been in the trade of *Manufacturing Goods*. Therefore, while manufacturing has shown robust growth in the world economy, U.S. manufacturing output has grown more modestly and has significantly declined in terms of U.S. employment. According to the U.S. Department of Commerce, manufacturing employment has contracted from approximately 22 percent of total U.S. employment in 1977 to about 12 percent in 2002.²⁸



Source: World Trade Organization

MULTINATIONAL TRADE BLOCKS

In the U.S., a significant portion of the economic growth from international trade can be attributed to trade between the U.S. and its neighbors Mexico and Canada. The North American Free Trade Agreement (NAFTA) has been a pivotal driver of a growing trade

²⁸ *Manufacturing in America*, U.S. Department of Commerce; Washington, D.C. January 2004.

²⁹ *Developing Countries' Goods Trade Share Surges to 50 Year Peak*. World Trade Organization Press Release: April 14, 2005

economy since its implementation in 1994. Total two-way trade between the U.S. and NAFTA partners grew a remarkable 111 percent between 1993 and 2003, while total two-way trade between the U.S. and the rest of the world grew by 79 percent.³⁰ **Exhibit 27** shows the annual growth in trade between the U.S., Canada and Mexico from 2000 through 2006. Total trade between NAFTA partners in 2006 was valued at more than \$760 billion. The table also shows that imports to the U.S. have been growing faster than exports in terms of both value and volume. A deeper discussion of NAFTA trade and its impact on the Inland Pacific Hub Study Region (IPH study area) is covered in the Trade Opportunities; Working Paper 3.4.

Exhibit 27: Growth in North American Trade³¹

2006 Value (billions \$)		Annual Percentage Change (Value)						
		2000	2001	2002	2003	2004	2005	2006
U.S. Exports to								
Canada	209.28	5.8%	-5.9%	0.5%	5.8%	11.0%	12.2%	8.5%
Mexico	116.75	27.6%	-8.5%	-4.2%	0.5%	13.7%	7.2%	12.0%
NAFTA	326.03	13.3%	-6.9%	-1.3%	3.8%	11.9%	10.4%	9.7%
U.S. Imports from								
Canada	278.89	14.4%	-4.5%	-3.0%	6.5%	14.1%	12.1%	5.1%
Mexico	155.21	19.4%	-1.4%	2.2%	0.4%	11.1%	6.1%	14.6%
NAFTA	434.09	16.1%	-3.4%	-1.1%	4.2%	13.1%	10.0%	8.3%

Source: *World Trade Organization*

ADOPTION OF ADVANCED INFORMATION TECHNOLOGIES

A major factor that has facilitated the globalization of the world economy is the development and accelerated adoption of new information technologies. By reducing the cost of communication, information technology can assist in globalizing production and capital markets. Companies seek to outsource their operations around the world to take advantage of low-cost labor markets, raw material supplies, high-skill labor markets and access to distribution infrastructure, wherever these resources may present the greatest competitive advantage. This pattern of dispersed operations may occur through growth in multinational corporations with operating units throughout the world, or it may occur through alliances among firms in different parts of the world. In either case, advanced information technology facilitates the process by improving and speeding the information flow across global and corporate boundaries.

Perhaps the one area where the advancement of information technology has had the greatest impact is supply chain management. The integration of information and transportation has allowed companies to disperse their operations to take advantage of competitive conditions throughout the world while reducing inventories and meeting higher service requirements by managing their supply chains.

³⁰ NAFTA 10 Years Later. Overview. U.S. Department of Commerce, International Trade Administration, Office of Industry Trade Policy.

³¹ Source: *World Trade Organization. International Trade Statistics 2006; World Trade Developments 2005*

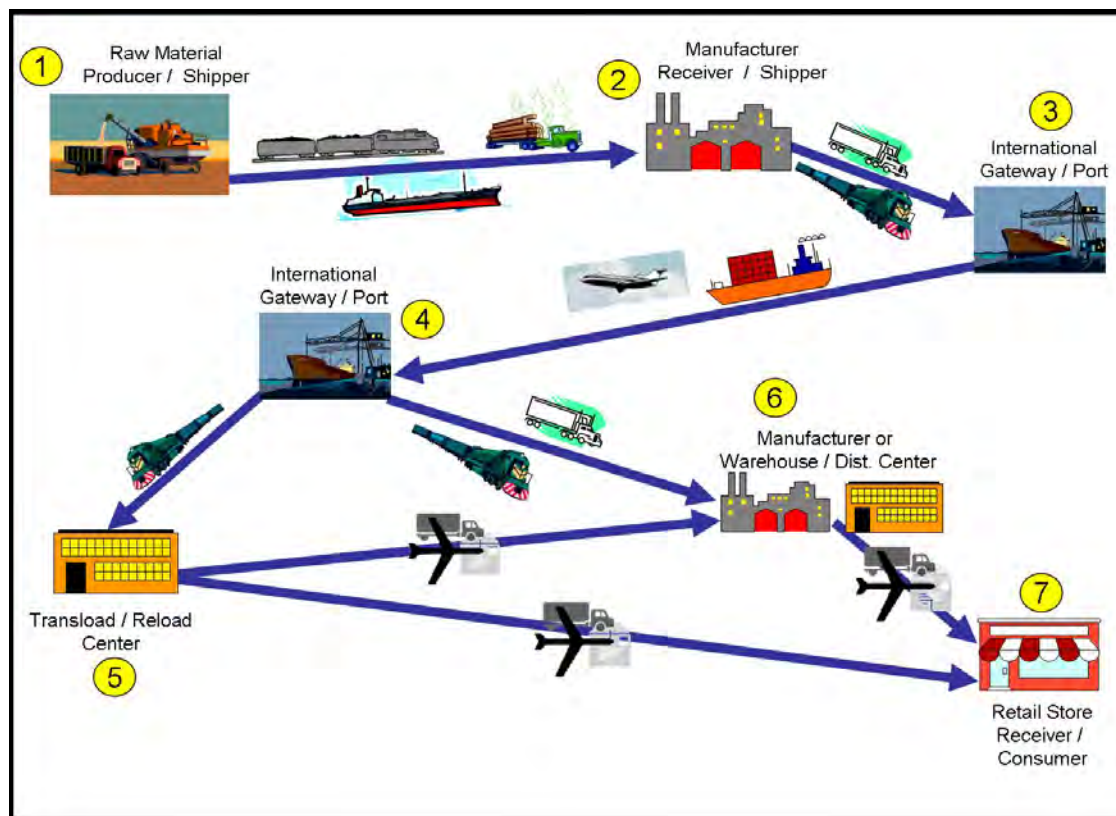
THE IMPACT OF SUPPLY CHAIN LOGISTICS ON THE ECONOMY

In the words of Thomas Friedman we live in a "flat world" - a global economy moving at an increasingly faster pace. Mr. Friedman argues that product supply chains, or supply-chaining, is one of ten major forces leveling the economic playing field among nations:

*"Supply-chaining is a method of collaborating horizontally - among suppliers, retailers, and customers - to create value. Supply-chaining is both enabled by the flattening of the world and a hugely important flattener itself, because the more they grow and proliferate, the more they force the adoption of common standards between companies (so that every link of every supply chain can interface with the next), the more they eliminate friction at borders, the more they encourage global collaboration."*³²

In today's business environment, time-sensitive transportation services are increasingly as required as a strategic advantage in manufacturing, agriculture and service-based industries. Businesses today shop the world for raw materials, parts and labor, managing widely dispersed supply chains, using real-time information integrated with reliable on-time, efficient and responsive transportation services. **Exhibit 28** depicts a simplistic "supply chain" to illustrate the multiple parties and close coordination required to make the system work smoothly and efficiently. Many companies now outsource supply chain coordination to freight forwarders or third-party logistics (3PL) firms.

Exhibit 28: Illustrative Supply Chain Network



Source: Wilbur Smith Associates

³² Friedman, Thomas L., *The World is Flat: A Brief History of the Twenty-First Century*; Farrar, Straus and Giroux, New York. 2005. pp.129.

As the United States (U.S.) economy becomes more service oriented and U.S. producers focus on more high-value or value-added products that are expensive to inventory, companies are adopting modern supply chain management techniques with the following attributes:

- *Demand Pull Supply Chains*: The movement of product triggered only after consumer places an order as opposed to the production of goods in advance (supply-push).
- *Customer-Focused Logistics*: Tailoring logistics networks to respond to the unique needs and profitability requirements of specific customers.
- *Transportation Effectiveness*: Leveraging the ability of integrated transportation to differentiate customer service and improve total supply chain cost performance.

The integration of information and transportation to accommodate global supply chains has given rise to logistics practices such as just-in-time (JIT) inventory management and electronic shipment tracking.

Just-in-time inventory is a supply chain system designed to maximize delivery and inventory efficiency. In many cases, JIT systems allow producers to deliver raw materials and subcomponents directly to manufacturing lines at specific times, typically eliminating the practice of holding inventory in warehouses or storage areas adjacent to the manufacturing lines. Thus, trucks on the highways and the containers on the rails have become moving warehouses in the new economy.

The introduction of shipment tracking technologies such as radio-frequency identification (RFID) allows shippers to predict the arrival of shipments within hours or even minutes. These technologies also allow shippers to track movements across modal networks, enabling seamless use of multiple transportation modes.

In short, the "logistics revolution" has likely several implications for the IPH study area:

- 1) The population centers of Spokane and Coeur d'Alene will see increasingly higher levels of freight activity and truck traffic, as product movements are triggered by consumer consumption
- 2) As congestion grows on key rail and highway corridors in the study area, alternative goods movement strategies like transloading will increasingly be viewed as an option that must be considered in regional land use planning
- 3) To remain competitive in the new economy, businesses will seek environments where transportation systems allow integrated supply chain strategies to succeed - namely transportation networks that support reliability, agility, dependability, and to some extent redundancy, to meet the JIT expectations in the commercial, industrial and retail sectors of the economy.

CONCLUDING REMARKS

It is difficult to maintain the economic prosperity of a region by selling more inherently local services to people within the region, particularly if the population and employment growth within the broader region is not expanding as rapidly as other areas. This challenge is reflected most clearly in those counties within the IPH study area where local services such as gasoline stations have very high location quotients (see Technical Memorandum 3 – Appendix A, County Profiles). Within those counties the opportunity to sell significantly more services at the gasoline station is not an option without real population growth or increasing tourism.

Central to most economic development strategies is the concept of developing, retaining, or attracting business activity that brings a flow of revenue into the community that in turn generates income and other jobs through economic multiplier effects. Traded sector businesses bring dollars into the IPH study area and some of those funds are spent in non-traded sector businesses. To strengthen and grow the region's economy, it is important to continue to enhance an environment that is supportive for traded sector businesses which will foster a positive environment for existing businesses and overall economic activity in the IPH study area. These traded sectors in the IPH study area are manufacturing, agriculture, forest products, and mining businesses. Public investments that could help to enhance the economic environment for traded sector businesses in the IPH study area might include:

- Customized workforce training programs to support new processes and equipment
- Improvements to transportation networks and services that improve shipping reliability and drive down supply chain and inventory costs
- Incentives that help support equipment upgrades and additional equipment installation
- Tax abatements that reduce both start-up and life-cycle costs

The transportation networks that serve the IPH study area today were initially developed to service those businesses that were the early foundation of the IPH study area's economy, natural resource industries and manufacturing. These and other freight-intensive industries in the region move significant volumes of goods and materials. However, the value of outbound commodity flows suggest that the freight-intensive sectors that play an important role in the economic vitality of the IPH study area are *Retail Trade*, *Transportation* and *Warehousing*, and *Manufacturing*. These three sectors account for over 85 percent of the total value of the outbound commodities. These commodities are expected to both dominate future freight movement in the IPH study area and be more reliant on road transport as compared to other transportation modes.

Freight-intensive industries also represent important employers in the IPH study area even today. In 2008, these sectors represented nearly 31 percent of the total employment and about 33 percent of the total earnings of the IPH study area. Natural resource and manufacturing businesses continue to provide jobs, income, and tax revenues that are important to the economy of the region. Although the role these sectors play in the region's economy is changing, supporting the transportation networks that will enable them to remain as prosperous as possible for as long as possible is vital to the IPH study area. For instance,

it is anticipated that the economic value of some traded sectors in the IPH study area (agriculture sector and forestry and timber industries) will diminish over time while the economic value of other traded sectors (i.e., mining and manufacturing businesses) will increase in the coming years (that is, these industries have potential for growth), contributing to the economic vitality of the IPH study area. Also, there appear to be new niche market opportunities in these more traditional industries such as identity-preserved grains, high-value manufacturing, organic farming, and specialized wood products that can provide future employment opportunities in the region that will require competitive transportation services.

The economic analysis indicates that the IPH study area provides unique competitive advantages that support the continued expansion and growth of a number of other strategic business sectors including: *Manufacturing, Construction, Administrative and Waste Services, and Retail Trade*. A recent study for Washington State Workforce Development Areas identified a substantially high technology manufacturing cluster in the region which included aircraft components, computer and communications equipment, and electrical signal testing equipment.³³ The transportation needs for these types of businesses differ from the more traditional industries in the region. Although transportation costs are always a factor, the transportation demands for these businesses are often driven by delivery schedules, reliability, and protecting the integrity of the products (product damage).

The emphasis on reliability and supply chain management is a crucial business strategy for companies who seek to extract value and thus competitive advantage through distribution. Efficient local and regional goods movement even for those goods being shipped to destinations across the country or for international export is important. Traffic congestion on highways and rails has been identified by many growth industries nationally and in the IPH study area as a significant transportation problem affecting economic growth and development.³⁴ Congestion in both metro counties within the IPH study area affects the entire region's ability to foster reliable and cost effective transportation services. Growth industries of the future will likely concentrate primarily in these metro counties. Thus, it will be important to provide transportation linkages not only to facilitate efficient movements in and through these metro areas but also linkages to all areas of the region to allow the non-metro areas to take advantage of economic opportunities that will cluster in the metro areas.

By necessity, future investments in transportation infrastructure in the IPH study area must balance the needs of more traditional industries with the transportation requirements of new economic growth sectors in the region. From a regional perspective the importance of an efficient transportation corridor that can divert some portion of the freight traffic from city streets in Spokane or Coeur d'Alene creates benefits for businesses located in the non-metro areas. Conversely, improvements and enhancement maintenance for corridors linking workforce in non-metro areas to growing centers of employment generate economic development benefits for the metro counties as well.

³³ "Industrial Cluster Analysis for Washington State Workforce Development Areas", Washington State Workforce Board, November 2008

³⁴ IPH Regional Business Interviews

APPENDIX A: NAICS INDUSTRY DEFINITIONS

Sector 11--Agriculture, Forestry, Fishing and Hunting

The Agriculture, Forestry, Fishing and Hunting sector comprises establishments primarily engaged in growing crops, raising animals, harvesting timber, and harvesting fish and other animals from a farm, ranch, or their natural habitats. The establishments in this sector are often described as farms, ranches, dairies, greenhouses, nurseries, orchards, or hatcheries. A farm may consist of a single tract of land or a number of separate tracts which may be held under different tenures. For example, one tract may be owned by the farm operator and another rented. It may be operated by the operator alone or with the assistance of members of the household or hired employees, or it may be operated by a partnership, corporation, or other type of organization. When a landowner has one or more tenants, renters, croppers, or managers, the land operated by each is considered a farm.

The sector distinguishes two basic activities: agricultural production and agricultural support activities. Agricultural production includes establishments performing the complete farm or ranch operation, such as farm owner-operators, tenant farm operators, and sharecroppers. Agricultural support activities include establishments that perform one or more activities associated with farm operation, such as soil preparation, planting, harvesting, and management, on a contract or fee basis. Excluded from the Agriculture, Forestry, Hunting and Fishing sector are establishments primarily engaged in agricultural research, and establishments primarily engaged in administering programs for regulating and conserving land, mineral, wildlife, and forest use. These establishments are classified in Industry 54171, Research and Development in the Physical, Engineering, and Life Sciences; and Industry 92412, Administration of Conservation Programs, respectively.

Sector 21--Mining, Quarrying, and Oil and Gas Extraction

The Mining, Quarrying, and Oil and Gas Extraction sector comprises establishments that extract naturally occurring mineral solids, such as coal and ores; liquid minerals, such as crude petroleum; and gases, such as natural gas. The term mining is used in the broad sense to include quarrying, well operations, beneficiating (e.g., crushing, screening, washing, and flotation), and other preparation customarily performed at the mine site, or as a part of mining activity. The Mining, Quarrying, and Oil and Gas Extraction sector distinguishes two basic activities: mine operation and mining support activities. Mine operation includes establishments operating mines, quarries, or oil and gas wells on their own account or for others on a contract or fee basis. Mining support activities include establishments that perform exploration (except geophysical surveying) and/or other mining services on a contract or fee basis (except mine site preparation and construction of oil/gas pipelines).

Establishments in the Mining, Quarrying, and Oil and Gas Extraction sector are grouped and classified according to the natural resource mined or to be mined. Industries include establishments that develop the mine site, extract the natural resources, and/or those that beneficiate (i.e., prepare) the mineral mined. Beneficiation is the process whereby the extracted material is reduced to particles that can be separated into mineral and waste, the former suitable for further processing or direct use. The operations that take place in beneficiation are primarily mechanical, such as grinding, washing, magnetic separation, and centrifugal separation. In contrast, manufacturing operations primarily use chemical and electrochemical

processes, such as electrolysis and distillation. However, some treatments, such as heat treatments, take place in both the beneficiation and the manufacturing (i.e., smelting/refining) stages. The range of preparation activities varies by mineral and the purity of any given ore deposit. While some minerals, such as petroleum and natural gas, require little or no preparation, others are washed and screened, while yet others, such as gold and silver, can be transformed into bullion before leaving the mine site. Mining, beneficiating, and manufacturing activities often occur in a single location. Separate receipts will be collected for these activities whenever possible. When receipts cannot be broken out between mining and manufacturing, establishments that mine or quarry nonmetallic minerals, and then beneficiate the nonmetallic minerals into more finished manufactured products are classified based on the primary activity of the establishment. A mine that manufactures a small amount of finished products will be classified in Sector 21, Mining, Quarrying, and Oil and Gas Extraction. An establishment that mines whose primary output is a more finished manufactured product will be classified in Sector 31-33, Manufacturing.

Sector 22--Utilities

The Utilities sector comprises establishments engaged in the provision of the following utility services: electric power, natural gas, steam supply, water supply, and sewage removal. Within this sector, the specific activities associated with the utility services provided vary by utility: electric power includes generation, transmission, and distribution; natural gas includes distribution; steam supply includes provision and/or distribution; water supply includes treatment and distribution; and sewage removal includes collection, treatment, and disposal of waste through sewer systems and sewage treatment facilities. Excluded from this sector are establishments primarily engaged in waste management services classified in Subsector 562, Waste Management and Remediation Services. These establishments also collect, treat, and dispose of waste materials; however, they do not use sewer systems or sewage treatment facilities.

Sector 23--Construction

The construction sector comprises establishments primarily engaged in the construction of buildings or engineering projects (e.g., highways and utility systems). Establishments primarily engaged in the preparation of sites for new construction and establishments primarily engaged in subdividing land for sale as building sites also are included in this sector.

Construction work done may include new work, additions, alterations, or maintenance and repairs. Activities of these establishments generally are managed at a fixed place of business, but they usually perform construction activities at multiple project sites. Production responsibilities for establishments in this sector are usually specified in: (1) contracts with the owners of construction projects (prime contracts); or, (2) contracts with other construction establishments (subcontracts).

Establishments primarily engaged in contracts that include responsibility for all aspects of individual construction projects are commonly known as general contractors, but also may be known as design-builders, construction managers, turnkey contractors, or (in cases where two or more establishments jointly secure a general contract) joint-venture contractors. Construction managers that provide oversight and scheduling only (i.e., agency) as well as construction managers that are responsible for the entire project (i.e., at risk) are included as general contractor-type establishments. Establishments of the "general contractor type" frequently

arrange construction of separate parts of their projects through subcontracts with other construction establishments.

Establishments primarily engaged in activities to produce a specific component (e.g., masonry, painting, and electrical work) of a construction project are commonly known as specialty trade contractors. Activities of specialty trade contractors are usually subcontracted from other construction establishments, but especially in remodeling and repair construction, the work may be done directly for the owner of the property.

Establishments primarily engaged in activities to construct buildings to be sold on sites that they own are known as operative builders, but also may be known as speculative builders or merchant builders. Operative builders produce buildings in a manner similar to general contractors, but their production processes also include site acquisition and securing of financial backing. Operative builders are most often associated with the construction of residential buildings. Like general contractors, they may subcontract all or part of the actual construction work on their buildings.

There are substantial differences in the types of equipment, work force skills, and other inputs required by establishments in this sector. To highlight these differences and variations in the underlying production functions, this sector is divided into three subsectors. Subsector 236, Construction of Buildings, comprises establishments of the general contractor type and operative builders involved in the construction of buildings. Subsector 237, Heavy and Civil Engineering Construction, comprises establishments involved in the construction of engineering projects. Subsector 238, Specialty Trade Contractors, comprises establishments engaged in specialty trade activities generally needed in the construction of all types of buildings.

Force account construction is construction work performed by an enterprise primarily engaged in some business other than construction for its own account and use, using employees of the enterprise. This activity is not included in the construction sector unless the construction work performed is the primary activity of a separate establishment of the enterprise. The installation and the ongoing repair and maintenance of telecommunications and utility networks are excluded from construction when the establishments performing the work are not independent contractors. Although a growing proportion of this work is subcontracted to independent contractors in the Construction Sector, the operating units of telecommunications and utility companies performing this work are included with the telecommunications or utility activities.

Sector 31-33--Manufacturing

The Manufacturing sector comprises establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products. The assembling of component parts of manufactured products is considered manufacturing, except in cases where the activity is appropriately classified in Sector 23, Construction. Establishments in the Manufacturing sector are often described as plants, factories, or mills and characteristically use power-driven machines and materials-handling equipment. However, establishments that transform materials or substances into new products by hand or in the worker's home and those engaged in selling to the general public products made on the same premises from which they are sold, such as bakeries, candy stores, and custom tailors, may also be included in this sector.

Manufacturing establishments may process materials or may contract with other establishments to process their materials for them. Both types of establishments are included in manufacturing. The materials, substances, or components transformed by manufacturing establishments are raw materials that are products of agriculture, forestry, fishing, mining, or quarrying as well as products of other manufacturing establishments. The materials used may be purchased directly from producers, obtained through customary trade channels, or secured without recourse to the market by transferring the product from one establishment to another, under the same ownership.

The new product of a manufacturing establishment may be finished in the sense that it is ready for utilization or consumption, or it may be semi-finished to become an input for an establishment engaged in further manufacturing. For example, the product of the alumina refinery is the input used in the primary production of aluminum; primary aluminum is the input to an aluminum wire drawing plant; and aluminum wire is the input for a fabricated wire product manufacturing establishment.

The subsectors in the Manufacturing sector generally reflect distinct production processes related to material inputs, production equipment, and employee skills. In the machinery area, where assembling is a key activity, parts and accessories for manufactured products are classified in the industry of the finished manufactured item when they are made for separate sale. For example, a replacement refrigerator door would be classified with refrigerators and an attachment for a piece of metal working machinery would be classified with metal working machinery. However, components, input from other manufacturing establishments, are classified based on the production function of the component manufacturer. For example, electronic components are classified in Subsector 334, Computer and Electronic Product Manufacturing and stampings are classified in Subsector 332, Fabricated Metal Product Manufacturing.

Manufacturing establishments often perform one or more activities that are classified outside the Manufacturing sector of NAICS. For instance, almost all manufacturing has some captive research and development or administrative operations, such as accounting, payroll, or management. These captive services are treated the same as captive manufacturing activities. When the services are provided by separate establishments, they are classified to the NAICS sector where such services are primary, not in manufacturing.

The boundaries of manufacturing and the other sectors of the classification system can be somewhat blurry. The establishments in the manufacturing sector are engaged in the transformation of materials into new products. Their output is a new product. However, the definition of what constitutes a new product can be somewhat subjective. As clarification, the following activities are considered manufacturing in NAICS:

- Milk bottling and pasteurizing
- Grinding of lenses to prescription
- Water bottling and processing
- Wood preserving
- Fresh fish packaging (oyster shucking, and fish filleting)
- Electroplating, plating, metal heat treating, and polishing for the trade

- Apparel jobbing (assigning of materials to contract factories or shops for fabrication or other contract operations as well as contracting on materials owned by others)
- Lapidary work for the trade
- Fabricating signs and advertising displays
- Rebuilding or remanufacturing; machinery (i.e., automotive parts)
- Printing and related activities
- Ship repair and renovation
- Ready-mixed concrete production
- Leather converting
- Machine shops
- Tire retreading.

Conversely, there are activities that are sometimes considered manufacturing, but which for NAICS are classified in another sector (i.e., not classified as manufacturing). They include:

- 1) Logging, classified in Sector 11, Agriculture, Forestry, Fishing and Hunting, is considered a harvesting operation
- 2) The beneficiating of ores and other minerals, classified in Sector 21, Mining, Quarrying, and Oil and Gas Extraction, is considered part of the activity of mining
- 3) The construction of structures and fabricating operations performed at the site of construction by contractors, is classified in Sector 23, Construction
- 4) Establishments engaged in breaking of bulk and redistribution in smaller lots, including packaging, repackaging, or bottling products, such as liquors or chemicals; the customized assembly of computers; sorting of scrap; mixing paints to customer order; and cutting metals to customer order, classified in Sector 42, Wholesale Trade or Sector 44-45, Retail Trade, produce a modified version of the same product, not a new product
- 5) Publishing and the combined activity of publishing and printing, classified in Sector 51, Information, perform the transformation of information into a product whereas the value of the product to the consumer lies in the information content, not in the format in which it is distributed (i.e., the book or software diskette)

Sector 42--Wholesale Trade

The Wholesale Trade sector comprises establishments engaged in wholesaling merchandise, generally without transformation, and rendering services incidental to the sale of merchandise. The merchandise described in this sector includes the outputs of agriculture, mining, manufacturing, and certain information industries, such as publishing.

The wholesaling process is an intermediate step in the distribution of merchandise. Wholesalers are organized to sell or arrange the purchase or sale of: (a) goods for resale (i.e., goods sold to other wholesalers or retailers); (b) capital or durable non-consumer goods; and, (c) raw and

intermediate materials and supplies used in production.

Wholesalers sell merchandise to other businesses and normally operate from a warehouse or office. These warehouses and offices are characterized by having little or no display of merchandise. In addition, neither the design nor the location of the premises is intended to solicit walk-in traffic. Wholesalers do not normally use advertising directed to the general public. Customers are generally reached initially via telephone, in-person marketing, or by specialized advertising that may include Internet and other electronic means. Follow-up orders are either vendor-initiated or client-initiated, generally based on previous sales, and typically exhibit strong ties between sellers and buyers. In fact, transactions are often conducted between wholesalers and clients that have long-standing business relationships.

This sector comprises two main types of wholesalers: merchant wholesalers that sell goods on their own account and business to business electronic markets, agents, and brokers that arrange sales and purchases for others generally for a commission or fee.

(1) Establishments that sell goods on their own account are known as wholesale merchants, distributors, jobbers, drop shippers, and import/export merchants. Also included as wholesale merchants are sales offices and sales branches (but not retail stores) maintained by manufacturing, refining, or mining enterprises apart from their plants or mines for the purpose of marketing their products. Merchant wholesale establishments typically maintain their own warehouse, where they receive and handle goods for their customers. Goods are generally sold without transformation, but may include integral functions, such as sorting, packaging, labeling, and other marketing services.

(2) Establishments arranging for the purchase or sale of goods owned by others or purchasing goods, generally on a commission basis are known as business-to-business electronic markets, agents and brokers, commission merchants, import/export agents and brokers, auction companies, and manufacturers' representatives. These establishments operate from offices and generally do not own or handle the goods they sell.

Some wholesale establishments may be connected with a single manufacturer and promote and sell the particular manufacturers' products to a wide range of other wholesalers or retailers. Other wholesalers may be connected to a retail chain, or a limited number of retail chains, and only provide a variety of products needed by that particular retail operation(s). These wholesalers may obtain the products from a wide range of manufacturers. Still other wholesalers may not take title to the goods, but act as agents and brokers for a commission.

Although, in general, wholesaling normally denotes sales in large volumes, durable non-consumer goods may be sold in single units. Sales of capital or durable non-consumer goods used in the production of goods and services, such as farm machinery, medium and heavy duty trucks, and industrial machinery, are always included in wholesale trade.

Sector 44-45--Retail Trade

The Retail Trade sector comprises establishments engaged in retailing merchandise, generally without transformation, and rendering services incidental to the sale of merchandise. The retailing process is the final step in the distribution of merchandise; retailers are, therefore, organized to sell merchandise in small quantities to the general public. This sector comprises two main types of retailers: store and non-store retailers.

1. Store retailers operate fixed point-of-sale locations, located and designed to attract a high volume of walk-in customers. In general, retail stores have extensive displays of merchandise and use mass-media advertising to attract customers. They typically sell merchandise to the general public for personal or household consumption, but some also serve business and institutional clients. These include establishments, such as office supply stores, computer and software stores, building materials dealers, plumbing supply stores, and electrical supply stores. Catalog showrooms, gasoline stations, automotive dealers, and mobile home dealers are treated as store retailers.

In addition to retailing merchandise, some types of store retailers are also engaged in the provision of after-sales services, such as repair and installation. For example, new automobile dealers, electronics and appliance stores, and musical instrument and supplies stores often provide repair services. As a general rule, establishments engaged in retailing merchandise and providing after-sales services are classified in this sector.

The first eleven subsectors of retail trade are store retailers. The establishments are grouped into industries and industry groups typically based on one or more of the following criteria:

- (a) The merchandise line or lines carried by the store; for example, specialty stores are distinguished from general-line stores.
 - (b) The usual trade designation of the establishments. This criterion applies in cases where a store type is well recognized by the industry and the public, but difficult to define strictly in terms of merchandise lines carried; for example, pharmacies, hardware stores, and department stores.
 - (c) Capital requirements in terms of display equipment; for example, food stores have equipment requirements not found in other retail industries.
 - (d) Human resource requirements in terms of expertise; for example, the staff of an automobile dealer requires knowledge in financing, registering, and licensing issues that are not necessary in other retail industries.
2. Non-store retailers, like store retailers, are organized to serve the general public, but their retailing methods differ. The establishments of this subsector reach customers and market merchandise with methods, such as the broadcasting of "infomercials," the broadcasting and publishing of direct-response advertising, the publishing of paper and electronic catalogs, door-to-door solicitation, in-home demonstration, selling from portable stalls (street vendors, except food), and distribution through vending machines. Establishments engaged in the direct sale (non-store) of products, such as home heating oil dealers and home delivery newspaper routes are included here.

The buying of goods for resale is a characteristic of retail trade establishments that particularly distinguishes them from establishments in the agriculture, manufacturing, and construction industries. For example, farms that sell their products at or from the point of production are not classified in retail, but rather in agriculture. Similarly, establishments that both manufacture and sell their products to the general public are not classified in retail, but rather in manufacturing. However, establishments that engage in processing activities incidental to retailing are classified in retail. This includes establishments, such as optical goods stores that do in-store grinding of lenses, and meat and seafood markets. Wholesalers also engage in the buying of goods for

resale, but they are not usually organized to serve the general public. They typically operate from a warehouse or office and neither the design nor the location of these premises is intended to solicit a high volume of walk-in traffic. Wholesalers supply institutional, industrial, wholesale, and retail clients; their operations are, therefore, generally organized to purchase, sell, and deliver merchandise in larger quantities. However, dealers of durable non-consumer goods, such as farm machinery and heavy

Sector 48-49--Transportation and Warehousing

The Transportation and Warehousing sector includes industries providing transportation of passengers and cargo, warehousing and storage for goods, scenic and sightseeing transportation, and support activities related to modes of transportation. Establishments in these industries use transportation equipment or transportation related facilities as a productive asset. The type of equipment depends on the mode of transportation. The modes of transportation are air, rail, water, road, and pipeline.

The Transportation and Warehousing sector distinguishes three basic types of activities: (1) subsectors for each mode of transportation; (2) a subsector for warehousing and storage; and, (3) a subsector for establishments providing support activities for transportation. In addition, there are subsectors for establishments that provide passenger transportation for scenic and sightseeing purposes, postal services, and courier services. A separate subsector for support activities is established in the sector because, first, support activities for transportation are inherently multimodal, such as freight transportation arrangement, or have multimodal aspects. Secondly, there are production process similarities among the support activity industries.

One of the support activities identified in the support activity subsector is the routine repair and maintenance of transportation equipment (e.g., aircraft at an airport, railroad rolling stock at a railroad terminal, or ships at a harbor or port facility). Such establishments do not perform complete overhauling or rebuilding of transportation equipment (i.e., periodic restoration of transportation equipment to original design specifications) or transportation equipment conversion (i.e., major modification to systems). An establishment that primarily performs factory (or shipyard) overhauls, rebuilding, or conversions of aircraft, railroad rolling stock, or a ship is classified in Subsector 336, Transportation Equipment Manufacturing according to the type of equipment.

Many of the establishments in this sector often operate on networks, with physical facilities, labor forces, and equipment spread over an extensive geographic area. Warehousing establishments in this sector are distinguished from merchant wholesaling in that the warehouse establishments do not sell the goods. Excluded from this sector are establishments primarily engaged in providing travel agent services that support transportation and other establishments, such as hotels, businesses, and government agencies. These establishments are classified in Sector 56, Administrative and Support and Waste Management and Remediation Services. Also, establishments primarily engaged in providing rental and leasing of transportation equipment without operator are classified in Subsector 532, Rental and Leasing Services.

Sector 51--Information

The Information sector comprises establishments engaged in the following processes: (a) producing and distributing information and cultural products; (b) providing the means to transmit or distribute these products as well as data or communications; and, (c) processing data. The main components of this sector are the publishing industries, including software publishing, and both traditional publishing and publishing exclusively on the Internet; the motion picture and sound recording industries; the broadcasting industries, including traditional broadcasting and those broadcasting exclusively over the Internet; the telecommunications industries; Web search portals, data processing industries, and the information services industries.

The expressions "information age" and "global information economy" are used with considerable frequency today. The general idea of an "information economy" includes both the notion of industries primarily producing, processing, and distributing information, as well as the idea that every industry is using available information and information technology to reorganize and make themselves more productive.

For the purposes of NAICS, it is the transformation of information into a commodity that is produced and distributed by a number of growing industries that is at issue. The Information sector groups three types of establishments: (1) those engaged in producing and distributing information and cultural products; (2) those that provide the means to transmit or distribute these products as well as data or communications; and, (3) those that process data. Cultural products are those that directly express attitudes, opinions, ideas, values, and artistic creativity; provide entertainment; or offer information and analysis concerning the past and present.

Included in this definition are popular, mass-produced products as well as cultural products that normally have a more limited audience, such as poetry books, literary magazines, or classical records. The unique characteristics of information and cultural products, and of the processes involved in their production and distribution, distinguish the Information sector from the goods-producing and service-producing sectors. Some of these characteristics are:

1. Unlike traditional goods, an "information or cultural product," such as a newspaper on-line or television program, does not necessarily have tangible qualities, nor is it necessarily associated with a particular form. A movie can be shown at a movie theater, on a television broadcast, through video-on-demand or rented at a local video store. A sound recording can be aired on radio, embedded in multimedia products, or sold at a record store.
2. Unlike traditional services, the delivery of these products does not require direct contact between the supplier and the consumer.
3. The value of these products to the consumer lies in their informational, educational, cultural, or entertainment content, not in the format in which they are distributed. Most of these products are protected from unlawful reproduction by copyright laws.
4. The intangible property aspect of information and cultural products makes the processes involved in their production and distribution very different from goods and services. Only those possessing the rights to these works are authorized to reproduce, alter, improve, and distribute them. Acquiring and using these rights often involves significant costs. In addition, technology is revolutionizing the distribution of these products. It is possible to distribute them in a physical

form, via broadcast, or on-line.

5. Distributors of information and cultural products can easily add value to the products they distribute. For instance, broadcasters add advertising not contained in the original product. This capacity means that unlike traditional distributors, they derive revenue not from sale of the distributed product to the final consumer, but from those who pay for the privilege of adding information to the original product. Similarly, a directory and mailing list publisher can acquire the rights to thousands of previously published newspaper and periodical articles and add new value by providing search and software and organizing the information in a way that facilitates research and retrieval. These products often command a much higher price than the original information.

The distribution modes for information commodities may either eliminate the necessity for traditional manufacture, or reverse the conventional order of manufacture-distribute. A newspaper distributed on-line, for example, can be printed locally or by the final consumer. Similarly, it is anticipated that packaged software, which today is mainly bought through the traditional retail channels, will soon be available mainly on-line. The NAICS Information sector is designed to make such economic changes transparent as they occur, or to facilitate designing surveys that will monitor the new phenomena and provide data to analyze the changes.

Many of the industries in the NAICS Information sector are engaged in producing products protected by copyright law, or in distributing them (other than distribution by traditional wholesale and retail methods). Examples are traditional publishing industries, software and directory and mailing list publishing industries, and film and sound industries. Broadcasting and telecommunications industries and information providers and processors are also included in the Information sector, because their technologies are so closely linked to other industries in the Information sector.

Sector 52--Finance and Insurance

The Finance and Insurance sector comprises establishments primarily engaged in financial transactions (transactions involving the creation, liquidation, or change in ownership of financial assets) and/or in facilitating financial transactions. Three principal types of activities are identified:

1. Raising funds by taking deposits and/or issuing securities and, in the process, incurring liabilities. Establishments engaged in this activity use raised funds to acquire financial assets by making loans and/or purchasing securities. Putting themselves at risk, they channel funds from lenders to borrowers and transform or repackage the funds with respect to maturity, scale, and risk. This activity is known as financial intermediation.
2. Pooling of risk by underwriting insurance and annuities. Establishments engaged in this activity collect fees, insurance premiums, or annuity considerations; build up reserves; invest those reserves; and make contractual payments. Fees are based on the expected incidence of the insured risk and the expected return on investment.
3. Providing specialized services facilitating or supporting financial intermediation, insurance, and employee benefit programs. In addition, monetary authorities charged with monetary control are included in this sector.

The subsectors, industry groups, and industries within the NAICS Finance and Insurance sector are defined on the basis of their unique production processes. As with all industries, the production processes are distinguished by their use of specialized human resources and specialized physical capital. In addition, the way in which these establishments acquire and allocate financial capital, their source of funds, and the use of those funds provides a third basis for distinguishing characteristics of the production process. For instance, the production process in raising funds through deposit-taking is different from the process of raising funds in bond or money markets. The process of making loans to individuals also requires different production processes than does the creation of investment pools or the underwriting of securities. Most of the Finance and Insurance subsectors contain one or more industry groups of: (1) intermediaries with similar patterns of raising and using funds; and, (2) establishments engaged in activities that facilitate, or are otherwise related to, that type of financial or insurance intermediation. Industries within this sector are defined in terms of activities for which a production process can be specified, and many of these activities are not exclusive to a particular type of financial institution. To deal with the varied activities taking place within existing financial institutions, the approach is to split these institutions into components performing specialized services. This requires defining the units engaged in providing those services and developing procedures that allow for their delineation. These units are the equivalents for finance and insurance of the establishments defined for other industries.

The output of many financial services, as well as the inputs and the processes by which they are combined, cannot be observed at a single location and can only be defined at a higher level of the organizational structure of the enterprise. Additionally, a number of independent activities that represent separate and distinct production processes may take place at a single location belonging to a multi-location financial firm. Activities are more likely to be homogeneous with respect to production characteristics than are locations, at least in financial services. The classification defines activities broadly enough that it can be used both by those classifying by location and by those employing a more top-down approach to the delineation of the establishment.

Establishments engaged in activities that facilitate, or are otherwise related to, the various types of intermediation have been included in individual subsectors, rather than in a separate subsector dedicated to services alone because these services are performed by intermediaries, as well as by specialist establishments, the extent to which the activity of the intermediaries can be separately identified is not clear.

The Finance and Insurance sector has been defined to encompass establishments primarily engaged in financial transactions; that is, transactions involving the creation, liquidation, change in ownership of financial assets; or in facilitating financial transactions. Financial industries are extensive users of electronic means for facilitating the verification of financial balances, authorizing transactions, transferring funds to and from trans-actors' accounts, notifying banks (or credit card issuers) of the individual transactions, and providing daily summaries. Since these transaction processing activities are integral to the production of finance and insurance services, establishments that principally provide a financial transaction processing service are classified to this sector, rather than to the data processing industry in the Information sector.

Legal entities that hold portfolios of assets on behalf of others are significant and data on them are required for a variety of purposes. Thus for NAICS, these funds, trusts, and other financial vehicles are the fifth subsector of the Finance and Insurance sector. These entities earn interest, dividends, and other property income, but have little or no employment and no revenue

from the sale of services. Separate establishments and employees devoted to the management of funds are classified in Industry Group 5239, Other Financial Investment Activities.

Sector 53--Real Estate and Rental and Leasing

The Real Estate and Rental and Leasing sector comprises establishments primarily engaged in renting, leasing, or otherwise allowing the use of tangible or intangible assets, and establishments providing related services. The major portion of this sector comprises establishments that rent, lease, or otherwise allow the use of their own assets by others. The assets may be tangible, as is the case of real estate and equipment, or intangible, as is the case with patents and trademarks. This sector also includes establishments primarily engaged in managing real estate for others, selling, renting and/or buying real estate for others, and appraising real estate. These activities are closely related to this sector's main activity, and it was felt that from a production basis they would best be included here.

In addition, a substantial proportion of property management is self-performed by lessors. The main components of this sector are the real estate lessors industries (including equity real estate investment trusts (REITs)); equipment lessors industries (including motor vehicles, computers, and consumer goods); and lessors of nonfinancial intangible assets (except copyrighted works).

Excluded from this sector are establishments primarily engaged in renting or leasing equipment with operators. Establishments renting or leasing equipment with operators are classified in various subsectors of NAICS depending on the nature of the services provided (e.g., transportation, construction, agriculture). These activities are excluded from this sector because the client is paying for the expertise and knowledge of the equipment operator, in addition to the rental of the equipment. In many cases, such as the rental of heavy construction equipment, the operator is essential to operate the equipment.

Sector 54--Professional, Scientific, and Technical Services

The Professional, Scientific, and Technical Services sector comprises establishments that specialize in performing professional, scientific, and technical activities for others. These activities require a high degree of expertise and training. The establishments in this sector specialize according to expertise and provide these services to clients in a variety of industries and, in some cases, to households. Activities performed include: legal advice and representation; accounting, bookkeeping, and payroll services; architectural, engineering, and specialized design services; computer services; consulting services; research services; advertising services; photographic services; translation and interpretation services; veterinary services; and other professional, scientific, and technical services.

This sector excludes establishments primarily engaged in providing a range of day-to-day office administrative services, such as financial planning, billing and recordkeeping, personnel, and physical distribution and logistics. These establishments are classified in Sector 56, Administrative and Support and Waste Management and Remediation Services.

Sector 55--Management of Companies and Enterprises

The Management of Companies and Enterprises sector comprises: (1) establishments that hold the securities of (or other equity interests in) companies and enterprises for the purpose of

owning a controlling interest or influencing management decisions; or, (2) establishments (except government establishments) that administer, oversee, and manage establishments of the company or enterprise and that normally undertake the strategic or organizational planning and decision-making role of the company or enterprise.

Establishments that administer, oversee, and manage may hold the securities of the company or enterprise. Establishments in this sector perform essential activities that are often undertaken, in-house, by establishments in many sectors of the economy. By consolidating the performance of these activities of the enterprise at one establishment, economies of scale are achieved.

Government establishments primarily engaged in administering, over-seeing and managing governmental programs are classified in Sector 92, Public Administration. Establishments primarily engaged in providing a range of day-to-day office administrative services, such as financial planning, billing and recordkeeping, personnel, and physical distribution and logistics are classified in Industry 56111, Office Administrative Services.

Sector 56--Administrative and Support and Waste Management and Remediation Services

The Administrative and Support and Waste Management and Remediation Services sector comprises establishments performing routine support activities for the day-to-day operations of other organizations. These essential activities are often undertaken in-house by establishments in many sectors of the economy.

The establishments in this sector specialize in one or more of these support activities and provide these services to clients in a variety of industries and, in some cases, to households. Activities performed include: office administration, hiring and placing of personnel, document preparation and similar clerical services, solicitation, collection, security and surveillance services, cleaning, and waste disposal services.

The administrative and management activities performed by establishments in this sector are typically on a contract or fee basis. These activities may also be performed by establishments that are part of the company or enterprise. However, establishments involved in administering, overseeing, and managing other establishments of the company or enterprise, are classified in Sector 55, Management of Companies and Enterprises. Establishments in Sector 55 normally undertake the strategic and organizational planning and decision making role of the company or enterprise. Government establishments engaged in administering, over-seeing, and managing governmental programs are classified in Sector 92, Public Administration.

Sector 61--Educational Services

The Educational Services sector comprises establishments that provide instruction and training in a wide variety of subjects. This instruction and training is provided by specialized establishments, such as schools, colleges, universities, and training centers. These establishments may be privately owned and operated for profit or not for profit, or they may be publicly owned and operated. They may also offer food and/or accommodation services to their students.

Educational services are usually delivered by teachers or instructors that explain, tell, demonstrate, supervise, and direct learning. Instruction is imparted in diverse settings, such as educational institutions, the workplace, or the home, and through diverse means, such as correspondence, television, the Internet, or other electronic and distance-learning methods. The training provided by these establishments may include the use of simulators and simulation methods. It can be adapted to the particular needs of the students, for example sign language can replace verbal language for teaching students with hearing impairments. All industries in the sector share this commonality of process, namely, labor inputs of instructors with the requisite subject matter expertise and teaching ability.

Sector 62--Health Care and Social Assistance

The Health Care and Social Assistance sector comprises establishments providing health care and social assistance for individuals. The sector includes both health care and social assistance because it is sometimes difficult to distinguish between the boundaries of these two activities. The industries in this sector are arranged on a continuum starting with those establishments providing medical care exclusively, continuing with those providing health care and social assistance, and finally finishing with those providing only social assistance. The services provided by establishments in this sector are delivered by trained professionals. All industries in the sector share this commonality of process, namely, labor inputs of health practitioners or social workers with the requisite expertise. Many of the industries in the sector are defined based on the educational degree held by the practitioners included in the industry. Excluded from this sector are aerobic classes in Subsector 713, Amusement, Gambling and Recreation Industries and nonmedical diet and weight reducing centers in Subsector 812, Personal and Laundry Services. Although these can be viewed as health services, these services are not typically delivered by health practitioners.

Sector 71--Arts, Entertainment, and Recreation

The Arts, Entertainment, and Recreation sector includes a wide range of establishments that operate facilities or provide services to meet varied cultural, entertainment, and recreational interests of their patrons. This sector comprises: (1) establishments that are involved in producing, promoting, or participating in live performances, events, or exhibits intended for public viewing; (2) establishments that preserve and exhibit objects and sites of historical, cultural, or educational interest; and, (3) establishments that operate facilities or provide services that enable patrons to participate in recreational activities or pursue amusement, hobby, and leisure-time interests.

Some establishments that provide cultural, entertainment, or recreational facilities and services are classified in other sectors. Excluded from this sector are: (1) establishments that provide both accommodations and recreational facilities, such as hunting and fishing camps and resort and casino hotels are classified in Subsector 721, Accommodation; (2) restaurants and night clubs that provide live entertainment in addition to the sale of food and beverages are classified in Subsector 722, Food Services and Drinking Places; (3) motion picture theaters, libraries and archives, and publishers of newspapers, magazines, books, periodicals, and computer software are classified in Sector 51, Information; and, (4) establishments using transportation equipment to provide recreational and entertainment services, such as those operating sightseeing buses, dinner cruises, or helicopter rides, are classified in Subsector 487, Scenic and Sightseeing Transportation.

Sector 72--Accommodation and Food Services

The Accommodation and Food Services sector comprises establishments providing customers with lodging and/or preparing meals, snacks, and beverages for immediate consumption. The sector includes both accommodation and food services establishments because the two activities are often combined at the same establishment.

Excluded from this sector are civic and social organizations; amusement and recreation parks; theaters; and other recreation or entertainment facilities providing food and beverage services.

Sector 81--Other Services (except Public Administration)

The Other Services (except Public Administration) sector comprises establishments engaged in providing services not specifically provided for elsewhere in the classification system. Establishments in this sector are primarily engaged in activities, such as equipment and machinery repairing, promoting or administering religious activities, grant making, advocacy, and providing dry-cleaning and laundry services, personal care services, death care services, pet care services, photofinishing services, temporary parking services, and dating services.

Private households that engage in employing workers on or about the premises in activities primarily concerned with the operation of the household are included in this sector. Excluded from this sector are establishments primarily engaged in retailing new equipment and also performing repairs and general maintenance on equipment. These establishments are classified in Sector 44-45, Retail Trade.

Sector 92--Public Administration

The Public Administration sector consists of establishments of federal, state, and local government agencies that administer, oversee, and manage public programs and have executive, legislative, or judicial authority over other institutions within a given area. These agencies also set policy, create laws, adjudicate civil and criminal legal cases, provide for public safety and for national defense. In general, government establishments in the Public Administration sector oversee governmental programs and activities that are not performed by private establishments. Establishments in this sector typically are engaged in the organization and financing of the production of public goods and services, most of which are provided for free or at prices that are not economically significant.

Government establishments also engage in a wide range of productive activities covering not only public goods and services but also individual goods and services similar to those produced in sectors typically identified with private-sector establishments. In general, ownership is not a criterion for classification in NAICS. Therefore, government establishments engaged in the production of private-sector-like goods and services should be classified in the same industry as private-sector establishments engaged in similar activities.

As a practical matter, it is difficult to identify separate establishment detail for many government agencies. To the extent that separate establishment records are available, the administration of governmental programs is classified in Sector 92, Public Administration, while the operation of that same governmental program is classified elsewhere in NAICS based on the activities performed. For example, the governmental administrative authority for an airport is classified in Industry 92612, Regulation and Administration of Transportation Programs, while operating the

airport is classified in Industry 48811, Airport Operations. When separate records for multi-establishment companies are not available to distinguish between the administration of a governmental program and the operation of it, the establishment is classified in Sector 92, Public Administration.

Examples of government-provided goods and services that are classified in sectors other than Public Administration include: schools, classified in Sector 61, Educational Services; hospitals, classified in Subsector 622, Hospitals; establishments operating transportation facilities, classified in Sector 48-49, Transportation and Warehousing; the operation of utilities, classified in Sector 22, Utilities; and the Government Printing Office, classified in Subsector 323, Printing and Related Support Activities.

APPENDIX B: EMPLOYMENT BY SECTOR DOCUMENTATION (FROM WOODS AND POOLE 2008 TECHNICAL DESCRIPTION)

The employment data is by two-digit North American Industry Classification System (NAICS) industry. The two-digit industries are defined in the 1997 North American Industry Classification System Manual. The employment data in the Woods & Poole 2008 database is no longer based on the Standard Industrial Classification (SIC) system definitions. For the years 1969 to 2000 BEA provided employment industry data by SIC rather than by NAICS; Woods & Poole has estimated the NAICS industry data for 1969 to 2000 from the BEA SIC, 1969 to 2000 employment industry data and the NAICS employment industry data for the years 2001 to 2006. As a rule, employment is classified in a given industry depending on the primary activity of the establishment. For example, employees of a large oil company are classified in many different sectors depending on the specific establishment in which they worked, even though the company as a whole would be considered a mining company: employees at a refinery are in Manufacturing; employees at the company headquarters are in Management; pipeline operators are in Transportation; and oil field workers are in Mining.

If a given establishment is engaged in activities in different sectors, all employees are classified according to the primary activity of the establishment regardless of their actual occupations; thus, a secretary for a trucking company is a transportation worker and an accountant at a small plumbing company is a construction worker. The main exception to this rule is the classification of government workers in the Woods & Poole database: all government employees are classified in Federal civilian, Federal military, or state and local government employment, regardless of the usual classification of the establishment in which they work. Definitions for each sector, based on NAICS industries, in the Woods & Poole database are as follows:

Farming includes establishments such as farms, orchards, greenhouses, and nurseries primarily engaged in the production of crops, plants, vines, trees (excluding forestry operations), and specialties such as Christmas trees, sod, bulbs, and flower seed. It also includes establishments such as ranches, dairies, feedlots, egg production facilities, and poultry hatcheries primarily engaged in the keeping, grazing, or feeding of cattle, hogs, sheep, goats, poultry of all kinds, and special animals such as horses, bees, pets, fish farming, and animals raised for fur.

Forestry, fishing, related activities, and other includes establishments primarily engaged in harvesting timber, and harvesting fish and other animals from their natural habitats. The sector also includes agricultural support establishments that perform one or more activities associated with farm operation, such as soil preparation, planting, harvesting, and management, on a contract or fee basis. Excluded are establishments primarily engaged in agricultural research and establishments primarily engaged in administering programs for regulating and conserving land, mineral, wildlife, and forest use. Other consists of jobs held by U.S. residents who are employed by international organizations and by foreign embassies and consulates in the United States.

Mining includes establishments that extract naturally occurring mineral solids (e.g., coal and ores), liquid minerals (e.g., crude petroleum), and gases (e.g., natural gas.) Mining includes quarrying, well operations, beneficiating (e.g., crushing, screening, washing, and flotation), and other preparation customarily performed at the mine site, or as a part of mining activity.

Utilities include establishments engaged in the provision of electric power, natural gas, steam supply, water supply, and sewage removal. Utilities include electric power generation, electric power transmission, electric power distribution, natural gas distribution, steam supply provision, steam supply distribution, water treatment, water distribution, sewage collection, sewage treatment, and disposal of waste through sewer systems and sewage treatment facilities. Excluded from this sector are establishments primarily engaged in waste management services that collect, treat, and dispose of waste materials but do not use sewer systems or sewage treatment facilities. Also excluded from this sector are federal or state or local government operated establishments.

Construction includes establishments primarily engaged in building new structures and roads, alterations, additions, reconstruction, installations, and repairs. It includes general contractors engaged in building residential and nonresidential structures; contractors engaged in heavy construction, such as bridges, roads, tunnels, and pipelines; and special trade contracting, such as plumbing, electrical work, masonry, and carpentry. Construction includes establishments primarily engaged in the preparation of sites for new construction, including demolition, and establishments primarily engaged in subdividing land for sale as building sites. Construction work done may include new work, additions, alterations, or maintenance and repairs.

Manufacturing includes establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products. The assembling of component parts of manufactured products is considered manufacturing, except in cases where the component parts are associated with structures. Manufacturing establishments can be plants, factories, or mills as well as bakeries, candy stores, and custom tailors. Manufacturing establishments may either process materials or may contract with other establishments to process their materials for them. Broadly defined, manufacturing industries include the following: food processing, such as canning, baking, meat processing, and beverages; tobacco products; textile mill products, such as fabric, carpets and rugs; apparel; wood products, including logging, sawmills, prefabricated homes, and mobile homes; furniture; paper; printing; chemicals, such as plastics, paints, and drugs; petroleum refining; rubber and plastics; leather products; stone, clay, and glass; primary metals, such as steel, copper, aluminum, and including finished products such as wire, beams, and pipe; fabricated metals, such as cans, sheet metal, cutlery, and ordnance; industrial machinery, including computers, office equipment, and engines; electronics and electrical equipment; transportation equipment, such as cars, trucks, ships, and airplanes; instruments; and miscellaneous industries, such as jewelry, musical instruments, and toys. Excluded from manufacturing is publishing of printed materials.

Wholesale Trade includes establishments engaged in wholesaling merchandise, generally without transformation, and rendering services incidental to the sale of merchandise. The merchandise described in this sector includes the outputs of agriculture, mining, manufacturing, and certain information industries, such as publishing. Wholesale establishments are primarily engaged in selling merchandise to retailers; or to industrial, commercial, institutional, farm, and construction contractors; or to professional business users; or to other wholesalers or brokers. The merchandise sold by wholesalers includes all goods used by institutions, such as schools and hospitals, as well as virtually all goods sold at the retail level. Wholesalers can be merchant wholesalers who purchase goods from manufacturers or other wholesalers and sell them; sales branches of manufacturing, mining, or farm companies engaged in marketing the products of the company to retail establishments; or agents, merchandise or commodity brokers, and commission merchants.

Retail trade includes establishments engaged in retailing merchandise, generally without transformation, and rendering services incidental to the sale of merchandise. Retail trade includes store retailers such as motor vehicle and parts dealers including automobile, motorcycle and boat dealers as well as tire and automobile parts stores; furniture and home furnishing stores; electronics and appliance stores; food and beverage stores, including supermarkets, convenience stores, butchers, and bakeries; health and personal care stores such as pharmacies and optical goods stores; gasoline stations; clothing and clothing accessory stores; sporting goods, hobby, book and music stores; department stores; and miscellaneous establishments, including office supply stores, mobile home dealers, thrift shops, florists, tobacco stores, and pet shops. Retail trade also includes non-store retailers such as Internet and catalog sellers, as well as home delivery establishments such as heating oil dealers. Retail trade excludes eating and drinking places, including restaurants, bars, and take-out stands.

Transportation and warehousing includes industries providing transportation of passengers and cargo and warehousing and storage for goods. Establishments in these industries use transportation equipment or transportation related facilities as a productive asset. Transportation includes railroads, highway passenger transportation, trucking, shipping, air transportation, pipelines, and transportation services. Transportation also includes private postal services, and courier services but excludes the U.S. Postal Service. Warehousing includes refrigerated storage and grain elevators.

Information includes establishments engaged in producing and distributing information and cultural products; providing the means to transmit or distribute these products as well as data or communications; and processing data. The main components of this sector are the publishing industries, including software publishing, and both traditional publishing and publishing exclusively on the Internet; the motion picture and sound recording industries; movie theaters; the broadcasting industries, including traditional broadcasting and those broadcasting exclusively over the Internet; the telecommunications industries; the industries known as Internet service providers and Web search portals; data processing industries; and the information services industries.

Finance and Insurance includes establishments primarily either engaged in or facilitating financial transactions (e.g., transactions involving the creation, liquidation, or change in ownership of financial assets.) Establishments include depository institutions, such as commercial banks, credit unions savings and loans, and foreign banks; credit institutions; credit card processing; investment companies; brokers and dealers in securities and commodity contracts; security and commodity exchanges; carriers of all types of insurance; insurance agents and insurance brokers. Also included are central banks and monetary authorities charged with monetary control.

Real Estate and Rental and Leasing includes establishments primarily engaged in renting, leasing, or otherwise allowing the use of tangible or intangible assets, and establishments providing related services. Real estate includes real estate leasing establishments, real estate agencies and brokerages, property management establishments, appraisals establishments, and escrow agencies. Rental and leasing includes car and truck rental, consumer goods rentals such as video stores and formal wear rental stores, and commercial equipment renting and leasing construction, transportation, office and farm equipment. Also included are establishments that lease nonfinancial and non-copyrighted intangible assets such as patents and trademarks.

Professional and Technical Services include establishments that specialize in performing professional, scientific, and technical activities for others. These activities include legal advice and representation; accounting, bookkeeping, and payroll services; architectural, engineering, and specialized design services; computer services; consulting services; research services; advertising services; photographic services; translation and interpretation services; veterinary services; and other professional, scientific, and technical services. Excluded are establishments primarily engaged in providing office administrative services, such as financial planning, billing and recordkeeping, personnel, and physical distribution and logistics.

Management of Companies and Enterprises includes bank holding establishments, other holding establishments, corporate management establishments as well as regional and subsidiary management establishments. Company or enterprise headquarters are included.

Administrative and Waste Management includes establishments engaged in office administration, hiring and placing of personnel, document preparation and similar clerical services, solicitation, collection, security and surveillance services, cleaning, and waste disposal services. Among many other establishments administrative includes call centers, telemarketers, janitorial services, armored cars, temporary employment agencies, locksmiths, landscaping, and travel agencies. Waste management includes, among other establishments, solid waste collections and disposal, landfill operations and septic tank maintenance. Excluded from administrative and waste management are establishments involved in administering, overseeing, and managing other establishments of the company or enterprise. Also excluded are government establishments engaged in administering, overseeing, and managing governmental programs.

Educational Services include private elementary schools, junior colleges, colleges, universities, and professional schools. Also included are trade and vocational schools, business and secretarial schools, computer training services, language schools, fine arts training, sports training establishments, driving schools, flight schools and establishments that provide test preparation and tutoring. Educational services may be provided imparted in educational institutions, the workplace, or the home through correspondence, television, or other means. Public schools, including colleges and universities, are excluded from educational services.

Health Care and Social Assistance includes establishments providing health care and social assistance for individuals. Health care establishments include ambulatory care services (e.g., physician offices, dentists, specialists, HMOs, dialysis centers, blood banks, and ambulance services), hospitals, and nursing and residential care facilities. Social assistance establishments include individual and family services (e.g., adoption agencies and youth centers) and community services such as food banks and homeless shelters. Excluded from this sector are aerobic classes and nonmedical diet and weight reducing centers. Also excluded are public hospitals and clinics.

Arts, Entertainment, and Recreation includes establishments that are involved in producing, promoting, or participating in live performances, events, or exhibits intended for public viewing; establishments that preserve and exhibit objects and sites of historical, cultural, or educational interest; and establishments that operate facilities or provide services that enable patrons to participate in recreational activities or pursue amusement, hobby, and leisure time interests. The sector includes establishments engaged in the performing arts, sporting events, museums, zoos, amusement and theme parks, golf courses, marinas, casinos, and gambling establishments. Excluded are movie theaters.

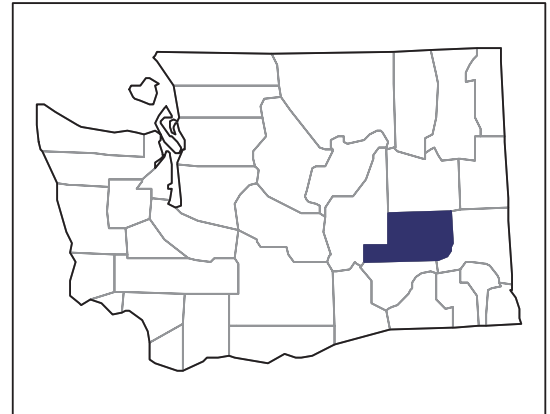
Accommodation and Food Services include hotels, motels, casino hotels, bed and breakfasts, campgrounds and recreational vehicle parks and other lodging places as well as eating and drinking places, including restaurants, bars, and take-out stands. Also included are caterers and food service contractors.

Other Services, except Public Administration includes churches and establishments engaged in equipment and machinery repairing, promoting or administering religious activities, grant-making, advocacy, and establishments providing dry cleaning and laundry services, personal care services, death care services, pet care services, photofinishing services, temporary parking services, and dating services. Private households that engage in employing workers on or about the premises in activities primarily concerned with the operation of the household are included in this sector.

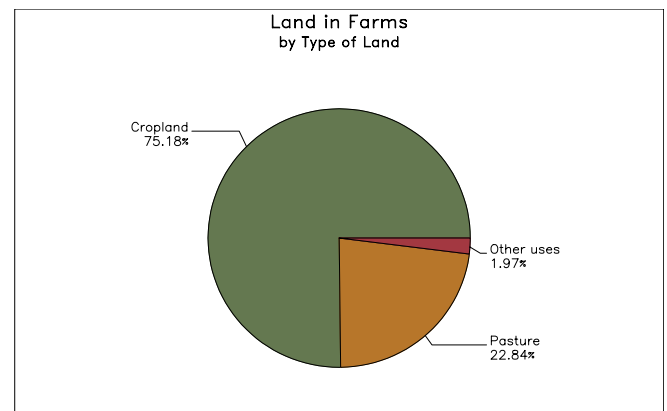
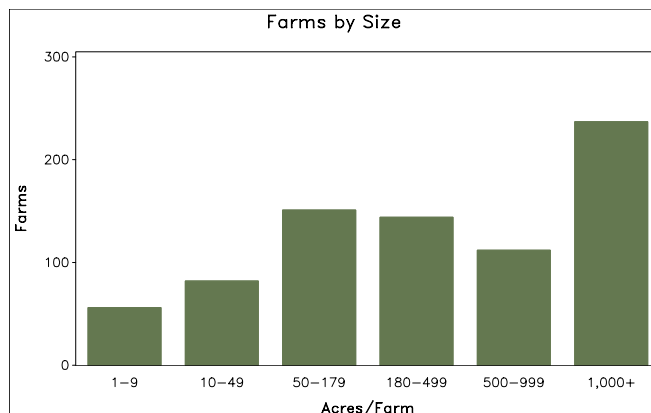
2007 CENSUS OF AGRICULTURE

County Profile

Adams County Washington



	2007	2002	% change
Number of Farms	782	717	+ 9
Land in Farms	1,098,487 acres	1,067,079 acres	+ 3
Average Size of Farm	1,405 acres	1,488 acres	- 6
Market Value of Products Sold	\$344,130,000	\$202,854,000	+ 70
Crop Sales \$246,608,000 (72 percent)			
Livestock Sales \$97,522,000 (28 percent)			
Average Per Farm	\$440,064	\$282,920	+ 56
Government Payments	\$14,454,000	\$12,992,000	+ 11
Average Per Farm Receiving Payments	\$26,521	\$27,408	- 3



United States Department of Agriculture
National Agricultural Statistics Service

www.agcensus.usda.gov

2007 CENSUS OF AGRICULTURE

County Profile

Adams County – Washington

Ranked items among the 39 state counties and 3,079 U.S. counties, 2007

Item	Quantity	State Rank	Universe ¹	U.S. Rank	Universe ¹
MARKET VALUE OF AGRICULTURAL PRODUCTS SOLD (\$1,000)					
Total value of agricultural products sold	344,130	6	39	121	3,076
Value of crops including nursery and greenhouse	246,608	6	39	60	3,072
Value of livestock, poultry, and their products	97,522	4	39	401	3,069
VALUE OF SALES BY COMMODITY GROUP (\$1,000)					
Grains, oilseeds, dry beans, and dry peas	87,390	4	36	287	2,933
Tobacco	-	-	-	-	437
Cotton and cottonseed	-	-	-	-	626
Vegetables, melons, potatoes, and sweet potatoes	91,259	4	37	29	2,796
Fruits, tree nuts, and berries	40,955	10	39	73	2,659
Nursery, greenhouse, floriculture, and sod	(D)	(D)	38	(D)	2,703
Cut Christmas trees and short rotation woody crops	(D)	31	33	(D)	1,710
Other crops and hay	(D)	6	39	(D)	3,054
Poultry and eggs	(D)	2	39	(D)	3,020
Cattle and calves	32,270	6	39	385	3,054
Milk and other dairy products from cows	(D)	8	34	(D)	2,493
Hogs and pigs	132	9	37	1,305	2,922
Sheep, goats, and their products	108	21	39	1,048	2,998
Horses, ponies, mules, burros, and donkeys	54	34	39	2,142	3,024
Aquaculture	-	-	34	-	1,498
Other animals and other animal products	(Z)	39	39	2,807	2,875
TOP CROP ITEMS (acres)					
Wheat for grain, all	262,101	3	30	17	2,481
Vegetables harvested for sale	34,348	4	37	22	2,794
Potatoes	29,462	3	37	9	2,124
Forage - land used for all hay and haylage, grass silage, and greenchop	28,132	10	39	735	3,060
Corn for grain	8,603	5	16	1,232	2,634
TOP LIVESTOCK INVENTORY ITEMS (number)					
Layers	(D)	2	39	(D)	3,024
Pullets for laying flock replacement	(D)	1	37	(D)	2,627
Cattle and calves	43,537	6	39	711	3,060
Sheep and lambs	1,133	17	39	823	2,891
Ducks	(D)	5	36	(D)	2,733

Other County Highlights

Economic Characteristics	Quantity	Operator Characteristics	Quantity
Farms by value of sales:		Principal operators by primary occupation:	
Less than \$1,000	332	Farming	452
\$1,000 to \$2,499	24	Other	330
\$2,500 to \$4,999	33		
\$5,000 to \$9,999	31	Principal operators by sex:	
\$10,000 to \$19,999	19	Male	683
\$20,000 to \$24,999	11	Female	99
\$25,000 to \$39,999	17		
\$40,000 to \$49,999	13	Average age of principal operator (years)	58.5
\$50,000 to \$99,999	45		
\$100,000 to \$249,999	66	All operators by race ² :	
\$250,000 to \$499,999	77	American Indian or Alaska Native	6
\$500,000 or more	114	Asian	7
Total farm production expenses (\$1,000)	262,417	Black or African American	-
Average per farm (\$)	335,572	Native Hawaiian or Other Pacific Islander	3
		White	1,177
Net cash farm income of operation (\$1,000)	107,930	More than one race	10
Average per farm (\$)	138,018	All operators of Spanish, Hispanic, or Latino Origin ²	34

See "Census of Agriculture, Volume 1, Geographic Area Series" for complete footnotes, explanations, definitions, and methodology.

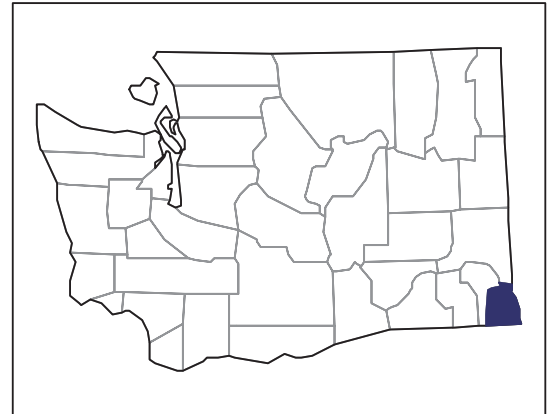
(D) Cannot be disclosed. (Z) Less than half of the unit shown.

¹ Universe is number of counties in state or U.S. with item. ² Data were collected for a maximum of three operators per farm.

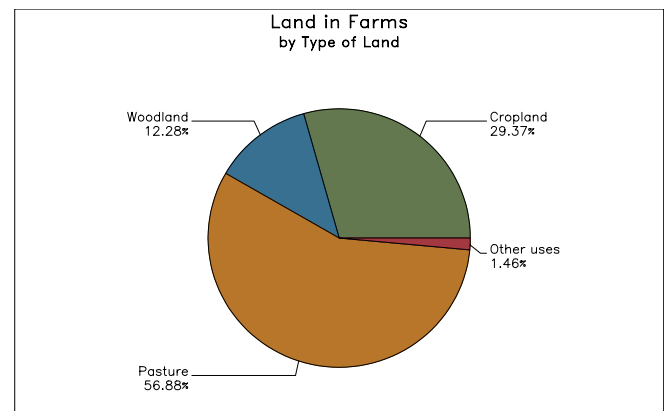
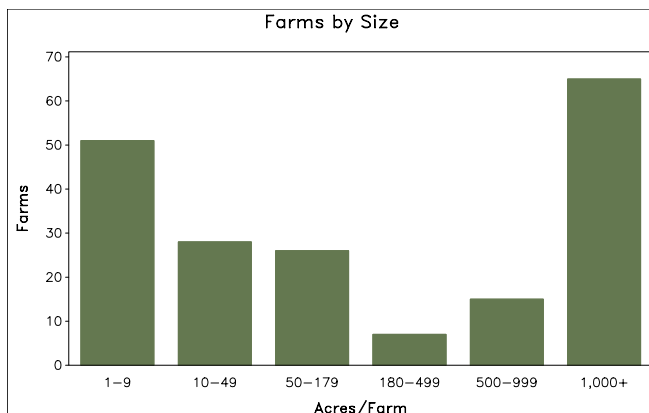
2007 CENSUS OF AGRICULTURE

County Profile

Asotin County Washington



	2007	2002	% change
Number of Farms	192	180	+ 7
Land in Farms	273,860 acres	280,393 acres	- 2
Average Size of Farm	1,426 acres	1,558 acres	- 8
Market Value of Products Sold	\$13,376,000	\$9,086,000	+ 47
Crop Sales (D)			
Livestock Sales (D)			
Average Per Farm	\$69,668	\$50,479	+ 38
Government Payments	\$2,339,000	\$2,373,000	- 1
Average Per Farm Receiving Payments	\$28,179	\$24,982	+ 13



United States Department of Agriculture
National Agricultural Statistics Service

www.agcensus.usda.gov

2007 CENSUS OF AGRICULTURE

County Profile

Asotin County – Washington

Ranked items among the 39 state counties and 3,079 U.S. counties, 2007

Item	Quantity	State Rank	Universe ¹	U.S. Rank	Universe ¹
MARKET VALUE OF AGRICULTURAL PRODUCTS SOLD (\$1,000)					
Total value of agricultural products sold	13,376	31	39	2,477	3,076
Value of crops including nursery and greenhouse	(D)	28	39	(D)	3,072
Value of livestock, poultry, and their products	(D)	30	39	(D)	3,069
VALUE OF SALES BY COMMODITY GROUP (\$1,000)					
Grains, oilseeds, dry beans, and dry peas	6,202	14	36	1,408	2,933
Tobacco	-	-	-	-	437
Cotton and cottonseed	-	-	-	-	626
Vegetables, melons, potatoes, and sweet potatoes	(D)	33	37	(D)	2,796
Fruits, tree nuts, and berries	(D)	(D)	39	(D)	2,659
Nursery, greenhouse, floriculture, and sod	(D)	(D)	38	(D)	2,703
Cut Christmas trees and short rotation woody crops	-	-	33	-	1,710
Other crops and hay	(D)	(D)	39	(D)	3,054
Poultry and eggs	23	30	39	2,083	3,020
Cattle and calves	(D)	(D)	39	(D)	3,054
Milk and other dairy products from cows	-	-	34	-	2,493
Hogs and pigs	8	34	37	2,335	2,922
Sheep, goats, and their products	24	33	39	2,172	2,998
Horses, ponies, mules, burros, and donkeys	126	28	39	1,512	3,024
Aquaculture	-	-	34	-	1,498
Other animals and other animal products	(D)	(D)	39	(D)	2,875
TOP CROP ITEMS (acres)					
Wheat for grain, all	25,642	13	30	429	2,481
Forage - land used for all hay and haylage, grass silage, and greenchop	3,702	31	39	2,501	3,060
Barley for grain	2,096	11	31	194	1,154
Dry edible beans, excluding limas	(D)	6	19	(D)	425
Field and grass seed crops, all	402	14	25	197	931
TOP LIVESTOCK INVENTORY ITEMS (number)					
Cattle and calves	8,615	25	39	2,116	3,060
Colonies of bees	1,443	14	38	369	2,640
Horses and ponies	732	31	39	1,782	3,066
Layers	511	36	39	2,147	3,024
Pigeons or squab	(D)	4	28	(D)	1,501

Other County Highlights

Economic Characteristics	Quantity	Operator Characteristics	Quantity
Farms by value of sales:		Principal operators by primary occupation:	
Less than \$1,000	83	Farming	102
\$1,000 to \$2,499	13	Other	90
\$2,500 to \$4,999	14		
\$5,000 to \$9,999	10	Principal operators by sex:	
\$10,000 to \$19,999	12	Male	157
\$20,000 to \$24,999	3	Female	35
\$25,000 to \$39,999	8		
\$40,000 to \$49,999	5	Average age of principal operator (years)	55.6
\$50,000 to \$99,999	9		
\$100,000 to \$249,999	19	All operators by race ² :	
\$250,000 to \$499,999	11	American Indian or Alaska Native	4
\$500,000 or more	5	Asian	-
Total farm production expenses (\$1,000)	14,476	Black or African American	-
Average per farm (\$)	75,395	Native Hawaiian or Other Pacific Islander	-
		White	311
Net cash farm income of operation (\$1,000)	2,998	More than one race	-
Average per farm (\$)	15,616	All operators of Spanish, Hispanic, or Latino Origin ²	2

See "Census of Agriculture, Volume 1, Geographic Area Series" for complete footnotes, explanations, definitions, and methodology.

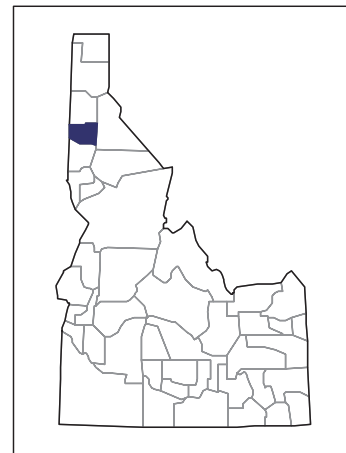
(D) Cannot be disclosed. (Z) Less than half of the unit shown.

¹ Universe is number of counties in state or U.S. with item. ² Data were collected for a maximum of three operators per farm.

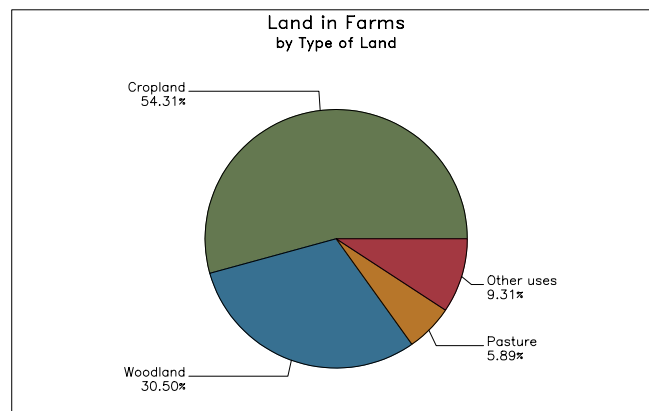
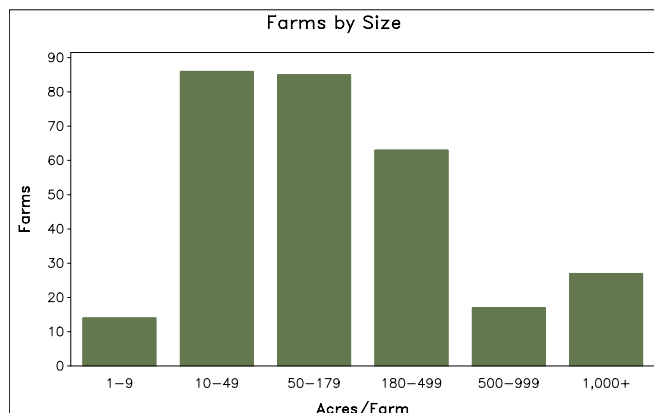
2007 CENSUS OF AGRICULTURE

County Profile

Benewah County Idaho



	2007	2002	% change
Number of Farms	292	241	+ 21
Land in Farms	153,591 acres	137,791 acres	+ 11
Average Size of Farm	526 acres	572 acres	- 8
Market Value of Products Sold	\$20,447,000	\$14,413,000	+ 42
Crop Sales \$19,618,000 (96 percent)			
Livestock Sales \$828,000 (4 percent)			
Average Per Farm	\$70,023	\$59,804	+ 17
Government Payments	\$1,415,000	\$860,000	+ 65
Average Per Farm Receiving Payments	\$11,694	\$9,996	+ 17



United States Department of Agriculture
National Agricultural Statistics Service

www.agcensus.usda.gov

2007 CENSUS OF AGRICULTURE

County Profile

Benewah County – Idaho

Ranked items among the 44 state counties and 3,079 U.S. counties, 2007

Item	Quantity	State Rank	Universe ¹	U.S. Rank	Universe ¹
MARKET VALUE OF AGRICULTURAL PRODUCTS SOLD (\$1,000)					
Total value of agricultural products sold	20,447	34	44	2,238	3,076
Value of crops including nursery and greenhouse	19,618	27	44	1,469	3,072
Value of livestock, poultry, and their products	828	43	44	2,917	3,069
VALUE OF SALES BY COMMODITY GROUP (\$1,000)					
Grains, oilseeds, dry beans, and dry peas	15,717	17	42	1,071	2,933
Tobacco	-	-	-	-	437
Cotton and cottonseed	-	-	-	-	626
Vegetables, melons, potatoes, and sweet potatoes	-	-	41	-	2,796
Fruits, tree nuts, and berries	(D)	15	36	(D)	2,659
Nursery, greenhouse, floriculture, and sod	727	25	41	1,230	2,703
Cut Christmas trees and short rotation woody crops	(D)	10	25	(D)	1,710
Other crops and hay	3,126	33	44	538	3,054
Poultry and eggs	(D)	29	44	(D)	3,020
Cattle and calves	743	42	44	2,701	3,054
Milk and other dairy products from cows	-	-	33	-	2,493
Hogs and pigs	2	38	42	2,672	2,922
Sheep, goats, and their products	14	38	44	2,470	2,998
Horses, ponies, mules, burros, and donkeys	29	41	44	2,504	3,024
Aquaculture	(D)	22	24	(D)	1,498
Other animals and other animal products	32	32	39	1,564	2,875
TOP CROP ITEMS (acres)					
Wheat for grain, all	35,996	12	41	354	2,481
Field and grass seed crops, all	11,736	3	25	17	931
Forage - land used for all hay and haylage, grass silage, and greenchop	6,969	41	44	2,038	3,060
Lentils	4,752	3	7	12	48
Barley for grain	4,414	21	40	136	1,154
TOP LIVESTOCK INVENTORY ITEMS (number)					
Cattle and calves	2,249	43	44	2,755	3,060
Horses and ponies	419	38	44	2,427	3,066
Layers	323	25	44	2,440	3,024
Goats, all	224	24	43	2,167	3,023
Bison	(D)	5	22	(D)	1,543

Other County Highlights

Economic Characteristics	Quantity	Operator Characteristics	Quantity
Farms by value of sales:		Principal operators by primary occupation:	
Less than \$1,000	154	Farming	115
\$1,000 to \$2,499	29	Other	177
\$2,500 to \$4,999	31		
\$5,000 to \$9,999	18	Principal operators by sex:	
\$10,000 to \$19,999	9	Male	232
\$20,000 to \$24,999	7	Female	60
\$25,000 to \$39,999	10		
\$40,000 to \$49,999	2	Average age of principal operator (years)	60.7
\$50,000 to \$99,999	6		
\$100,000 to \$249,999	3	All operators by race ² :	
\$250,000 to \$499,999	4	American Indian or Alaska Native	17
\$500,000 or more	19	Asian	-
Total farm production expenses (\$1,000)	16,096	Black or African American	1
Average per farm (\$)	55,124	Native Hawaiian or Other Pacific Islander	-
		White	412
Net cash farm income of operation (\$1,000)	7,521	More than one race	5
Average per farm (\$)	25,757	All operators of Spanish, Hispanic, or Latino Origin ²	3

See "Census of Agriculture, Volume 1, Geographic Area Series" for complete footnotes, explanations, definitions, and methodology.

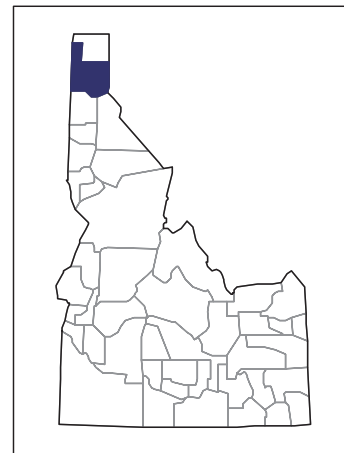
(D) Cannot be disclosed. (Z) Less than half of the unit shown.

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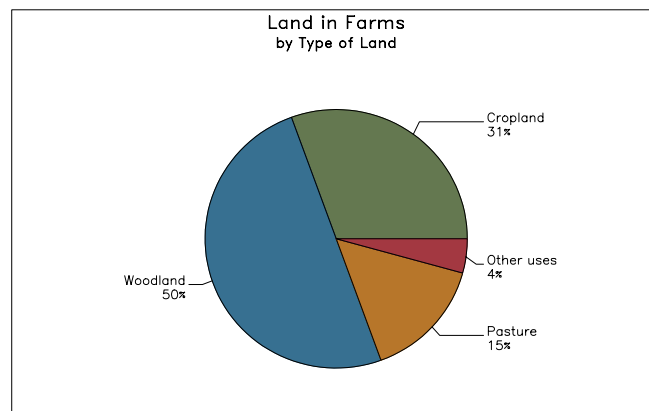
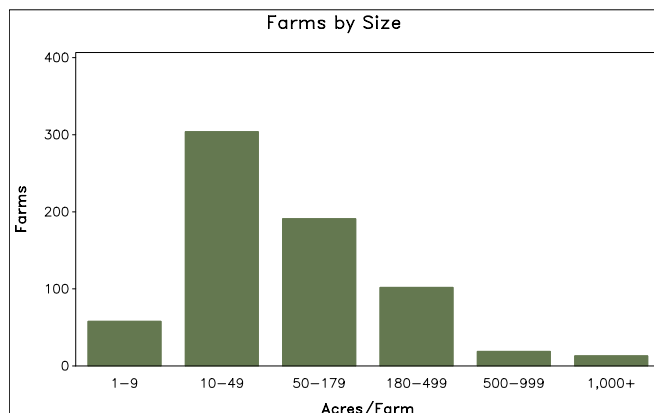
2007 CENSUS OF AGRICULTURE

County Profile

Bonner County Idaho



	2007	2002	% change
Number of Farms	687	743	- 8
Land in Farms	94,380 acres	90,858 acres	+ 4
Average Size of Farm	137 acres	122 acres	+ 12
Market Value of Products Sold	\$10,689,000	\$7,150,000	+ 49
Crop Sales \$6,672,000 (62 percent)			
Livestock Sales \$4,017,000 (38 percent)			
Average Per Farm	\$15,559	\$9,623	+ 62
Government Payments	\$70,000	\$117,000	- 40
Average Per Farm Receiving Payments	\$2,699	\$5,335	- 49



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2007 CENSUS OF AGRICULTURE

County Profile

Bonner County – Idaho

Ranked items among the 44 state counties and 3,079 U.S. counties, 2007

Item	Quantity	State Rank	Universe ¹	U.S. Rank	Universe ¹
MARKET VALUE OF AGRICULTURAL PRODUCTS SOLD (\$1,000)					
Total value of agricultural products sold	10,689	38	44	2,579	3,076
Value of crops including nursery and greenhouse	6,672	36	44	2,095	3,072
Value of livestock, poultry, and their products	4,017	36	44	2,539	3,069
VALUE OF SALES BY COMMODITY GROUP (\$1,000)					
Grains, oilseeds, dry beans, and dry peas	5	42	42	2,809	2,933
Tobacco	-	-	-	-	437
Cotton and cottonseed	-	-	-	-	626
Vegetables, melons, potatoes, and sweet potatoes	24	34	41	2,354	2,796
Fruits, tree nuts, and berries	270	7	36	953	2,659
Nursery, greenhouse, floriculture, and sod	3,395	6	41	610	2,703
Cut Christmas trees and short rotation woody crops	1,586	1	25	33	1,710
Other crops and hay	1,393	38	44	1,206	3,054
Poultry and eggs	(D)	(D)	44	(D)	3,020
Cattle and calves	(D)	37	44	(D)	3,054
Milk and other dairy products from cows	387	29	33	1,698	2,493
Hogs and pigs	25	17	42	1,865	2,922
Sheep, goats, and their products	84	27	44	1,241	2,998
Horses, ponies, mules, burros, and donkeys	150	24	44	1,363	3,024
Aquaculture	(D)	13	24	(D)	1,498
Other animals and other animal products	863	9	39	238	2,875
TOP CROP ITEMS (acres)					
Forage - land used for all hay and haylage, grass silage, and greenchop	19,003	27	44	1,093	3,060
Cut Christmas trees	430	1	29	146	1,756
Short-rotation woody crops	388	2	21	116	1,134
Nursery stock	228	7	40	389	2,130
Oats for grain	86	31	38	1,344	1,957
TOP LIVESTOCK INVENTORY ITEMS (number)					
Cattle and calves	4,650	40	44	2,495	3,060
Colonies of bees	(D)	17	35	(D)	2,640
Horses and ponies	1,802	18	44	672	3,066
Layers	1,609	5	44	1,231	3,024
Sheep and lambs	1,049	24	40	865	2,891

Other County Highlights

Economic Characteristics	Quantity	Operator Characteristics	Quantity
Farms by value of sales:		Principal operators by primary occupation:	
Less than \$1,000	302	Farming	327
\$1,000 to \$2,499	108	Other	360
\$2,500 to \$4,999	61		
\$5,000 to \$9,999	81	Principal operators by sex:	
\$10,000 to \$19,999	56	Male	519
\$20,000 to \$24,999	11	Female	168
\$25,000 to \$39,999	27		
\$40,000 to \$49,999	8	Average age of principal operator (years)	58.5
\$50,000 to \$99,999	16		
\$100,000 to \$249,999	7	All operators by race ² :	
\$250,000 to \$499,999	6	American Indian or Alaska Native	2
\$500,000 or more	4	Asian	3
Total farm production expenses (\$1,000)	14,102	Black or African American	-
Average per farm (\$)	20,526	Native Hawaiian or Other Pacific Islander	-
		White	1,109
Net cash farm income of operation (\$1,000)	-1,107	More than one race	3
Average per farm (\$)	-1,612	All operators of Spanish, Hispanic, or Latino Origin ²	11

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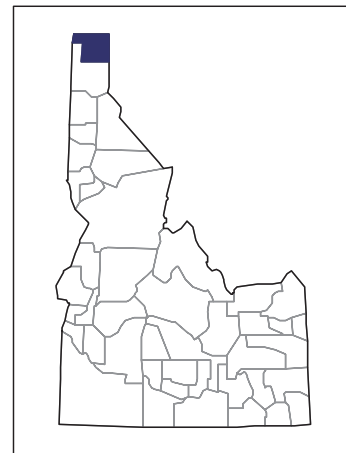
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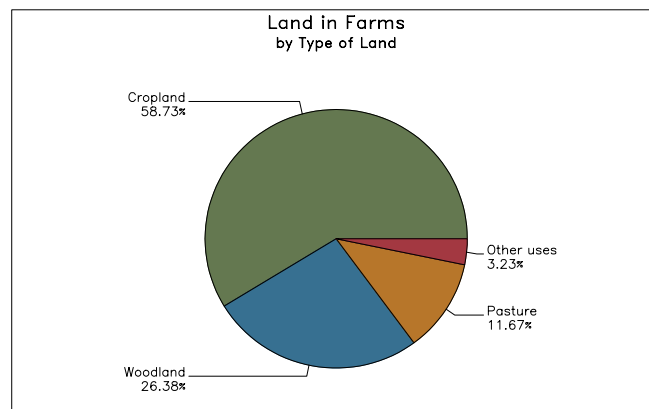
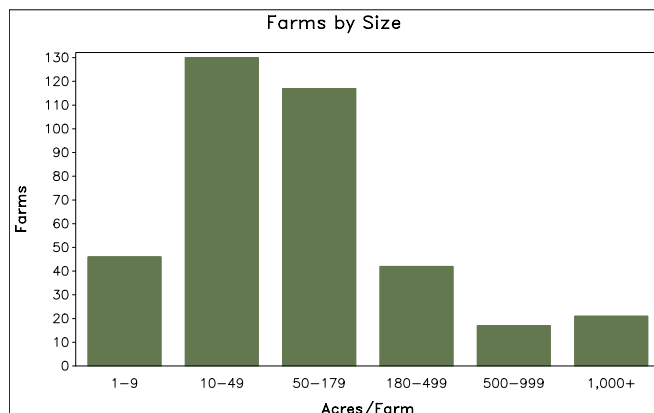
2007 CENSUS OF AGRICULTURE

County Profile

Boundary County Idaho



	2007	2002	% change
Number of Farms	373	432	- 14
Land in Farms	73,500 acres	76,506 acres	- 4
Average Size of Farm	197 acres	177 acres	+ 11
Market Value of Products Sold	\$30,225,000	\$22,822,000	+ 32
Crop Sales \$27,654,000 (91 percent)			
Livestock Sales \$2,572,000 (9 percent)			
Average Per Farm	\$81,033	\$52,829	+ 53
Government Payments	\$942,000	\$312,000	+ 202
Average Per Farm Receiving Payments	\$14,279	\$7,085	+ 102



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2007 CENSUS OF AGRICULTURE

County Profile

Boundary County – Idaho

Ranked items among the 44 state counties and 3,079 U.S. counties, 2007

Item	Quantity	State Rank	Universe ¹	U.S. Rank	Universe ¹
MARKET VALUE OF AGRICULTURAL PRODUCTS SOLD (\$1,000)					
Total value of agricultural products sold	30,225	29	44	1,980	3,076
Value of crops including nursery and greenhouse	27,654	23	44	1,268	3,072
Value of livestock, poultry, and their products	2,572	39	44	2,709	3,069
VALUE OF SALES BY COMMODITY GROUP (\$1,000)					
Grains, oilseeds, dry beans, and dry peas	7,950	22	42	1,325	2,933
Tobacco	-	-	-	-	437
Cotton and cottonseed	-	-	-	-	626
Vegetables, melons, potatoes, and sweet potatoes	45	32	41	2,164	2,796
Fruits, tree nuts, and berries	(D)	16	36	(D)	2,659
Nursery, greenhouse, floriculture, and sod	10,191	2	41	289	2,703
Cut Christmas trees and short rotation woody crops	(D)	6	25	(D)	1,710
Other crops and hay	9,382	19	44	188	3,054
Poultry and eggs	11	24	44	2,431	3,020
Cattle and calves	(D)	40	44	(D)	3,054
Milk and other dairy products from cows	(D)	(D)	33	(D)	2,493
Hogs and pigs	84	8	42	1,427	2,922
Sheep, goats, and their products	146	24	44	817	2,998
Horses, ponies, mules, burros, and donkeys	64	35	44	2,034	3,024
Aquaculture	(D)	21	24	(D)	1,498
Other animals and other animal products	36	30	39	1,515	2,875
TOP CROP ITEMS (acres)					
Wheat for grain, all	16,063	20	41	556	2,481
Forage - land used for all hay and haylage, grass silage, and greenchop	11,438	35	44	1,582	3,060
Barley for grain	3,352	23	40	151	1,154
Canola	2,636	3	10	36	191
Nursery stock	1,574	1	40	52	2,130
TOP LIVESTOCK INVENTORY ITEMS (number)					
Cattle and calves	4,884	38	44	2,472	3,060
Layers	807	12	44	1,816	3,024
Horses and ponies	672	36	44	1,891	3,066
Sheep and lambs	671	28	40	1,221	2,891
Broilers and other meat-type chickens	517	6	33	1,111	2,476

Other County Highlights

Economic Characteristics	Quantity	Operator Characteristics	Quantity
Farms by value of sales:		Principal operators by primary occupation:	
Less than \$1,000	98	Farming	176
\$1,000 to \$2,499	46	Other	197
\$2,500 to \$4,999	32		
\$5,000 to \$9,999	54	Principal operators by sex:	
\$10,000 to \$19,999	49	Male	328
\$20,000 to \$24,999	10	Female	45
\$25,000 to \$39,999	16		
\$40,000 to \$49,999	8	Average age of principal operator (years)	56.1
\$50,000 to \$99,999	13		
\$100,000 to \$249,999	17	All operators by race ² :	
\$250,000 to \$499,999	16	American Indian or Alaska Native	4
\$500,000 or more	14	Asian	1
Total farm production expenses (\$1,000)	26,382	Black or African American	-
Average per farm (\$)	70,729	Native Hawaiian or Other Pacific Islander	1
		White	545
Net cash farm income of operation (\$1,000)	5,782	More than one race	3
Average per farm (\$)	15,500	All operators of Spanish, Hispanic, or Latino Origin ²	3

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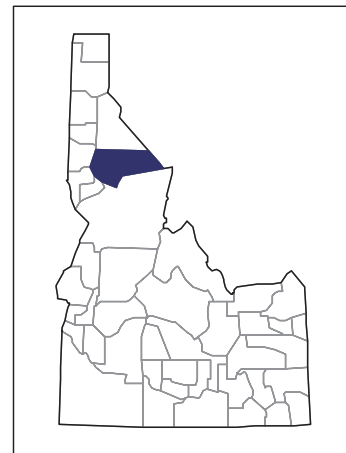
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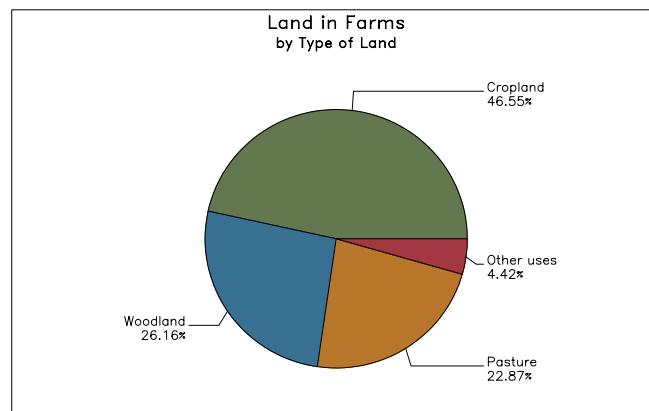
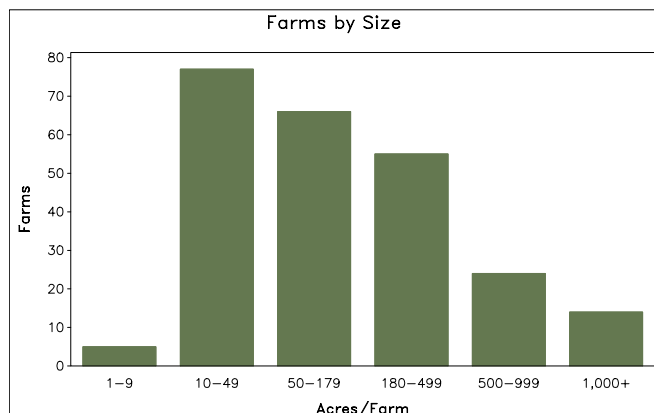
2007 CENSUS OF AGRICULTURE

County Profile

Clearwater County Idaho



	2007	2002	% change
Number of Farms	241	193	+ 25
Land in Farms	69,568 acres	70,724 acres	- 2
Average Size of Farm	289 acres	366 acres	- 21
Market Value of Products Sold	\$7,950,000	\$5,645,000	+ 41
Crop Sales \$5,670,000 (71 percent)			
Livestock Sales \$2,280,000 (29 percent)			
Average Per Farm	\$32,988	\$29,250	+ 13
Government Payments	\$978,000	\$586,000	+ 67
Average Per Farm Receiving Payments	\$8,733	\$10,278	- 15



United States Department of Agriculture
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2007 CENSUS OF AGRICULTURE

County Profile

Clearwater County – Idaho

Ranked items among the 44 state counties and 3,079 U.S. counties, 2007

Item	Quantity	State Rank	Universe ¹	U.S. Rank	Universe ¹
MARKET VALUE OF AGRICULTURAL PRODUCTS SOLD (\$1,000)					
Total value of agricultural products sold	7,950	41	44	2,693	3,076
Value of crops including nursery and greenhouse	5,670	37	44	2,174	3,072
Value of livestock, poultry, and their products	2,280	40	44	2,752	3,069
VALUE OF SALES BY COMMODITY GROUP (\$1,000)					
Grains, oilseeds, dry beans, and dry peas	4,008	33	42	1,568	2,933
Tobacco	-	-	-	-	437
Cotton and cottonseed	-	-	-	-	626
Vegetables, melons, potatoes, and sweet potatoes	(D)	41	41	(D)	2,796
Fruits, tree nuts, and berries	-	-	36	-	2,659
Nursery, greenhouse, floriculture, and sod	(D)	(D)	41	(D)	2,703
Cut Christmas trees and short rotation woody crops	(D)	9	25	(D)	1,710
Other crops and hay	(D)	42	44	(D)	3,054
Poultry and eggs	(D)	(D)	44	(D)	3,020
Cattle and calves	(D)	41	44	(D)	3,054
Milk and other dairy products from cows	(D)	33	33	2,489	2,493
Hogs and pigs	5	34	42	2,490	2,922
Sheep, goats, and their products	3	42	44	2,838	2,998
Horses, ponies, mules, burros, and donkeys	64	36	44	2,036	3,024
Aquaculture	(D)	6	24	(D)	1,498
Other animals and other animal products	(D)	38	39	2,853	2,875
TOP CROP ITEMS (acres)					
Wheat for grain, all	11,123	23	41	671	2,481
Forage - land used for all hay and haylage, grass silage, and greenchop	7,753	40	44	1,952	3,060
Dry edible beans, excluding limas	1,399	10	19	127	425
Barley for grain	1,094	33	40	249	1,154
Lentils	(D)	7	7	32	48
TOP LIVESTOCK INVENTORY ITEMS (number)					
Pheasants	(D)	1	27	(D)	1,544
Cattle and calves	3,496	41	44	2,611	3,060
Horses and ponies	412	39	44	2,441	3,066
Layers	204	33	44	2,652	3,024
Mules, burros, and donkeys	104	11	44	821	2,998

Other County Highlights

Economic Characteristics	Quantity	Operator Characteristics	Quantity
Farms by value of sales:		Principal operators by primary occupation:	
Less than \$1,000	99	Farming	106
\$1,000 to \$2,499	36	Other	135
\$2,500 to \$4,999	32		
\$5,000 to \$9,999	18	Principal operators by sex:	
\$10,000 to \$19,999	18	Male	202
\$20,000 to \$24,999	5	Female	39
\$25,000 to \$39,999	10		
\$40,000 to \$49,999	1	Average age of principal operator (years)	59.9
\$50,000 to \$99,999	3		
\$100,000 to \$249,999	16	All operators by race ² :	
\$250,000 to \$499,999	-	American Indian or Alaska Native	8
\$500,000 or more	3	Asian	-
Total farm production expenses (\$1,000)	9,039	Black or African American	-
Average per farm (\$)	37,504	Native Hawaiian or Other Pacific Islander	-
		White	376
Net cash farm income of operation (\$1,000)	950	More than one race	-
Average per farm (\$)	3,944	All operators of Spanish, Hispanic, or Latino Origin ²	8

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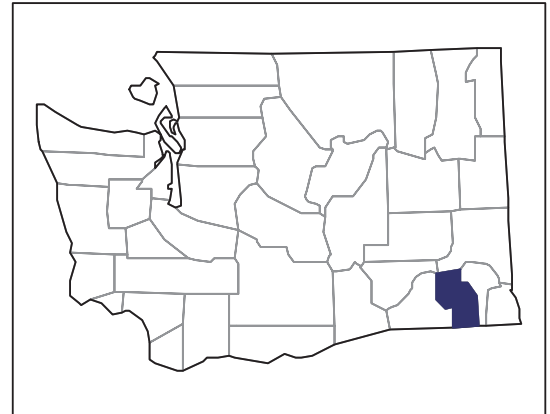
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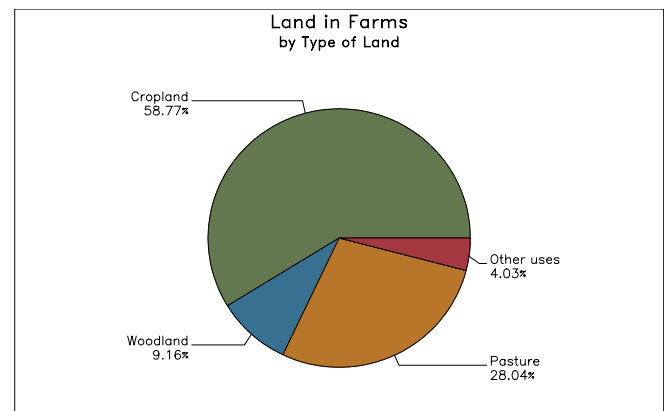
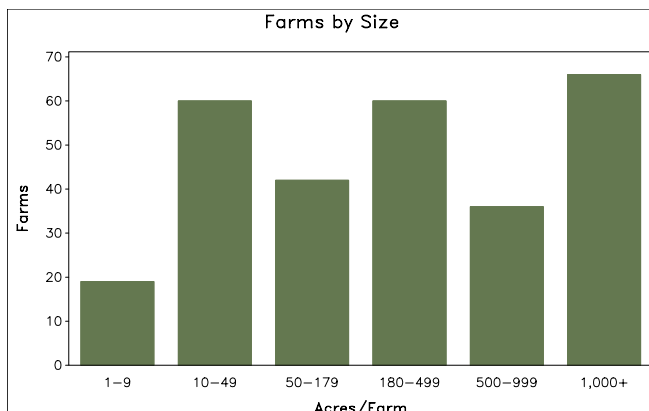
2007 CENSUS OF AGRICULTURE

County Profile

Columbia County Washington



	2007	2002	% change
Number of Farms	283	255	+ 11
Land in Farms	313,307 acres	294,661 acres	+ 6
Average Size of Farm	1,107 acres	1,156 acres	- 4
Market Value of Products Sold	\$39,819,000	\$26,516,000	+ 50
Crop Sales \$36,224,000 (91 percent)			
Livestock Sales \$3,595,000 (9 percent)			
Average Per Farm	\$140,702	\$103,985	+ 35
Government Payments	\$5,257,000	\$3,643,000	+ 44
Average Per Farm Receiving Payments	\$25,274	\$21,947	+ 15



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2007 CENSUS OF AGRICULTURE

County Profile

Columbia County – Washington

Ranked items among the 39 state counties and 3,079 U.S. counties, 2007

Item	Quantity	State Rank	Universe ¹	U.S. Rank	Universe ¹
MARKET VALUE OF AGRICULTURAL PRODUCTS SOLD (\$1,000)					
Total value of agricultural products sold	39,819	23	39	1,771	3,076
Value of crops including nursery and greenhouse	36,224	20	39	1,097	3,072
Value of livestock, poultry, and their products	3,595	32	39	2,589	3,069
VALUE OF SALES BY COMMODITY GROUP (\$1,000)					
Grains, oilseeds, dry beans, and dry peas	34,083	11	36	765	2,933
Tobacco	-	-	-	-	437
Cotton and cottonseed	-	-	-	-	626
Vegetables, melons, potatoes, and sweet potatoes	(D)	(D)	37	(D)	2,796
Fruits, tree nuts, and berries	(D)	29	39	(D)	2,659
Nursery, greenhouse, floriculture, and sod	(D)	34	38	(D)	2,703
Cut Christmas trees and short rotation woody crops	-	-	33	-	1,710
Other crops and hay	595	27	39	2,018	3,054
Poultry and eggs	4	39	39	2,743	3,020
Cattle and calves	2,414	27	39	2,184	3,054
Milk and other dairy products from cows	(D)	27	34	(D)	2,493
Hogs and pigs	58	19	37	1,543	2,922
Sheep, goats, and their products	(D)	(D)	39	(D)	2,998
Horses, ponies, mules, burros, and donkeys	(D)	(D)	39	(D)	3,024
Aquaculture	(D)	(D)	34	(D)	1,498
Other animals and other animal products	116	22	39	938	2,875
TOP CROP ITEMS (acres)					
Wheat for grain, all	77,970	9	30	216	2,481
Barley for grain	11,591	4	31	81	1,154
Dry edible peas	11,416	2	14	16	277
Forage - land used for all hay and haylage, grass silage, and greenchop	3,499	32	39	2,524	3,060
Oats for grain	862	5	22	438	1,957
TOP LIVESTOCK INVENTORY ITEMS (number)					
Cattle and calves	5,762	29	39	2,384	3,060
Colonies of bees	4,143	8	38	170	2,640
Horses and ponies	242	37	39	2,791	3,066
Layers	216	38	39	2,622	3,024
Hogs and pigs	116	29	38	2,093	2,958

Other County Highlights

Economic Characteristics	Quantity	Operator Characteristics	Quantity
Farms by value of sales:		Principal operators by primary occupation:	
Less than \$1,000	125	Farming	147
\$1,000 to \$2,499	7	Other	136
\$2,500 to \$4,999	19		
\$5,000 to \$9,999	24	Principal operators by sex:	
\$10,000 to \$19,999	21	Male	248
\$20,000 to \$24,999	4	Female	35
\$25,000 to \$39,999	5		
\$40,000 to \$49,999	3	Average age of principal operator (years)	57.3
\$50,000 to \$99,999	12		
\$100,000 to \$249,999	17	All operators by race ² :	
\$250,000 to \$499,999	19	American Indian or Alaska Native	2
\$500,000 or more	27	Asian	2
		Black or African American	-
Total farm production expenses (\$1,000)	33,756	Native Hawaiian or Other Pacific Islander	-
Average per farm (\$)	119,281	White	447
		More than one race	1
Net cash farm income of operation (\$1,000)	14,790	All operators of Spanish, Hispanic, or Latino Origin ²	7
Average per farm (\$)	52,260		

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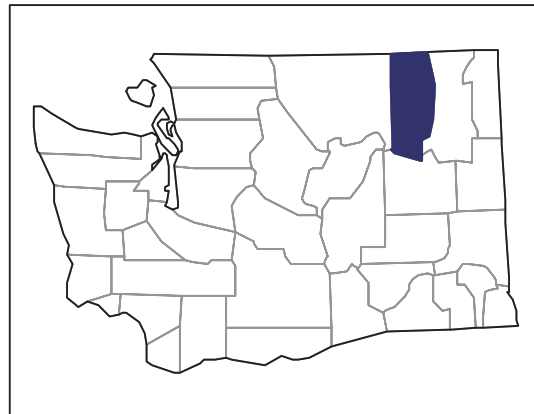
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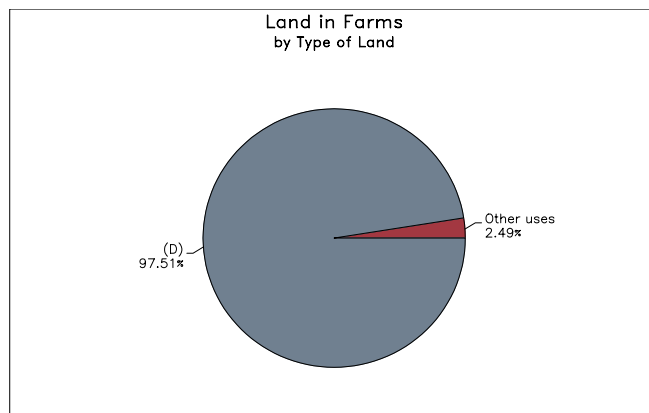
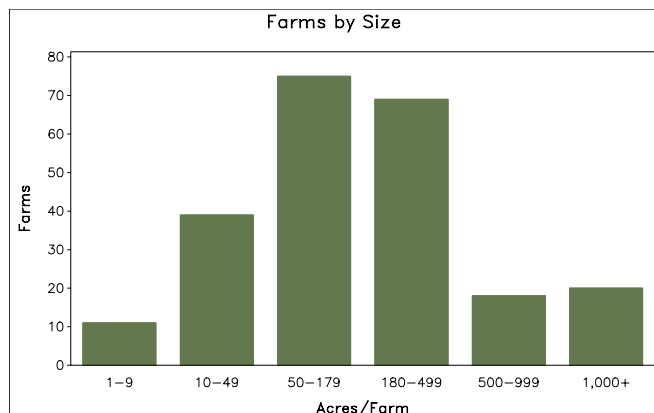
2007 CENSUS OF AGRICULTURE

County Profile

Ferry County Washington



	2007	2002	% change
Number of Farms	232	207	+ 12
Land in Farms	749,452 acres	799,435 acres	- 6
Average Size of Farm	3,230 acres	3,862 acres	- 16
Market Value of Products Sold	\$2,913,000	\$4,346,000	- 33
Crop Sales \$649,000 (22 percent)			
Livestock Sales \$2,264,000 (78 percent)			
Average Per Farm	\$12,555	\$20,997	- 40
Government Payments	\$73,000	\$127,000	- 43
Average Per Farm Receiving Payments	\$3,300	\$3,342	- 1



United States Department of Agriculture
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2007 CENSUS OF AGRICULTURE

County Profile

Ferry County – Washington

Ranked items among the 39 state counties and 3,079 U.S. counties, 2007

Item	Quantity	State Rank	Universe ¹	U.S. Rank	Universe ¹
MARKET VALUE OF AGRICULTURAL PRODUCTS SOLD (\$1,000)					
Total value of agricultural products sold	2,913	37	39	2,917	3,076
Value of crops including nursery and greenhouse	649	38	39	2,885	3,072
Value of livestock, poultry, and their products	2,264	35	39	2,754	3,069
VALUE OF SALES BY COMMODITY GROUP (\$1,000)					
Grains, oilseeds, dry beans, and dry peas	128	27	36	2,429	2,933
Tobacco	-	-	-	-	437
Cotton and cottonseed	-	-	-	-	626
Vegetables, melons, potatoes, and sweet potatoes	(D)	34	37	(D)	2,796
Fruits, tree nuts, and berries	166	34	39	1,172	2,659
Nursery, greenhouse, floriculture, and sod	(D)	38	38	(D)	2,703
Cut Christmas trees and short rotation woody crops	-	-	33	-	1,710
Other crops and hay	327	30	39	2,417	3,054
Poultry and eggs	(D)	(D)	39	(D)	3,020
Cattle and calves	1,649	29	39	2,408	3,054
Milk and other dairy products from cows	-	-	34	-	2,493
Hogs and pigs	8	35	37	2,353	2,922
Sheep, goats, and their products	22	34	39	2,248	2,998
Horses, ponies, mules, burros, and donkeys	201	25	39	1,108	3,024
Aquaculture	368	25	34	397	1,498
Other animals and other animal products	(D)	38	39	(D)	2,875
TOP CROP ITEMS (acres)					
Forage - land used for all hay and haylage, grass silage, and greenchop	6,784	23	39	2,059	3,060
Oats for grain	(D)	3	22	(D)	1,957
Wheat for grain, all	(D)	25	30	(D)	2,481
Field and grass seed crops, all	(D)	22	25	(D)	931
Barley for grain	88	24	31	695	1,154
TOP LIVESTOCK INVENTORY ITEMS (number)					
Cattle and calves	4,126	32	39	2,553	3,060
Horses and ponies	1,545	18	39	830	3,066
Layers	546	34	39	2,102	3,024
Sheep and lambs	362	30	39	1,660	2,891
Pullets for laying flock replacement	87	29	37	1,630	2,627

Other County Highlights

Economic Characteristics	Quantity	Operator Characteristics	Quantity
Farms by value of sales:		Principal operators by primary occupation:	
Less than \$1,000	100	Farming	104
\$1,000 to \$2,499	23	Other	128
\$2,500 to \$4,999	34		
\$5,000 to \$9,999	19	Principal operators by sex:	
\$10,000 to \$19,999	22	Male	182
\$20,000 to \$24,999	4	Female	50
\$25,000 to \$39,999	10		
\$40,000 to \$49,999	3	Average age of principal operator (years)	60.3
\$50,000 to \$99,999	8		
\$100,000 to \$249,999	9	All operators by race ² :	
\$250,000 to \$499,999	-	American Indian or Alaska Native	31
\$500,000 or more	-	Asian	4
		Black or African American	-
Total farm production expenses (\$1,000)	5,079	Native Hawaiian or Other Pacific Islander	-
Average per farm (\$)	21,893	White	318
		More than one race	10
Net cash farm income of operation (\$1,000)	-1,639	All operators of Spanish, Hispanic, or Latino Origin ²	8
Average per farm (\$)	-7,065		

See "Census of Agriculture, Volume 1, Geographic Area Series" for complete footnotes, explanations, definitions, and methodology.

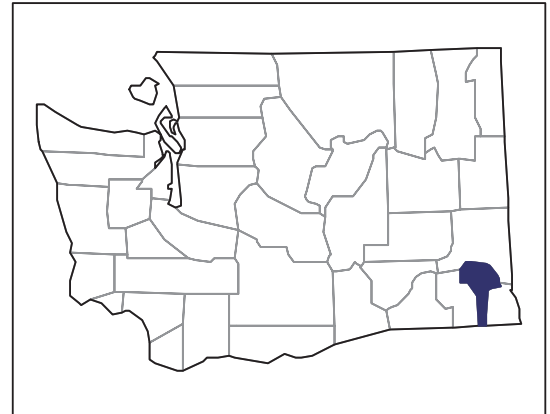
(D) Cannot be disclosed. (Z) Less than half of the unit shown.

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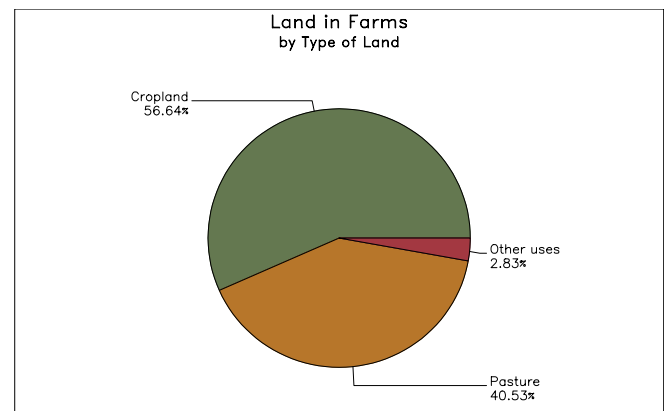
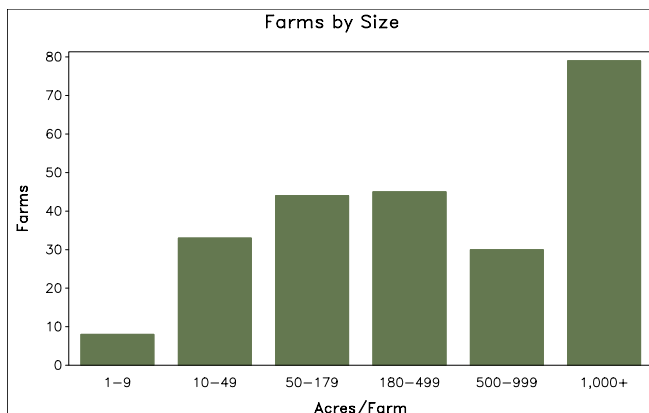
2007 CENSUS OF AGRICULTURE

County Profile

Garfield County Washington



	2007	2002	% change
Number of Farms	239	198	+ 21
Land in Farms	308,212 acres	312,425 acres	- 1
Average Size of Farm	1,290 acres	1,578 acres	- 18
Market Value of Products Sold	\$26,440,000	\$19,778,000	+ 34
Crop Sales \$23,227,000 (88 percent)			
Livestock Sales \$3,214,000 (12 percent)			
Average Per Farm	\$110,629	\$99,887	+ 11
Government Payments	\$5,086,000	\$3,472,000	+ 46
Average Per Farm Receiving Payments	\$29,230	\$24,627	+ 19



United States Department of Agriculture
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2007 CENSUS OF AGRICULTURE

County Profile

Garfield County – Washington

Ranked items among the 39 state counties and 3,079 U.S. counties, 2007

Item	Quantity	State Rank	Universe ¹	U.S. Rank	Universe ¹
MARKET VALUE OF AGRICULTURAL PRODUCTS SOLD (\$1,000)					
Total value of agricultural products sold	26,440	28	39	2,074	3,076
Value of crops including nursery and greenhouse	23,227	23	39	1,372	3,072
Value of livestock, poultry, and their products	3,214	33	39	2,632	3,069
VALUE OF SALES BY COMMODITY GROUP (\$1,000)					
Grains, oilseeds, dry beans, and dry peas	22,717	12	36	940	2,933
Tobacco	-	-	-	-	437
Cotton and cottonseed	-	-	-	-	626
Vegetables, melons, potatoes, and sweet potatoes	-	-	37	-	2,796
Fruits, tree nuts, and berries	(D)	39	39	(D)	2,659
Nursery, greenhouse, floriculture, and sod	-	-	38	-	2,703
Cut Christmas trees and short rotation woody crops	(D)	(D)	33	(D)	1,710
Other crops and hay	(D)	(D)	39	(D)	3,054
Poultry and eggs	(D)	(D)	39	(D)	3,020
Cattle and calves	(D)	26	39	(D)	3,054
Milk and other dairy products from cows	-	-	34	-	2,493
Hogs and pigs	2	37	37	2,707	2,922
Sheep, goats, and their products	(D)	39	39	(D)	2,998
Horses, ponies, mules, burros, and donkeys	14	38	39	2,785	3,024
Aquaculture	(D)	27	34	(D)	1,498
Other animals and other animal products	17	33	39	1,845	2,875
TOP CROP ITEMS (acres)					
Wheat for grain, all	68,447	11	30	239	2,481
Barley for grain	11,010	5	31	87	1,154
Forage - land used for all hay and haylage, grass silage, and greenchop	2,128	34	39	2,715	3,060
Dry edible peas	(D)	6	14	76	277
Field and grass seed crops, all	768	13	25	138	931
TOP LIVESTOCK INVENTORY ITEMS (number)					
Cattle and calves	7,073	26	39	2,256	3,060
Colonies of bees	400	21	38	687	2,640
Horses and ponies	301	36	39	2,678	3,066
Pheasants	(D)	15	31	(D)	1,544
Sheep and lambs	191	35	39	2,031	2,891

Other County Highlights

Economic Characteristics	Quantity	Operator Characteristics	Quantity
Farms by value of sales:		Principal operators by primary occupation:	
Less than \$1,000	113	Farming	115
\$1,000 to \$2,499	13	Other	124
\$2,500 to \$4,999	14		
\$5,000 to \$9,999	8	Principal operators by sex:	
\$10,000 to \$19,999	6	Male	200
\$20,000 to \$24,999	4	Female	39
\$25,000 to \$39,999	3		
\$40,000 to \$49,999	-	Average age of principal operator (years)	58.8
\$50,000 to \$99,999	16		
\$100,000 to \$249,999	22	All operators by race ² :	
\$250,000 to \$499,999	26	American Indian or Alaska Native	4
\$500,000 or more	14	Asian	-
Total farm production expenses (\$1,000)	26,815	Black or African American	-
Average per farm (\$)	112,198	Native Hawaiian or Other Pacific Islander	2
		White	362
Net cash farm income of operation (\$1,000)	6,361	More than one race	11
Average per farm (\$)	26,615	All operators of Spanish, Hispanic, or Latino Origin ²	-

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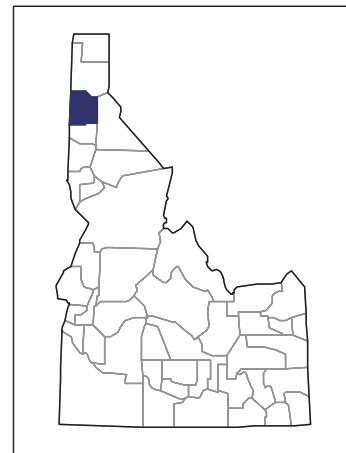
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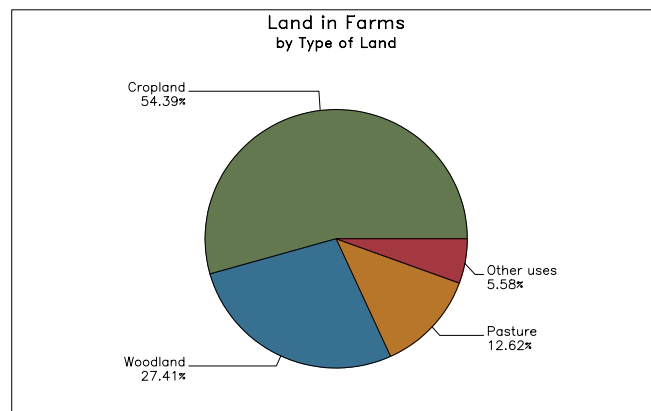
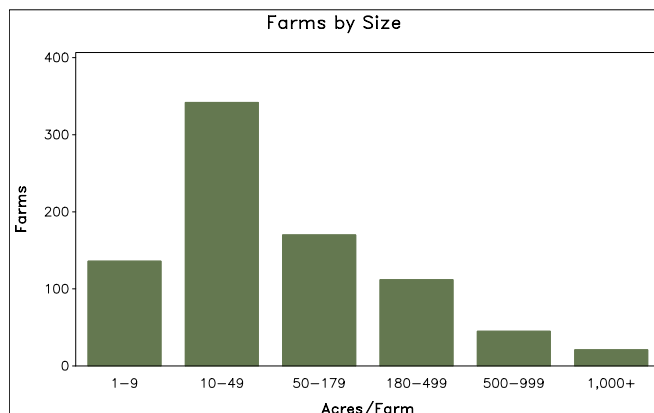
2007 CENSUS OF AGRICULTURE

County Profile

Kootenai County Idaho



	2007	2002	% change
Number of Farms	826	828	0
Land in Farms	130,851 acres	154,217 acres	- 15
Average Size of Farm	158 acres	186 acres	- 15
Market Value of Products Sold	\$16,383,000	\$14,140,000	+ 16
Crop Sales \$12,310,000 (75 percent)			
Livestock Sales \$4,072,000 (25 percent)			
Average Per Farm	\$19,834	\$17,078	+ 16
Government Payments	\$869,000	\$685,000	+ 27
Average Per Farm Receiving Payments	\$6,035	\$6,646	- 9



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2007 CENSUS OF AGRICULTURE

County Profile

Kootenai County – Idaho

Ranked items among the 44 state counties and 3,079 U.S. counties, 2007

Item	Quantity	State Rank	Universe ¹	U.S. Rank	Universe ¹
MARKET VALUE OF AGRICULTURAL PRODUCTS SOLD (\$1,000)					
Total value of agricultural products sold	16,383	37	44	2,376	3,076
Value of crops including nursery and greenhouse	12,310	33	44	1,748	3,072
Value of livestock, poultry, and their products	4,072	35	44	2,530	3,069
VALUE OF SALES BY COMMODITY GROUP (\$1,000)					
Grains, oilseeds, dry beans, and dry peas	4,366	31	42	1,535	2,933
Tobacco	-	-	-	-	437
Cotton and cottonseed	-	-	-	-	626
Vegetables, melons, potatoes, and sweet potatoes	441	28	41	1,118	2,796
Fruits, tree nuts, and berries	105	9	36	1,379	2,659
Nursery, greenhouse, floriculture, and sod	704	26	41	1,245	2,703
Cut Christmas trees and short rotation woody crops	101	2	25	409	1,710
Other crops and hay	6,593	23	44	250	3,054
Poultry and eggs	(D)	(D)	44	(D)	3,020
Cattle and calves	(D)	38	44	(D)	3,054
Milk and other dairy products from cows	-	-	33	-	2,493
Hogs and pigs	306	3	42	1,130	2,922
Sheep, goats, and their products	83	28	44	1,249	2,998
Horses, ponies, mules, burros, and donkeys	1,178	2	44	179	3,024
Aquaculture	(D)	23	24	(D)	1,498
Other animals and other animal products	512	13	39	380	2,875
TOP CROP ITEMS (acres)					
Forage - land used for all hay and haylage, grass silage, and greenchop	16,430	31	44	1,232	3,060
Field and grass seed crops, all	15,504	1	25	12	931
Wheat for grain, all	9,585	25	41	726	2,481
Oats for grain	1,065	3	38	350	1,957
Barley for grain	1,022	35	40	260	1,154
TOP LIVESTOCK INVENTORY ITEMS (number)					
Cattle and calves	4,859	39	44	2,475	3,060
Horses and ponies	2,405	11	44	399	3,066
Hogs and pigs	(D)	(D)	40	(D)	2,958
Colonies of bees	(D)	22	35	(D)	2,640
Goats, all	1,162	6	43	623	3,023

Other County Highlights

Economic Characteristics	Quantity	Operator Characteristics	Quantity
Farms by value of sales:		Principal operators by primary occupation:	
Less than \$1,000	356	Farming	330
\$1,000 to \$2,499	141	Other	496
\$2,500 to \$4,999	90		
\$5,000 to \$9,999	84	Principal operators by sex:	
\$10,000 to \$19,999	51	Male	693
\$20,000 to \$24,999	20	Female	133
\$25,000 to \$39,999	22		
\$40,000 to \$49,999	7	Average age of principal operator (years)	58.2
\$50,000 to \$99,999	25		
\$100,000 to \$249,999	17	All operators by race ² :	
\$250,000 to \$499,999	5	American Indian or Alaska Native	10
\$500,000 or more	8	Asian	5
Total farm production expenses (\$1,000)	19,944	Black or African American	-
Average per farm (\$)	24,146	Native Hawaiian or Other Pacific Islander	-
		White	1,260
Net cash farm income of operation (\$1,000)	89	More than one race	15
Average per farm (\$)	108	All operators of Spanish, Hispanic, or Latino Origin ²	11

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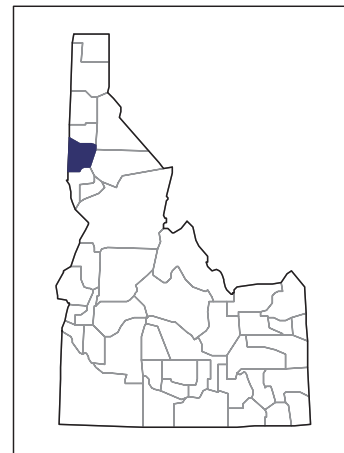
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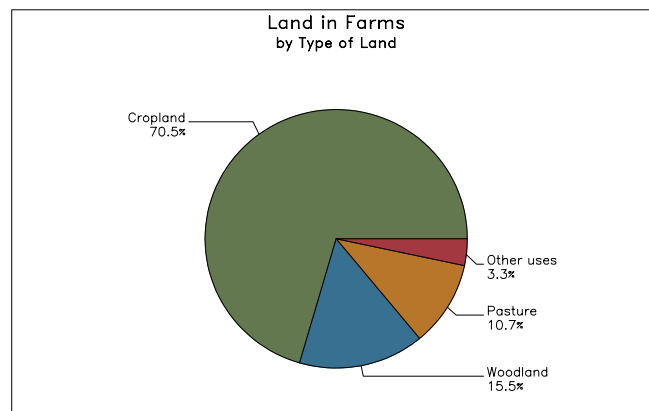
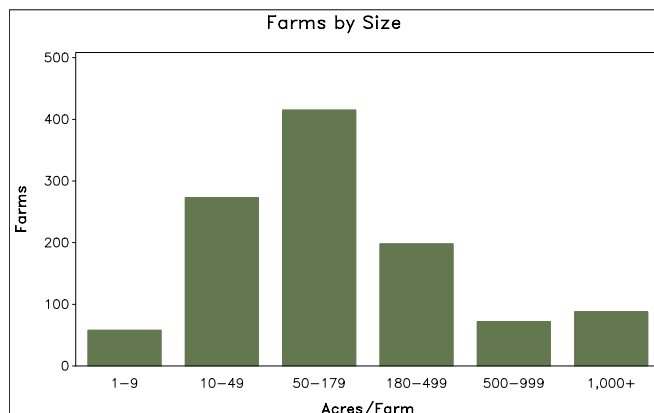
2007 CENSUS OF AGRICULTURE

County Profile

Latah County Idaho



	2007	2002	% change
Number of Farms	1,104	890	+ 24
Land in Farms	344,472 acres	340,115 acres	+ 1
Average Size of Farm	312 acres	382 acres	- 18
Market Value of Products Sold	\$60,932,000	\$39,862,000	+ 53
Crop Sales \$57,460,000 (94 percent)			
Livestock Sales \$3,472,000 (6 percent)			
Average Per Farm	\$55,192	\$44,789	+ 23
Government Payments	\$6,396,000	\$4,496,000	+ 42
Average Per Farm Receiving Payments	\$8,015	\$8,435	- 5



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2007 CENSUS OF AGRICULTURE

County Profile

Latah County – Idaho

Ranked items among the 44 state counties and 3,079 U.S. counties, 2007

Item	Quantity	State Rank	Universe ¹	U.S. Rank	Universe ¹
MARKET VALUE OF AGRICULTURAL PRODUCTS SOLD (\$1,000)					
Total value of agricultural products sold	60,932	19	44	1,381	3,076
Value of crops including nursery and greenhouse	57,460	13	44	754	3,072
Value of livestock, poultry, and their products	3,472	37	44	2,601	3,069
VALUE OF SALES BY COMMODITY GROUP (\$1,000)					
Grains, oilseeds, dry beans, and dry peas	49,167	5	42	592	2,933
Tobacco	-	-	-	-	437
Cotton and cottonseed	-	-	-	-	626
Vegetables, melons, potatoes, and sweet potatoes	26	33	41	2,323	2,796
Fruits, tree nuts, and berries	10	22	36	2,226	2,659
Nursery, greenhouse, floriculture, and sod	3,131	8	41	637	2,703
Cut Christmas trees and short rotation woody crops	7	12	25	1,218	1,710
Other crops and hay	5,119	26	44	316	3,054
Poultry and eggs	(D)	(D)	44	(D)	3,020
Cattle and calves	(D)	36	44	(D)	3,054
Milk and other dairy products from cows	(D)	31	33	(D)	2,493
Hogs and pigs	10	29	42	2,263	2,922
Sheep, goats, and their products	281	18	44	459	2,998
Horses, ponies, mules, burros, and donkeys	230	17	44	1,001	3,024
Aquaculture	-	-	24	-	1,498
Other animals and other animal products	40	28	39	1,460	2,875
TOP CROP ITEMS (acres)					
Wheat for grain, all	91,834	4	41	185	2,481
Forage - land used for all hay and haylage, grass silage, and greenchop	19,676	26	44	1,065	3,060
Lentils	18,475	1	7	6	48
Dry edible beans, excluding limas	12,892	3	19	26	425
Barley for grain	11,659	16	40	80	1,154
TOP LIVESTOCK INVENTORY ITEMS (number)					
Cattle and calves	6,843	34	44	2,275	3,060
Sheep and lambs	3,233	18	40	326	2,891
Horses and ponies	1,843	16	44	644	3,066
Colonies of bees	1,508	20	35	358	2,640
Layers	973	8	44	1,663	3,024

Other County Highlights

Economic Characteristics	Quantity	Operator Characteristics	Quantity
Farms by value of sales:		Principal operators by primary occupation:	
Less than \$1,000	656	Farming	405
\$1,000 to \$2,499	81	Other	699
\$2,500 to \$4,999	68		
\$5,000 to \$9,999	59	Principal operators by sex:	
\$10,000 to \$19,999	51	Male	876
\$20,000 to \$24,999	13	Female	228
\$25,000 to \$39,999	20		
\$40,000 to \$49,999	10	Average age of principal operator (years)	58.2
\$50,000 to \$99,999	31		
\$100,000 to \$249,999	34	All operators by race ² :	
\$250,000 to \$499,999	40	American Indian or Alaska Native	16
\$500,000 or more	41	Asian	5
Total farm production expenses (\$1,000)	51,052	Black or African American	1
Average per farm (\$)	46,243	Native Hawaiian or Other Pacific Islander	1
		White	1,705
Net cash farm income of operation (\$1,000)	20,825	More than one race	5
Average per farm (\$)	18,863	All operators of Spanish, Hispanic, or Latino Origin ²	9

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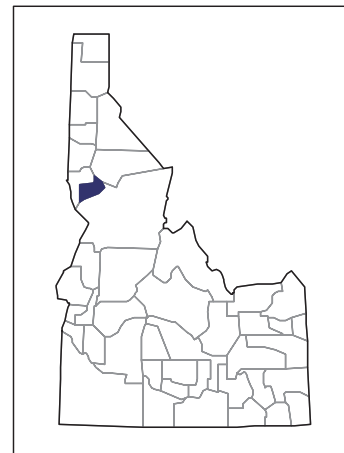
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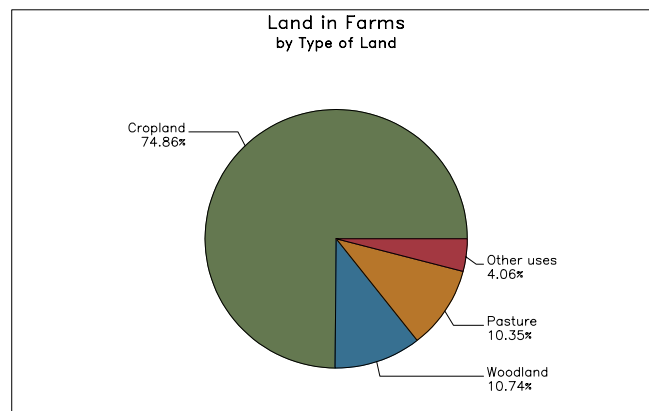
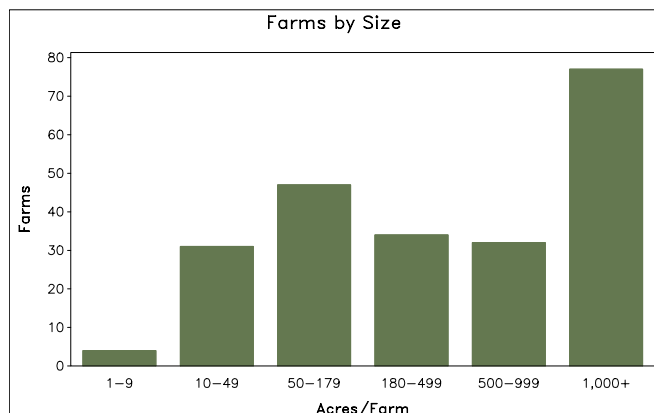
2007 CENSUS OF AGRICULTURE

County Profile

Lewis County Idaho



	2007	2002	% change
Number of Farms	225	177	+ 27
Land in Farms	245,944 acres	216,562 acres	+ 14
Average Size of Farm	1,093 acres	1,224 acres	- 11
Market Value of Products Sold	\$43,744,000	\$27,752,000	+ 58
Crop Sales \$40,551,000 (93 percent)			
Livestock Sales \$3,193,000 (7 percent)			
Average Per Farm	\$194,418	\$156,792	+ 24
Government Payments	\$3,920,000	\$1,755,000	+ 123
Average Per Farm Receiving Payments	\$22,657	\$17,203	+ 32



United States Department of Agriculture
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2007 CENSUS OF AGRICULTURE

County Profile

Lewis County – Idaho

Ranked items among the 44 state counties and 3,079 U.S. counties, 2007

Item	Quantity	State Rank	Universe ¹	U.S. Rank	Universe ¹
MARKET VALUE OF AGRICULTURAL PRODUCTS SOLD (\$1,000)					
Total value of agricultural products sold	43,744	23	44	1,676	3,076
Value of crops including nursery and greenhouse	40,551	18	44	1,020	3,072
Value of livestock, poultry, and their products	3,193	38	44	2,637	3,069
VALUE OF SALES BY COMMODITY GROUP (\$1,000)					
Grains, oilseeds, dry beans, and dry peas	(D)	11	42	769	2,933
Tobacco	-	-	-	-	437
Cotton and cottonseed	-	-	-	-	626
Vegetables, melons, potatoes, and sweet potatoes	-	-	41	-	2,796
Fruits, tree nuts, and berries	-	-	36	-	2,659
Nursery, greenhouse, floriculture, and sod	(D)	35	41	(D)	2,703
Cut Christmas trees and short rotation woody crops	-	-	25	-	1,710
Other crops and hay	(D)	25	44	(D)	3,054
Poultry and eggs	(D)	4	44	(D)	3,020
Cattle and calves	(D)	35	44	(D)	3,054
Milk and other dairy products from cows	-	-	33	-	2,493
Hogs and pigs	(D)	(D)	42	(D)	2,922
Sheep, goats, and their products	(D)	41	44	(D)	2,998
Horses, ponies, mules, burros, and donkeys	97	30	44	1,724	3,024
Aquaculture	-	-	24	-	1,498
Other animals and other animal products	-	-	39	-	2,875
TOP CROP ITEMS (acres)					
Wheat for grain, all	98,866	3	41	165	2,481
Barley for grain	17,739	11	40	53	1,154
Field and grass seed crops, all	12,183	2	25	15	931
Forage - land used for all hay and haylage, grass silage, and greenchop	7,975	39	44	1,921	3,060
Oats for grain	6,574	1	38	28	1,957
TOP LIVESTOCK INVENTORY ITEMS (number)					
Pheasants	(D)	2	27	(D)	1,544
Cattle and calves	4,885	37	44	2,471	3,060
Horses and ponies	430	37	44	2,397	3,066
Pigeons or squab	(D)	7	21	(D)	1,501
Layers	99	39	44	2,852	3,024

Other County Highlights

Economic Characteristics	Quantity	Operator Characteristics	Quantity
Farms by value of sales:		Principal operators by primary occupation:	
Less than \$1,000	70	Farming	138
\$1,000 to \$2,499	10	Other	87
\$2,500 to \$4,999	6		
\$5,000 to \$9,999	8	Principal operators by sex:	
\$10,000 to \$19,999	9	Male	201
\$20,000 to \$24,999	5	Female	24
\$25,000 to \$39,999	5		
\$40,000 to \$49,999	11	Average age of principal operator (years)	55.8
\$50,000 to \$99,999	16		
\$100,000 to \$249,999	28	All operators by race ² :	
\$250,000 to \$499,999	23	American Indian or Alaska Native	3
\$500,000 or more	34	Asian	-
Total farm production expenses (\$1,000)	35,862	Black or African American	-
Average per farm (\$)	159,386	Native Hawaiian or Other Pacific Islander	-
		White	345
Net cash farm income of operation (\$1,000)	16,281	More than one race	2
Average per farm (\$)	72,359	All operators of Spanish, Hispanic, or Latino Origin ²	-

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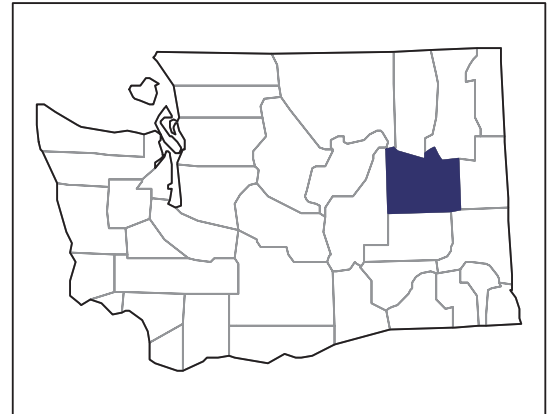
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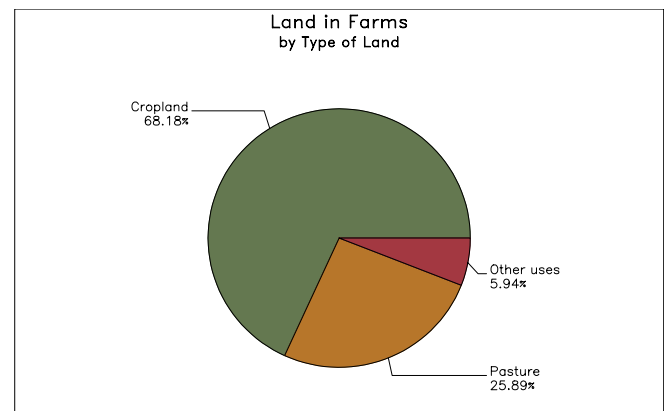
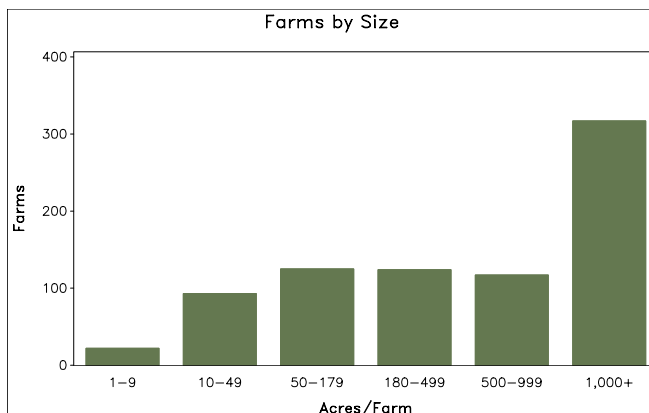
2007 CENSUS OF AGRICULTURE

County Profile

Lincoln County Washington



	2007	2002	% change
Number of Farms	798	747	+ 7
Land in Farms	1,090,178 acres	1,233,377 acres	- 12
Average Size of Farm	1,366 acres	1,651 acres	- 17
Market Value of Products Sold	\$126,216,000	\$93,555,000	+ 35
Crop Sales \$117,744,000 (93 percent)			
Livestock Sales \$8,472,000 (7 percent)			
Average Per Farm	\$158,165	\$125,241	+ 26
Government Payments	\$15,371,000	\$9,987,000	+ 54
Average Per Farm Receiving Payments	\$25,834	\$18,809	+ 37



United States Department of Agriculture
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2007 CENSUS OF AGRICULTURE

County Profile

Lincoln County – Washington

Ranked items among the 39 state counties and 3,079 U.S. counties, 2007

Item	Quantity	State Rank	Universe ¹	U.S. Rank	Universe ¹
MARKET VALUE OF AGRICULTURAL PRODUCTS SOLD (\$1,000)					
Total value of agricultural products sold	126,216	14	39	692	3,076
Value of crops including nursery and greenhouse	117,744	12	39	286	3,072
Value of livestock, poultry, and their products	8,472	26	39	2,143	3,069
VALUE OF SALES BY COMMODITY GROUP (\$1,000)					
Grains, oilseeds, dry beans, and dry peas	106,123	3	36	181	2,933
Tobacco	-	-	-	-	437
Cotton and cottonseed	-	-	-	-	626
Vegetables, melons, potatoes, and sweet potatoes	3,629	13	37	404	2,796
Fruits, tree nuts, and berries	136	35	39	1,256	2,659
Nursery, greenhouse, floriculture, and sod	54	36	38	2,208	2,703
Cut Christmas trees and short rotation woody crops	-	-	33	-	1,710
Other crops and hay	7,802	9	39	213	3,054
Poultry and eggs	146	18	39	1,330	3,020
Cattle and calves	7,567	15	39	1,409	3,054
Milk and other dairy products from cows	(D)	26	34	(D)	2,493
Hogs and pigs	34	25	37	1,739	2,922
Sheep, goats, and their products	91	23	39	1,180	2,998
Horses, ponies, mules, burros, and donkeys	291	21	39	817	3,024
Aquaculture	-	-	34	-	1,498
Other animals and other animal products	(D)	(D)	39	(D)	2,875
TOP CROP ITEMS (acres)					
Wheat for grain, all	313,441	2	30	10	2,481
Barley for grain	39,870	2	31	21	1,154
Forage - land used for all hay and haylage, grass silage, and greenchop	24,754	12	39	860	3,060
Field and grass seed crops, all	4,871	7	25	42	931
Vegetables harvested for sale	2,489	12	37	302	2,794
TOP LIVESTOCK INVENTORY ITEMS (number)					
Cattle and calves	16,881	18	39	1,566	3,060
Pheasants	8,090	1	31	97	1,544
Horses and ponies	1,226	20	39	1,118	3,066
Sheep and lambs	1,054	19	39	860	2,891
Goats, all	780	18	38	984	3,023

Other County Highlights

Economic Characteristics	Quantity	Operator Characteristics	Quantity
Farms by value of sales:		Principal operators by primary occupation:	
Less than \$1,000	328	Farming	497
\$1,000 to \$2,499	24	Other	301
\$2,500 to \$4,999	24		
\$5,000 to \$9,999	29	Principal operators by sex:	
\$10,000 to \$19,999	27	Male	698
\$20,000 to \$24,999	15	Female	100
\$25,000 to \$39,999	22		
\$40,000 to \$49,999	13	Average age of principal operator (years)	56.1
\$50,000 to \$99,999	38		
\$100,000 to \$249,999	87	All operators by race ² :	
\$250,000 to \$499,999	101	American Indian or Alaska Native	11
\$500,000 or more	90	Asian	2
Total farm production expenses (\$1,000)	86,668	Black or African American	3
Average per farm (\$)	108,607	Native Hawaiian or Other Pacific Islander	-
		White	1,233
Net cash farm income of operation (\$1,000)	61,605	More than one race	7
Average per farm (\$)	77,199	All operators of Spanish, Hispanic, or Latino Origin ²	25

See "Census of Agriculture, Volume 1, Geographic Area Series" for complete footnotes, explanations, definitions, and methodology.

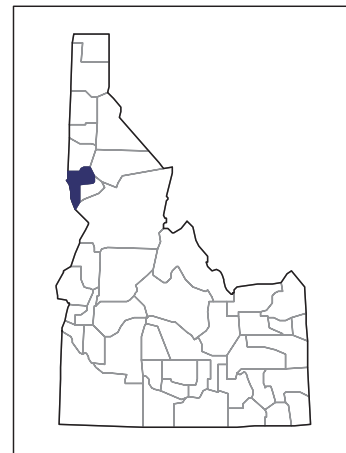
(D) Cannot be disclosed. (Z) Less than half of the unit shown.

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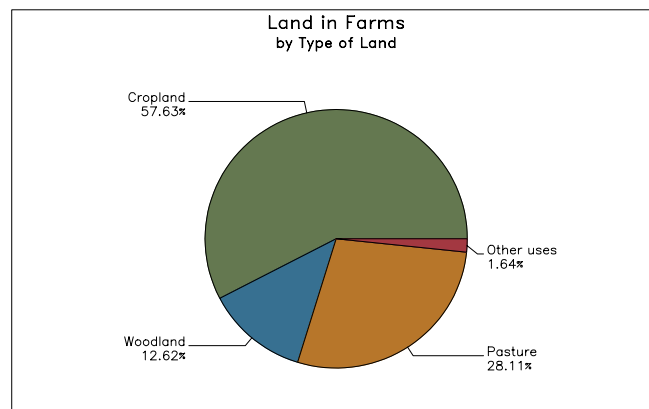
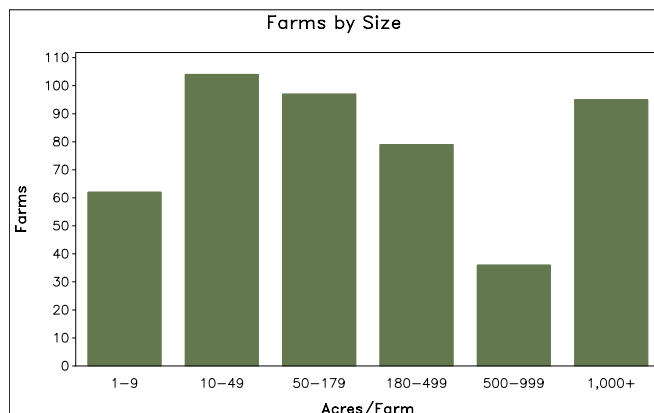
2007 CENSUS OF AGRICULTURE

County Profile

Nez Perce County Idaho



	2007	2002	% change
Number of Farms	473	441	+ 7
Land in Farms	353,292 acres	343,462 acres	+ 3
Average Size of Farm	747 acres	779 acres	- 4
Market Value of Products Sold	\$58,693,000	\$40,402,000	+ 45
Crop Sales \$54,579,000 (93 percent)			
Livestock Sales \$4,114,000 (7 percent)			
Average Per Farm	\$124,086	\$91,614	+ 35
Government Payments	\$5,013,000	\$2,837,000	+ 77
Average Per Farm Receiving Payments	\$19,737	\$19,701	0



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2007 CENSUS OF AGRICULTURE

County Profile

Nez Perce County – Idaho

Ranked items among the 44 state counties and 3,079 U.S. counties, 2007

Item	Quantity	State Rank	Universe ¹	U.S. Rank	Universe ¹
MARKET VALUE OF AGRICULTURAL PRODUCTS SOLD (\$1,000)					
Total value of agricultural products sold	58,693	20	44	1,413	3,076
Value of crops including nursery and greenhouse	54,579	14	44	784	3,072
Value of livestock, poultry, and their products	4,114	34	44	2,526	3,069
VALUE OF SALES BY COMMODITY GROUP (\$1,000)					
Grains, oilseeds, dry beans, and dry peas	50,920	4	42	576	2,933
Tobacco	-	-	-	-	437
Cotton and cottonseed	-	-	-	-	626
Vegetables, melons, potatoes, and sweet potatoes	10	37	41	2,528	2,796
Fruits, tree nuts, and berries	59	11	36	1,627	2,659
Nursery, greenhouse, floriculture, and sod	(D)	24	41	(D)	2,703
Cut Christmas trees and short rotation woody crops	(D)	25	25	1,701	1,710
Other crops and hay	(D)	34	44	(D)	3,054
Poultry and eggs	4	33	44	2,789	3,020
Cattle and calves	3,812	33	44	1,896	3,054
Milk and other dairy products from cows	-	-	33	-	2,493
Hogs and pigs	2	39	42	2,703	2,922
Sheep, goats, and their products	31	36	44	2,015	2,998
Horses, ponies, mules, burros, and donkeys	157	23	44	1,324	3,024
Aquaculture	49	18	24	792	1,498
Other animals and other animal products	59	26	39	1,280	2,875
TOP CROP ITEMS (acres)					
Wheat for grain, all	106,270	2	41	155	2,481
Dry edible beans, excluding limas	23,540	1	19	14	425
Barley for grain	15,037	12	40	62	1,154
Forage - land used for all hay and haylage, grass silage, and greenchop	8,541	38	44	1,866	3,060
Lentils	7,724	2	7	8	48
TOP LIVESTOCK INVENTORY ITEMS (number)					
Cattle and calves	9,638	31	44	2,036	3,060
Colonies of bees	4,379	12	35	163	2,640
Horses and ponies	1,006	31	44	1,388	3,066
Layers	377	21	44	2,347	3,024
Goats, all	321	16	43	1,885	3,023

Other County Highlights

Economic Characteristics	Quantity	Operator Characteristics	Quantity
Farms by value of sales:		Principal operators by primary occupation:	
Less than \$1,000	199	Farming	241
\$1,000 to \$2,499	42	Other	232
\$2,500 to \$4,999	34		
\$5,000 to \$9,999	23	Principal operators by sex:	
\$10,000 to \$19,999	19	Male	394
\$20,000 to \$24,999	10	Female	79
\$25,000 to \$39,999	16		
\$40,000 to \$49,999	10	Average age of principal operator (years)	57.1
\$50,000 to \$99,999	23		
\$100,000 to \$249,999	33	All operators by race ² :	
\$250,000 to \$499,999	29	American Indian or Alaska Native	10
\$500,000 or more	35	Asian	-
Total farm production expenses (\$1,000)	51,044	Black or African American	-
Average per farm (\$)	107,916	Native Hawaiian or Other Pacific Islander	-
		White	756
Net cash farm income of operation (\$1,000)	21,784	More than one race	-
Average per farm (\$)	46,055	All operators of Spanish, Hispanic, or Latino Origin ²	11

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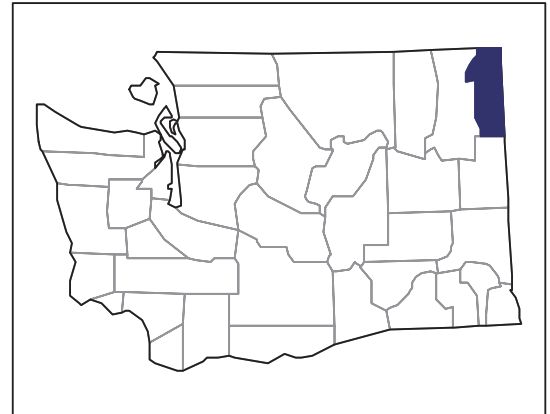
(D) Cannot be disclosed. (Z) Less than half of the unit shown.

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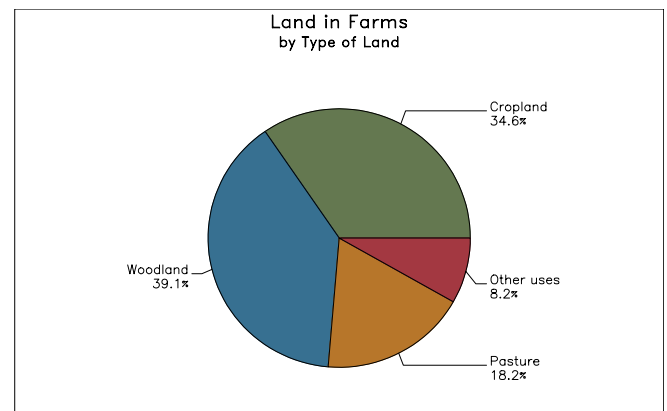
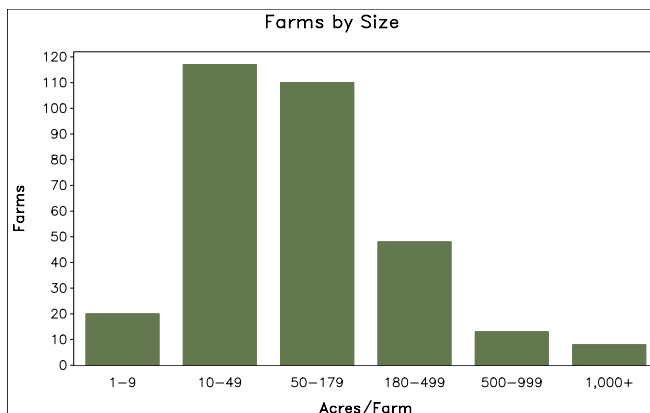
2007 CENSUS OF AGRICULTURE

County Profile

Pend Oreille County Washington



	2007	2002	% change
Number of Farms	316	263	+ 20
Land in Farms	55,109 acres	61,239 acres	- 10
Average Size of Farm	174 acres	233 acres	- 25
Market Value of Products Sold	\$2,818,000	\$3,366,000	- 16
Crop Sales \$1,264,000 (45 percent)			
Livestock Sales \$1,554,000 (55 percent)			
Average Per Farm	\$8,917	\$12,798	- 30
Government Payments	\$50,000	\$80,000	- 38
Average Per Farm Receiving Payments	\$5,529	\$7,261	- 24



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2007 CENSUS OF AGRICULTURE

County Profile

Pend Oreille County – Washington

Ranked items among the 39 state counties and 3,079 U.S. counties, 2007

Item	Quantity	State Rank	Universe ¹	U.S. Rank	Universe ¹
MARKET VALUE OF AGRICULTURAL PRODUCTS SOLD (\$1,000)					
Total value of agricultural products sold	2,818	38	39	2,926	3,076
Value of crops including nursery and greenhouse	1,264	35	39	2,738	3,072
Value of livestock, poultry, and their products	1,554	39	39	2,834	3,069
VALUE OF SALES BY COMMODITY GROUP (\$1,000)					
Grains, oilseeds, dry beans, and dry peas	(D)	34	36	(D)	2,933
Tobacco	-	-	-	-	437
Cotton and cottonseed	-	-	-	-	626
Vegetables, melons, potatoes, and sweet potatoes	(D)	35	37	(D)	2,796
Fruits, tree nuts, and berries	107	37	39	1,367	2,659
Nursery, greenhouse, floriculture, and sod	51	37	38	2,222	2,703
Cut Christmas trees and short rotation woody crops	(D)	19	33	(D)	1,710
Other crops and hay	1,033	20	39	1,474	3,054
Poultry and eggs	(D)	(D)	39	(D)	3,020
Cattle and calves	1,332	32	39	2,516	3,054
Milk and other dairy products from cows	-	-	34	-	2,493
Hogs and pigs	20	31	37	1,966	2,922
Sheep, goats, and their products	19	35	39	2,343	2,998
Horses, ponies, mules, burros, and donkeys	40	37	39	2,343	3,024
Aquaculture	14	32	34	976	1,498
Other animals and other animal products	(D)	(D)	39	(D)	2,875
TOP CROP ITEMS (acres)					
Forage - land used for all hay and haylage, grass silage, and greenchop	10,766	20	39	1,639	3,060
Cut Christmas trees	97	16	35	500	1,756
Barley for grain	(D)	27	31	(D)	1,154
Oats for grain	(D)	19	22	(D)	1,957
Land in berries	11	24	36	973	2,237
TOP LIVESTOCK INVENTORY ITEMS (number)					
Cattle and calves	4,572	30	39	2,503	3,060
Horses and ponies	793	30	39	1,687	3,066
Layers	652	33	39	1,959	3,024
Sheep and lambs	227	32	39	1,920	2,891
Hogs and pigs	224	25	38	1,772	2,958

Other County Highlights

Economic Characteristics	Quantity	Operator Characteristics	Quantity
Farms by value of sales:		Principal operators by primary occupation:	
Less than \$1,000	159	Farming	112
\$1,000 to \$2,499	69	Other	204
\$2,500 to \$4,999	27		
\$5,000 to \$9,999	22	Principal operators by sex:	
\$10,000 to \$19,999	17	Male	230
\$20,000 to \$24,999	2	Female	86
\$25,000 to \$39,999	7		
\$40,000 to \$49,999	1	Average age of principal operator (years)	57.4
\$50,000 to \$99,999	8		
\$100,000 to \$249,999	2	All operators by race ² :	
\$250,000 to \$499,999	-	American Indian or Alaska Native	5
\$500,000 or more	2	Asian	4
Total farm production expenses (\$1,000)	4,847	Black or African American	2
Average per farm (\$)	15,337	Native Hawaiian or Other Pacific Islander	-
		White	491
Net cash farm income of operation (\$1,000)	-1,239	More than one race	4
Average per farm (\$)	-3,921	All operators of Spanish, Hispanic, or Latino Origin ²	5

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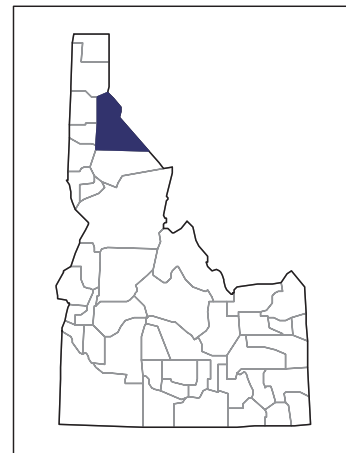
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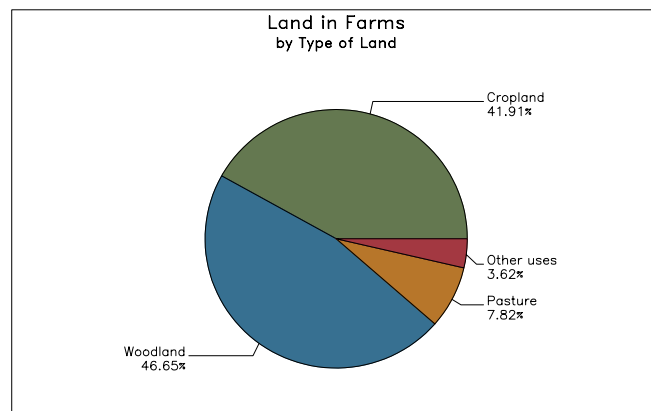
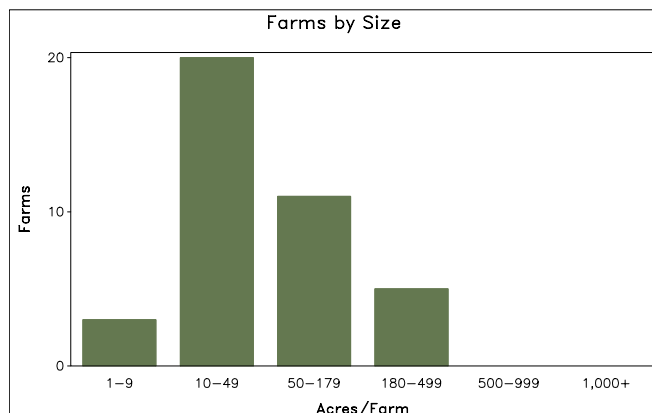
2007 CENSUS OF AGRICULTURE

County Profile

Shoshone County Idaho



	2007	2002	% change
Number of Farms	39	46	- 15
Land in Farms	3,147 acres	4,310 acres	- 27
Average Size of Farm	81 acres	94 acres	- 14
Market Value of Products Sold	\$133,000	\$89,000	+ 49
Crop Sales \$18,000 (14 percent)			
Livestock Sales \$115,000 (86 percent)			
Average Per Farm	\$3,400	\$1,929	+ 76
Government Payments	-	(D)	
Average Per Farm Receiving Payments	-	(D)	



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2007 CENSUS OF AGRICULTURE

County Profile

Shoshone County – Idaho

Ranked items among the 44 state counties and 3,079 U.S. counties, 2007

Item	Quantity	State Rank	Universe ¹	U.S. Rank	Universe ¹
MARKET VALUE OF AGRICULTURAL PRODUCTS SOLD (\$1,000)					
Total value of agricultural products sold	133	44	44	3,058	3,076
Value of crops including nursery and greenhouse	18	44	44	3,061	3,072
Value of livestock, poultry, and their products	115	44	44	3,038	3,069
VALUE OF SALES BY COMMODITY GROUP (\$1,000)					
Grains, oilseeds, dry beans, and dry peas	-	-	42	-	2,933
Tobacco	-	-	-	-	437
Cotton and cottonseed	-	-	-	-	626
Vegetables, melons, potatoes, and sweet potatoes	-	-	41	-	2,796
Fruits, tree nuts, and berries	-	-	36	-	2,659
Nursery, greenhouse, floriculture, and sod	-	-	41	-	2,703
Cut Christmas trees and short rotation woody crops	-	-	25	-	1,710
Other crops and hay	18	44	44	2,997	3,054
Poultry and eggs	(D)	43	44	3,006	3,020
Cattle and calves	34	44	44	3,010	3,054
Milk and other dairy products from cows	-	-	33	-	2,493
Hogs and pigs	-	-	42	-	2,922
Sheep, goats, and their products	(D)	(D)	44	(D)	2,998
Horses, ponies, mules, burros, and donkeys	9	43	44	2,856	3,024
Aquaculture	(D)	19	24	(D)	1,498
Other animals and other animal products	(D)	35	39	(D)	2,875
TOP CROP ITEMS (acres)					
Forage - land used for all hay and haylage, grass silage, and greenchop	178	44	44	3,005	3,060
Nursery stock	(D)	14	40	(D)	2,130
TOP LIVESTOCK INVENTORY ITEMS (number)					
Horses and ponies	101	43	44	2,973	3,066
Layers	67	41	44	2,930	3,024
Cattle and calves	62	44	44	3,033	3,060
Goats, all	(D)	36	43	(D)	3,023
Elk	(D)	19	26	(D)	824

Other County Highlights

Economic Characteristics	Quantity	Operator Characteristics	Quantity
Farms by value of sales:		Principal operators by primary occupation:	
Less than \$1,000	15	Farming	17
\$1,000 to \$2,499	12	Other	22
\$2,500 to \$4,999	3		
\$5,000 to \$9,999	7	Principal operators by sex:	
\$10,000 to \$19,999	1	Male	28
\$20,000 to \$24,999	-	Female	11
\$25,000 to \$39,999	-		
\$40,000 to \$49,999	1	Average age of principal operator (years)	63.3
\$50,000 to \$99,999	-		
\$100,000 to \$249,999	-	All operators by race ² :	
\$250,000 to \$499,999	-	American Indian or Alaska Native	2
\$500,000 or more	-	Asian	-
Total farm production expenses (\$1,000)	465	Black or African American	-
Average per farm (\$)	11,928	Native Hawaiian or Other Pacific Islander	-
		White	60
Net cash farm income of operation (\$1,000)	-291	More than one race	2
Average per farm (\$)	-7,469	All operators of Spanish, Hispanic, or Latino Origin ²	3

See "Census of Agriculture, Volume 1, Geographic Area Series" for complete footnotes, explanations, definitions, and methodology.

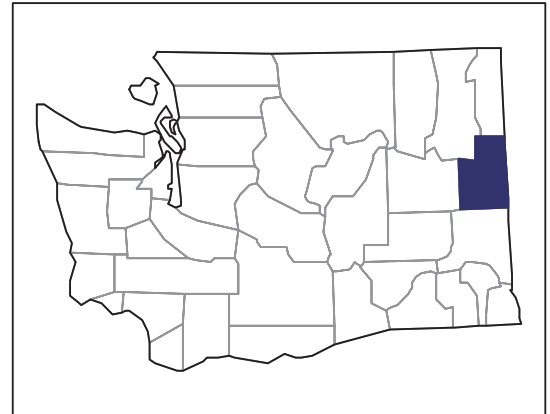
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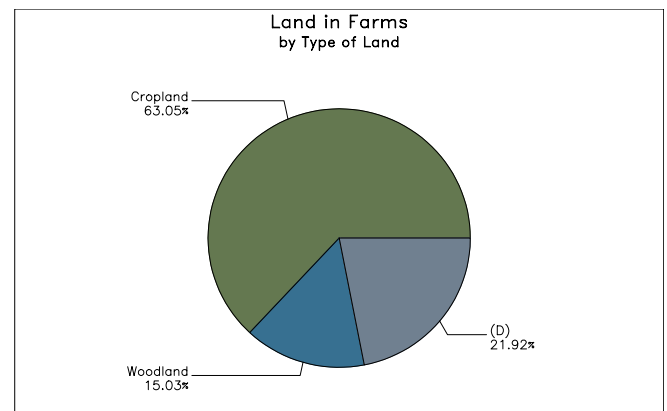
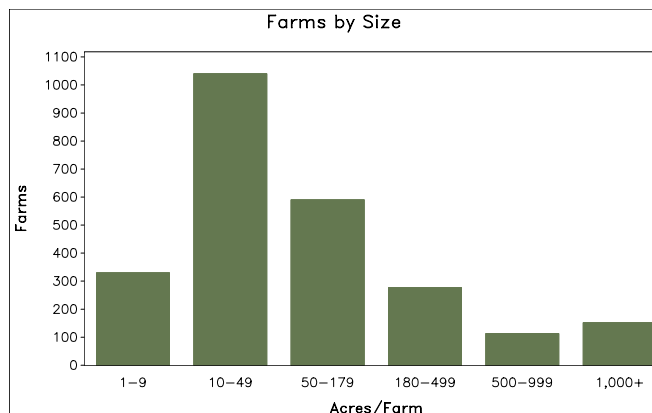
2007 CENSUS OF AGRICULTURE

County Profile

Spokane County Washington



	2007	2002	% change
Number of Farms	2,502	2,225	+ 12
Land in Farms	626,329 acres	643,377 acres	- 3
Average Size of Farm	250 acres	289 acres	- 13
Market Value of Products Sold	\$117,065,000	\$93,853,000	+ 25
Crop Sales \$98,523,000 (84 percent)			
Livestock Sales \$18,542,000 (16 percent)			
Average Per Farm	\$46,789	\$42,181	+ 11
Government Payments	\$5,929,000	\$4,279,000	+ 39
Average Per Farm Receiving Payments	\$9,687	\$8,374	+ 16



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2007 CENSUS OF AGRICULTURE

County Profile

Spokane County – Washington

Ranked items among the 39 state counties and 3,079 U.S. counties, 2007

Item	Quantity	State Rank	Universe ¹	U.S. Rank	Universe ¹
MARKET VALUE OF AGRICULTURAL PRODUCTS SOLD (\$1,000)					
Total value of agricultural products sold	117,065	17	39	746	3,076
Value of crops including nursery and greenhouse	98,523	14	39	386	3,072
Value of livestock, poultry, and their products	18,542	19	39	1,575	3,069
VALUE OF SALES BY COMMODITY GROUP (\$1,000)					
Grains, oilseeds, dry beans, and dry peas	63,873	6	36	464	2,933
Tobacco	-	-	-	-	437
Cotton and cottonseed	-	-	-	-	626
Vegetables, melons, potatoes, and sweet potatoes	5,528	11	37	312	2,796
Fruits, tree nuts, and berries	1,561	21	39	353	2,659
Nursery, greenhouse, floriculture, and sod	10,963	10	38	275	2,703
Cut Christmas trees and short rotation woody crops	125	16	33	356	1,710
Other crops and hay	16,473	8	39	105	3,054
Poultry and eggs	(D)	16	39	(D)	3,020
Cattle and calves	9,076	12	39	1,265	3,054
Milk and other dairy products from cows	4,833	16	34	741	2,493
Hogs and pigs	201	5	37	1,214	2,922
Sheep, goats, and their products	201	11	39	625	2,998
Horses, ponies, mules, burros, and donkeys	1,705	5	39	108	3,024
Aquaculture	(D)	24	34	(D)	1,498
Other animals and other animal products	1,871	3	39	98	2,875
TOP CROP ITEMS (acres)					
Wheat for grain, all	140,746	7	30	92	2,481
Forage - land used for all hay and haylage, grass silage, and greenchop	61,222	3	39	164	3,060
Lentils	34,106	1	4	3	48
Barley for grain	26,482	3	31	38	1,154
Field and grass seed crops, all	24,200	1	25	10	931
TOP LIVESTOCK INVENTORY ITEMS (number)					
Cattle and calves	22,443	16	39	1,307	3,060
Layers	6,593	11	39	752	3,024
Horses and ponies	6,043	4	39	40	3,066
Colonies of bees	4,498	7	38	158	2,640
Sheep and lambs	2,016	9	39	493	2,891

Other County Highlights

Economic Characteristics	Quantity	Operator Characteristics	Quantity
Farms by value of sales:		Principal operators by primary occupation:	
Less than \$1,000	1,087	Farming	908
\$1,000 to \$2,499	322	Other	1,594
\$2,500 to \$4,999	261		
\$5,000 to \$9,999	242	Principal operators by sex:	
\$10,000 to \$19,999	160	Male	1,983
\$20,000 to \$24,999	49	Female	519
\$25,000 to \$39,999	74		
\$40,000 to \$49,999	26	Average age of principal operator (years)	57.5
\$50,000 to \$99,999	74		
\$100,000 to \$249,999	74	All operators by race ² :	
\$250,000 to \$499,999	76	American Indian or Alaska Native	43
\$500,000 or more	57	Asian	13
Total farm production expenses (\$1,000)	103,956	Black or African American	2
Average per farm (\$)	41,549	Native Hawaiian or Other Pacific Islander	-
		White	3,843
Net cash farm income of operation (\$1,000)	25,401	More than one race	59
Average per farm (\$)	10,152	All operators of Spanish, Hispanic, or Latino Origin ²	58

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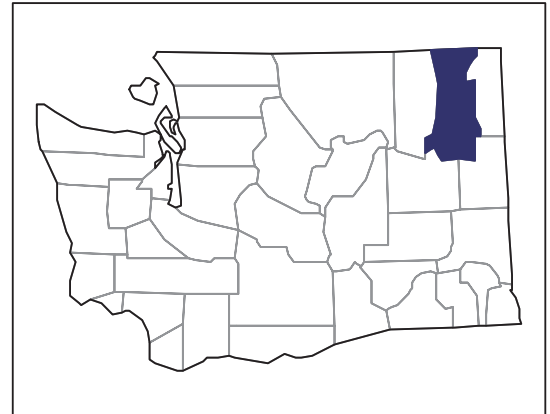
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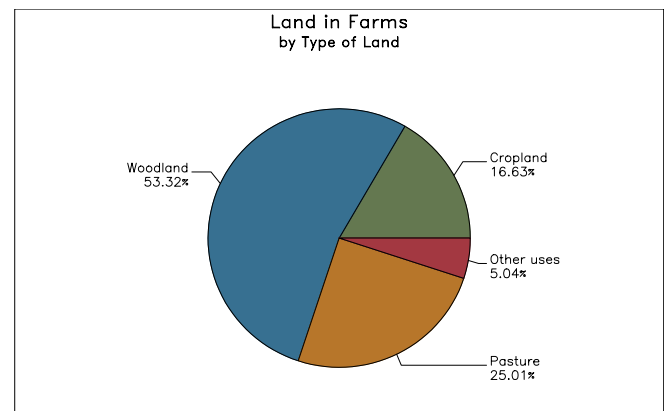
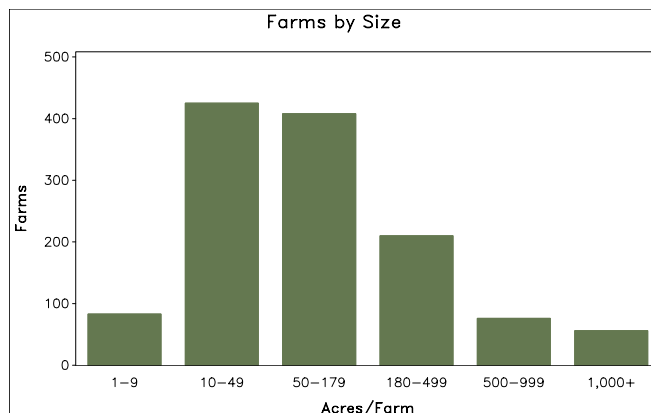
2007 CENSUS OF AGRICULTURE

County Profile

Stevens County Washington



	2007	2002	% change
Number of Farms	1,258	1,269	- 1
Land in Farms	531,082 acres	528,402 acres	+ 1
Average Size of Farm	422 acres	416 acres	+ 1
Market Value of Products Sold	\$24,530,000	\$28,245,000	- 13
Crop Sales \$11,676,000 (48 percent)			
Livestock Sales \$12,854,000 (52 percent)			
Average Per Farm	\$19,499	\$22,258	- 12
Government Payments	\$846,000	\$912,000	- 7
Average Per Farm Receiving Payments	\$4,729	\$4,363	+ 8



United States Department of Agriculture
National Agricultural Statistics Service

www.agcensus.usda.gov

2007 CENSUS OF AGRICULTURE

County Profile

Stevens County – Washington

Ranked items among the 39 state counties and 3,079 U.S. counties, 2007

Item	Quantity	State Rank	Universe ¹	U.S. Rank	Universe ¹
MARKET VALUE OF AGRICULTURAL PRODUCTS SOLD (\$1,000)					
Total value of agricultural products sold	24,530	29	39	2,126	3,076
Value of crops including nursery and greenhouse	11,676	26	39	1,778	3,072
Value of livestock, poultry, and their products	12,854	23	39	1,871	3,069
VALUE OF SALES BY COMMODITY GROUP (\$1,000)					
Grains, oilseeds, dry beans, and dry peas	1,947	18	36	1,795	2,933
Tobacco	-	-	-	-	437
Cotton and cottonseed	-	-	-	-	626
Vegetables, melons, potatoes, and sweet potatoes	350	28	37	1,238	2,796
Fruits, tree nuts, and berries	651	27	39	611	2,659
Nursery, greenhouse, floriculture, and sod	3,652	14	38	583	2,703
Cut Christmas trees and short rotation woody crops	-	-	33	-	1,710
Other crops and hay	5,076	10	39	320	3,054
Poultry and eggs	60	24	39	1,607	3,020
Cattle and calves	7,685	14	39	1,398	3,054
Milk and other dairy products from cows	2,496	20	34	992	2,493
Hogs and pigs	193	6	37	1,219	2,922
Sheep, goats, and their products	252	8	39	507	2,998
Horses, ponies, mules, burros, and donkeys	714	13	39	315	3,024
Aquaculture	806	19	34	235	1,498
Other animals and other animal products	648	9	39	311	2,875
TOP CROP ITEMS (acres)					
Forage - land used for all hay and haylage, grass silage, and greenchop	45,077	6	39	359	3,060
Wheat for grain, all	5,121	16	30	970	2,481
Barley for grain	3,176	8	31	153	1,154
Oats for grain	823	6	22	460	1,957
Nursery stock	(D)	5	36	(D)	2,130
TOP LIVESTOCK INVENTORY ITEMS (number)					
Cattle and calves	23,012	15	39	1,285	3,060
Horses and ponies	3,920	10	39	132	3,066
Sheep and lambs	3,221	2	39	328	2,891
Colonies of bees	3,173	9	38	205	2,640
Layers	2,855	17	39	972	3,024

Other County Highlights

Economic Characteristics	Quantity	Operator Characteristics	Quantity
Farms by value of sales:		Principal operators by primary occupation:	
Less than \$1,000	484	Farming	599
\$1,000 to \$2,499	156	Other	659
\$2,500 to \$4,999	133		
\$5,000 to \$9,999	151	Principal operators by sex:	
\$10,000 to \$19,999	108	Male	1,060
\$20,000 to \$24,999	31	Female	198
\$25,000 to \$39,999	87		
\$40,000 to \$49,999	14	Average age of principal operator (years)	58.6
\$50,000 to \$99,999	48		
\$100,000 to \$249,999	32	All operators by race ² :	
\$250,000 to \$499,999	8	American Indian or Alaska Native	58
\$500,000 or more	6	Asian	14
Total farm production expenses (\$1,000)	26,993	Black or African American	-
Average per farm (\$)	21,457	Native Hawaiian or Other Pacific Islander	-
		White	1,866
Net cash farm income of operation (\$1,000)	1,713	More than one race	24
Average per farm (\$)	1,362	All operators of Spanish, Hispanic, or Latino Origin ²	45

See "Census of Agriculture, Volume 1, Geographic Area Series" for complete footnotes, explanations, definitions, and methodology.

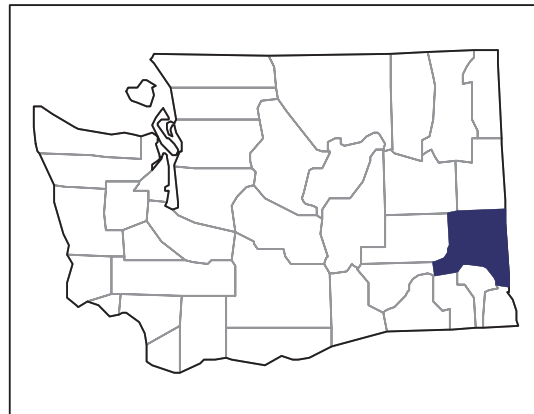
(D) Cannot be disclosed. (Z) Less than half of the unit shown.

¹ Universe is number of counties in state or U.S. with item. ² Data were collected for a maximum of three operators per farm.

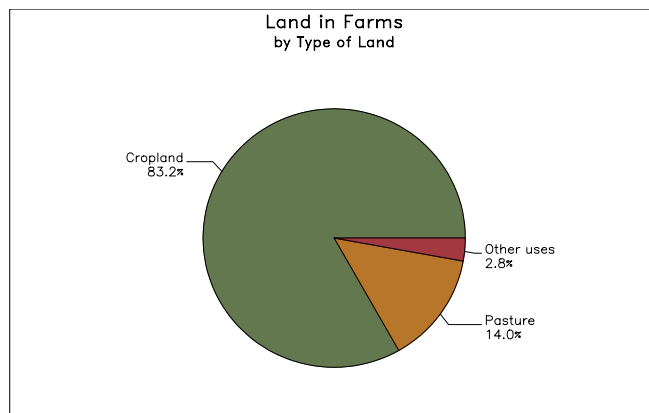
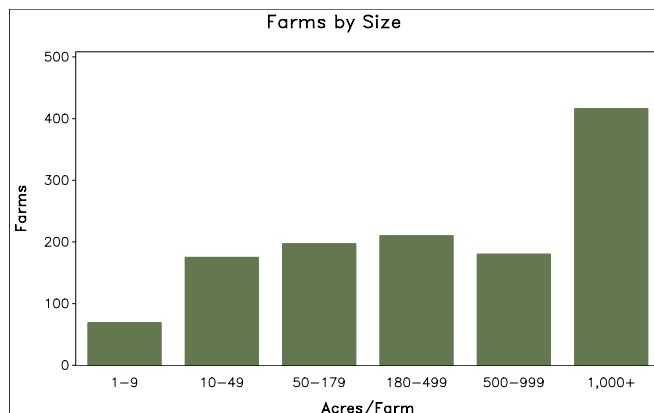
2007 CENSUS OF AGRICULTURE

County Profile

Whitman County Washington



	2007	2002	% change
Number of Farms	1,247	1,087	+ 15
Land in Farms	1,271,141 acres	1,328,337 acres	- 4
Average Size of Farm	1,019 acres	1,222 acres	- 17
Market Value of Products Sold	\$254,031,000	\$162,631,000	+ 56
Crop Sales \$243,659,000 (96 percent)			
Livestock Sales \$10,372,000 (4 percent)			
Average Per Farm	\$203,714	\$149,614	+ 36
Government Payments	\$25,305,000	\$19,215,000	+ 32
Average Per Farm Receiving Payments	\$28,023	\$25,118	+ 12



United States Department of Agriculture
National Agricultural Statistics Service

www.agcensus.usda.gov

2007 CENSUS OF AGRICULTURE

County Profile

Whitman County – Washington

Ranked items among the 39 state counties and 3,079 U.S. counties, 2007

Item	Quantity	State Rank	Universe ¹	U.S. Rank	Universe ¹
MARKET VALUE OF AGRICULTURAL PRODUCTS SOLD (\$1,000)					
Total value of agricultural products sold	254,031	9	39	216	3,076
Value of crops including nursery and greenhouse	243,659	7	39	62	3,072
Value of livestock, poultry, and their products	10,372	25	39	2,019	3,069
VALUE OF SALES BY COMMODITY GROUP (\$1,000)					
Grains, oilseeds, dry beans, and dry peas	236,885	1	36	8	2,933
Tobacco	-	-	-	-	437
Cotton and cottonseed	-	-	-	-	626
Vegetables, melons, potatoes, and sweet potatoes	(D)	19	37	(D)	2,796
Fruits, tree nuts, and berries	(D)	33	39	(D)	2,659
Nursery, greenhouse, floriculture, and sod	301	31	38	1,652	2,703
Cut Christmas trees and short rotation woody crops	(D)	30	33	(D)	1,710
Other crops and hay	4,279	12	39	392	3,054
Poultry and eggs	(D)	14	39	(D)	3,020
Cattle and calves	7,078	17	39	1,470	3,054
Milk and other dairy products from cows	(D)	24	34	(D)	2,493
Hogs and pigs	1,566	1	37	812	2,922
Sheep, goats, and their products	384	2	39	330	2,998
Horses, ponies, mules, burros, and donkeys	185	26	39	1,177	3,024
Aquaculture	-	-	34	-	1,498
Other animals and other animal products	45	30	39	1,414	2,875
TOP CROP ITEMS (acres)					
Wheat for grain, all	457,973	1	30	2	2,481
Barley for grain	108,689	1	31	2	1,154
Dry edible peas	37,187	1	14	9	277
Lentils	32,969	2	4	4	48
Dry edible beans, excluding limas	32,832	1	19	11	425
TOP LIVESTOCK INVENTORY ITEMS (number)					
Quail	(D)	1	22	(D)	1,386
Cattle and calves	15,116	20	39	1,655	3,060
Hogs and pigs	8,488	1	38	735	2,958
Pheasants	(D)	3	31	(D)	1,544
Sheep and lambs	2,370	5	39	423	2,891

Other County Highlights

Economic Characteristics	Quantity	Operator Characteristics	Quantity
Farms by value of sales:		Principal operators by primary occupation:	
Less than \$1,000	495	Farming	701
\$1,000 to \$2,499	63	Other	546
\$2,500 to \$4,999	29		
\$5,000 to \$9,999	38	Principal operators by sex:	
\$10,000 to \$19,999	35	Male	1,056
\$20,000 to \$24,999	14	Female	191
\$25,000 to \$39,999	39		
\$40,000 to \$49,999	13	Average age of principal operator (years)	56.8
\$50,000 to \$99,999	60		
\$100,000 to \$249,999	131	All operators by race ² :	
\$250,000 to \$499,999	161	American Indian or Alaska Native	19
\$500,000 or more	169	Asian	2
Total farm production expenses (\$1,000)	166,656	Black or African American	-
Average per farm (\$)	133,646	Native Hawaiian or Other Pacific Islander	5
		White	1,940
Net cash farm income of operation (\$1,000)	119,955	More than one race	10
Average per farm (\$)	96,195	All operators of Spanish, Hispanic, or Latino Origin ²	10

See "Census of Agriculture, Volume 1, Geographic Area Series" for complete footnotes, explanations, definitions, and methodology.

(D) Cannot be disclosed. (Z) Less than half of the unit shown.

¹ Universe is number of counties in state or U.S. with item. ² Data were collected for a maximum of three operators per farm.

INLAND PACIFIC HUB

Transportation Study



Working Paper 3.2

Regional Freight Profile

April, 2010

Final

WilburSmith
ASSOCIATES

In Association with

Halcrow

and

HNTB

This study was supported by the US Department of Transportation, Office of the Secretary, Grant No. DTOS59-08-G-00105

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GLOSSARY OF TERMS

Term	Definition
BEA Regions	<p>The U.S. Department of Commerce, Bureau of Economic Analysis (BEA) has defined 179 BEA geographic regions. BEA's economic areas define the relevant regional markets surrounding metropolitan or micropolitan statistical areas. They consist of one or more economic nodes - metropolitan or micropolitan statistical areas that serve as regional centers of economic activity - and the surrounding counties that are economically related to the nodes.</p> <p>To view a map of BEA Regions go to: www.bea.gov/newsreleases/general/2004/pdf/rea1104.pdf</p>
Bulk / Specialized Carrier	Specialized motor carriers transport specific types of goods including construction and military materials, oversize/overweight items, and hazardous materials. Many carriers have specialized commodities in addition to more traditional truckload goods. The specialized carrier market operates according to dedicated business segments and is often terminal specific according to which materials are being transported (e.g. liquid and dry chemicals). The specialized carrier market is characterized by closed loop operation and trucks often operate with 50 percent empty miles.
Class 1 Railroad	The largest rail carriers in the U.S., classified by operating revenue. Currently Class I carriers have operating revenue exceeding \$319.3 million. Currently seven railroads operating in the U.S. are classified as Class I, including BNSF and Union Pacific in the Western U.S.
Distribution Center	Warehousing facilities, where typically like commodities in containers or truck-load lots are resorted into mixed truck loads for distribution to retail outlets or customers.
Drayage Carrier	The service offered by a motor carrier for pick-up and delivery of ocean, rail or air cargo containers.
Inbound Freight Flows	The freight that originates outside a particular state or region and terminates in that state or region
Internal Flows	Freight that originates and terminates within a particular state or region.
Just-in-Time Inventory System	An inventory and inbound manufacturing strategy that smoothes material flows into assembly and manufacturing plants. The strategy seeks to minimize inventory investment by scheduling delivery of raw materials to the point where they are needed, at the precise time required.
Less Than Truckload (LTL) and Small Package Carriers	LTL carriers consolidate many smaller shipments from multiple shippers located in a common area or region; sort them at dock facilities according to common designation and then line-haul trailers to a destination dock for delivery.

Outbound Freight Flows	The freight that originates in a particular state or region and terminates outside of that state or region.
Private Carriers	Unlike "for-hire" trucking services, private carrier fleets are operated by businesses whose primary business is something other than transportation. For instance, private carrier fleets may be operated by manufacturers, distributors, retailers, or other businesses operating trucks as an internal value-added function primarily to meet their own business shipping needs. While private truck fleets primarily serve a single company, private carriers are allowed to sell unused backhaul capacity on a for-hire basis. Wal-Mart is an example of a private carrier.
Supply Chain	A group of physical entities, such as manufacturing plants, distribution centers, conveyances, retail outlets, people and information that are linked together through integrated processes (such as procurement or logistics) to supply goods or services from source through consumption.
Third party logistics (3PL)	A firm that specializes in logistics services that are provided to other companies.
Through-Freight Flows (Overhead flows)	Freight traffic volumes that originate and terminate beyond the borders of a state or region, but that use transportation infrastructure of the state or region during transit.
Trans-loading	The practice of transferring product between truck and rail transportation. It allows shippers and receivers to enjoy the cost benefits of rail transportation without having a rail siding at their door—at the least an expensive proposition, and for many companies, a physical impossibility. In most instances, a third-party logistics trans-load facility operator, or transportation broker facilitates trans-loading for both the shipper and receiver. These companies coordinate truck and rail connections and frequently offer warehousing and inventory management services to facilitate storage and delivery.
Truckload Carrier	The truckload (TL) motor carrier segment generally does not operate across a regular route, but rather delivers shipments directly to a recipient and try to pick up another truckload shipment at or near the first delivery point for a "backhaul" load. TL carriers generally have little need for extensive terminal or warehousing facilities.

Notes:

Information on trucking industry segments provided by the American Transportation Research Institute (ATRI), and adapted from the American Trucking Trends 2004, American Trucking Association.

Information on Class I railroads taken from wikipedia.com

Trans-loading definition taken from: *Shouldn't you be transloading?* John Paul Quinn

Logistics Management May 1, 2005. <http://www.logisticsmgmt.com>

FREIGHT PROFILE OF THE INLAND PACIFIC HUB STUDY AREA

Commodities that flow into, out-of, within and through the Inland Pacific Hub (IPH) study area reflect the region's economic base. Understanding freight flows in the region is one of the initial steps needed to gain a clear understanding of the economic activity of the area and how that affects the transportation network.

Information in this Technical Memorandum is presented in a top down format. Summary tables, details and charts are presented in the following sequence:

- regional summary
- mode summary
- county cluster summary
- individual county summary
- commodity detail
- import and export detail

The main information resource for this analysis is Global Insight, Inc.'s 2007 TRANSEARCH™ database. TRANSEARCH™ is one of the most comprehensive databases in use today to describe how freight moves between various markets. The TRANSEARCH™ dataset purchased by the IPH for this study contained over 470,000 freight records depicting the nature of freight movements between:

- 19 counties within the IPH study area
- 19 IPH study area counties and all of the business economic areas (BEAs) within the U.S.
- 19 IPH study area counties and areas in Canada or Mexico that have imports or exports with the IPH.

Appendix A provides additional information about the data sources and procedures used in assembling TRANSEARCH™.

Each TRANSEARCH™ data record indicated:

- origin and destination
- type of commodity
- mode of transportation
- tons and value

The dataset contained 2007 actual data as the base year and provided forecasts for 2012, 2017 and 2027. In the body of this study, the 2007 actual data and the 2027 forecast year were observed for changes in commodity flows. **Appendix B** exhibits data that compares 2007 with the 2012 forecast. **Appendix C** exhibits data that compares 2007 with the 2017 forecast.

To assist in conducting the analysis of TRANSEARCH™ data, Wilbur Smith Associates (WSA) constructed a customized spreadsheet application referred to as the FreightMode Analyzer. Upon completion of the study, the IPH team will retain a fully functioning version of the FreightMode Analyzer to further investigate in detail how freight flows may change by each county, commodity and mode. The IPH team can use the FreightMode Analyzer to assist in further economic development planning for the IPH.

TRANSEARCH™ datasets are modeled from inputs from various sources. As with any modeling activity, forecast totals depicted at a national or regional level have more cumulative precision than any of the subtotal predictions. The modeling in this study attempts to depict forecast amounts down to the county level. Also, the further into future the study timeframe extends (20 years for this study), the less precision and certainty that can be expected from the forecasts. As such, the forecast amounts should be considered as guidance to identify distribution trends but not actual future amounts.

REGIONAL SUMMARY

COMMODITY FLOWS BY DIRECTION AND MODE

Based on the 2007 TRANSEARCH™ database, over 167 million tons of freight moved on the transportation system into, out-of, within and through the IPH study area by truck, air, rail and water. Total tonnage of 2007 freight flows for all freight in the IPH study area is summarized in **Exhibit 1**. The mode is displayed across the top of the table and the direction is indicated along the left hand column.

Exhibit 1: Total Freight Flow Tonnage by Mode and Direction

Freight Flow Direction	2007 Tonnage of IPH's Freight Flows					Direction %
	Truck	Rail	Water	Air	Total	
Internal In Study Area	13,729,929	98,020	2,131	128	13,830,208	8.3%
Inbound						
From West	12,628,000	566,796	1,529,204	5,571	14,729,572	
From East	2,412,529	3,871,676		11,847	6,296,052	
From North	620,627	788,504		108	1,409,239	
From South	3,007,499	136,040		1,345	3,144,884	
Inbound Subtotal	18,668,655	5,363,016	1,529,204	18,872	25,579,747	15.3%
Outbound						
To West	13,882,365	5,089,955	3,056,087	24,148	22,052,555	
To East	5,054,659	1,731,852		1,479	6,787,990	
To North	793,829	143,836		17,683	955,348	
To South	9,280,323	847,560		939	10,128,822	
Outbound Subtotal	29,011,177	7,813,203	3,056,087	44,249	39,924,715	23.9%
Internal + Inbound + Outbound	61,409,761	13,274,239	4,587,422	63,248	79,334,670	47.4%
Combined Truck + Rail	74,684,000					
Through Traffic	29,690,825	58,308,175			87,999,000	52.6%
Total For All Traffic	91,100,586	71,582,414	4,587,422	63,248	167,333,670	100.0%
Mode Distribution %	54.4%	42.8%	2.74%	0.04%	100.0%	
Combined Truck + Rail	97.2%					

Data Source for all Tables: Global Insight 2007 TRANSEARCH™ Data

THROUGH-FREIGHT'S IMPACT ON THE IPH STUDY AREA

The largest share of tonnage in the IPH study area is for through-freight that does not stop in the region (third row from the bottom). In 2007, almost 88 million tons of freight or 52.6 percent of the total tonnage was through-freight (**Exhibit 2**). The percentage of through-freight that moves across the region places demands on the capacity and preservation of the regional highway and rail transportation system, but aside from jobs related to transportation support services (truck stops, lodging, freight transfer terminals, etc.) through-freight which does not stop does not create significant industry in the IPH study area. Through-freight is less connected to the region's economic activity than inbound or outbound freight which supports jobs at factories, stores and other businesses. Through-freight typically moves along national freight corridors such as I-90 or along the major rail lines.

International import freight that arrives in containers at the ports in Seattle, Tacoma or Portland is moved by truck or train to inland destinations. Containerized freight moved eastbound by intermodal trains for delivery to Chicago, Memphis and other inland points is the major type of through-freight. Intermodal through-freight typically does not stop during the rail journey to the inland destinations, except for train crew changes or maintenance. Conversely, freight moved westbound from the Midwest and other inland origins moved by truck or rail and destined to Seattle, Tacoma or Portland for export or for consumption in those cities typically does not stop in the IPH study area except for transportation service activities such as refueling or lodging. Since through-freight does not stop in the IPH study area, it is unlikely that locating a regional hub in the IPH study area would significantly alter movements of through-freight along I-90 or the rail lines.

Freight moved eastbound by truck to inland destinations beyond the IPH study area is one version of through-freight. This type is typically trans-loaded from the ISO 20-foot or 40-foot international containers into larger 53-foot domestic truck trailers for a more economical journey to the hinterland.

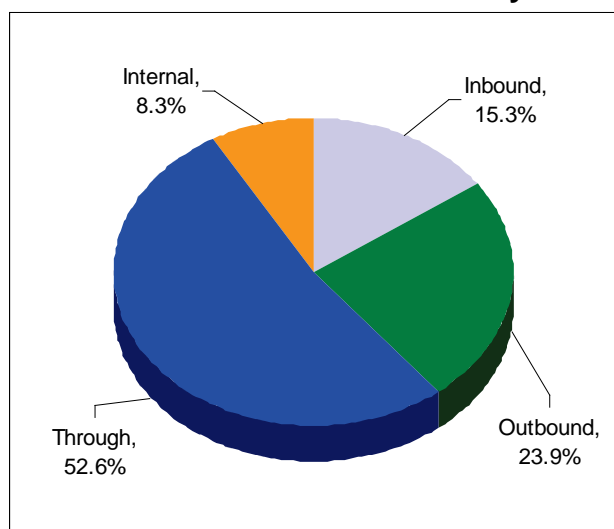
Freight moved by truck to or from IPH study area origins or destinations is not considered through-freight.

Understanding the amount of truck freight is important because the large percentage of truck through-freight enjoys the use and public benefit of the IPH study area's highway system. Freight increases or decreases can be used by public officials as a traffic volume guideline for managing the maintenance and preservation of the highway system. A multi-jurisdictional approach will assist in understanding, scoping, prioritizing and funding such issues as:

- location of economic developments
- route management and diversions
- right-of-way acquisitions
- rail access
- highway and bridge maintenance
- carbon impacts
- linkage of intelligent highway systems.

This is clearly evident in the need for a by-pass route for traffic using US-95. It causes a local congestion problem north of Coeur d'Alene and it affects regional traffic. US-95 requires a regional solution. It is noteworthy that the IPH study area is a forerunner in assembling this public/private multi-jurisdictional project team to address such issues as US-95. An average daily vehicle and truck traffic analysis for the IPH study area's highways is beyond the scope of this study. It is the freight forecasts from this study that can indicate in which direction and based on tonnage forecasts, how much will highway and rail utilization change over time.

Exhibit 2: 2007 Direction of Flows by Tonnage



IPH STUDY AREA OUTBOUND FREIGHT

Outbound freight represented almost 40 million tons or 23.9 percent of the total tonnage. Outbound freight flows are the result of a local work effort generally in agriculture, mining, forest products, food processing, etc. in the IPH study area. These products leave the IPH study area for consumption in other parts of the state, the U.S. or internationally and contribute income to the economic base of the region. Using the FreightMode Analyzer, we can observe for 2007 and the forecast years which commodities are moving out of the study area toward the west, east, north and south. The results of these observations appear further in this study in Exhibit 8 through Exhibit 35.

IPH STUDY AREA INBOUND FREIGHT

Inbound freight represented 15.3 percent of the total tonnage. Inbound freight typically results in job activities in the distribution industry, retail, and manufacturing (raw materials or sub-components). Inbound freight provides many of the supplies needed for service industries.

IPH STUDY AREA INTERNAL FREIGHT

Internal freight represents freight that originates and terminates at an origin or destination point within any of the 19 counties in the IPH study area. Internal freight amounted to 8.3 percent of the total tonnage. Internal freight also results in jobs in the distribution industry, retail, and manufacturing, and provides many of the supplies needed for service industries. However, internal freight does not necessarily attract revenues from outside the area to contribute to the economic and tax base of the IPH study area, with the exception of tourism.

Truck and rail total tonnage for local, inbound and outbound freight, basically the tonnage generating commerce for the IPH study area, amounted to 74.68 million tons.

MODE SUMMARY

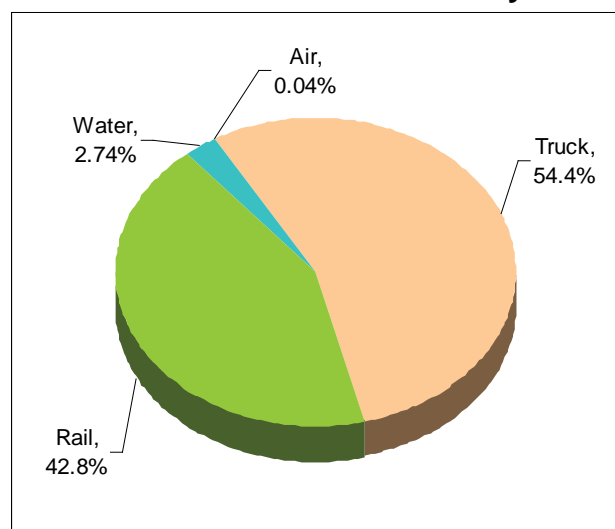
FREIGHT MODES

By mode, trucks handle the largest proportion of the IPH study area's freight tonnage (**Exhibit 3**). In 2007, tonnage by mode was distributed as:

- 91 million tons of freight or 54 percent of the tonnage was moved by truck
- rail accounted for 71 million tons of freight or 43 percent
- water borne freight, mostly agriculturally derived products out of Whitman, Columbia, Garfield, Nez Perce, and Asotin counties accounted for 4.6 million tons of freight or 3 percent
- air freight out of Spokane amounted to 63,000 tons, which was 0.04 percent. The TRANSEARCH™ dataset for airfreight may not capture all private airfreight activity, thus the activity at Coeur d'Alene airport, assumed to be small for the overall study, may be unreported and under represented.

Because the vast majority of freight in the IPH study area moves by truck and rail, the analysis in this working paper will focus on truck and rail, and their impact on the highway and rail networks. Airfreight is broken out toward the end in the section examining the Central Counties because that is where 99.99 percent of the commercial airfreight occurs and there is minimal impact on the other IPH study area counties. Freight transported by water on the Snake River is a factor for the Southern Counties and additional charts and tables are provided toward the end of the Southern Counties analysis section to indicate tonnage without and with waterborne freight. The other IPH study area counties do not have navigable rivers for waterborne freight transport. Unless airfreight or waterborne freight is specifically indicated in the section or exhibit title, the content refers to highway and rail freight.

Exhibit 3: 2007 Mode Distribution by Tonnage



Global Insight TRANSEARCH™ data shows the 2007 value of freight that moved in the IPH study area was \$469 billion (**Exhibit 4**). Nearly \$254 billion or 54.1 percent of that value was associated with through-freight. Of the remaining value of the freight movements, 24.7 percent was for outbound, 17.8 percent was for inbound and 3.3 percent was for internal freight.

Exhibit 4: Total Freight Flow Value by Mode and Direction

Freight Flow Direction	2007 Values of IPH's Freight Flows					Direction %
	Truck	Rail	Water	Air	Total	
Internal In Study Area	\$15,528,157,528	\$127,433,177	\$305,345	\$74,638	\$15,655,970,688	3.3%
Inbound						
From West	\$49,816,586,355	\$194,732,112	\$897,076,992	\$104,421,505	\$51,012,816,964	
From East	\$9,234,071,885	\$3,004,814,928		\$52,376,300	\$12,291,263,114	
From North	\$735,807,539	\$436,151,833		\$2,518,364	\$1,174,477,736	
From South	\$19,168,430,874	\$102,856,249		\$14,320,497	\$19,285,607,620	
Inbound Subtotal	\$78,954,896,654	\$3,738,555,123	\$897,076,992	\$173,636,666	\$83,764,165,434	17.8%
Outbound						
To West	\$64,109,180,356	\$574,033,125	\$1,116,556,661	\$107,450,549	\$65,907,220,691	
To East	\$22,916,730,677	\$2,090,809,653		\$29,881,978	\$25,037,422,308	
To North	\$500,528,618	\$65,457,653		\$54,628,891	\$620,615,162	
To South	\$23,319,455,177	\$916,760,635		\$8,452,422	\$24,244,668,234	
Outbound Subtotal	\$110,845,894,829	\$3,647,061,066	\$1,116,556,661	\$200,413,840	\$115,809,926,395	24.7%
Internal + Inbound + Outbound	\$205,328,949,011	\$7,513,049,366	\$2,013,938,997	\$374,125,144	\$215,230,062,518	45.9%
Combined Truck + Rail	\$212,841,998,377					
Through Traffic	\$166,236,598,903	\$87,894,365,480			\$254,130,964,383	54.1%
Total For All Traffic	\$371,565,547,913	\$95,407,414,846	\$2,013,938,997	\$374,125,144	\$469,361,026,900	100.0%
Mode Distribution %	79.2%	20.3%	0.43%	0.08%	100.0%	
Combined Truck + Rail	99.5%					

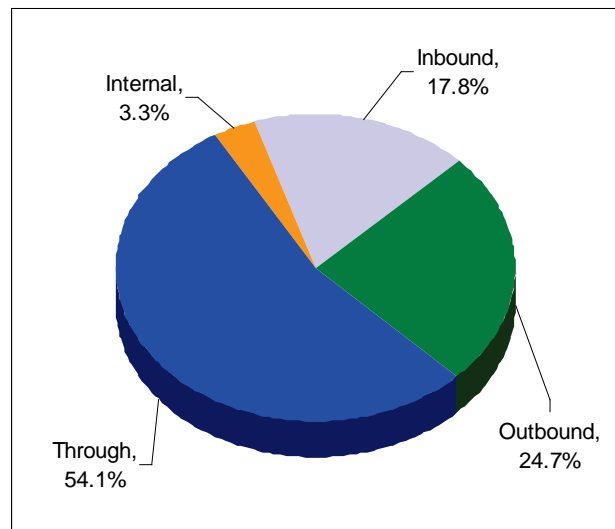
Source for all Tables: Global Insight 2007 TRANSEARCH™ Data

By mode of transportation, 79.2 percent of the value of the freight was moved by truck, with 20.3 percent moved by rail, 0.4 percent moved by water and 0.1 percent moved by air freight.

By value, in 2007 (**Exhibit 5**):

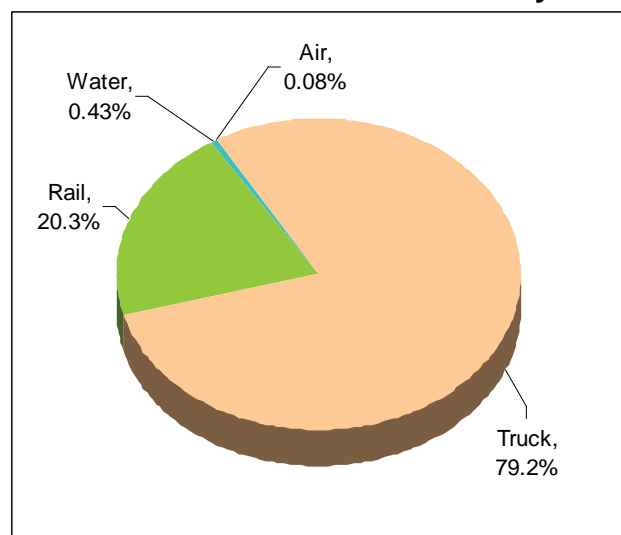
- 54.1 percent was through-freight
- outbound freight represented 24.7 percent of the total value
- inbound freight represented 17.8 percent
- freight that originated and terminated in an origin and destination point within any of the 19 counties covered in the IPH study area amounted to 3.3 percent of the total value.

Exhibit 5: 2007 Direction of Flows by Value



Trucks handled a higher proportion of the value of the freight at 79.2 percent (**Exhibit 6**) compared to truck's proportion of the tonnage at 54.4 percent as shown in Exhibit 3. This disparity in proportion reflects the nature of truck freight. Commodities typically moved by truck, such as electronics, apparel, food, and consumer goods, are more valuable per transported pound and are more time sensitive because of their shorter retail shelf life. By comparison, commodities moving on rail, such as grain, lumber, coal and minerals, are typically heavier, denser and less valuable per transported pound and are not as time sensitive for delivery. The heavier and denser freight can take advantage of the savings produced by moving on the slower and less expensive rail service verses moving by the faster and more expensive truck service. Thus, even though fewer tons are transported by truck than by rail, the total value of the freight transported by truck is much higher.

Exhibit 6: 2007 Mode Distribution by Value



Analysis of commodity flows within the context of the IPH study area's economic base provides an understanding of:

- the nature of existing commodity markets in the region
- the amount of freight that might utilize an inland hub facility
- modes currently utilized in the absence of an inland hub
- the role of drayage into and out of the region involved in the overall commodity flows

The following analysis explores these questions, as well as anticipated shifts in commodity markets that may be expected based on the 2027 forecast from TRANSEARCH™.

IPH STUDY AREA SUMMARY OF INBOUND AND OUTBOUND FREIGHT FLOWS

Exhibit 7 brings together amounts for truck and rail tonnage to create a summary of IPH study area's local, inbound and outbound freight. In 2007 there were 74.7 million tons in the three categories (at the bottom of Exhibit 7 in the right column). In Exhibit 1 the total tonnage for the IPH study area was 167.3 million tons for all modes in all directions. That total of 167.3 million tons was comprised of 87.9 million tons of through-freight for truck and rail, 4.6 million tons for water freight, 63.3 tons of air freight and the 74.7 million tons from Exhibit 7. It is the 74.7 million tons that will be discussed in more detail in the next section.

In Exhibit 7, titles across the top row of the columns depict the direction which influence the freight flows. The titles across the top also indicate the major highways that truck freight would most likely utilize. There are columns for each of the flow directions: the first is for local freight that circulated within the region, and directional flows with the markets in the west, east, north and south.

Local freight accounted for approximately 13.8 million tons within the study area (see the bottom rows for the combined total for local freight). The key concept in measuring local freight is that total inbound should balance with total outbound. It is a closed system in which the total amount of local freight shipped out by all shippers should equate to the total amount of local freight received by all consignees. Each county cluster could ship varying amounts and it could receive varying amounts, but the total outbound and inbound should balance. In Exhibit 7, the amounts for inbound and outbound balance at 13.7 million tons for truck and 98,020 for rail.

TRUCK INBOUND AND OUTBOUND SUMMARY

Truck summary information is presented in the top third of Exhibit 7. Total truck tonnage for 2007 is 61.4 million:

- local tonnage was 13.7 million tons
- inbound from all directional markets was 18.7 million tons
- outbound to all directional markets was 29 million tons.

Truck tonnage is forecast to grow 13.4 percent and reach 48.5 million by 2027:

- local freight is forecast to grow to 15.33 million tons, an increase of 11.7 percent
- inbound is forecast to grow to 39.64 million tons for an increase of 22.3 percent
- outbound is forecast to grow to 48.48 million tons for a decrease of 13.4 percent.

Truck is by far the dominant mode in the IPH study area at 82.2 percent over rail in 2007. The forecast is for truck to increase its proportion of the freight moved, up to 84.4 percent in 2027.

RAIL INBOUND AND OUTBOUND SUMMARY

Rail summary information is presented in the middle third of Exhibit 7. Total rail tonnage for 2007 is 13.3 million:

- local tonnage was 98,020 tons
- inbound from all directional markets was 5.46 million tons
- outbound to all directional markets was 7.91 million tons

Rail tonnage is forecast to grow 1 percent and reach 13.4 million by 2027:

- local freight is forecast to drop to 49,666 tons, a decrease of 49 percent
- inbound is forecast to grow to 6.49 million tons for an increase of 18.8 percent
- outbound is forecast to drop to 6.97 million tons for a decrease of 11.8 percent

This indicates commerce will continue to use rail to bring products into the IPH study area but will be converting from rail to truck to send its products out of the region to those markets, or that the commodities that usually ship by rail will be decreasing in total tonnage produced.

The way coal is reported in the TRANSEARCH™ data adds tonnage to rail's inbound and outbound tonnage that needs to be clarified. Coal freight is interchanged in the IPH study area between two Class I railroads. TRANSEARCH™ classifies the coal tonnage as 2.5 million tons inbound on one railroad and 2.5 million tons outbound on the other railroad. Without the interchange, the coal tonnage could be considered as through-freight as it is not consumed in the region, and the tonnage could be omitted from the inbound and outbound tables. If the 5 million tons were removed from the inbound and outbound total, the resulting total would be 8.3 million tons. However, coal's tonnage was retained in both the inbound and outbound summaries to maintain the rail waybill dataset integrity.

Exhibit 7: Summary of IPH Study Area Inbound and Outbound Freight Flows

IPH Counties Tonnage Summary			Local Freight: Circulates Between IPH Counties	Western Flows: Routes = I-90, US2, US12, US20	Eastern Flows: Routes = I-90, US2, US12, ID200	Northern Flows: Routes = US95, US195, US395	Southern Flows: Routes = US95, US195, US395	Totals
Truck Summary	Year	Data	Truck	Truck	Truck	Truck	Truck	Truck Total
Truck Inbound From:	2007	Tonnage	13,729,929	12,628,000	2,412,529	620,627	3,007,499	32,398,584
	2027	Tonnage	15,332,605	15,089,386	3,428,582	948,797	4,836,659	39,636,029
		% vs 2007	11.67%	19.49%	42.12%	52.88%	60.82%	22.34%
Truck Outbound To:	2007	Tonnage	13,729,929	13,882,365	5,054,659	793,829	9,280,323	42,741,106
	2027	Tonnage	15,332,605	16,748,903	6,056,097	1,209,502	9,024,875	48,371,981
		% vs 2007	11.67%	20.65%	19.81%	52.36%	(2.75%)	13.17%
Truck Total	2007	Tonnage	13,729,929	26,510,365	7,467,188	1,414,456	12,287,822	61,409,761
	2027	Tonnage	15,332,605	31,838,289	9,597,171	2,158,299	13,861,534	72,787,898
		% vs 2007	11.67%	20.10%	28.52%	52.59%	12.81%	18.53%
Rail Summary	Year	Data	Rail	Rail	Rail	Rail	Rail	Rail Total
Rail Inbound From:	2007	Tonnage	98,020	566,796	3,871,676	788,504	136,040	5,461,036
	2027	Tonnage	49,666	543,055	4,700,665	1,050,633	144,635	6,488,653
		% vs 2007	(49.33%)	(4.19%)	21.41%	33.24%	6.32%	18.82%
Rail Outbound To:	2007	Tonnage	98,020	5,089,955	1,731,852	143,836	847,560	7,911,223
	2027	Tonnage	49,666	4,765,369	1,333,211	219,469	604,868	6,972,583
		% vs 2007	(49.33%)	(6.38%)	(23.02%)	52.58%	(28.63%)	(11.86%)
Rail Total	2007	Tonnage	98,020	5,656,751	5,603,528	932,340	983,600	13,274,239
	2027	Tonnage	49,666	5,308,424	6,033,876	1,270,102	749,504	13,411,570
		% vs 2007	(49.33%)	(6.16%)	7.68%	36.23%	(23.80%)	1.03%
Combined Summary	Year	Data	Truck + Rail	Truck + Rail	Truck + Rail	Truck + Rail	Truck + Rail	Total
Truck + Rail Inbound	2007	Tonnage	13,827,949	13,194,796	6,284,205	1,409,131	3,143,539	37,859,620
	2027	Tonnage	15,382,270	15,632,441	8,129,247	1,999,430	4,981,294	46,124,682
		% vs 2007	11.24%	18.47%	29.36%	41.89%	58.46%	21.83%
Truck + Rail Outbound	2007	Tonnage	13,827,949	18,972,320	6,786,511	937,665	10,127,883	50,652,329
	2027	Tonnage	15,382,270	21,514,272	7,389,308	1,428,971	9,629,743	55,344,564
		% vs 2007	11.24%	13.40%	8.88%	52.40%	(4.92%)	9.26%
Truck + Rail Total	2007	Tonnage	13,827,949	32,167,116	13,070,716	2,346,796	13,271,422	74,684,000
	2027	Tonnage	15,382,270	37,146,713	15,518,555	3,428,401	14,611,037	86,086,976
		% vs 2007	11.24%	15.48%	19.59%	46.09%	10.09%	15.27%

Note: See Appendix D: TRANSEARCH™ Data Errata

COUNTY CLUSTERS SUMMARY

THREE COUNTY CLUSTERS

Similar geographic terrain and economic composition in the IPH study area led dividing the study area into a Northern, Central and Southern region to facilitate the freight profiling (**Exhibit 8**).

The Northern region is mountainous and has rolling foothills. It is sparsely populated and produces a significant amount of lumber and wood products. The Northern region contains five counties:

- Ferry, WA
- Stevens, WA
- Pend Oreille, WA
- Boundary, ID
- Bonner, ID

The Central region consists of rolling hills. Spokane and Kootenai Counties hold the densest population centers in the IPH study area. The Central region produces many agricultural products and the majority of the manufactured goods in the study area. The Central region contains five counties:

- Lincoln, WA
- Adams, WA
- Spokane, WA
- Kootenai, ID
- Shoshone, ID

The Southern region contains the “Palouse”, a lightly populated area with rolling hills. It produces a significant amount of agricultural and mineral products. The Southern region contains nine counties:

- Columbia, WA
- Garfield, WA
- Asotin, WA
- Whitman, WA
- Benewah, ID
- Latah, ID
- Nez Perce, ID
- Lewis, ID
- Clearwater, ID

Exhibit 8: County Clusters



FREIGHT FLOWS IN THE COUNTY CLUSTERS

Freight flows were studied by mode and direction. The vast majority of the freight (99.5 percent) moved by truck or rail, and the study focuses on these two modes. Direction of the freight flows was observed to determine not only destination, but to assist in understanding the impact on the main highway corridors in the IPH study area. Directional flows were classified into five groups:

- local freight that circulates within the region
- inbound or outbound directional flows to or from the West
- inbound or outbound directional flows to or from the East
- inbound or outbound directional flows to or from the North
- inbound or outbound directional flows to or from the South

Truck freight to and from the West mainly uses Interstate 90, and highways such as US2, US12 and US20. Westbound freight moves between the IPH study area and western Washington including the Ports of Seattle, Tacoma and Vancouver for international freight, and Oregon accessing the Port of Portland for international freight.

Truck freight traveling to and from the east use Interstate 90 and highways US2, US12 and ID-200. Eastbound freight moves between the IPH study area and all eastern markets in the Mountain States, Midwest, Northeast, Southeast and South Central. Some of the eastern freight can be accounted as international imports or exports that would enter or exit the East Coast and Gulf Coast ports.

Truck freight to and from the north uses highways US-95, US-195 and US-395. Northbound freight moves between the IPH and Canada.

Truck freight traveling to and from the south use highways US-95, US-195 and US-395. Southbound freight moves between the IPH study area and California, Utah, Nevada, Arizona and Mexico.

Rail freight mainly flows east-west on two Class I railroads; the Union Pacific Railroad (UP) and the Burlington Northern Santa Fe Railway (BNSF). One Class II railroad, the Montana Rail Link (MRL) serves the region.

- The UP rail line follows the Snake River in southeastern Washington, enters the IPH in Adams County, then up to Spokane, Sandpoint and on to Eastport at the Canadian border where there is an interchange with the Canadian Pacific Railroad. Branch lines serve Coeur d'Alene and Plummer.
- The BNSF has two rail lines. The northern line runs from Seattle across the Cascades and enters the IPH in Lincoln County. It proceeds to Spokane with a branch line to Coeur d'Alene, then runs to Sandpoint and Bonners Ferry and onto the Montana border to connect to the eastern markets. The southern line from Portland enters the IPH at Ritzville and parallels US-395 to Spokane. Between Spokane and Sandpoint there is a single BNSF main line.
- The MRL and the other 8 Short Line railroads operate on over 900 miles of track and reach most areas in the IPH study area (see Tech Memo 1 for a further description of railroad service in the IPH study area).
- The MRL carries freight on its own line from Sandpoint east into Montana to connect with eastern markets. MRL has trackage rights on the BNSF line between Spokane and Sandpoint.

Most of the Class I rail activity involves east/west doublestack intermodal service that passes through the IPH study area without stopping as it connects the Ports of Seattle, Tacoma and Portland with the Midwest and other eastern markets. Since through-freight on the Class I railroads contribute little to the IPH study area's inbound or

outbound economy, through truck and rail tonnage has been omitted from the study analysis.

INBOUND AND OUTBOUND TONNAGE SUMMARY

The next step is to disaggregate the flows to match the three county clusters that have been identified. The TRANSEARCH™ dataset enables depiction of each cluster's tonnage by inbound and outbound direction, by mode, and by year (**Exhibit 9**) for the Northern and Central Counties (**Exhibit 10**) and for the Southern Counties and the Combined Totals. The table shows tonnage for truck and rail and the combination of the two. It also shows the amount of growth or contraction between 2007 and 2027. The amounts in this table match all preceding and succeeding tables.

Northern Counties will see a rise from 16.25 million tons in 2007 to 17.26 million tons in 2027, an increase of 6.19 percent.

- Inbound freight will see an overall increase of 1.37 million tons or 31.45 percent. Local inbound freight will increase 194,000 tons. Most of the inbound increase will come from the west at 590,000 tons and the south at 419,000 tons.
- Outbound freight will see an overall decrease of 363,000 tons or 3.05 percent. Local freight will decrease by 442,000 tons and southern outbound freight will decrease by 653,000 tons. There will be a gain in outbound freight to the west at 624,000 tons and to the east at 274,000 tons, but these do not offset the other decreases.

Central Counties will see a rise from 53.45 million tons in 2007 to 57.92 million tons in 2027, an increase of 8.36 percent.

- Inbound freight will see an overall increase of 3.98 million tons or 14.97 percent. Local inbound freight will increase 73,000 tons. Most of the inbound increase will come from the west at 1.49 million tons, the east at 1.38 million tons, the north at 344,000 tons and the south at 668,000 tons.
- Outbound freight will see an overall increase of 484,000 tons or 1.80 percent. Local freight will increase by 1.31 million tons, the east at 541,000 tons, the north at 305,000 tons, and the south at 397,000 tons. There will be a decrease for outbound to the west at 597,000 tons.

Southern Counties will see a rise from 19.79 million tons in 2007 to 26.39 million tons in 2027, an increase of 40.42 percent.

- Inbound freight will see an overall increase of 2.91 million tons or 42.19 percent. Local inbound freight will increase 194,000 tons, from the west at 342,000 tons, the east at 307,000 tons, the north at 97,000 tons and the south at 739,000 tons.
- Outbound freight will see an overall increase of 4.68 million tons or 39.38 percent. Local freight will increase by 2.02 million tons, from the west at 2.41 million tons, the east at 152,000 tons, the north at 45,000 tons and the south at 151,000 tons.

Combined for all Counties will see a rise from 74.68 million tons in 2007 to 86.19 million tons in 2027, an increase of 15.42 percent.

- Inbound freight will see an overall increase of 8.26 million tons or 21.83 percent. Local inbound freight will increase 1.55 million tons, from the west at 2.43 million tons, the east at 1.84 million tons, the north at 590,000 tons and the south at 1.69 million tons.
- Outbound freight will see an overall increase of 4.80 million tons or 9.49 percent. Local freight will increase by 1.65 million tons, from the west at 2.54 million tons, the east at 715,000 tons, and the north at 491,000 tons. Outbound to the south will decrease by 498,000 tons.

Exhibit 9: Tonnage Summary for Northern and Central Clusters

IPH Counties Tonnage Summary			Local Traffic: Circulates Between IPH Counties		Western Flows: Routes = I-90, US2, US12, US20		Eastern Flows: Routes = I-90, US2, US12, ID200		Northern Flows: Routes = US95, US195, US395		Southern Flows: Routes = US95, US195, US395		Commodity Total
County	Year	Data	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	
Northern Counties Inbound From:	2007	Tonnage	1,328,884	70,960	1,697,835	63,160	305,303	22,440	164,077	10,520	669,464	23,280	4,355,923
		Combined	1,399,844		1,760,995		327,743		174,597		692,744		
	2027	Tonnage	1,522,784	27,185	2,287,373	57,340	437,724	28,323	248,274	9,960	1,087,646	19,080	
		Combined	1,549,969		2,344,713		466,048		258,234		1,106,726		
		% vs 2007	14.59%	(61.69%)	34.72%	(9.21%)	43.37%	26.22%	51.32%	(5.32%)	62.47%	(18.04%)	31.45%
			10.72%		33.15%		42.20%		47.90%		59.76%		
Northern Counties Outbound To:	2007	Tonnage	4,341,656	81,440	2,567,343	510,910	1,042,857	668,440	203,798	138,236	1,798,370	549,000	11,902,051
		Combined	4,423,096		3,078,253		1,711,297		342,034		2,347,370		
	2027	Tonnage	3,900,678	36,377	3,192,727	613,742	1,316,506	480,950	274,471	209,557	1,145,575	368,529	
		Combined	3,937,054		3,806,469		1,797,456		484,029		1,514,103		
		% vs 2007	(10.16%)	(55.33%)	24.36%	20.13%	26.24%	(28.05%)	34.68%	51.59%	(36.30%)	(32.87%)	(3.05%)
			(10.99%)		23.66%		5.03%		41.51%		(35.50%)		
Northern Counties Subtotal	2007	Tonnage	5,670,540	152,400	4,265,179	574,070	1,348,160	690,880	367,875	148,756	2,467,834	572,280	16,257,974
		Combined	5,822,940		4,839,249		2,039,040		516,631		3,040,114		
	2027	Tonnage	5,423,461	63,562	5,480,100	671,082	1,754,231	509,273	522,745	219,518	2,233,221	387,609	
		Combined	5,487,023		6,151,182		2,263,504		742,263		2,620,830		
		% vs 2007	(4.36%)	(58.29%)	28.48%	16.90%	30.12%	(26.29%)	42.10%	47.57%	(9.51%)	(32.27%)	6.19%
			(5.77%)		27.11%		11.01%		43.67%		(13.79%)		
Central Counties Inbound From:	2007	Tonnage	8,868,718	22,044	9,857,453	409,196	1,489,604	3,706,068	266,728	611,424	1,283,593	84,720	26,599,548
		Combined	8,890,762		10,266,649		5,195,672		878,152		1,368,313		
	2027	Tonnage	8,963,653	16,666	11,387,489	374,291	2,066,116	4,514,451	413,635	808,568	1,955,799	81,053	
		Combined	8,980,319		11,761,781		6,580,567		1,222,203		2,036,852		
		% vs 2007	1.07%	(24.40%)	15.52%	(8.53%)	38.70%	21.81%	55.08%	32.24%	52.37%	(4.33%)	14.97%
			1.01%		14.56%		26.65%		39.18%		48.86%		
Central Counties Outbound To:	2007	Tonnage	4,525,735	12,780	9,851,478	4,501,373	2,171,372	765,092	488,395	5,600	4,354,699	181,840	26,858,363
		Combined	4,538,515		14,352,851		2,936,464		493,995		4,536,539		
	2027	Tonnage	4,548,687	10,635	9,661,670	4,093,838	2,859,464	618,081	788,844	9,911	4,600,841	150,639	
		Combined	4,559,322		13,755,508		3,477,544		798,755		4,751,481		
		% vs 2007	0.51%	(16.78%)	(1.93%)	(9.05%)	31.69%	(19.21%)	61.52%	76.99%	5.65%	(17.16%)	1.80%
			0.46%		(4.16%)		18.43%		61.69%		4.74%		
Central Counties Subtotal	2007	Tonnage	13,394,453	34,824	19,708,931	4,910,569	3,660,975	4,471,160	755,123	617,024	5,638,292	266,560	53,457,911
		Combined	13,429,277		24,619,500		8,132,135		1,372,147		5,904,852		
	2027	Tonnage	13,512,340	27,301	21,049,159	4,468,129	4,925,580	5,132,532	1,202,479	818,479	6,556,640	231,692	
		Combined	13,539,642		25,517,288		10,058,112		2,020,958		6,788,333		
		% vs 2007	0.88%	(21.60%)	6.80%	(9.01%)	34.54%	14.79%	59.24%	32.65%	16.29%	(13.08%)	8.36%
			0.82%		3.65%		23.68%		47.28%		14.96%		

Exhibit 10: Tonnage Summary for Southern Cluster and All Clusters Combined

IPH Counties Tonnage Summary			Local Traffic: Circulates Between IPH Counties		Western Flows: Routes = I-90, US2, US12, US20		Eastern Flows: Routes = I-90, US2, US12, ID200		Northern Flows: Routes = US95, US195, US395		Southern Flows: Routes = US95, US195, US395		Commodity Total
County	Year	Data	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	
Southern Counties Inbound From:	2007	Tonnage	3,532,327	5,016	1,072,711	94,440	617,622	143,168	189,822	166,560	1,054,442	28,040	6,904,149
		Combined	3,537,343		1,167,151		760,790		356,382		1,082,482		
	2027	Tonnage	4,846,167	5,815	1,414,524	111,423	924,741	157,890	286,889	232,104	1,793,213	44,502	
		Combined	4,851,982		1,525,947		1,082,631		518,993		1,837,716		
		% vs 2007	37.19%	15.93%	31.86%	17.98%	49.73%	10.28%	51.14%	39.35%	70.06%	58.71%	42.19%
			37.16%		30.74%		42.30%		45.63%		69.77%		
Southern Counties Outbound To:	2007	Tonnage	4,862,539	3,800	1,463,544	77,672	1,840,430	298,320	101,636		3,127,254	116,720	11,891,914
		Combined	4,866,339		1,541,216		2,138,750		101,636		3,243,974		
	2027	Tonnage	6,883,240	2,654	3,894,506	57,789	1,992,619	234,180	146,187		3,278,459	85,700	
		Combined	6,885,894		3,952,295		2,226,799		146,187		3,364,159		
		% vs 2007	41.56%	(30.16%)	166.10%	(25.60%)	8.27%	(21.50%)	43.83%		4.84%	(26.58%)	39.38%
			41.50%		156.44%		4.12%		43.83%		3.70%		
Southern Counties Subtotal	2007	Tonnage	8,394,866	8,816	2,536,255	172,112	2,458,052	441,488	291,458	166,560	4,181,696	144,760	18,796,063
		Combined	8,403,682		2,708,367		2,899,540		458,018		4,326,456		
	2027	Tonnage	11,729,408	8,469	5,309,029	169,213	2,917,360	392,070	433,076	232,104	5,071,672	130,203	
		Combined	11,737,876		5,478,242		3,309,431		665,180		5,201,875		
		% vs 2007	39.72%	(3.94%)	109.33%	(1.68%)	18.69%	(11.19%)	48.59%	39.35%	21.28%	(10.06%)	40.42%
			39.68%		102.27%		14.14%		45.23%		20.23%		
Combined IPH Counties Inbound From:	2007	Tonnage	13,729,929	98,020	12,628,000	566,796	2,412,529	3,871,676	620,627	788,504	3,007,499	136,040	37,859,620
		Combined	13,827,949		13,194,796		6,284,205		1,409,131		3,143,539		
	2027	Tonnage	15,332,605	49,666	15,089,386	543,055	3,428,582	4,700,665	948,797	1,050,633	4,836,659	144,635	
		Combined	15,382,270		15,632,441		8,129,247		1,999,430		4,981,294		
		% vs 2007	11.67%	(49.33%)	19.49%	(4.19%)	42.12%	21.41%	52.88%	33.24%	60.82%	6.32%	21.83%
			11.24%		18.47%		29.36%		41.89%		58.46%		
Combined IPH Counties Outbound To:	2007	Tonnage	13,729,929	98,020	13,882,365	5,089,955	5,054,659	1,731,852	793,829	143,836	9,280,323	847,560	50,652,329
		Combined	13,827,949		18,972,320		6,786,511		937,665		10,127,883		
	2027	Tonnage	15,332,605	49,666	16,748,903	4,765,369	6,168,589	1,333,211	1,209,502	219,469	9,024,875	604,868	
		Combined	15,382,270		21,514,272		7,501,800		1,428,971		9,629,743		
		% vs 2007	11.67%	(49.33%)	20.65%	(6.38%)	22.04%	(23.02%)	52.36%	52.58%	(2.75%)	(28.63%)	9.49%
			11.24%		13.40%		10.54%		52.40%		(4.92%)		
Combined IPH Counties Total	2007	Tonnage	13,729,929	98,020	26,510,365	5,656,751	7,467,188	5,603,528	1,414,456	932,340	12,287,822	983,600	74,684,000
		Combined	13,827,949		32,167,116		13,070,716		2,346,796		13,271,422		
	2027	Tonnage	15,332,605	49,666	31,838,289	5,308,424	9,597,171	6,033,876	2,158,299	1,270,102	13,861,534	749,504	
		Combined	15,382,270		37,146,713		15,631,046		3,428,401		14,611,037		
		% vs 2007	11.67%	(49.33%)	20.10%	(6.16%)	28.52%	7.68%	52.59%	36.23%	12.81%	(23.80%)	15.42%
			11.24%		15.48%		19.59%		46.09%		10.09%		

RAIL CARLOAD AND INTERMODAL SUMMARY

Rail flows in the three county clusters show that carload freight is forecast to decrease and intermodal freight is forecast to grow (**Exhibit 11**). The table shows tonnage for carload and intermodal and the combination of the two. It also shows the amount of growth or contraction between 2007 and 2027.

Northern Counties will see a decrease in rail freight from a total of 2.13 million tons in 2007 down to 1.85 million tons in 2027, a decrease of 13.44 percent.

- Inbound rail freight is all carload that will see an overall decrease of 49,000 tons or 25.46 percent. Local inbound freight will decrease 43,000 tons, and from the west will decrease 6,000 tons, the north at 600 tons and from the south at 4,000 tons. The only inbound increase will come from the east at 6,000 tons.
- Outbound rail freight will see an overall decrease of 239,000 tons or 12.26 percent. Local freight will decrease by 45,000 tons, the east will decrease 188,000 tons and the south at 181,000 tons. There will be a gain outbound to the west at 103,000 tons and to the north at 71,000 tons.

Central Counties will see an increase in rail freight from a total of 10.30 million tons in 2007 to 10.67 million tons in 2027, an increase of 3.67 percent.

- Inbound rail freight will see an overall increase of 962,000 tons or 19.89 percent. Local inbound freight will decrease 5,000 tons, inbound carload from the west will decrease 36,000 tons and from the south at 3,000 tons. Inbound carload will increase from the east at 748,000 tons and from the north at 197,000 tons. Inbound intermodal will increase from the west at 1,700 tons and from the east at 200,000 tons.
- Outbound rail freight will see an overall decrease of 583,000 tons or 10.68 percent. Local freight will decrease by 2,000 tons, and outbound carload from the west will decrease 553,000 tons, from the east at 176,000 tons, and from the south at 31,000 tons. Outbound intermodal will increase from the west at 313,000 tons and from the east at 28,000 tons.

Southern Counties will see an increase in rail freight from a total of 933,000 tons in 2007 to 17.26 million tons in 2027, an increase of 0.18 percent.

- Inbound rail freight is all carload and will see an increase of 49,000 tons or 25.46 percent. Local inbound freight will increase 800 tons, from the west at 17,000 tons, the east at 14,000 tons, the north at 66,000 tons and from the south at 18,000 tons.
- Outbound rail freight is all carload and will see an overall decrease of 239,000 tons or 12.26 percent. Local freight will decrease by 45,000 tons, from the east at 188,000 tons and from the south at 181,000 tons.

Combined for all Counties will see an increase in rail freight from a total 13.27 million tons in 2007 to 13.41 million tons in 2027, an increase of 1.03 percent.

- Local freight will see a decrease of 49,000 tons, and from the west at 348,000 tons, and the south at 234,000 tons, There will be an increase in tonnage from the east at 430,000 tons and from the north at 662,000 tons.

Exhibit 11: 2007 and 2027 Rail Carload and Intermodal Summary

Rail Carload and Intermodal Tonnage			Local Traffic: Circulates Between IPH Counties		Western Origins or Destinations		Eastern Origins or Destinations		Northern Origins or Destinations		Southern Origins or Destinations		Commodity Total
County	Year	Data	Carload	Intermodal	Carload	Intermodal	Carload	Intermodal	Carload	Intermodal	Carload	Intermodal	
Northern IPH Counties Inbound	2007	Tonnage	70,960		63,160		22,440		10,520		23,280		190,360
	2027	Tonnage	27,185		57,340		28,323		9,960		19,080		141,889
		% vs 2007	(61.69%)		(9.21%)		26.22%		(5.32%)		(18.04%)		(25.46%)
Northern IPH Counties Outbound	2007	Tonnage	81,440		510,910		668,440		138,236		549,000		1,948,026
	2027	Tonnage	36,377		613,742		480,950		209,557		368,529		1,709,155
		% vs 2007	(55.33%)		20.13%		(28.05%)		51.59%		(32.87%)		(12.26%)
Northern IPH Counties Subtotal	2007	Tonnage	152,400		574,070		690,880		148,756		572,280		2,138,386
	2027	Tonnage	63,562		671,082		509,273		219,518		387,609		1,851,044
		% vs 2007	(58.29%)		16.90%		(26.29%)		47.57%		(32.27%)		(13.44%)
Central IPH Counties Inbound	2007	Tonnage	22,044		402,636	6,560	3,483,588	222,480	611,424		84,720		4,833,452
	2027	Tonnage	16,666		366,001	8,291	4,231,483	282,968	808,568		81,053		5,795,030
		% vs 2007	(24.40%)		(9.10%)	26.39%	21.47%	27.19%	32.24%		(4.33%)		19.89%
Central IPH Counties Outbound	2007	Tonnage	12,780		4,315,693	185,680	645,052	120,040	5,600		181,840		5,466,685
	2027	Tonnage	10,635		3,762,068	331,770	469,724	148,357	9,911		150,639		4,883,104
		% vs 2007	(16.78%)		(12.83%)	78.68%	(27.18%)	23.59%	76.99%		(17.16%)		(10.68%)
Central IPH Counties Subtotal	2007	Tonnage	34,824		4,718,329	192,240	4,128,640	342,520	617,024		266,560		10,300,137
	2027	Tonnage	27,301		4,128,068	340,061	4,701,207	431,325	818,479		231,692		10,678,134
		% vs 2007	(21.60%)		(12.51%)	76.89%	13.87%	25.93%	32.65%		(13.08%)		3.67%
Southern IPH Counties Inbound	2007	Tonnage	5,016		94,440		143,168		166,560		28,040		437,224
	2027	Tonnage	5,815		111,423		157,890		232,104		44,502		551,735
		% vs 2007	15.93%		17.98%		10.28%		39.35%		58.71%		26.19%
Southern IPH Counties Outbound	2007	Tonnage	3,800		77,672		298,320				116,720		496,512
	2027	Tonnage	2,654		57,789		234,180				85,700		380,324
		% vs 2007	(30.16%)		(25.60%)		(21.50%)				(26.58%)		(23.40%)
Southern IPH Counties Subtotal	2007	Tonnage	8,816		172,112		441,488		166,560		144,760		933,736
	2027	Tonnage	8,469		169,213		392,070		232,104		130,203		932,059
		% vs 2007	(3.94%)		(1.68%)		(11.19%)		39.35%		(10.06%)		(0.18%)

Exhibit 11: Continued

Rail Carload and Intermodal Tonnage			Local Traffic: Circulates Between IPH Counties		Western Origins or Destinations		Eastern Origins or Destinations		Northern Origins or Destinations		Southern Origins or Destinations		Commodity Total
County	Year	Data	Carload	Intermodal	Carload	Intermodal	Carload	Intermodal	Carload	Intermodal	Carload	Intermodal	
Combined IPH Counties	2007	Tonnage	98,020		560,236	6,560	3,649,196	222,480	788,504		136,040		5,461,036
Inbound *	2027	Tonnage	49,666		534,764	8,291	4,417,696	282,968	1,050,633		144,635		6,488,653
		% vs 2007	(49.33%)		(4.55%)	26.39%	21.06%	27.19%	33.24%		6.32%		18.82%
Combined IPH Counties	2007	Tonnage	98,020		4,904,275	185,680	1,611,812	120,040	143,836		847,560		7,911,223
Outbound *	2027	Tonnage	49,666		4,433,599	331,770	1,184,854	148,357	219,469		604,868		6,972,583
		% vs 2007	(49.33%)		(9.60%)	78.68%	(26.49%)	23.59%	52.58%		(28.63%)		(11.86%)
Combined IPH Counties	2007	Tonnage	98,020		5,464,511	192,240	5,261,008	342,520	932,340		983,600		13,274,239
Total *	2027	Tonnage	49,666		4,968,363	340,061	5,602,551	431,325	1,270,102		749,504		13,411,570
		% vs 2007	(49.33%)		(9.08%)	76.89%	6.49%	25.93%	36.23%		(23.80%)		1.03%
Carload Totals	2007	Tonnage	98,020		5,464,511		5,261,008		932,340		983,600		12,739,479
Carload Totals	2027	Tonnage	<u>49,666</u>		<u>4,968,363</u>		<u>5,602,551</u>		<u>1,270,102</u>		<u>749,504</u>		<u>12,640,185</u>
		Change	(48,354)		(496,148)		341,543		337,762		(234,096)		(99,294)
		% vs 2007	(49.33%)		(9.08%)		6.49%		36.23%		(23.80%)		(0.78%)
Intermodal Totals	2007	Tonnage				192,240		342,520					534,760
Intermodal Totals	2027	Tonnage				<u>331,770</u>		<u>431,325</u>					<u>763,095</u>
		Change				139,530		88,805					228,335
		% vs 2007				72.58%		25.93%					42.70%
Carload + Intermodal	2007	Tonnage	98,020		5,656,751		5,603,528		932,340		983,600		13,274,239
Carload + Intermodal	2027	Tonnage	<u>49,666</u>		<u>5,300,133</u>		<u>6,033,876</u>		<u>1,270,102</u>		<u>749,504</u>		<u>13,403,279</u>
		Change	(48,354)		(356,618)		430,348		337,762		(234,096)		129,040
		% vs 2007	(49.33%)		(6.30%)		7.68%		36.23%		(23.80%)		0.97%

COUNTY CLUSTER FREIGHT FLOWS

Freight flows for each county are shown for 2007 and 2027 in paired tables. For each county cluster four tables are shown. Two tables are shown for inbound flows and two for outbound flows. In each set the upper table shows the county clusters combined directional tonnage. The second table shows each county's directional tonnage. In this lower table, counties are sorted in the left column in descending order based on commodity total tonnage for 2007. In the county table, the top row indicates columns for freight moving in five directions: Local, West, East, North and South as described above. Proportional break-outs are shown in the bottom rows and right-hand column.

The third set of tables shows the top 20 commodities shipped into or out of the county cluster. Commodities are sorted in descending order on commodity total tonnage for 2007 (third column from the left). The fourth column from the left shows the TRANSEARCH™ 2027 forecast growth rate (positive or negative) for the commodity. The resulting forecast tonnage for 2027 is shown in the fifth column. Two tables are shown side by side to allow for easy comparison of inbound and outbound commodity movements that can be used for economic development assessment. Generally, the data positive or negative growth rate indicates which industrial sectors may be expanding or contracting.

Two commodity groups that appear often have vague definitions that require clarity: "Secondary Freight" and "Nonmetallic Minerals." Secondary freight is composed of mixed commodities. Primary freight is composed from a single commodity group shipped from its original origin to a destination. Secondary freight can be composed of single or multiple commodities that can be shipped one or multiple times between production facilities, a production facility to a distribution center (DC), or a DC to a retail outlet; and they can be shipped in single or multiple vehicles. Secondary freight is a good indicator of the growth in the movement of distribution activity within the region and the amount trans-loading, warehousing, and value added inventory handling. It is also an indicator of goods consumption and utilization of parts and components used for value-added commercial activities.

Nonmetallic minerals according to the Washington State University Strategic Freight Transportation Analysis Report 21 are "sand, gravel and aggregates used in the construction of highways and buildings that comprise approximately 96 percent of minerals mined". The report also notes that the mining of these minerals usually occurs close to the point of consumption and are not transported over long distances. "High transportation cost of construction materials, such as sand and gravel or crushed stone, is the largest component in determining the cost of materials in highway construction, which makes the proximity of the mine to the construction site a strong economic issue."

It must also be noted that the commodity movement section for the southern counties of the study area are essentially presented twice. Because the southern counties include significant water movements, that skew comparisons of the other modes in the central

and northern counties, the data is first presented without water movements. In the second series of tables, commodities moving by water are included.

The TRANSEARCH™ dataset contains forecasts for 2012, 2017 and 2027. For brevity, the tables in the body of the technical memo show only the growth rate of 2027 over 2007. Tables for freight flow forecasts for 2012 are in Appendix B and the freight flow forecasts for 2017 are in Appendix C.

NORTHERN COUNTIES INBOUND FREIGHT FLOWS

Inbound freight to the Northern Counties totaled 4.4 million tons in 2007 and is forecast to grow to 5.7 million tons in 2027, an increase of 1.4 million tons or 31.4 percent (**Exhibit 12**).

To assist in identifying tonnage statistics in the tables, the first two tables will have numbered circles, such as ① to assist in orienting where data correlates between the text and tables.

A summary of the forecast for 2027 indicates:

- local truck freight in 2007 was at 1.3 million tons ① and is forecast to grow 14.6 percent ② by 2027 to 1.5 million tons ③
- inbound directional truck freight was at 2.8 million tons ④ and is forecast to grow 43 percent to just over 4 million tons in 2027
- overall inbound rail freight was at 190,000 tons and is forecast to decrease 25.5 percent to 142,000 tons.

Exhibit 12: 2007 and 2027 Northern Counties Inbound Tonnage

Northern Counties Inbound Tonnage		2007	2027	Growth	% Growth
Local Freight					
		①	③		②
Truck Only	Tonnage & Growth Rate	1,328,884	1,522,784	193,900	14.6%
Rail Only	Tonnage & Growth Rate	70,960	27,185	(43,775)	(61.7%)
Truck + Rail	Tonnage & Growth Rate	1,399,844	1,549,969	150,125	10.7%
⑤ Directional Freight (to West, East, North or South)					
Truck Only	Tonnage & Growth Rate	④ 2,836,679	4,061,018	1,224,339	43.2%
Rail Only	Tonnage & Growth Rate	119,400	114,704	(4,696)	(3.9%)
Truck + Rail	Tonnage & Growth Rate	2,956,079	4,175,722	1,219,643	41.3%
Combined Local and Directional Freight					
Truck Only	Tonnage & Growth Rate	4,165,563	5,583,802	1,418,239	34.0%
Rail Only	Tonnage & Growth Rate	190,360	141,889	(48,471)	(25.5%)
Truck + Rail	Tonnage & Growth Rate	4,355,923	5,725,691	1,369,768	31.4%

Detailed inbound analysis *by county* (**Exhibit 13**) indicates:

- Stevens County represents approximately 41.2 percent ⑨ by share of the 2007 total tonnage

- Bonner County has the second largest 2007 share at 39.2 percent of the total
- Boundary County is at 9.1 percent
- Pend Oreille County is at 6.0 percent
- Ferry County is at 4.5 percent

The TRANSEARCH™ forecast indicates inbound tonnage to:

- Stevens County will increase by 675,000 tons or 37.6 percent
- Bonner County will increase by 380,000 tons or 22.5 percent
- Boundary County will increase by 90,000 tons or 23.2 percent
- Pend Oreille County will increase by 95,000 tons or 36.5 percent
- Ferry County will increase by 125,000 tons or 63.6 percent

Inbound analysis *by direction* indicates that in 2007 (in Exhibit 13, second row from bottom, “2007 Truck + Rail Freight”):

- local freight represented a 32.1 percent ⑥ by share of the total tonnage for the Northern Counties
- inbound freight from the West represented 40.4 percent (next column to right)
- inbound freight from the East represented 7.5 percent
- inbound freight from the North (proxy for Canada) represented 4.0 percent
- inbound freight from the South represented 15.9 percent ⑦

TRANSEARCH™ forecasts slight shifts in share for 2027 (the difference between bottom row - 2027, and second row from bottom - 2007):

- local inbound truck and rail freight decreasing 5 percent
- inbound from the West increasing 0.6 percent
- inbound from the East increasing 0.6 percent
- inbound from the North increasing 0.5 percent
- inbound from the South increasing by 3.4 percent, going up to 19.3 percent ⑧

Inbound analysis *by mode* indicates that local truck freight will represent 30.5 percent in 2007 and rail freight will represent 1.6 percent. TRANSEARCH™ forecasts for 2027 the mix will shift with truck decreasing to 26.6 percent and rail decreasing to 0.5 percent.

For directional inbound tonnage in 2007, truck represented 65.1 percent of the total tonnage and rail 2.7 percent. TRANSEARCH™ forecasts for 2027 the mix will shift with truck rising to a 70.9 percent share and rail decreasing to only 2.0 percent.

Inbound truck tonnage with significant increases will occur in Stevens County from the West ⑩, in Bonner County from the South, and in Boundary County from the South. Inbound truck tonnage will not have any significant decreases arriving from any direction. There will not be any significant increases or decreases in inbound rail tonnage arriving from any direction.

Exhibit 13: 2007 and 2027 Northern Counties Inbound Distribution

Northern Counties Inbound Tonnage			Local Freight: Circulates within IPH Counties		Inbound from Western Origins: Routes = I-90, US2, US12, US20		Inbound from Eastern Origins: Routes = I-90, US2, US12, ID200		Inbound from Northern Origins: Routes = US95, US195, US395		Inbound from Southern Origins: Routes = US95, US195, US395		Commodity Total	County %
County	Year	Data	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail		
Stevens County, WA	2007	Tonnage	315,894		1,342,380		47,390		57,572		33,404		1,796,639	41.2%
	2027	Tonnage	438,577		1,821,564		63,213		90,788		57,531		2,471,673	43.2%
		% vs 2007	38.8%		35.7%	10	33.4%		57.7%		72.2%		37.6%	9
Bonner County, ID	2007	Tonnage	786,041	70,960	81,130		201,858		22,087		543,801		1,705,877	39.2%
	2027	Tonnage	815,629	27,185	71,386		285,792		30,245		858,673		2,088,910	36.5%
		% vs 2007	3.8%	(61.7%)	(12.0%)		41.6%		36.9%		57.9%		22.5%	
Boundary County, ID	2007	Tonnage	159,353		9,320	62,080	33,489	17,120	5,444	7,960	78,468	23,280	396,514	9.1%
	2027	Tonnage	173,577		9,649	56,083	46,981	24,374	7,349	7,239	144,330	19,080	488,663	8.5%
		% vs 2007	8.9%		3.5%	(9.7%)	40.3%	42.4%	35.0%	(9.1%)	83.9%	(18.0%)	23.2%	
Pend Oreille County, WA	2007	Tonnage	43,866		145,126		17,456	5,320	37,829	2,560	9,857		262,014	6.0%
	2027	Tonnage	55,608		184,100		35,292	3,949	57,163	2,721	18,697		357,531	6.2%
		% vs 2007	26.8%		26.9%		102.2%	(25.8%)	51.1%	6.3%	89.7%		36.5%	
Ferry County, WA	2007	Tonnage	23,730		119,879	1,080	5,109		41,145		3,935		194,878	4.5%
	2027	Tonnage	39,393		200,675	1,257	6,447		62,728		8,414		318,915	5.6%
		% vs 2007	66.0%		67.4%	16.4%	26.2%		52.5%		113.9%		63.6%	
County Summary	2007	Tonnage	1,328,884	70,960	1,697,835	63,160	305,303	22,440	164,077	10,520	669,464	23,280	4,355,923	100.0%
	2027	Tonnage	1,522,784	27,185	2,287,373	57,340	437,724	28,323	248,274	9,960	1,087,646	19,080	5,725,691	100.0%
		% vs 2007	14.6%	(61.7%)	34.7%	(9.2%)	43.4%	26.2%	51.3%	(5.3%)	62.5%	(18.0%)	31.4%	

2007 Truck Freight	2007	Tons %	30.5%			65.1%							
2007 Rail Freight	2007	Tons %		1.6%		2.7%							100.0%
2027 Truck Freight	2027	Tons %	26.6%			70.9%							
2027 Rail Freight	2027	Tons %		0.5%		2.0%							100.0%
2007 Truck + Rail	2007	Tons %	5	32.1%	40.4%	7.5%	4.0%	6	15.9%	8			100.0%
2027 Truck + Rail	2027	Tons %		27.1%	7	41.0%	8.1%	4.5%					100.0%

NORTHERN COUNTIES OUTBOUND FREIGHT FLOWS

Outbound freight from the Northern Counties totaled 11.9 million tons in 2007 and is forecast to decrease slightly to 11.5 million tons in 2027, a reduction of 362,000 tons or 3.0 percent (**Exhibit 14**).

A summary of the forecast for 2027 indicates:

- local truck freight in 2007 was at 4.3 million tons and is forecast to decrease 10.2 percent by 2027 to 3.9 million tons
- outbound directional truck freight was at 5.6 million tons and is forecast to increase 5.6 percent to 5.9 million tons
- outbound directional rail freight was at 1.87 million tons and is forecast to decrease 10.4 percent to 1.67 million tons

Exhibit 14: 2007 and 2027 Northern Counties Outbound Tonnage

Northern Counties Outbound Tonnage		2007	2027	Growth	% Growth
Local freight					
Truck Only	Tonnage & Growth Rate	4,341,656	3,900,678	(440,978)	(10.2%)
Rail Only	Tonnage & Growth Rate	81,440	36,377	(45,063)	(55.3%)
Truck + Rail	Tonnage & Growth Rate	4,423,096	3,937,054	(486,042)	(11.0%)
Directional Freight (to West, East, North or South)					
Truck Only	Tonnage & Growth Rate	5,612,369	5,929,279	316,910	5.6%
Rail Only	Tonnage & Growth Rate	1,866,586	1,672,778	(193,808)	(10.4%)
Truck + Rail	Tonnage & Growth Rate	7,478,955	7,602,057	123,102	1.6%
Combined Local and Directional Freight					
Truck Only	Tonnage & Growth Rate	9,954,025	9,829,957	(124,069)	(1.2%)
Rail Only	Tonnage & Growth Rate	1,948,026	1,709,155	(238,871)	(12.3%)
Truck + Rail	Tonnage & Growth Rate	11,902,051	11,539,111	(362,940)	(3.0%)

Detailed outbound analysis *by county* (**Exhibit 15**) indicates:

- Bonner County represents approximately 42.5 percent of the 2007 total tonnage
- Stevens County has the second largest 2007 share with 28.8 percent of the total
- Boundary County is at 17.9 percent
- Pend Oreille County is at 6.9 percent
- Ferry County is at 3.9 percent.

The TRANSEARCH™ forecast indicates that inbound tonnage to:

- Bonner County will decrease by 460,000 tons or 9.1 percent
- Stevens County will decrease by 665,000 tons or 19.4 percent
- Boundary County will decrease by 560,000 tons or 26.3 percent
- Ferry County will increase by 1.5 million tons or over 300 percent
- Pend Oreille County will decrease by 195,000 tons or 23.5 percent

Outbound analysis *by direction* indicates that in 2007:

- local freight represented a 37.2 percent by share of the total outbound tonnage for the Northern Counties
- outbound freight to the West represented 25.9 percent
- outbound freight to the East represented 14.4 percent
- outbound freight to the North (proxy for Canada) represented 2.9 percent
- outbound freight from the South represented 19.7 percent

TRANSEARCH™ forecasts slight shifts for 2027:

- local outbound freight decreasing by 3.1 percent
- Western outbound freight increasing by 7.1 percent
- Eastern outbound freight increasing by 1.2 percent
- North outbound freight increasing by 1.3 percent
- South outbound freight decreasing by 6.6 percent

Outbound analysis *by mode* indicates local truck freight share was at 36.5 percent in 2007 and rail share was at 0.7 percent. TRANSEARCH™ forecasts for 2027 truck share to be 33.8 percent and rail share will be at 0.3 percent.

For directional outbound tonnage in 2007 truck share was 47.2 percent and rail share was at 15.7 percent. TRANSEARCH™ forecasts for 2027 the mix will shift with truck rising to 51.4 percent and rail decreasing to only 14.5 percent.

Outbound truck tonnage with significant increases will occur in Bonner County to the west, in Stevens County to the north and in Ferry County to the west, east and south.

Outbound truck tonnage with significant decreases will occur in Bonner County to the south, in Stevens County to the west and in Boundary County to the south.

Outbound rail tonnage with significant increases will occur in Stevens County to the west and Boundary County to the north.

Outbound rail tonnage with significant decreases will occur in Bonner County to the west, east and south, in Stevens County to the east and South, in Boundary County to the east and south and in Pend Oreille County to the east and south.

Exhibit 15: 2007 and 2027 Northern Counties Outbound Distribution

Northern Counties Outbound Tonnage			Local freight: Circulates within IPH Counties		Outbound to Western Destinations: Routes = I-90, US2, US12, US20		Outbound to Eastern Destinations: Routes = I-90, US2, US12, ID200		Outbound to Northern Destinations: Routes = US95, US195, US395		Outbound to Southern Destinations: Routes = US95, US195, US395		Commodity Total	County %
County	Year	Data	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail		
Bonner County, ID	2007	Tonnage	3,125,780	66,880	148,983	11,400	562,625	196,360	10,011		819,734	112,960	5,054,734	42.5%
	2027	Tonnage	2,983,420	28,205	159,295	3,958	761,944	141,142	13,486		434,467	68,103	4,594,020	39.8%
		% vs 2007	(4.6%)	(57.8%)	6.9%	(65.3%)	35.4%	(28.1%)	34.7%		(47.0%)	(39.7%)	(9.1%)	
Stevens County, WA	2007	Tonnage	698,031		1,581,893	299,728	167,845	213,120	170,156	75,116	206,870	16,000	3,428,758	28.8%
	2027	Tonnage	538,959		986,345	403,105	141,891	152,792	231,585	96,809	198,091	12,913	2,762,491	23.9%
		% vs 2007	(22.8%)		(37.6%)	34.5%	(15.5%)	(28.3%)	36.1%	28.9%	(4.2%)	(19.3%)	(19.4%)	
Boundary County, ID	2007	Tonnage	218,713	14,560	51,739	199,782	266,729	231,560	5,559	63,120	702,336	377,680	2,131,778	17.9%
	2027	Tonnage	103,046	8,172	57,449	206,678	271,710	167,422	7,338	112,748	383,075	253,194	1,570,832	13.6%
		% vs 2007	(52.9%)	(43.9%)	11.0%	3.5%	1.9%	(27.7%)	32.0%	78.6%	(45.5%)	(33.0%)	(26.3%)	
Pend Oreille County, WA	2007	Tonnage	266,919		421,193		21,810	27,400	11,221		33,126	42,360	824,030	6.9%
	2027	Tonnage	115,291		398,126		17,283	19,595	14,141		31,639	34,319	630,393	5.5%
		% vs 2007	(56.8%)		(5.5%)		(20.8%)	(28.5%)	26.0%		(4.5%)	(19.0%)	(23.5%)	
Ferry County, WA	2007	Tonnage	32,213		363,535		23,849		6,850		36,304		462,750	3.9%
	2027	Tonnage	159,962		1,591,512		123,677		7,921		98,303		1,981,375	17.2%
		% vs 2007	396.6%		337.8%		418.6%		15.6%		170.8%		328.2%	
County Summary	2007	Tonnage	4,341,656	81,440	2,567,343	510,910	1,042,857	668,440	203,798	138,236	1,798,370	549,000	11,902,051	100.0%
	2027	Tonnage	3,900,678	36,377	3,192,727	613,742	1,316,506	480,950	274,471	209,557	1,145,575	368,529	11,539,111	100.0%
		% vs 2007	(10.2%)	(55.3%)	24.4%	20.1%	26.2%	(28.0%)	34.7%	51.6%	(36.3%)	(32.9%)	(3.0%)	

2007 Truck Freight	2007	Tons %	36.5%			47.2%							
2007 Rail Freight	2007	Tons %		0.7%		15.7%							100.0%
2027 Truck Freight	2027	Tons %	33.8%			51.4%							
2027 Rail Freight	2027	Tons %		0.3%		14.5%							100.0%
2007 Truck + Rail	2007	Tons %	37.2%		25.9%	14.4%		2.9%		19.7%			100.0%
2027 Truck + Rail	2027	Tons %	34.1%		33.0%	15.6%		4.2%		13.1%			100.0%

COMMODITIES THAT MOVE INTO AND OUT-OF THE NORTHERN COUNTIES

The pie charts below depict the top ten inbound and outbound commodities by percentage of the tonnage shipped. The next ten to twenty commodities shipped typically equal few percentage points more or less. For clarity, these smaller commodities have been omitted from the pie charts to minimize the number of categories shown but are detailed in the following tables. In each pie chart set to help visualize proportional changes the left pie chart shows 2007's distribution while the right pie chart shows 2027's distribution. For example, in **(Exhibit 16)** it is easy to recognize that inbound secondary freight increases from 48.2 percent in 2007 to 60.9 percent in 2027, and the shifting share of lumber or wood products that decreases from 21.7 percent in 2007 to 8.4 percent in 2027.

Inbound commodity share (Exhibit 16): The top four commodities represent over 86 percent of total in bound freight for 2007.

- secondary freight inbound shipments in 2007 represented 2 million tons or 48.2 percent of the total tonnage and is forecast to reach 60.1 percent in 2027
- lumber, nonmetallic minerals, as well as clay, concrete, glass or stone products comprise the remaining three in the group of large inbound commodities.

Outbound commodity share (Exhibit 17): The top three commodities represent 94 percent of the total outbound freight. The pie charts easily depict the significance of lumber and nonmetallic minerals in outbound tonnage for the Northern Counties.

- lumber products represented 51.5 percent of the outbound tonnage in 2007 and will decrease in share to 45 percent by 2027
- minerals represented 38.9 percent and will increase in share 41 percent by 2027
- farm products represented approximately 2.6 percent and will increase slightly.

Exhibit 16: 2007 and 2027 Northern Counties Top Ten Inbound Commodities

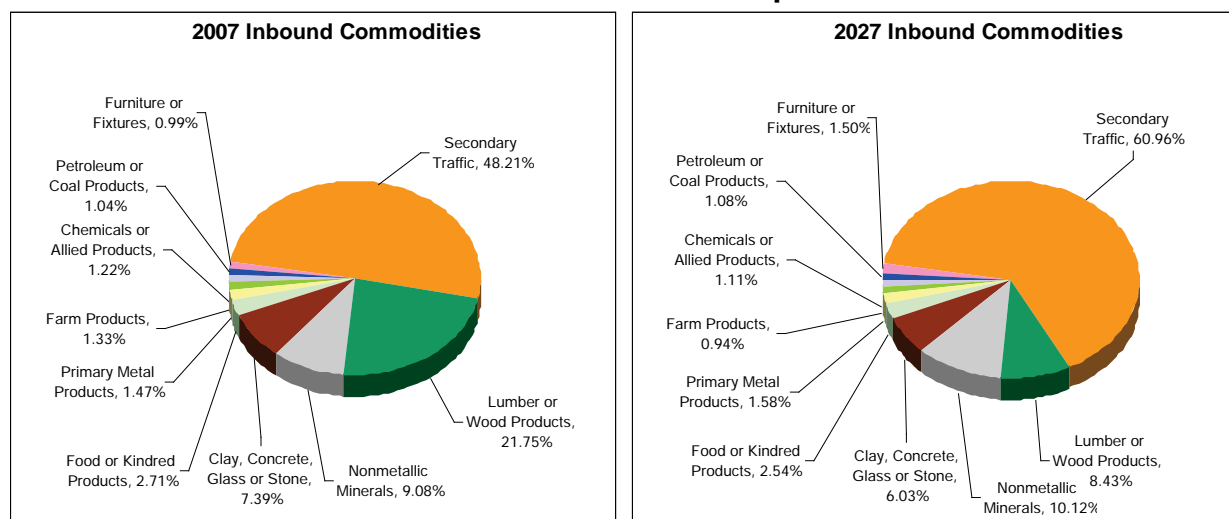
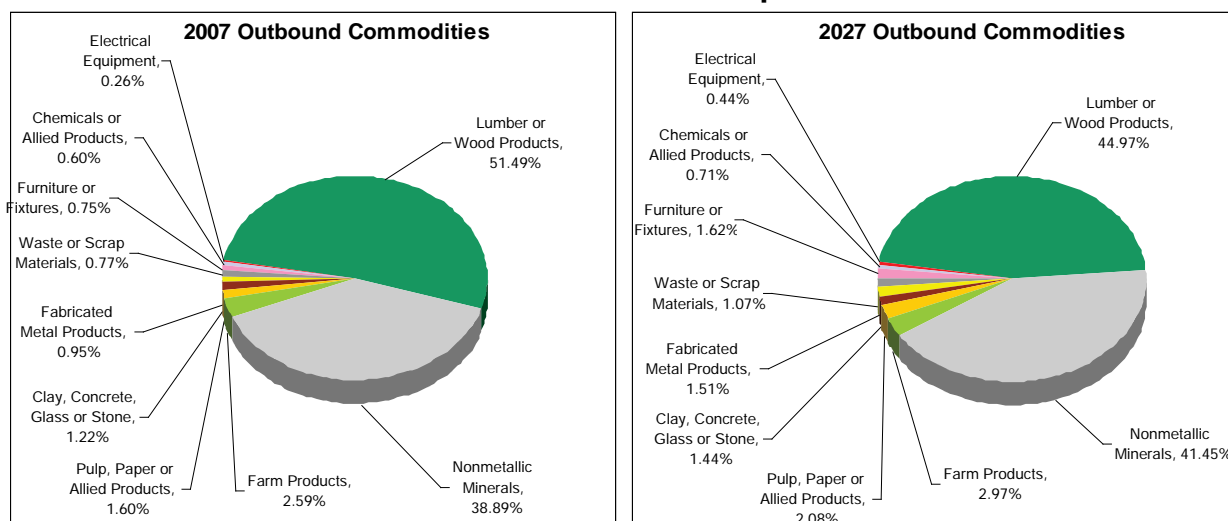


Exhibit 17: 2007 and 2027 Northern Counties Top Ten Outbound Commodities



The pie charts can be cross referenced with **Exhibit 18** to determine the tonnage changes for the inbound (table on the left) and outbound (table on the right) commodities sorted in descending order for tonnage for the year 2007. The center column indicates the forecast growth percentage for the commodities by 2027.

Inbound commodity forecast growth (Exhibit 19): The table and chart shows the forecasted growth from the base year of 2007 and each of study periods. This tool enables a quick visualization of not only the long term growth but also what happens during the intermediate years as a result of the 2008-2009 recession.

- for example, in 2007 the largest inbound commodity was secondary freight and clearly the charts indicate tonnage will increase in each forecast period, with 66.7 percent by 2027; indicating more local consumption of consumer type products
- lumber and wood products show a decrease in each forecast period which indicates a gradual decline for inbound demand for this commodity or that its distribution pattern is changing with direct shipment to other destinations by-passing the region
- nonmetallic minerals and clay products indicate an initial decline succeeded by growth reflecting a recessionary down-turn for sand and gravel in construction.

Outbound commodity forecast growth (Exhibit 20):

- lumber products experience a large initial decrease with small positive growth in 2012 and 2017, and 2027 tonnage is still 15 percent less than 2007's indicating a gradual decline in this commodity sector
- nonmetallic minerals experience an initial decline but fully recovers by 2027
- farm products are forecast to gradually grow 11 percent by 2027
- commodities that result from manufacturing or value added processes, such as paper, furniture, electrical and transportation equipment, printed material, and others shown in the table all forecast growth, reflecting a gradual change in the economy toward activities that are not mainly dependent on natural resources.

Exhibit 18: 2007 and 2027 Northern Counties Commodities Forecast Changes

Northern Counties Inbound						Northern Counties Outbound					
Top 20 Commodities	2007 %	2007 Tons	Growth % ►	2027 Tons	2027 %	Top 20 Commodities	2007 %	2007 Tons	Growth % ►	2027 Tons	2027 %
Secondary Freight	48.21%	2,099,804	66.21%	3,490,178	60.96%	Lumber or Wood Products	51.49%	6,128,070	(15.33%)	5,188,677	44.97%
Lumber or Wood Products	21.75%	947,405	(49.07%)	482,507	8.43%	Nonmetallic Minerals	38.89%	4,628,855	3.32%	4,782,552	41.45%
Nonmetallic Minerals	9.08%	395,413	46.52%	579,351	10.12%	Farm Products	2.59%	308,288	11.00%	342,189	2.97%
Clay, Concrete, Glass or Stone	7.39%	321,711	7.34%	345,313	6.03%	Pulp, Paper or Allied Products	1.60%	189,859	26.26%	239,714	2.08%
Food or Kindred Products	2.71%	118,222	23.01%	145,429	2.54%	Clay, Concrete, Glass or Stone	1.22%	145,315	14.29%	166,078	1.44%
Primary Metal Products	1.47%	64,021	41.25%	90,432	1.58%	Fabricated Metal Products	0.95%	113,431	53.85%	174,508	1.51%
Farm Products	1.33%	57,765	(6.46%)	54,035	0.94%	Waste or Scrap Materials	0.77%	91,154	35.68%	123,677	1.07%
Chemicals or Allied Products	1.22%	52,984	19.71%	63,426	1.11%	Furniture or Fixtures	0.75%	89,048	110.14%	187,129	1.62%
Petroleum or Coal Products	1.04%	45,151	36.84%	61,784	1.08%	Chemicals or Allied Products	0.60%	71,049	15.15%	81,815	0.71%
Furniture or Fixtures	0.99%	42,978	99.77%	85,859	1.50%	Electrical Equipment	0.26%	30,788	65.63%	50,992	0.44%
Pulp, Paper or Allied Products	0.98%	42,641	18.63%	50,587	0.88%	Food or Kindred Products	0.19%	22,932	18.10%	27,084	0.23%
Rail Intermodal Drayage from Ramp	0.63%	27,403	28.00%	35,077	0.61%	Secondary Freight	0.15%	17,861	321.92%	75,361	0.65%
Electrical Equipment	0.59%	25,847	86.26%	48,143	0.84%	Primary Metal Products	0.15%	17,561	(35.46%)	11,334	0.10%
Fabricated Metal Products	0.49%	21,314	54.63%	32,959	0.58%	Transportation Equipment	0.12%	14,682	104.79%	30,067	0.26%
Transportation Equipment	0.47%	20,557	64.47%	33,809	0.59%	Rail Intermodal Drayage to Ramp	0.09%	11,184	84.33%	20,615	0.18%
Waste or Scrap Materials	0.44%	19,017	42.95%	27,184	0.47%	Rubber or Misc Plastics	0.07%	7,946	41.93%	11,278	0.10%
Coal	0.39%	17,201	46.55%	25,208	0.44%	Apparel or Related Products	0.03%	3,165	223.86%	10,250	0.09%
Rubber or Misc Plastics	0.24%	10,290	56.73%	16,128	0.28%	Fresh Fish or Marine Products	0.03%	2,986	44.89%	4,326	0.04%
Machinery	0.20%	8,850	143.51%	21,551	0.38%	Metallic Ores	0.02%	2,902	(38.38%)	1,788	0.02%
Misc Manufacturing Products	0.17%	7,288	241.61%	24,896	0.43%	Printed Matter	0.02%	2,188	147.80%	5,423	0.05%

Exhibit 19: 2007, 2012, 2017 and 2027 Northern Counties Inbound Commodity Growth

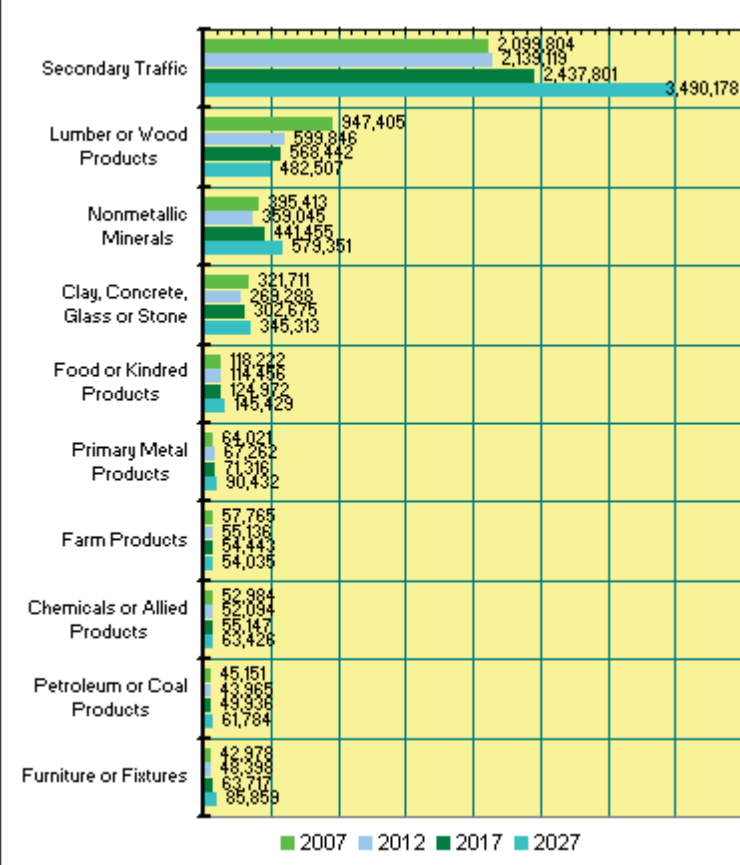
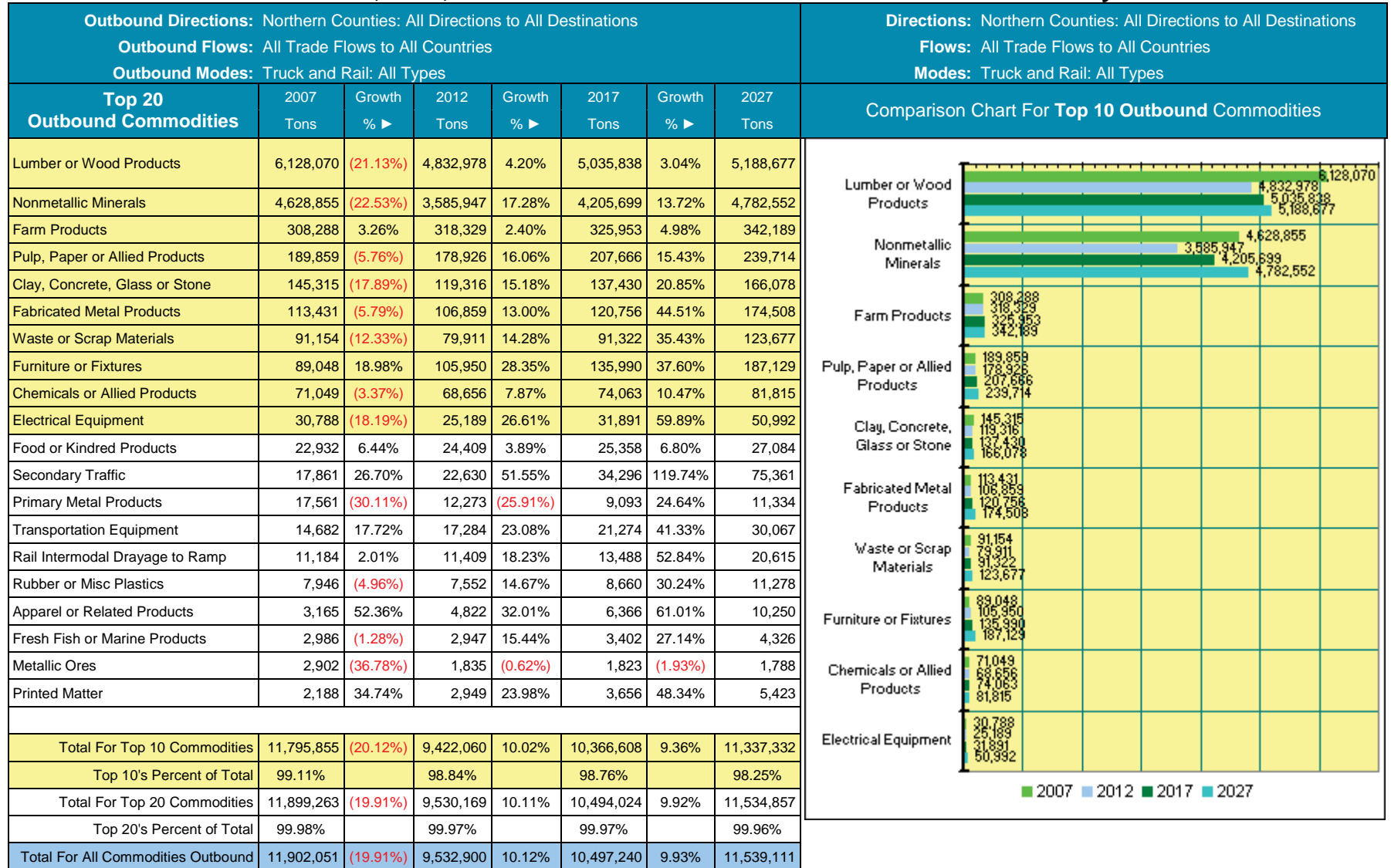
Inbound Directions: Northern IPH Counties: All Directions From All Origins Inbound Flows: All Trade Flows from All Countries Inbound Modes: Truck and Rail: All Types								Directions: Northern IPH Counties: All Directions From All Origins Flows: All Trade Flows from All Countries Modes: Truck and Rail: All Types							
Top 20 Inbound Commodities	2007 Tons	Growth % ▶	2012 Tons	Growth % ▶	2017 Tons	Growth % ▶	2027 Tons	Comparison Chart For Top 10 Inbound Commodities							
Secondary Traffic	2,099,804	1.87%	2,139,119	13.96%	2,437,801	43.17%	3,490,178								
Lumber or Wood Products	947,405	(36.69%)	599,846	(5.24%)	568,442	(15.12%)	482,507								
Nonmetallic Minerals	395,413	(9.20%)	359,045	22.95%	441,455	31.24%	579,351								
Clay, Concrete, Glass or Stone	321,711	(16.29%)	269,288	12.40%	302,675	14.09%	345,313								
Food or Kindred Products	118,222	(3.19%)	114,456	9.19%	124,972	16.37%	145,429								
Primary Metal Products	64,021	5.06%	67,262	6.03%	71,316	26.80%	90,432								
Farm Products	57,765	(4.55%)	55,136	(1.26%)	54,443	(0.75%)	54,035								
Chemicals or Allied Products	52,984	(1.68%)	52,094	5.86%	55,147	15.01%	63,426								
Petroleum or Coal Products	45,151	(2.63%)	43,965	13.58%	49,936	23.73%	61,784								
Furniture or Fixtures	42,978	12.61%	48,398	31.65%	63,717	34.75%	85,859								
Pulp, Paper or Allied Products	42,641	(6.89%)	39,704	9.05%	43,295	16.84%	50,587								
Rail Intermodal Drayage from Ramp	27,403	(14.94%)	23,310	10.33%	25,718	36.39%	35,077								
Electrical Equipment	25,847	(21.10%)	20,393	28.32%	26,168	83.98%	48,143								
Fabricated Metal Products	21,314	(6.97%)	19,829	18.95%	23,586	39.74%	32,959								
Transportation Equipment	20,557	2.63%	21,096	16.74%	24,627	37.28%	33,809								
Waste or Scrap Materials	19,017	3.97%	19,772	13.02%	22,348	21.64%	27,184								
Coal	17,201	(1.67%)	16,913	20.28%	20,344	23.91%	25,208								
Rubber or Misc Plastics	10,290	(3.53%)	9,926	17.62%	11,676	38.13%	16,128								
Machinery	8,850	15.85%	10,253	27.86%	13,109	64.39%	21,551								
Misc Manufacturing Products	7,288	22.65%	8,938	40.92%	12,596	97.65%	24,896								
Total For Top 10 Commodities															
Total For Top 20 Commodities															
Total For All Commodities Inbound															

Exhibit 20: 2007, 2012, 2017 and 2027 Northern Counties Outbound Commodity Growth



CENTRAL COUNTIES INBOUND FREIGHT FLOWS

Inbound freight to the Central Counties totaled 26.6 million tons in 2007 and is forecast to grow to 30.6 million tons in 2027, an increase of almost 4 million tons or 15 percent (**Exhibit 21**).

A summary of the forecast for 2027 indicates:

- local truck freight in 2007 was at 8.86 million tons and is forecast to grow 1.1 percent by 2027 to 8.96 million tons
- inbound directional truck freight was at 12.9 million tons and is forecast to grow 22.7 percent to 15.8 million tons
- inbound directional rail freight was at 4.8 million tons and is forecast to grow 20.1 percent to 5.8 million tons.

Exhibit 21: 2007 and 2027 Central Counties Inbound Tonnage

Central Counties Inbound Tonnage		2007	2027	Growth	% Growth
Local freight					
Truck Only	Tonnage & Growth Rate	8,868,718	8,963,653	94,935	1.1%
Rail Only	Tonnage & Growth Rate	22,044	16,666	(5,378)	(24.4%)
Truck + Rail	Tonnage & Growth Rate	8,890,762	8,980,319	89,558	1.0%
Directional Freight (to West, East, North or South)					
Truck Only	Tonnage & Growth Rate	12,897,378	15,823,040	2,925,662	22.7%
Rail Only	Tonnage & Growth Rate	4,811,408	5,778,364	966,956	20.1%
Truck + Rail	Tonnage & Growth Rate	17,708,786	21,601,403	3,892,617	22.0%
Combined Local and Directional Freight					
Truck Only	Tonnage & Growth Rate	21,766,096	24,786,693	3,020,597	13.9%
Rail Only	Tonnage & Growth Rate	4,833,452	5,795,030	961,578	19.9%
Truck + Rail	Tonnage & Growth Rate	26,599,548	30,581,723	3,982,175	15.0%

Detailed inbound analysis *by county* (**Exhibit 22**) indicates:

- Spokane County represents 79.8 percent by share of the 2007 total tonnage
- Kootenai County has the second largest 2007 share at 10.9 percent of the total
- Adams County is at 4 percent
- Lincoln County is at 3.9 percent
- Shoshone County is at 1.4 percent.

The TRANSEARCH™ forecast indicates the inbound tonnage to:

- Spokane County will increase by 1.96 million tons or 9.2 percent
- Kootenai County will increase by 630,000 tons or 21.4 percent
- Lincoln County will increase by 1.1 million tons or 100.3 percent
- Shoshone County will increase by 355,000 tons or 96.2 percent
- Adams County will decrease by less than 0.9 percent.

Inbound analysis *by direction* indicates that in 2007:

- local freight represented a 33.3 percent by share of the total tonnage for the Central Counties
- inbound freight from the West represented 38.6 percent
- inbound freight from the East represented 19.5 percent
- inbound freight from the North (proxy for Canada) represented 3.3 percent
- inbound freight from the South represented 5.1 percent.

TRANSEARCH™ forecasts slight shifts in share for 2027:

- local inbound freight will decrease by 4 percent
- inbound arriving from the West will remain level
- Inbound arriving from the East will increase by 2 percent
- Inbound arriving from the North will increase by 0.7 percent
- Inbound freight arriving from the South will increase by 1.4 percent.

Inbound analysis *by mode* indicates that local truck freight will be at 33.3 percent in 2007 and rail freight will be at 0.1 percent. TRANSEARCH™ forecasts for 2027 the mix will shift with truck decreasing to 29.3 percent and rail remaining approximately level.

For directional inbound tonnage in 2007 truck represented 48.5 percent of the total tonnage and rail represented 18.1 percent. TRANSEARCH™ forecasts for 2027 the mix will shift with truck rising to a 51.7 percent share and rail increasing to 18.9 percent.

Inbound truck tonnage will increase in Spokane County from all directions, in Kootenai County from the east, north and south, in Lincoln County from the west, east and south, and in Shoshone County from the east and south.

Inbound truck tonnage will not have any significant decreases from any direction.

Inbound rail tonnage will increase in Spokane County from the east and north, in Kootenai County from the north, and in Adams County from the north.

Inbound rail tonnage will decrease in Spokane County from the west, and Adams County from the east.

Exhibit 22: 2007 and 2027 Central Counties Inbound Distribution

Central Counties Inbound Tonnage			Local freight: Circulates within IPH Counties		Inbound from Western Origins: Routes = I-90, US2, US12, US20		Inbound from Eastern Origins: Routes = I-90, US2, US12, ID200		Inbound from Northern Origins: Routes = US95, US195, US395		Inbound from Southern Origins: Routes = US95, US195, US395		Commodity Total	County %
County	Year	Data	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail		
Spokane County, WA	2007	Tonnage	6,703,832	18,084	8,403,410	401,916	962,855	3,498,236	148,804	498,264	525,569	60,240	21,221,210	79.8%
	2027	Tonnage	6,181,871	15,081	9,403,139	368,982	1,193,223	4,346,682	231,915	628,816	749,244	64,693	23,183,647	75.8%
		% vs 2007	(7.8%)	(16.6%)	11.9%	(8.2%)	23.9%	24.3%	55.9%	26.2%	42.6%	7.4%	9.2%	
Kootenai County, ID	2007	Tonnage	1,234,365	3,960	525,056	3,280	379,073	58,308	44,826	36,600	604,640	18,840	2,908,948	10.9%
	2027	Tonnage	1,318,403	1,585	571,619	684	513,376	50,715	74,381	56,272	929,097	14,477	3,530,609	11.5%
		% vs 2007	6.8%	(60.0%)	8.9%	(79.1%)	35.4%	(13.0%)	65.9%	53.7%	53.7%	(23.2%)	21.4%	
Lincoln County, WA	2007	Tonnage	469,949		392,457		68,301	3,920	33,350	3,160	78,913		1,050,050	3.9%
	2027	Tonnage	852,020		855,087		184,549	6,151	49,077	4,923	151,325		2,103,131	6.9%
		% vs 2007	81.3%		117.9%		170.2%	56.9%	47.2%	55.8%	91.8%		100.3%	
Adams County, WA	2007	Tonnage	244,572		503,432	4,000	16,908	145,604	34,905	73,400	22,646	5,640	1,051,107	4.0%
	2027	Tonnage	186,105		511,505	4,625	29,819	110,904	51,730	118,558	26,872	1,882	1,042,000	3.4%
		% vs 2007	(23.9%)		1.6%	15.6%	76.4%	(23.8%)	48.2%	61.5%	18.7%	(66.6%)	(0.9%)	
Shoshone County, ID	2007	Tonnage	216,000		33,097		62,467		4,843		51,826		368,233	1.4%
	2027	Tonnage	425,253		46,140		145,149		6,532		99,261		722,336	2.4%
		% vs 2007	96.9%		39.4%		132.4%		34.9%		91.5%		96.2%	
County Summary	2007	Tonnage	8,868,718	22,044	9,857,453	409,196	1,489,604	3,706,068	266,728	611,424	1,283,593	84,720	26,599,548	100.0%
	2027	Tonnage	8,963,653	16,666	11,387,489	374,291	2,066,116	4,514,451	413,635	808,568	1,955,799	81,053	30,581,723	100.0%
		% vs 2007	1.1%	(24.4%)	15.5%	(8.5%)	38.7%	21.8%	55.1%	32.2%	52.4%	(4.3%)	15.0%	

2007 Truck Freight	2007	Tons %	33.3%		48.5%				
2007 Rail Freight	2007	Tons %		0.1%	18.1%				100.0%
2027 Truck Freight	2027	Tons %	29.3%		51.7%				
2027 Rail Freight	2027	Tons %		0.1%	18.9%				100.0%
2007 Truck + Rail	2007	Tons %	33.4%		38.6%	19.5%	3.3%	5.1%	100.0%
2027 Truck + Rail	2027	Tons %	29.4%		38.5%	21.5%	4.0%	6.7%	100.0%

CENTRAL COUNTIES OUTBOUND FREIGHT FLOWS

Outbound freight from the Central Counties totaled 26.8 million tons in 2007 and is forecast to increase slightly to 27.3 million tons in 2027, an increase of 484,000 tons or 1.8 percent (**Exhibit 23**).

A summary of the forecast for 2027 indicates:

- local truck freight in 2007 was at 4.5 million tons and is forecast to increase by only 0.5 percent by 2027
- directional truck freight was at 16.9 million tons and is forecast to increase 6.2 percent to 17.9 million tons by 2027
- directional rail freight was at 5.4 million tons and is forecast to decrease 10.7 percent to 4.9 million tons by 2027.

Exhibit 23: 2007 and 2027 Central Counties Outbound Tonnage

Central Counties Outbound Tonnage		2007	2027	Growth	% Growth
Local freight					
Truck Only	Tonnage & Growth Rate	4,525,735	4,548,687	22,952	0.5%
Rail Only	Tonnage & Growth Rate	12,780	10,635	(2,145)	(16.8%)
Truck + Rail	Tonnage & Growth Rate	4,538,515	4,559,322	20,807	0.5%
Directional Freight (to West, East, North or South)					
Truck Only	Tonnage & Growth Rate	16,865,944	17,910,819	1,044,875	6.2%
Rail Only	Tonnage & Growth Rate	5,453,905	4,872,469	(581,436)	(10.7%)
Truck + Rail	Tonnage & Growth Rate	22,319,849	22,783,288	463,439	2.1%
Combined Local and Directional Freight					
Truck Only	Tonnage & Growth Rate	21,391,678	22,459,506	1,067,828	5.0%
Rail Only	Tonnage & Growth Rate	5,466,685	4,883,104	(583,581)	(10.7%)
Truck + Rail	Tonnage & Growth Rate	26,858,363	27,342,610	484,246	1.8%

Outbound analysis *by county* indicates:

- Spokane County represents 57.5 percent of the 2007 total outbound tonnage
- Kootenai County is second with 21.5 percent of the total
- Adams County is at 9.8 percent
- Lincoln County at 9.8 percent
- Shoshone County is at 1.3 percent.

The 2027 TRANSEARCH™ forecast indicates outbound tonnage from:

- Spokane County will increase by 650,000 tons or 3.9 percent
- Kootenai County will increase by 815,000 tons or 13.2 percent
- Lincoln County will increase by 730,000 tons or 44.7 percent
- Adams County will decrease by 1.26 million tons or 44.7 percent
- Shoshone County will decrease by 140,000 tons or 37 percent.

The detailed outbound analysis *by direction* (**Exhibit 24**) indicates that in 2007:

- local freight represented 15.2 percent of the total tonnage for the Central Counties
- outbound freight to the Western states represented 53.8 percent of the total
- outbound freight to the Eastern states represented 10.7 percent
- outbound freight to the Southern states represented 1.9 percent
- outbound freight to the North or Canada was only 18.9 percent

TRANSEARCH™ forecasts minor shifts in share for 2027 with local freight remaining basically the same, outbound to the West decreasing 2.7 percent, eastbound freight gaining 1.3 percent, northbound freight going up 1.2 percent and freight destined to the South up 0.4 percent.

Outbound analysis *by mode* indicates that the local freight mix in 2007 and 2027 will remain about the same: truck will have approximately 15 percent and rail with less than 0.1 percent.

For directional outbound tonnage in 2007, trucks represented 62.4 percent and rail represented 22.3 percent. TRANSEARCH™ forecasts that by 2027 the mix will shift slightly with truck representing 66.3 percent, and rail decreasing to 18.7 percent.

Outbound truck tonnage will increase in Spokane County to the east and north, in Kootenai County in all directions, and in Lincoln County to the north.

Outbound truck tonnage will decrease in Spokane County to the west, in Adams County to the west and south and in Lincoln County to the west and south.

Outbound rail tonnage will increase only in Spokane County to the west.

Outbound rail tonnage decreases will occur in Adams County to the west and east, and Lincoln County to the west.

Exhibit 24: 2007 and 2027 Central Counties Outbound Distribution

Central Counties Outbound Tonnage			Local freight: Circulates within IPH Counties		Outbound to Western Destinations: Routes = I-90, US2, US12, US20		Outbound to Eastern Destinations: Routes = I-90, US2, US12, ID200		Outbound to Northern Destinations: Routes = US95, US195, US395		Outbound to Southern Destinations: Routes = US95, US195, US395		Commodity Total	County %
County	Year	Data	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail		
Spokane County, WA	2007	Tonnage	1,672,550	4,496	8,843,907	3,300,477	1,004,653	374,932	287,471	5,600	943,720	80,056	16,517,862	57.5%
	2027	Tonnage	1,838,175	4,712	8,483,340	3,710,901	1,205,337	348,898	483,356	9,911	1,001,460	76,088	17,162,178	62.4%
		% vs 2007	9.9%	4.8%	(4.1%)	12.4%	20.0%	(6.9%)	68.1%	77.0%	6.1%	(5.0%)	3.9%	
Kootenai County, ID	2007	Tonnage	2,291,415		664,034	6,600	863,336	242,400	59,181		1,967,748	82,800	6,177,513	21.5%
	2027	Tonnage	2,088,825		820,660	11,488	1,216,161	184,666	105,519		2,508,693	57,649	6,993,662	25.4%
		% vs 2007	(8.8%)		23.6%	74.1%	40.9%	(23.8%)	78.3%		27.5%	(30.4%)	13.2%	
Adams County, WA	2007	Tonnage	175,293	880	297,272	1,011,116	57,175	147,760	87,522		1,044,816	3,960	2,825,795	9.8%
	2027	Tonnage	76,531	1,243	220,922	285,835	39,889	84,517	121,807		728,487	4,579	1,563,809	5.7%
		% vs 2007	(56.3%)	41.3%	(25.7%)	(71.7%)	(30.2%)	(42.8%)	39.2%		(30.3%)	15.6%	(44.7%)	
Lincoln County, WA	2007	Tonnage	175,293	880	297,272	1,011,116	57,175	147,760	87,522		1,044,816	3,960	2,825,795	9.8%
	2027	Tonnage	76,531	1,243	220,922	285,835	39,889	84,517	121,807		728,487	4,579	1,563,809	5.7%
		% vs 2007	(56.3%)	41.3%	(25.7%)	(71.7%)	(30.2%)	(42.8%)	39.2%		(30.3%)	15.6%	(44.7%)	
Shoshone County, ID	2007	Tonnage	58,416		17,176		189,996		8,303		108,830		382,721	1.3%
	2027	Tonnage	52,450		18,978		97,091		13,980		58,716		241,215	0.9%
		% vs 2007	(10.2%)		10.5%		(48.9%)		68.4%		(46.0%)		(37.0%)	
County Summary	2007	Tonnage	4,372,966	6,256	10,119,662	5,329,309	2,172,336	912,852	529,999	5,600	5,109,930	170,776	28,729,686	100.0%
	2027	Tonnage	4,132,512	7,198	9,764,822	4,294,058	2,598,367	702,597	846,469	9,911	5,025,844	142,895	27,524,674	100.0%
		% vs 2007	(5.5%)	15.1%	(3.5%)	(19.4%)	19.6%	(23.0%)	59.7%	77.0%	(1.6%)	(16.3%)	(4.2%)	

2007 Truck Freight	2007	Tons %	15.2%			62.4%		
2007 Rail Freight	2007	Tons %		0.0%		22.3%		100.0%
2027 Truck Freight	2027	Tons %	15.0%			66.3%		
2027 Rail Freight	2027	Tons %		0.0%		18.7%		100.0%
2007 Truck + Rail	2007	Tons %	15.2%		53.8%	10.7%	1.9%	100.0%
2027 Truck + Rail	2027	Tons %	15.0%		51.1%	12.0%	3.1%	100.0%

COMMODITIES THAT MOVE INTO AND OUT-OF THE CENTRAL COUNTIES

The pie charts below depict the top ten inbound and outbound commodities by percentage of the tonnage shipped. In each pie chart set to help visualize proportional changes the left pie chart shows 2007's distribution while the right pie chart shows 2027's distribution.

Inbound commodity share (Exhibit 25): The top three commodities represent approximately 48 percent of all inbound commodities. Distribution activities around secondary freight, farm and food products, lumber, coal, and a variety of mineral products comprise the existing base industries in the Central Counties.

Inbound commodity flows in 2007 were focused on primary commodities such as:

- nonmetallic minerals at 22.2 percent
- lumber and wood at 13.6 percent
- secondary traffic at 12 percent
- coal at 9.5 percent
- food products at 6.6 percent
- clay and like products at 6.1 percent
- petroleum and chemicals combine for 11.2 percent.

Outbound commodity share (Exhibit 26): The top four commodities represent 63 percent of the total outbound freight. The pie charts easily depict the significance of secondary freight and farm products in outbound tonnage for the Central Counties as they comprise approximately half of the tonnage.

- secondary freight was the top outbound commodity with 26.5 percent (while it was third for inbound with 12 percent). This high percentage for outbound and inbound reflects the commercial activities in and around Spokane and Coeur d'Alene. Much of the secondary freight circulates within the IPH study area, and there is an increasing amount that is destined to all markets out of the IPH study area. This reflects the increasing manufacturing and value added commercial activities in the area and the distribution of mixed shipments that will be transported via truck
- farm products represents 15.2 percent of the total tonnage share in 2007
- lumber and wood products share was at 11.7 percent of the total tonnage
- Coal shows as both an inbound and outbound commodity in the tables. Coal freight is interchanged between the two Class I railroads. In the TRANSEARCH™ rail waybill records after one railroad brings coal into the IPH study area, the other railroad takes it out, creating two transport records. Realistically coal should be considered as a single through-freight shipment, but it is not tabulated as such in the database. Coal's tonnage was retained in both the inbound and outbound summaries to maintain the rail waybill dataset integrity. The TRANSEARCH™ rail waybill records were also analyzed for other commodities that experienced the matching interchange effect, but none were identified.

Exhibit 25: 2007 and 2027 Central Counties Top Ten Inbound Commodities

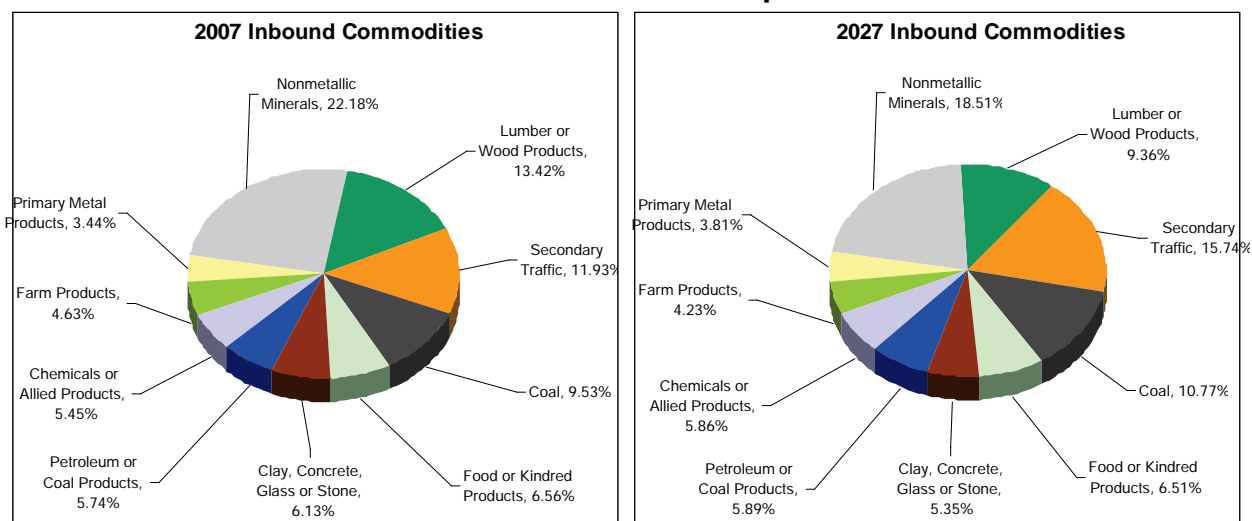
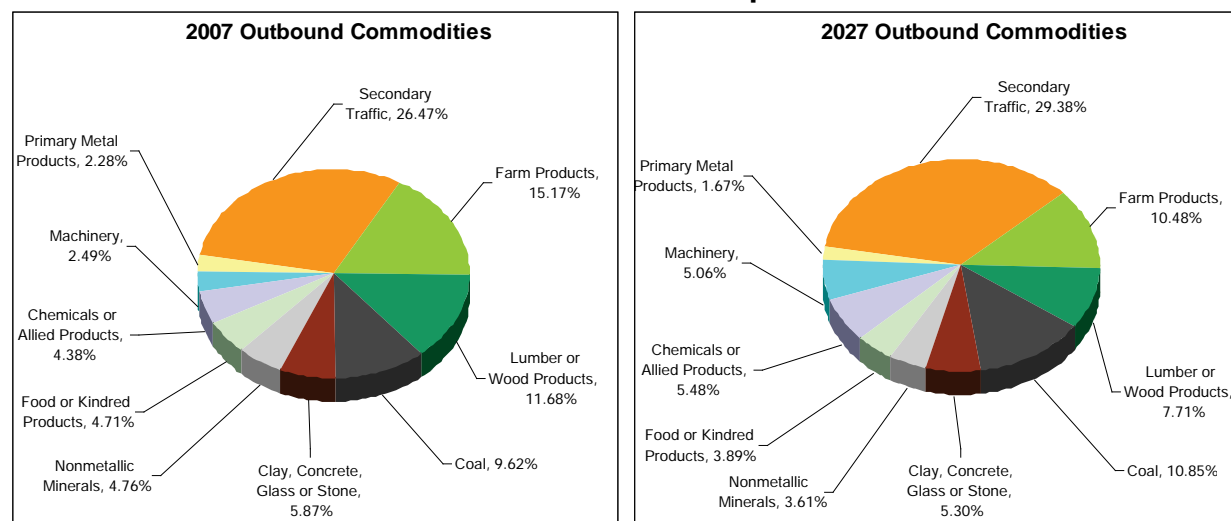


Exhibit 26: 2007 and 2027 Central Counties Top Ten Outbound Commodities



The pie charts can be cross referenced with **Exhibit 27** to determine the tonnage changes for the inbound (table on the left) and outbound (table on the right) commodities sorted in descending order for tonnage for the year 2007. The center column in each table indicates the forecast growth percentage for the commodities by 2027.

For 2027, TRANSEARCH™ forecasts most inbound commodities will experience growth with the exception of the two largest inbound commodities of nonmetallic minerals which is forecast to decline 4.1 percent and lumber or wood products which is forecast to decline 19.8 percent.

Inbound commodity forecast growth (Exhibit 28): The table and chart shows the forecasted growth from the base year of 2007. The 2007 top ten commodities for this region account for 89 percent of the total (two yellow rows at bottom of table). By 2027,

the top ten will decrease to 87.6 percent of the total, indicating a diversification of the inbound freight flows.

- in 2007 the largest inbound commodity was nonmetallic minerals, with a 27.7 percent decrease in 2012 and returning to positive growth in 2017 and 2027 (although not back to the 2007 level)
- lumber and wood products decrease by 23.2 percent from 2007 to 2012, and show only a marginal recovery in each forecast period (remaining around 20 percent below the 2007 level)
- secondary freight takes a slight dip in 2012 over 2007 and has strong growth in 2012 and 2027 finishing more than 50 percent higher than 2007
- most other commodities experience a slight recessionary dip but then grow.

Outbound commodity forecast growth (Exhibit 29): The TRANSEARCH™ forecast shows a decline in some outbound commodities such as farm and food products, lumber and wood, and nonmetallic minerals which may indicate a shift away from the area's more traditional resource-based industries to more of an urbanized and manufacturing mix of commercial activities. The 2007 top ten commodities account for 87.4 percent of the total and will decrease to 83.4 percent of the total by 2027.

- secondary freight is visibly the largest commodity, is slated to grow 13 percent by tonnage by 2027 and reach 29.8 percent of the outbound total, experiencing a 6.8 percent recessionary dip in 2012 with recovery in the next two forecast periods.
- farm products to decline by 29.7 percent and drop down to 10.6 percent of the total
- lumber and wood products tonnage to decline by 32.8 percent
- clay, concrete, glass or stone tonnage decline 8 percent
- nonmetallic minerals tonnage decline by 22.7 percent
- food and kindred products tonnage decline 16 percent
- primary metal products tonnage decline 25.5 percent

Exhibit 27: 2007 and 2027 Central Counties Commodities Forecast Changes

Central Counties Inbound	2007	2007	Growth	2027	2027
Top 20 Commodities	%	Tons	% ►	Tons	%
Nonmetallic Minerals	22.2	5,898,736	(4.1)	5,659,641	18.7
Lumber Or Wood Products	13.4	3,570,781	(19.8)	2,863,744	9.5
Secondary Freight	12.0	3,173,717	51.6	4,812,571	15.9
Coal	9.6	2,534,905	30.0	3,295,122	10.9
Food Or Kindred Products	6.6	1,744,637	14.1	1,990,608	6.6
Clay, Concrete, Glass Or Stone	6.1	1,630,992	0.4	1,637,401	5.4
Petroleum Or Coal Products	5.8	1,526,093	18.1	1,801,815	6.0
Chemicals Or Allied Products	5.5	1,450,293	23.5	1,790,616	5.9
Farm Products	4.7	1,231,331	5.1	1,294,110	4.3
Primary Metal Products	3.5	915,278	27.3	1,165,577	3.9
Transportation Equipment	1.5	407,078	86.3	758,288	2.5
Fabricated Metal Products	1.3	349,519	20.2	420,030	1.4
Pulp, Paper Or Allied Products	1.2	311,778	8.1	337,034	1.1
Rail Intermodal Drayage from Ramp	1.0	272,237	28.0	348,502	1.2
Electrical Equipment	1.0	259,496	87.1	485,418	1.6
Rail Intermodal Drayage to Ramp	0.8	211,332	84.3	389,558	1.3
Machinery	0.7	192,885	83.0	352,891	1.2
Rubber Or Misc Plastics	0.6	145,185	35.6	196,815	0.7
Misc Mixed Shipments	0.5	135,760	31.3	178,216	0.6
Waste Or Scrap Materials	0.4	105,101	53.2	161,058	0.5

Central Counties Outbound	2007	2007	Growth	2027	2027
Top 20 Commodities	%	Tons	% ►	Tons	%
Secondary Freight	26.5	7,109,401	13.0	8,033,560	29.8
Farm Products	15.2	4,075,401	(29.7)	2,866,511	10.6
Lumber Or Wood Products	11.7	3,136,953	(32.8)	2,109,058	7.8
Coal	9.6	2,583,149	14.8	2,966,182	11.0
Clay, Concrete, Glass Or Stone	5.9	1,575,272	(8.0)	1,448,614	5.4
Nonmetallic Minerals	4.8	1,277,532	(22.7)	987,395	3.7
Food Or Kindred Products	4.8	1,265,232	(16.0)	1,062,946	3.9
Chemicals Or Allied Products	4.4	1,175,388	27.5	1,499,058	5.6
Machinery	2.5	669,599	106.6	1,383,419	5.1
Primary Metal Products	2.3	611,628	(25.5)	455,460	1.7
Fabricated Metal Products	2.1	567,492	14.1	647,294	2.4
Transportation Equipment	1.7	439,877	76.3	775,666	2.9
Electrical Equipment	1.4	358,834	(1.1)	354,842	1.3
Petroleum Or Coal Products	1.3	346,946	17.4	407,209	1.5
Pulp, Paper Or Allied Products	1.2	316,925	5.0	332,785	1.2
Rail Intermodal Drayage from Ramp	1.2	316,179	28.0	404,697	1.5
Waste Or Scrap Materials	1.2	312,885	68.3	526,645	2.0
Furniture Or Fixtures	0.7	196,923	69.2	333,169	1.2
Rail Intermodal Drayage to Ramp	0.4	101,407	84.2	186,749	0.7
Rubber Or Misc Plastics	0.4	99,631	50.6	150,057	0.6

Exhibit 28: 2007, 2012, 2017 and 2027 Central Counties Inbound Commodity Growth

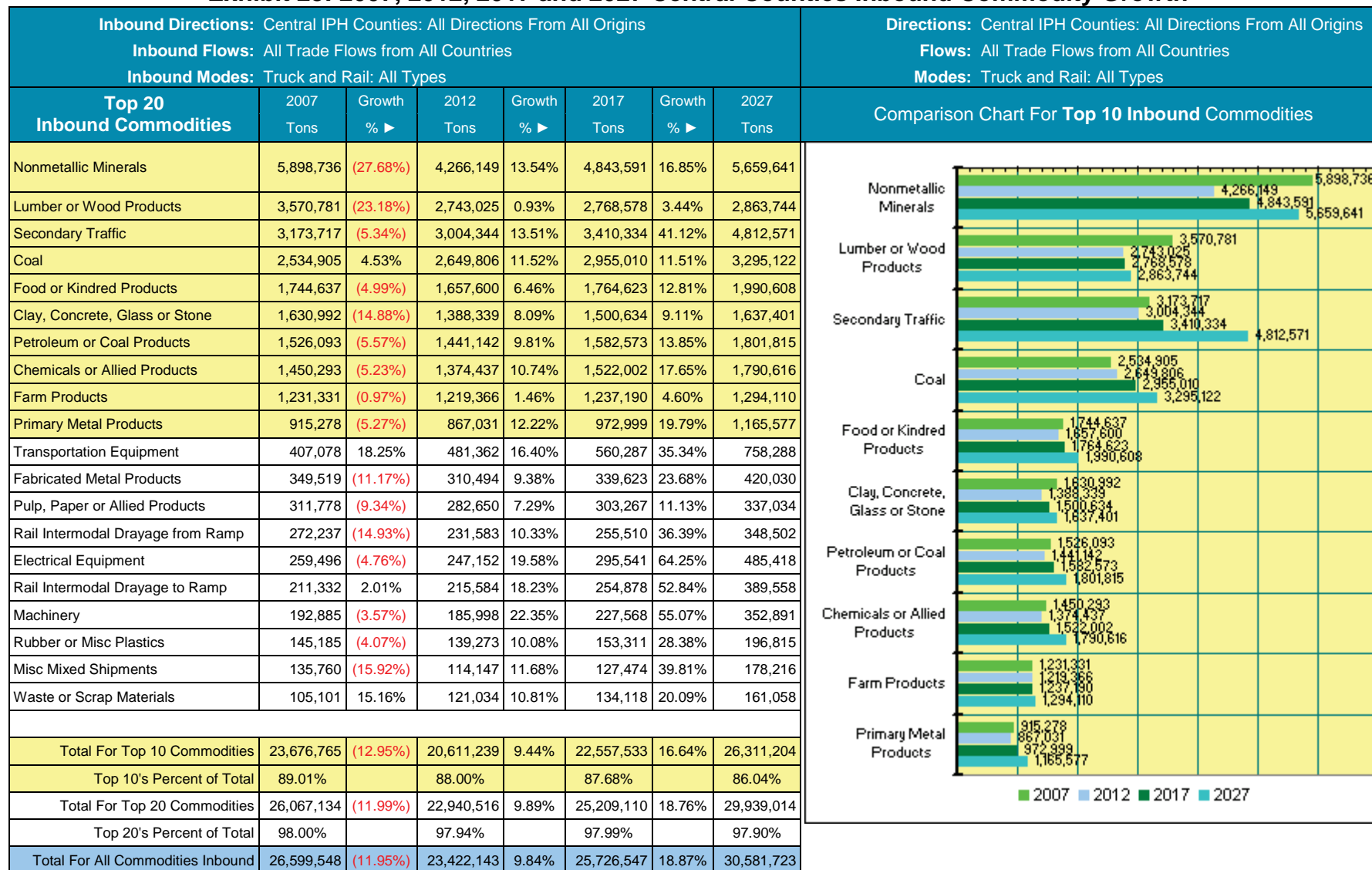


Exhibit 29: 2007, 2012, 2017 and 2027 Central Counties Outbound Commodity Growth

Outbound Directions: Central IPH Counties: All Directions to All Destinations Outbound Flows: All Trade Flows to All Countries Outbound Modes: Truck and Rail: All Types								Directions: Central IPH Counties: All Directions to All Destinations Flows: All Trade Flows to All Countries Modes: Truck and Rail: All Types							
Top 20 Outbound Commodities	2007 Tons	Growth % ►	2012 Tons	Growth % ►	2017 Tons	Growth % ►	2027 Tons	Comparison Chart For Top 10 Outbound Commodities							
Secondary Traffic	7,109,401	(6.87%)	6,621,252	3.38%	6,845,325	17.36%	8,033,560								
Farm Products	4,075,401	(9.53%)	3,687,198	(9.62%)	3,332,426	(13.98%)	2,866,511								
Lumber or Wood Products	3,136,953	(23.00%)	2,415,372	(1.01%)	2,391,094	(11.80%)	2,109,058								
Coal	2,583,149	2.72%	2,653,434	0.47%	2,665,949	11.26%	2,966,182								
Clay, Concrete, Glass or Stone	1,575,272	(17.37%)	1,301,693	4.57%	1,361,161	6.42%	1,448,614								
Nonmetallic Minerals	1,277,532	(26.69%)	936,605	3.30%	967,558	2.05%	987,395								
Food or Kindred Products	1,265,232	(9.75%)	1,141,878	(0.54%)	1,135,767	(6.41%)	1,062,946								
Chemicals or Allied Products	1,175,388	0.22%	1,178,017	11.72%	1,316,066	13.90%	1,499,058								
Machinery	669,599	(2.17%)	655,066	27.03%	832,142	66.25%	1,383,419								
Primary Metal Products	611,628	(3.37%)	590,989	(13.60%)	510,592	(10.80%)	455,460								
Fabricated Metal Products	567,492	(8.64%)	518,474	5.99%	549,556	17.78%	647,294								
Transportation Equipment	439,877	14.60%	504,105	14.41%	576,722	34.50%	775,666								
Electrical Equipment	358,834	(34.96%)	233,399	7.45%	250,791	41.49%	354,842								
Petroleum or Coal Products	346,946	(9.78%)	313,018	17.02%	366,309	11.17%	407,209								
Pulp, Paper or Allied Products	316,925	(11.11%)	281,716	7.77%	303,596	9.61%	332,785								
Rail Intermodal Drayage from Ramp	316,179	(14.94%)	268,945	10.33%	296,727	36.39%	404,697								
Waste or Scrap Materials	312,885	1.49%	317,556	15.89%	368,007	43.11%	526,645								
Furniture or Fixtures	196,923	0.70%	198,293	23.66%	245,217	35.87%	333,169								
Rail Intermodal Drayage to Ramp	101,407	1.99%	103,421	18.24%	122,285	52.72%	186,749								
Rubber or Misc Plastics	99,631	(1.15%)	98,481	16.77%	114,998	30.49%	150,057								
Total For Top 10 Commodities	23,479,554	(9.79%)	21,181,505	0.83%	21,358,081	6.81%	22,812,202								
Top 10's Percent of Total	87.42%		87.14%		85.88%		83.43%								
Total For Top 20 Commodities	26,536,652	(9.49%)	24,018,912	2.22%	24,552,288	9.69%	26,931,317								
Top 20's Percent of Total	98.80%		98.81%		98.72%		98.50%								
Total For All Commodities Outbound	26,858,363	(9.49%)	24,308,190	2.31%	24,870,310	9.94%	27,342,610								

AIR FREIGHT MOVEMENTS IN THE CENTRAL COUNTIES

The total amount of airfreight tonnage reported in the TRANSEARCH™ database 2007 for the IPH study area was 63,248 tons (Exhibit 1). Of that amount, 128 tons were moved internally within the IPH study area, 18,872 tons were transported inbound and 44,249 tons were transported outbound. The total value of the airfreight transported was \$374,125,144 (**Exhibit 4: Total Freight Flow Value by Mode and Direction**). Of that amount \$74,638 was transported internally within the IPH study area, \$173,636,666 was transported inbound and \$200,413,840 was transported outbound.

Airfreight forecast growth for 2027 is 27.8 for tonnage and TRANSEARCH™ shows the majority of airfreight involved Spokane County. A minor amount of commercial airfreight (less than 0.01 percent) was handled by Nez Perce and Whitman Counties. This was basically comprised of mail or miscellaneous shipments. Nez Perce County handled a total of 23 tons of internal IPH study area freight, 13 tons inbound and 10 tons outbound. Whitman County handled 6 tons inbound and 1 ton outbound.

Spokane County (Spokane International Airport (GEG)) handled 63,205 tons of the total or 99.99 percent. Of the total tonnage, 128 tons were transported within the IPH study area, 18,852 tons were transported inbound and 44,248 tons were transported outbound.

Inbound commodity forecast growth for airfreight (Exhibit 30): Inbound airfreight is forecast to grow by 17.4 percent by 2027 to reach a total of 22,580 tons.

- mail or contract traffic is the largest commodity handled, the table shows it will decline in each of the forecast periods ending 24.8 percent below 2007
- miscellaneous mixed shipments is the second largest commodity handled and after a recessionary dip in 2012, it returns to growth in 2017 and 2027
- machinery is the third largest commodity handled and it experiences double digit growth in each of the forecast periods, ending 112 percent above 2007
- most other inbound commodities experience growth during the study period except for chemicals, printed matter, farm products, and apparel and related products which all decline by 2027.

Outbound commodity forecast growth for airfreight (Exhibit 31): Outbound airfreight is forecast to grow by 27.8 percent by 2027 to reach a total of 56,570 tons.

- mail or contract traffic is the largest commodity handled, the table shows it also declines 31.2 percent during the study period down to 12,534 tons
- pulp, paper or allied product are the second largest commodity handled and show continual growth during the study period ending 72 percent higher in 2027
- machinery is the third largest commodity handled and it experiences growth in each of the forecast periods, ending 97 percent above 2007
- most other outbound commodities experience growth during the study period except for apparel and related products which declines 75 percent.

Exhibit 30: Airfreight Flows Into the Central Counties

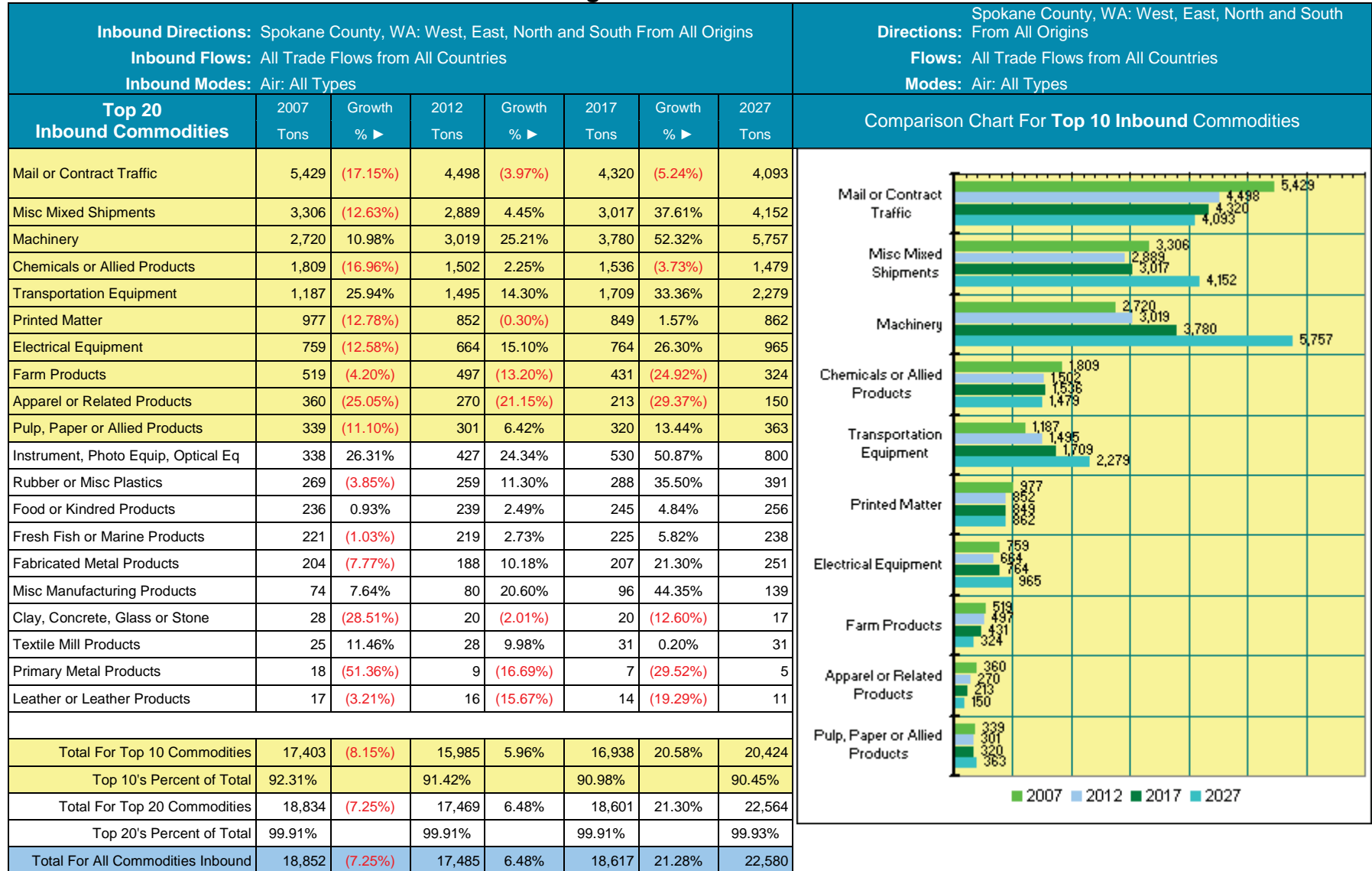
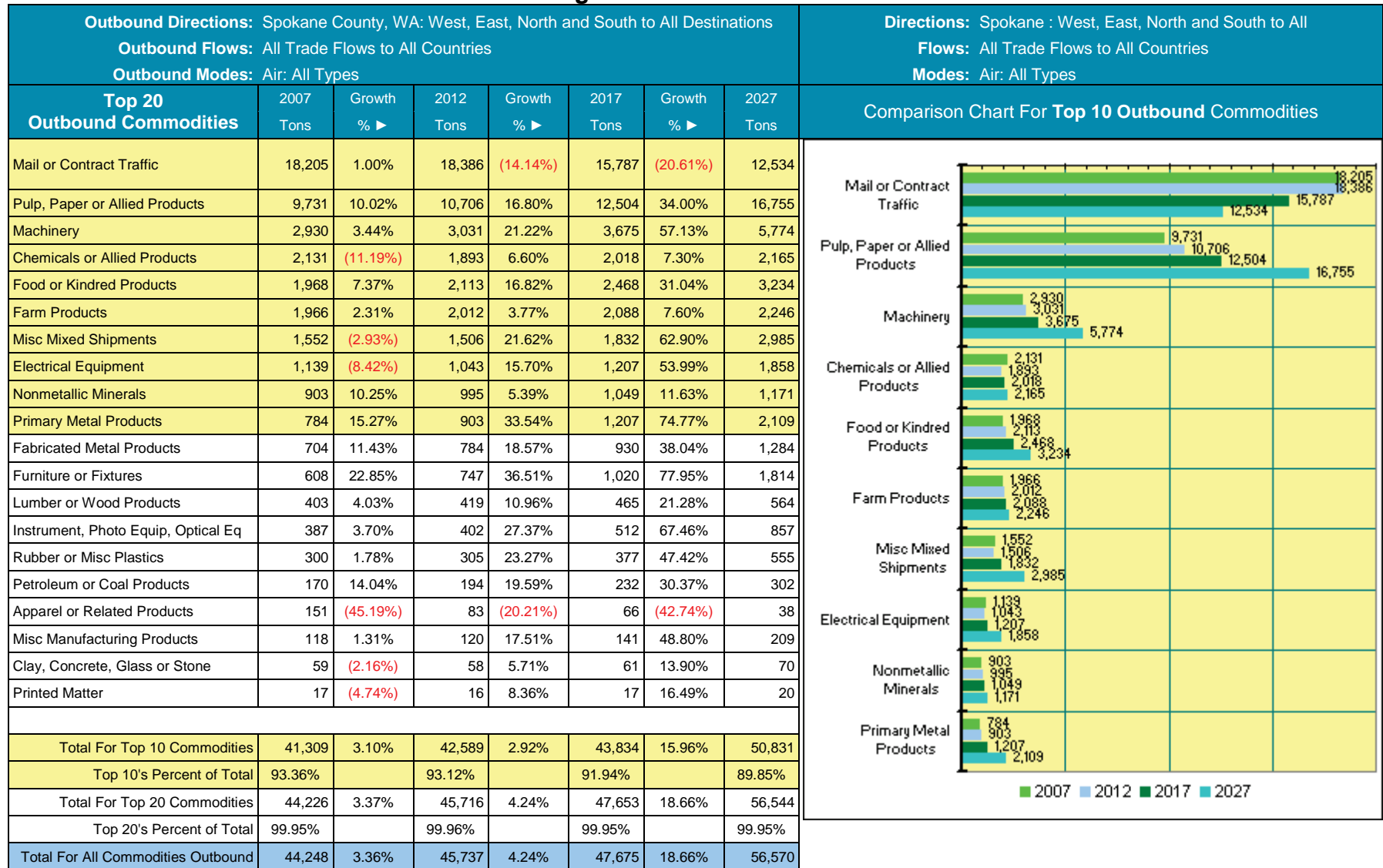


Exhibit 31: Airfreight Flows Out Of the Central Counties



SOUTHERN COUNTIES INBOUND FREIGHT FLOWS

Inbound freight to the Southern Counties totaled 6.9 million tons in 2007 and is forecast to grow to 9.8 million tons in 2027, an increase of 2.9 million tons or 42.2 percent (**Exhibit 32**).

A summary of the forecast for 2027 indicates:

- Local truck freight in 2007 was at 3.5 million tons and is forecast to increase by 37.2 percent by 2027 to 4.8 million tons.
- Inbound directional truck freight was at 2.9 million tons and is forecast to increase by 50.6 percent to 4.4 tons.
- Inbound directional rail freight was at 432,000 tons and is forecast to increase by 26.3 percent to 546,000 tons.

Exhibit 32: 2007 and 2027 Southern Counties Inbound Tonnage

Southern Counties Inbound Tonnage		2007	2027	Growth	% Growth
Local freight					
Truck Only	Tonnage & Growth Rate	3,532,327	4,846,167	1,313,840	37.2%
Rail Only	Tonnage & Growth Rate	5,016	5,815	799	15.9%
Truck + Rail	Tonnage & Growth Rate	3,537,343	4,851,982	1,314,639	37.2%
Directional Freight (to West, East, North or South)					
Truck Only	Tonnage & Growth Rate	2,934,598	4,419,367	1,484,769	50.6%
Rail Only	Tonnage & Growth Rate	432,208	545,920	113,712	26.3%
Truck + Rail	Tonnage & Growth Rate	3,366,806	4,965,287	1,598,481	47.5%
Combined Local and Directional Freight					
Truck Only	Tonnage & Growth Rate	6,466,925	9,265,534	2,798,609	43.3%
Rail Only	Tonnage & Growth Rate	437,224	551,735	114,511	26.2%
Truck + Rail	Tonnage & Growth Rate	6,904,149	9,817,269	2,913,120	42.2%

Detailed inbound analysis *by county* (**Exhibit 33**) indicates:

- Nez Perce County represents approximately 32.4 percent of the 2007 total tonnage
- Whitman County has the second largest 2007 share at 20.4 percent
- Asotin County transports 13.7 percent
- Latah County transports 13.2 percent
- Benewah County transports 7.7 percent
- Clearwater County transports 7.1 percent
- Garfield County transports 2 percent
- Lewis County transports 1.8 percent
- Columbia County transports 1.6 percent.

The TRANSEARCH™ forecast indicates that inbound tonnage to:

- Nez Perce County will increase by 570,000 tons or 25.5 percent
- Whitman County will increase by 590,000 tons or 41.9 percent
- Asotin County will increase by 690,000 tons or 72.9 percent
- Latah County will increase by 410,000 tons or 44.6 percent
- Clearwater County will increase by 280,000 tons or 56.8 percent
- Benewah County will increase by 130,000 or 24 percent
- Garfield County will increase by 90,000 tons or 68.1 percent
- Lewis County will increase by 100,000 tons or 78.9 percent
- Columbia County will increase by almost 60,000 tons or 50.7 percent

Inbound analysis *by direction* indicates that in 2007:

- local freight represented 51.2 percent of the total tonnage for the Southern Counties
- inbound freight from the west represented 16.9 percent.
- inbound freight from the east represented 11 percent
- inbound freight from the north (proxy for Canada) represented 5.2 percent
- inbound freight from the south represented 15.7 percent

TRANSEARCH™ forecasts slight shifts in share for 2027:

- local inbound freight decreasing 1.8 percent
- inbound from the west decreasing 1.4 percent
- inbound from the east remaining level
- inbound from the north remaining level
- inbound from the south increasing by 3 percent

Inbound analysis *by mode* indicates that for local freight truck will be at 51.2 percent in 2007 and rail freight will be at 0.1 percent. TRANSEARCH™ forecasts for 2027 the mix will shift with truck decreasing to 49.4 percent and rail remaining approximately level.

For directional inbound tonnage in 2007 for truck represented 42.5 percent of the total tonnage and rail represented 6.3 percent. TRANSEARCH™ forecasts for 2027 the mix will shift with truck rising to a 45 percent share and rail decreasing to 5.6 percent.

Inbound truck tonnage will have significant increases in Nez Perce County from the east and south, in Whitman County from the west, and in Clearwater County and Benewah County from the south.

Inbound truck tonnage will not have any significant decreases from any direction. Inbound rail tonnage will have marginal increases in Nez Perce County from the east and south, in Whitman County from the west, in Clearwater County from the east and south, and in Benewah County from the south.

Inbound rail tonnage will not have any significant decreases from any direction.

Exhibit 33: 2007 and 2027 Southern Counties Inbound Distribution

Southern Counties Inbound Tonnage			Local freight: Circulates within IPH Counties		Inbound from Western Origins: Routes = I-90, US2, US12, US20		Inbound from Eastern Origins: Routes = I-90, US2, US12, ID200		Inbound from Northern Origins: Routes = US95, US195, US395		Inbound from Southern Origins: Routes = US95, US195, US395		Commodity Total	County %
County	Year	Data	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail		
Nez Perce County, ID	2007	Tonnage	1,118,226		121,334	84,640	276,841	88,328	14,250	85,320	438,423	12,440	2,239,802	32.4%
	2027	Tonnage	1,341,228		126,875	102,465	355,407	86,638	20,644	103,311	659,794	14,268	2,810,630	28.6%
		% vs 2007	19.9%		4.6%	21.1%	28.4%	(1.9%)	44.9%	21.1%	50.5%	14.7%	25.5%	
Whitman County, WA	2007	Tonnage	675,425	3,120	571,510	7,960	26,333	22,600	52,578	23,120	25,807		1,408,454	20.4%
	2027	Tonnage	888,788	3,608	849,174	6,816	49,576	26,248	78,399	37,199	58,615		1,998,423	20.4%
		% vs 2007	31.6%	15.6%	48.6%	(14.4%)	88.3%	16.1%	49.1%	60.9%	127.1%		41.9%	
Asotin County, WA	2007	Tonnage	731,238		153,019		16,143		35,755		9,064		945,219	13.7%
	2027	Tonnage	1,375,928		164,803		22,380		55,400		15,977		1,634,488	16.6%
		% vs 2007	88.2%		7.7%		38.6%		54.9%		76.3%		72.9%	
Latah County, ID	2007	Tonnage	390,477		121,933		142,110		8,152		251,361		914,032	13.2%
	2027	Tonnage	410,892		140,456		248,073		11,209		511,404		1,322,034	13.5%
		% vs 2007	5.2%		15.2%		74.6%		37.5%		103.5%		44.6%	
Clearwater County, ID	2007	Tonnage	244,104		23,160	1,840	62,268		5,606		153,526		490,505	7.1%
	2027	Tonnage	375,078		23,682	2,142	100,030		7,444		260,906		769,282	7.8%
		% vs 2007	53.7%		2.3%	16.4%	60.6%		32.8%		69.9%		56.8%	
Benewah County, ID	2007	Tonnage	302,385	1,896	19,113		59,725		7,081		142,328		532,529	7.7%
	2027	Tonnage	356,296	2,207	13,965		72,246		9,805		205,903		660,423	6.7%
		% vs 2007	17.8%	16.4%	(26.9%)		21.0%		38.5%		44.7%		24.0%	
Garfield County, WA	2007	Tonnage	491		6,805		329	32,240	26,344	52,960	182	15,600	134,952	2.0%
	2027	Tonnage	2,182		20,037		691	45,004	41,962	86,110	571	30,234	226,790	2.3%
		% vs 2007	344.0%		194.4%		110.0%	39.6%	59.3%	62.6%	214.0%	93.8%	68.1%	

Southern Counties Inbound Tonnage (Continued)			Local freight: Circulates within IPH Counties		Inbound from Western Origins: Routes = I-90, US2, US12, US20		Inbound from Eastern Origins: Routes = I-90, US2, US12, ID200		Inbound from Northern Origins: Routes = US95, US195, US395		Inbound from Southern Origins: Routes = US95, US195, US395		Commodity Total	County %
County	Year	Data	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail		
Lewis County, ID	2007	Tonnage	51,913		3,442		28,989		6,635	5,160	29,781		125,919	1.8%
	2027	Tonnage	67,621		7,082		63,838		8,735	5,485	72,557		225,318	2.3%
		% vs 2007	30.3%		105.8%		120.2%		31.6%	6.3%	143.6%		78.9%	
Columbia County, WA	2007	Tonnage	18,068		52,395		4,884		33,420		3,969		112,737	1.6%
	2027	Tonnage	28,154		68,450		12,501		53,291		7,486		169,882	1.7%
		% vs 2007	55.8%		30.6%		156.0%		59.5%		88.6%		50.7%	
County Summary	2007	Tonnage	3,532,327	5,016	1,072,711	94,440	617,622	143,168	189,822	166,560	1,054,442	28,040	6,904,149	100.0%
	2027	Tonnage	4,846,167	5,815	1,414,524	111,423	924,741	157,890	286,889	232,104	1,793,213	44,502	9,817,269	100.0%
		% vs 2007	37.2%	15.9%	31.9%	18.0%	49.7%	10.3%	51.1%	39.4%	70.1%	58.7%	42.2%	

2007 Truck Freight	2007	Tons %	51.2%		42.5%				100.0%	
2007 Rail Freight	2007	Tons %		0.1%	6.3%					
2027 Truck Freight	2027	Tons %	49.4%		45.0%				100.0%	
2027 Rail Freight	2027	Tons %		0.1%	5.6%					
2007 Truck + Rail	2007	Tons %	51.2%		16.9%	11.0%	5.2%	15.7%	100.0%	
2027 Truck + Rail	2027	Tons %	49.4%		15.5%	11.0%	5.3%	18.7%	100.0%	

SOUTHERN COUNTIES OUTBOUND FREIGHT FLOWS

Outbound freight from the Southern Counties totaled 11.9 million tons in 2007 and is forecast to grow to 16.5 million tons in 2027, an increase of 4.7 million tons or 39.4 percent (**Exhibit 34**).

A summary of the forecast for 2027 indicates:

- local truck freight in 2007 was at 4.9 million tons and is forecast to increase 41.6 percent by 2027 to 6.9 million tons
- directional truck freight was at 6.5 million tons and is forecast to increase 42.5 percent to 9.3 million tons
- directional rail freight was at 492,000 tons and is forecast to decrease 23.3 percent to 378,000 tons.

Exhibit 34: 2007 and 2027 Southern Counties Outbound Tonnage

Southern Counties Outbound Tonnage		2007	2027	Growth	% Growth
Local freight					
Truck Only	Tonnage & Growth Rate	4,862,539	6,883,240	2,020,702	41.6%
Rail Only	Tonnage & Growth Rate	3,800	2,654	(1,146)	(30.2%)
Truck + Rail	Tonnage & Growth Rate	4,866,339	6,885,894	2,019,555	41.5%
Directional Freight (to West, East, North or South)					
Truck Only	Tonnage & Growth Rate	6,532,864	9,311,771	2,778,907	42.5%
Rail Only	Tonnage & Growth Rate	492,712	377,670	(115,042)	(23.3%)
Truck + Rail	Tonnage & Growth Rate	7,025,576	9,689,441	2,663,866	37.9%
Combined Local and Directional Freight					
Truck Only	Tonnage & Growth Rate	11,395,402	16,195,011	4,799,609	42.1%
Rail Only	Tonnage & Growth Rate	496,512	380,324	(116,188)	(23.4%)
Truck + Rail	Tonnage & Growth Rate	11,891,914	16,575,335	4,683,421	39.4%

Outbound analysis *by county* (**Exhibit 35**) indicates:

- Nez Perce County represents over 45.6 percent of the 2007 total outbound tonnage
- Benewah County is second with 15.8 percent of the total
- Whitman County is at 11.9 percent
- Latah County is at 8.6 percent
- Asotin County is at 6.6 percent
- Clearwater County is at 6.1 percent
- Columbia County is at 2.2 percent
- Lewis County is at 2.5 percent
- Garfield County is at 0.7 percent

The 2027 TRANSEARCH™ forecast indicates that outbound tonnage from:

- Nez Perce County will increase by 860,000 tons or 15.9 percent

- Benewah County will remain level
- Whitman County will increase by 120,000 tons or 8.7 percent
- Latah County will increase 740,000 tons or 72.6 percent
- Asotin County will increase 3.9 million tons or over 400 percent
- Clearwater County will decrease 200,000 or 27 percent
- Lewis County will decrease 85,000 tons or 28.6 percent
- Columbia County will increase 8,000 tons or 3.2 percent
- Garfield County will increase 30,000 tons or 35.4 percent

The detailed outbound analysis *by direction* indicates that in 2007:

- local freight represented 40.9 percent of the total tonnage for the Southern Counties
- outbound to the western states represented 13 percent of the total
- outbound to the eastern states represented 18 percent
- outbound to the north or Canada represented 0.9 percent
- outbound to the southern states represented 27.3 percent

TRANSEARCH™ forecasts shifts in share for 2027:

- local freight increasing 1.4 percent
- outbound to the west increasing 10.8 percent
- outbound to the east decreasing 4.6 percent
- outbound to the north remaining level
- outbound to the south decreasing 7 percent

Outbound analysis *by mode* indicates that for local freight for 2007 and 2027 the mix for truck and rail freight will remain about the same: truck will have 40.9 percent and rail about 0.03 percent.

For directional outbound tonnage in 2007 truck represented 54.9 percent and rail represented 4.1 percent. TRANSEARCH™ forecasts for 2027 the mix will shift slightly with truck representing 56.2 percent and rail decreasing to 2.3 percent.

Outbound truck tonnage with significant increases will occur in Nez Perce County to the west and south, in Whitman County to the south, Latah County to the east, and Asotin County to the west.

Outbound truck tonnage with significant decreases will occur in Benewah County to the east and south and in Latah, Clearwater and Lewis Counties to the east and south.

Outbound rail tonnage will not have any significant increases to any destinations.

Outbound rail tonnage with significant decreases will occur only in Nez Perce County to the east and Benewah County to the south.

Exhibit 35: 2007 and 2027 Southern Counties Outbound Distribution

Southern Counties Outbound Tonnage			Local freight: Circulates within IPH Counties		Outbound to Western Destinations: Routes = I-90, US2, US12, US20		Outbound to Eastern Destinations: Routes = I-90, US2, US12, ID200		Outbound to Northern Destinations: Routes = US95, US195, US395		Outbound to Southern Destinations: Routes = US95, US195, US395		Commodity Total	County %
County	Year	Data	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail		
Nez Perce County, ID	2007	Tonnage	2,069,127		287,991	34,120	787,416	194,160	20,461		1,961,931	72,000	5,427,206	45.6%
	2027	Tonnage	2,467,904		478,621	39,757	795,556	165,956	29,313		2,249,371	62,489	6,288,968	37.9%
		% vs 2007	19.3%		66.2%	16.5%	1.0%	(14.5%)	43.3%		14.7%	(13.2%)	15.9%	
Whitman County, WA	2007	Tonnage	723,642		255,846	43,552	169,394	1,920	40,103		182,741		1,417,199	11.9%
	2027	Tonnage	796,076		273,568	18,032	169,515	1,363	56,794		225,555		1,540,903	9.3%
		% vs 2007	10.0%		6.9%	(58.6%)	0.1%	(29.0%)	41.6%		23.4%		8.7%	
Asotin County, WA	2007	Tonnage	170,099		520,987		31,299		12,407		44,226		779,018	6.6%
	2027	Tonnage	918,378		2,752,121		86,269		22,817		181,235		3,960,819	23.9%
		% vs 2007	439.9%		428.3%		175.6%		83.9%		309.8%		408.4%	
Latah County, ID	2007	Tonnage	664,561		46,457		100,352	28,760	4,153		173,310	3,600	1,021,193	8.6%
	2027	Tonnage	1,266,296		67,090		272,973	18,665	5,668		129,917	2,257	1,762,867	10.6%
		% vs 2007	90.5%		44.4%		172.0%	(35.1%)	36.5%		(25.0%)	(37.3%)	72.6%	
Clearwater County, ID	2007	Tonnage	391,256		62,451		57,792	3,560	3,066		209,517	2,920	730,562	6.1%
	2027	Tonnage	355,493		52,231		35,109	3,556	3,607		80,080	3,138	533,213	3.2%
		% vs 2007	(9.1%)		(16.4%)		(39.3%)	(0.1%)	17.6%		(61.8%)	7.5%	(27.0%)	
Benewah County, ID	2007	Tonnage	654,388	3,800	69,464		629,686	59,680	6,095		424,874	30,600	1,878,586	15.8%
	2027	Tonnage	851,580	2,654	72,186		578,961	37,811	7,102		331,664	16,589	1,898,547	11.5%
		% vs 2007	30.1%	(30.2%)	3.9%		(8.1%)	(36.6%)	16.5%		(21.9%)	(45.8%)	1.1%	
Garfield County, WA	2007	Tonnage	52,507		8,586		6,380		5,561		9,337		82,371	0.7%
	2027	Tonnage	58,799		8,622		27,790		7,643		8,678		111,532	0.7%
		% vs 2007	12.0%		0.4%		335.6%		37.4%		(7.1%)		35.4%	

Southern Counties Outbound Tonnage (Continued)			Local freight: Circulates within IPH Counties		Outbound to Western Destinations: Routes = I-90, US2, US12, US20		Outbound to Eastern Destinations: Routes = I-90, US2, US12, ID200		Outbound to Northern Destinations: Routes = US95, US195, US395		Outbound to Southern Destinations: Routes = US95, US195, US395		Commodity Total	County %
County	Year	Data	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail		
Lewis County, ID	2007	Tonnage	99,498		17,427		57,981	6,800	1,477		108,330	7,600	299,113	2.5%
	2027	Tonnage	117,441		5,960		26,324	2,733	1,814		58,217	1,227	213,716	1.3%
		% vs 2007	18.0%		(65.8%)		(54.6%)	(59.8%)	22.8%		(46.3%)	(83.9%)	(28.6%)	
Columbia County, WA	2007	Tonnage	37,460		194,335		130	3,440	8,314		12,988		256,667	2.2%
	2027	Tonnage	51,275		184,106		121	4,096	11,429		13,743		264,770	1.6%
		% vs 2007	36.9%		(5.3%)		(6.9%)	19.1%	37.5%		5.8%		3.2%	
County Summary	2007	Tonnage	4,862,539	3,800	1,463,544	77,672	1,840,430	298,320	101,636		3,127,254	116,720	11,891,914	100.0%
	2027	Tonnage	6,883,240	2,654	3,894,506	57,789	1,992,619	234,180	146,187		3,278,459	85,700	16,575,335	100.0%
		% vs 2007	41.6%	(30.2%)	166.1%	(25.6%)	8.3%	(21.5%)	43.8%		4.8%	(26.6%)	39.4%	

2007 Truck Freight	2007	Tons %	40.9%		54.9%					100.0%
2007 Rail Freight	2007	Tons %		0.0%	4.1%					
2027 Truck Freight	2027	Tons %	41.5%		56.2%					100.0%
2027 Rail Freight	2027	Tons %		0.0%	2.3%					
2007 Truck + Rail	2007	Tons %	40.9%		13.0%	18.0%	0.9%	27.3%		100.0%
2027 Truck + Rail	2027	Tons %	41.5%		23.8%	13.4%	0.9%	20.3%		100.0%

COMMODITIES THAT MOVE INTO AND OUT-OF THE SOUTHERN COUNTIES

Distribution activities around secondary freight, farm and food products, lumber, and a variety of mineral products comprise the existing base industries in the Southern Counties. To be consistent with the prior analysis for the Northern and Central Counties the first four pie charts depict tonnage percentages without freight movements by barge on the Snake River. However, because there are significant waterborne freight movements on the Snake River in the next section additional pie charts and tables are provided to more thoroughly understand the impact of waterborne freight in the Southern Counties.

Inbound commodity share (Exhibit 36): The forecast for inbound commodity flows exclusive of water freight in 2027 indicates the largest inbound commodity of lumber and wood, at 19 percent, will decline by 4.4 percent by 2027. Other commodities share rankings are:

- secondary freight at 18.3 percent
- nonmetallic minerals at 17.4 percent
- farm products at 16.7 percent
- clay and like products at 6.3 percent
- petroleum and chemicals combine for 8.2 percent.

The top four 2007 inbound commodities represent almost 89.4 percent of the total and in 2027 they represent 86.9 percent of the total. The 2027 pie chart shows that lumber and wood products decrease in share while secondary traffic and nonmetallic minerals increase in share.

Outbound commodity share (Exhibit 37): Outbound shipments in 2007 of the primary commodities were:

- nonmetallic minerals at 36.6 percent
- lumber and wood products at 25.2 percent
- secondary freight at 16 percent
- farm products at 11.4 percent.

These four commodities represented the majority of the commodities transported out of the region on the surface network. The next step will be to observe if lumber or wood products and farm products also decline after water borne transportation is evaluated.

Exhibit 36: 2007 and 2027 Southern Counties Top Ten Inbound Commodities (no water)

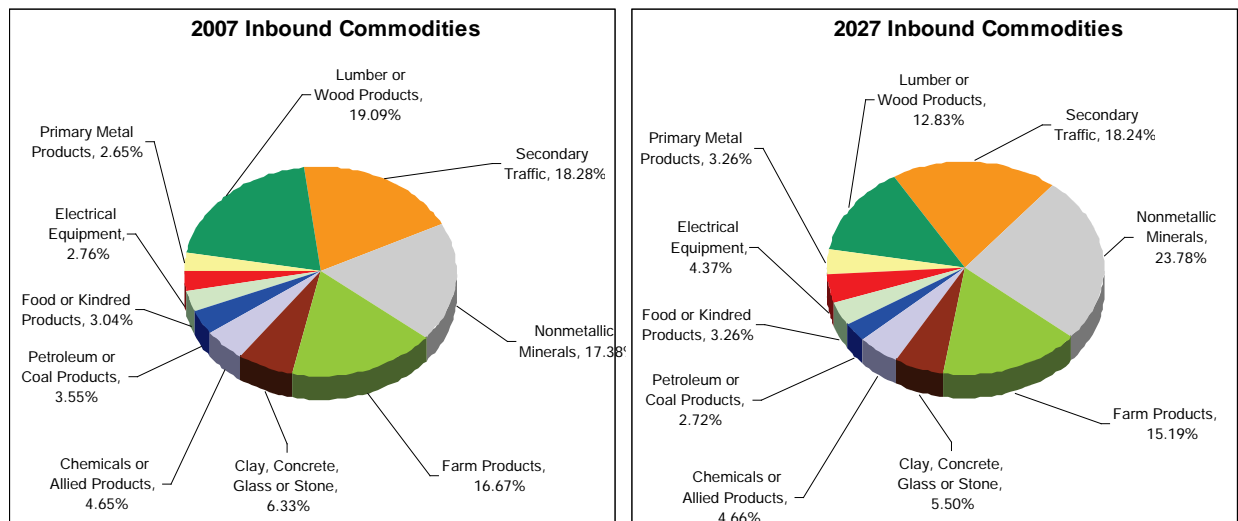
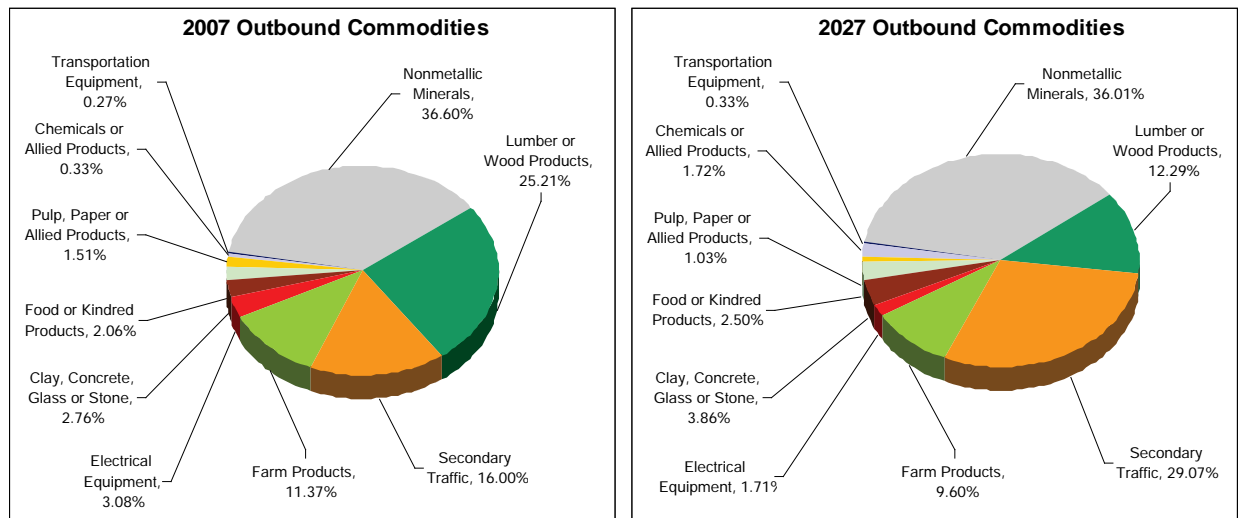


Exhibit 37: 2007 and 2027 Southern Counties Top Ten Outbound Commodities (no water)



The pie charts can be cross referenced with **(Exhibit 38)** to determine the tonnage changes for the inbound (table on the left) and outbound (table on the right) commodities sorted in descending order for tonnage for the year 2007. The center column indicates the forecast growth percentage for the commodities by 2027. Almost all inbound commodities will experience growth with the exception of lumber and wood products.

Inbound commodity forecast growth (Exhibit 39): The table and chart shows the forecasted growth from the base year of 2007 and each of the study periods. The 2007 top ten inbound commodities for this region account for 94.4 percent of the total. By

2027, the top ten will decrease to 93.8 percent of the total, indicating only a slight diversification of the inbound freight flows:

- in 2007 the largest inbound commodity was lumber and wood products with a 11.6 percent decrease in 2012; returning to positive growth in 2017 and 2027, but not returning to the same tonnage level as in 2007
- secondary freight takes a 7.4 percent dip in 2012 over 2007 and has 11.8 percent growth in 2012 and shows 2027 increasing 37.1 percent over 2017; finishing more than 18 percent higher than 2007
- nonmetallic minerals increases for each forecast period, finishing 23.7 percent higher in 2027 over 2007
- most other commodities experience growth over the study period.

Outbound commodity forecast growth (Exhibit 40): Most outbound commodities from the Southern Counties will experience growth except for farm products, lumber and wood, electrical equipment, pulp products and metallic ores. The 2007 top ten commodities account for 99 percent and will decline to 96.8 percent in 2027:

- nonmetallic minerals is the largest commodity handled, experiencing a 13.1 percent recessionary dip in 2012 with recovery in the next two forecast periods, finishing 2027 with a 37.1 percent increase over 2007
- lumber and wood products decline in all three forecast periods with a total decrease of 32 percent in 2027 compared to 2007
- secondary freight experiences continual growth even through the recessionary period to end with 2027 growing significantly at 153 percent over 2007.
- farm products increase in each of the forecast periods ending with 2027 at 9.6 percent higher than 2007
- most other commodities also experience growth over the forecast periods.

Commodities that result from manufacturing or value added processes, such as processed foods, chemicals, electrical or transportation equipment and machinery, and others included in the top 20 group will experience double or even triple digit growth over the forecast period.

Exhibit 38: 2007 and 2027 Southern Counties Commodities Forecast Changes (no water transport)

Southern Counties Inbound						Southern Counties Outbound					
Top 20 Commodities (no Water Freight)	2007 %	2007 Tons	Growth % ►	2027 Tons	2027 %	Top 20 Commodities (no Water Freight)	2007 %	2007 Tons	Growth % ►	2027 Tons	2027 %
Lumber or Wood Products	19.09%	1,318,031	(4.45%)	1,259,421	12.83%	Nonmetallic Minerals	36.60%	4,352,127	37.14%	5,968,541	36.01%
Secondary Freight	18.28%	1,262,325	41.88%	1,791,010	18.24%	Lumber or Wood Products	25.21%	2,997,451	(32.02%)	2,037,611	12.29%
Nonmetallic Minerals	17.38%	1,199,653	94.60%	2,334,545	23.78%	Secondary Freight	16.00%	1,903,133	153.14%	4,817,635	29.07%
Farm Products	16.67%	1,151,150	29.52%	1,490,941	15.19%	Farm Products	11.37%	1,352,620	17.65%	1,591,340	9.60%
Clay, Concrete, Glass or Stone	6.33%	437,045	23.59%	540,161	5.50%	Electrical Equipment	3.08%	365,999	(22.38%)	284,104	1.71%
Chemicals or Allied Products	4.65%	321,136	42.38%	457,249	4.66%	Clay, Concrete, Glass or Stone	2.76%	328,158	94.87%	639,480	3.86%
Petroleum or Coal Products	3.55%	245,249	9.05%	267,452	2.72%	Food or Kindred Products	2.06%	244,741	69.54%	414,943	2.50%
Food or Kindred Products	3.04%	209,895	52.41%	319,895	3.26%	Pulp, Paper or Allied Products	1.51%	179,129	(4.88%)	170,392	1.03%
Electrical Equipment	2.76%	190,701	124.89%	428,862	4.37%	Chemicals or Allied Products	0.33%	38,750	636.84%	285,522	1.72%
Primary Metal Products	2.65%	183,082	75.03%	320,443	3.26%	Transportation Equipment	0.27%	31,743	74.47%	55,384	0.33%
Pulp, Paper or Allied Products	1.92%	132,290	16.37%	153,947	1.57%	Misc Manufacturing Products	0.23%	27,544	518.48%	170,356	1.03%
Transportation Equipment	1.32%	91,270	93.48%	176,592	1.80%	Waste or Scrap Materials	0.18%	20,826	62.99%	33,945	0.20%
Printed Matter	0.35%	24,243	36.97%	33,205	0.34%	Printed Matter	0.12%	14,476	128.16%	33,029	0.20%
Coal	0.35%	24,053	91.96%	46,172	0.47%	Fabricated Metal Products	0.10%	11,313	159.81%	29,393	0.18%
Machinery	0.34%	23,573	134.18%	55,203	0.56%	Machinery	0.06%	7,522	101.51%	15,157	0.09%
Waste or Scrap Materials	0.34%	23,479	40.75%	33,047	0.34%	Rail Intermodal Drayage to Ramp	0.05%	5,407	83.99%	9,948	0.06%
Fabricated Metal Products	0.32%	21,808	65.87%	36,173	0.37%	Metallic Ores	0.04%	4,165	(46.21%)	2,241	0.01%
Furniture or Fixtures	0.15%	10,153	26.85%	12,878	0.13%	Instrument, Photo Equip, Optical Eq	0.03%	3,273	279.98%	12,438	0.08%
Misc Manufacturing Products	0.15%	10,128	134.43%	23,743	0.24%	Primary Metal Products	0.01%	1,422	(35.84%)	912	0.01%
Rubber or Misc Plastics	0.09%	6,369	79.82%	11,454	0.12%	Furniture or Fixtures	0.00%	309	262.49%	1,120	0.01%

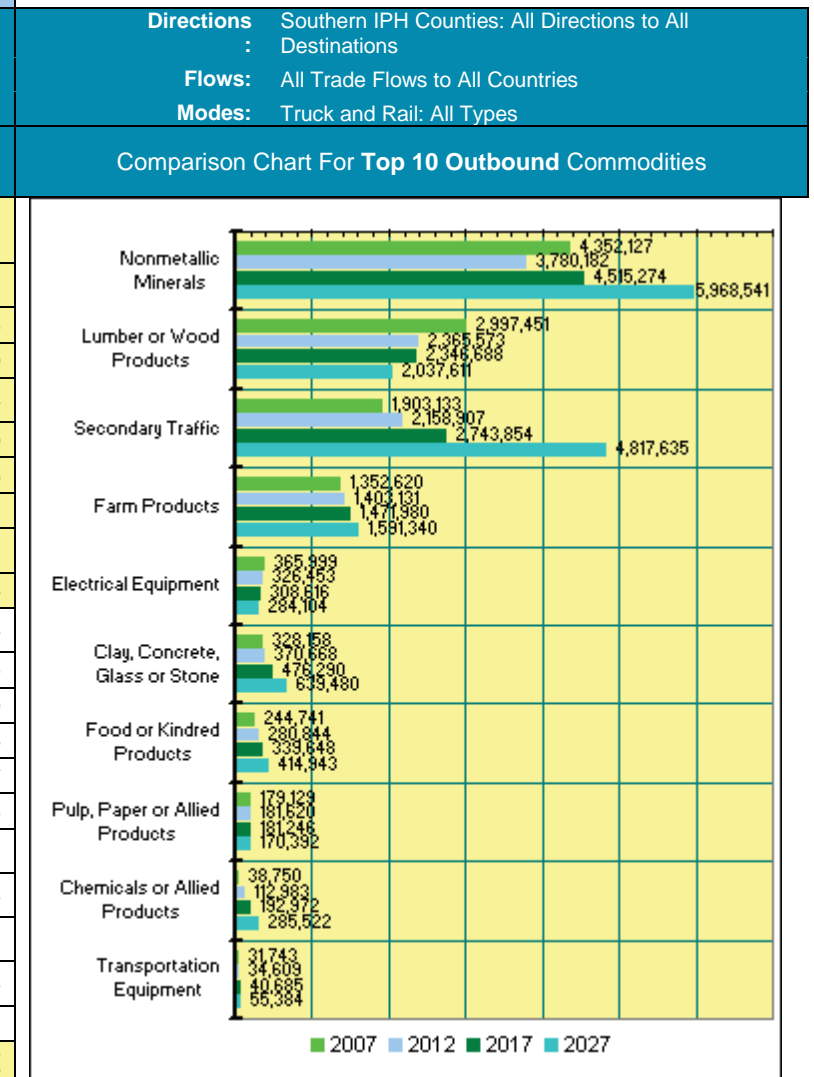
Exhibit 39: 2007, 2012, 2017 and 2027 Southern Counties Inbound Commodity Growth (no water transport)

Inbound Directions: Southern Counties: All Directions From All Origins Inbound Flows: All Trade Flows from All Countries Inbound Modes: Truck and Rail: All Types								Directions: Southern Counties: All Directions From All Origins Flows: All Trade Flows from All Countries Modes: Truck and Rail: All Types			
Top 20 Inbound Commodities	2007 Tons	Growth % ►	2012 Tons	Growth % ►	2017 Tons	Growth % ►	2027 Tons	Comparison Chart For Top 10 Inbound Commodities			
Lumber or Wood Products	1,318,031	(11.66%)	1,164,369	6.44%	1,239,391	1.62%	1,259,421				
Secondary Traffic	1,262,325	(7.48%)	1,167,958	11.84%	1,306,265	37.11%	1,791,010				
Nonmetallic Minerals	1,199,653	4.31%	1,251,303	31.42%	1,644,419	41.97%	2,334,545				
Farm Products	1,151,150	6.68%	1,228,052	8.04%	1,326,784	12.37%	1,490,941				
Clay, Concrete, Glass or Stone	437,045	(9.26%)	396,593	13.06%	448,397	20.47%	540,161				
Chemicals or Allied Products	321,136	4.86%	336,745	14.72%	386,322	18.36%	457,249				
Petroleum or Coal Products	245,249	9.38%	268,265	5.09%	281,917	(5.13%)	267,452				
Food or Kindred Products	209,895	4.46%	219,263	15.03%	252,217	26.83%	319,895				
Electrical Equipment	190,701	3.98%	198,291	18.86%	235,697	81.95%	428,862				
Primary Metal Products	183,082	9.98%	201,356	18.56%	238,729	34.23%	320,443				
Pulp, Paper or Allied Products	132,290	(6.94%)	123,114	8.86%	134,027	14.86%	153,947				
Transportation Equipment	91,270	8.97%	99,458	20.48%	119,827	47.37%	176,592				
Printed Matter	24,243	(3.52%)	23,390	9.76%	25,674	29.33%	33,205				
Coal	24,053	5.45%	25,364	32.75%	33,670	37.13%	46,172				
Machinery	23,573	9.91%	25,908	29.61%	33,579	64.40%	55,203				
Waste or Scrap Materials	23,479	4.94%	24,638	13.67%	28,007	17.99%	33,047				
Fabricated Metal Products	21,808	(3.29%)	21,092	19.39%	25,181	43.66%	36,173				
Furniture or Fixtures	10,153	(10.64%)	9,072	14.19%	10,360	24.31%	12,878				
Misc Manufacturing Products	10,128	7.44%	10,882	28.20%	13,950	70.20%	23,743				
Rubber or Misc Plastics	6,369	1.47%	6,463	21.89%	7,878	45.39%	11,454				
Total For Top 10 Commodities	6,518,265	(1.32%)	6,432,196	14.43%	7,360,138	25.13%	9,209,980				
Top 10's Percent of Total	94.41%		94.32%		94.22%		93.81%				
Total For Top 20 Commodities	6,885,630	(1.22%)	6,801,576	14.57%	7,792,290	25.67%	9,792,393				
Top 20's Percent of Total	99.73%		99.74%		99.75%		99.75%				
Total For All Commodities Inbound	6,904,149	(1.23%)	6,819,368	14.56%	7,811,999	25.67%	9,817,269				

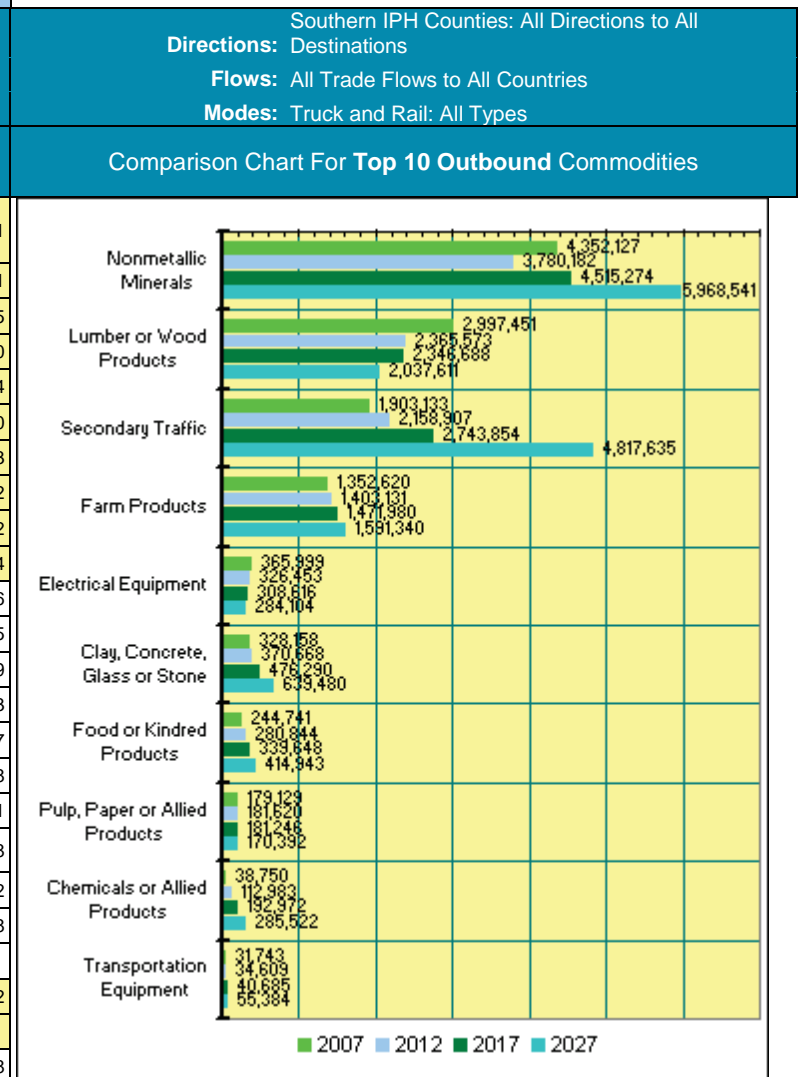
Exhibit 40: 2007, 2012, 2017 and 2027 Southern Counties Outbound Commodity Growth (no water transport)

Outbound Directions: Southern IPH Counties: All Directions to All Destinations Outbound Flows: All Trade Flows to All Countries Outbound Modes: Truck and Rail: All Types								Directions: Southern IPH Counties: All Directions to All Destinations Flows: All Trade Flows to All Countries Modes: Truck and Rail: All Types
Top 20 Outbound Commodities	2007 Tons	Growth % ▶	2012 Tons	Growth % ▶	2017 Tons	Growth % ▶	2027 Tons	Comparison Chart For Top 10 Outbound Commodities
Nonmetallic Minerals	4,352,127	(13.14%)	3,780,182	19.45%	4,515,274	32.19%	5,968,541	
Lumber or Wood Products	2,997,451	(21.08%)	2,365,573	(0.80%)	2,346,688	(13.17%)	2,037,611	
Secondary Traffic	1,903,133	13.44%	2,158,907	27.09%	2,743,854	75.58%	4,817,635	
Farm Products	1,352,620	3.73%	1,403,131	4.91%	1,471,980	8.11%	1,591,340	
Electrical Equipment	365,999	(10.81%)	326,453	(5.46%)	308,616	(7.94%)	284,104	
Clay, Concrete, Glass or Stone	328,158	12.95%	370,668	28.50%	476,290	34.26%	639,480	
Food or Kindred Products	244,741	14.75%	280,844	20.94%	339,648	22.17%	414,943	
Pulp, Paper or Allied Products	179,129	1.39%	181,620	(0.21%)	181,246	(5.99%)	170,392	
Chemicals or Allied Products	38,750	191.57%	112,983	70.80%	192,972	47.96%	285,522	
Transportation Equipment	31,743	9.03%	34,609	17.56%	40,685	36.13%	55,384	
Misc Manufacturing Products	27,544	59.88%	44,037	53.99%	67,812	151.22%	170,356	
Waste or Scrap Materials	20,826	28.57%	26,775	8.79%	29,128	16.54%	33,945	
Printed Matter	14,476	18.51%	17,155	26.46%	21,694	52.25%	33,029	
Fabricated Metal Products	11,313	5.00%	11,879	43.32%	17,026	72.64%	29,393	
Machinery	7,522	6.55%	8,014	24.19%	9,953	52.28%	15,157	
Rail Intermodal Drayage to Ramp	5,407	2.07%	5,519	19.72%	6,607	50.55%	9,948	
Metallic Ores	4,165	(43.73%)	2,344	(2.27%)	2,291	(2.18%)	2,241	
Instrument, Photo Equip, Optical Eq	3,273	15.13%	3,769	38.06%	5,203	139.05%	12,438	
Primary Metal Products	1,422	(9.42%)	1,288	(12.44%)	1,128	(19.11%)	912	
Tobacco Products	676	(22.49%)	524	(4.28%)	501	(14.74%)	428	
Total For Top 10 Commodities	11,793,850	(6.60%)	11,014,969	14.55%	12,617,252	28.91%	16,264,952	
Top 10's Percent of Total	99.18%		98.90%		98.72%		98.13%	
Total For Top 20 Commodities	11,890,475	(6.34%)	11,136,273	14.75%	12,778,595	29.69%	16,572,798	
Top 20's Percent of Total	99.99%		99.99%		99.99%		99.98%	
Total For All Commodities	11,891,910	(6.34%)	11,137,750	14.75%	12,780,380	29.69%	16,575,330	

Outbound	4		0		6		5
Outbound Directions:	Southern IPH Counties: All Directions to All Destinations						
Outbound Flows:	All Trade Flows to All Countries						
Outbound Modes:	Truck and Rail: All Types						
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Misc Manufacturing Products	27,544	59.88%	44,037	53.99%	67,812	151.22%	170,356
Waste or Scrap Materials	20,826	28.57%	26,775	8.79%	29,128	16.54%	33,945
Printed Matter	14,476	18.51%	17,155	26.46%	21,694	52.25%	33,029
Fabricated Metal Products	11,313	5.00%	11,879	43.32%	17,026	72.64%	29,393
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Total For Top 10 Commodities	11,793,850	(6.60%)	11,014,969	14.55%	12,617,252	28.91%	16,264,952
Top 10's Percent of Total	99.18%		98.90%		98.72%		98.13%
Total For Top 20 Commodities	11,890,475	(6.34%)	11,136,273	14.75%	12,778,595	29.69%	16,572,798
Top 20's Percent of Total	99.99%		99.99%		99.99%		99.98%
Total For All Commodities	11,891,911	(6.34%)	11,137,751	14.75%	12,780,381	29.69%	16,575,331



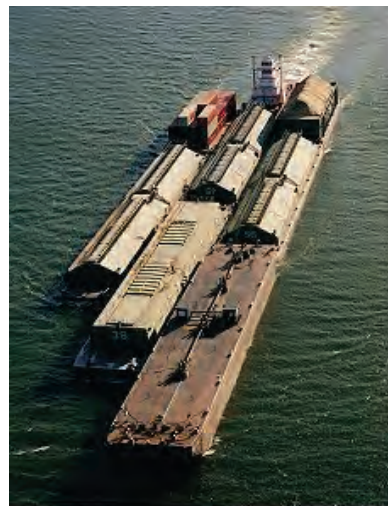
Outbound	4		0		6		5
Outbound Directions: Southern IPH Counties: All Directions to All Destinations Outbound Flows: All Trade Flows to All Countries Outbound Modes: Truck and Rail: All Types							
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Farm Products	1,352,620	3.73%	1,403,131	4.91%	1,471,980	8.11%	1,591,340
Electrical Equipment	365,999	(10.81%)	326,453	(5.46%)	308,616	(7.94%)	284,104
Clay, Concrete, Glass or Stone	328,158	12.95%	370,668	28.50%	476,290	34.26%	639,480
Food or Kindred Products	244,741	14.75%	280,844	20.94%	339,648	22.17%	414,943
Pulp, Paper or Allied Products	179,129	1.39%	181,620	(0.21%)	181,246	(5.99%)	170,392
Chemicals or Allied Products	38,750	191.57%	112,983	70.80%	192,972	47.96%	285,522
Transportation Equipment	31,743	9.03%	34,609	17.56%	40,685	36.13%	55,384
Misc Manufacturing Products	27,544	59.88%	44,037	53.99%	67,812	151.22%	170,356
Waste or Scrap Materials	20,826	28.57%	26,775	8.79%	29,128	16.54%	33,945
Printed Matter	14,476	18.51%	17,155	26.46%	21,694	52.25%	33,029
Fabricated Metal Products	11,313	5.00%	11,879	43.32%	17,026	72.64%	29,393
Machinery	7,522	6.55%	8,014	24.19%	9,953	52.28%	15,157
Rail Intermodal Drayage to Ramp	5,407	2.07%	5,519	19.72%	6,607	50.55%	9,948
Metallic Ores	4,165	(43.73%)	2,344	(2.27%)	2,291	(2.18%)	2,241
Instrument, Photo Equip, Optical Eq	3,273	15.13%	3,769	38.06%	5,203	139.05%	12,438
Primary Metal Products	1,422	(9.42%)	1,288	(12.44%)	1,128	(19.11%)	912
Tobacco Products	676	(22.49%)	524	(4.28%)	501	(14.74%)	428
Total For Top 10 Commodities	11,793,850	(6.60%)	11,014,969	14.55%	12,617,252	28.91%	16,264,952
Top 10's Percent of Total	99.18%		98.90%		98.72%		98.13%
Total For Top 20 Commodities	11,890,475	(6.34%)	11,136,273	14.75%	12,778,595	29.69%	16,572,798
Top 20's Percent of Total	99.99%		99.99%		99.99%		99.98%
Total For All Commodities Outbound	11,891,914	(6.34%)	11,137,750	14.75%	12,780,386	29.69%	16,575,335



ADDITION OF WATER TRANSPORTATION TO SOUTHERN COUNTY FREIGHT FLOWS

The addition of waterborne freight on the Columbia/Snake River to the tonnage amounts that are moved by truck and rail in the Southern Counties provides a different alignment of the inbound and outbound total shares. There are 36 ports which can be serviced along the navigable portion of the river. Portland, OR and Vancouver, WA serve as the global gateway on the western end of the river providing access for ocean going bulk and container ships. Lewiston is the major container handling river port in the IPH study area at the eastern end of the river corridor. Containerized service is also available between Portland and/or Boardman and Umatilla, OR; and Pasco, WA (however these three river ports are not in the IPH study area).

Currently there are three operators offering container-on-barge service: Bernert Barge Lines, Foss Maritime, and Tidewater Barge Lines. Several barges can be tied together and can be shuttled between ports by a single tug boat. There are eight dams and navigable locks between Portland and Lewiston. Barge transit time from Portland to Lewiston is approximately two days, making the service only one day longer compared to draying containers out of Portland over the highway to Lewiston. Because many containers can be carried on a single barge, the service is less costly than highway drayage service that moves only one container per truck. If a shipper can tolerate the extra day of transit time, they can take advantage of the savings that can be obtained by using the barge service compared to drayage service. There is more outbound freight than inbound, creating a shortage of outbound equipment.



Source: Tidewater Barge Lines

Inbound commodity forecast growth for water transit only (Exhibit 41): The table and chart shows the forecasted growth from the base year of 2007. In 2007 only nine commodities were moved inbound (pie charts are not shown because there are not ten commodities). Overall there will be 84 percent growth by 2027.

- petroleum and coal products are the largest inbound commodity in 2007 at 72.6 percent of the total inbound and is forecast to grow 94 percent growth by 2027
- farm products are the second largest inbound commodity in 2007 at 10.8 percent growing in is forecast to grow 67.7 percent by 2027.

Outbound commodity forecast growth for water transit only (Exhibit 42): In 2007 only eight commodities were moved outbound (pie charts are not shown because there are not ten commodities). Overall, tonnage remains basically flat between 2007 and 2027.

- farm products is the largest outbound commodity, however it is forecast to decrease by 724,000 tons, or 37 percent between 2007 and 2027
- processed food and kindred products is the second largest product, gaining 468,000 tons or 41 percent between 2007 and 2027, (its growth is the opposite of farm products, signaling a change to value added food products)

- waste and scrape leaving the area increases by 57.7 percent during the study period.

Exhibit 41: 2007, 2012, 2017 and 2027 Southern Counties Inbound Commodity Growth (water only)

Inbound Directions: Southern Counties: Local and West From All Origins Inbound Flows: All Trade Flows from All Countries Inbound Modes: Water: All Types								Directions: Southern Counties: Local and West From All Origins Flows: All Trade Flows from All Countries Modes: Water: All Types								
Top 20 Inbound Commodities		2007 Tons	Growth % ►	2012 Tons	Growth % ►	2017 Tons	Growth % ►	2027 Tons	Comparison Chart For Top 10 Inbound Commodities							
Petroleum or Coal Products		1,113,993	22.23%	1,361,647	20.25%	1,637,335	31.99%	2,161,061	<div>2007201220172027</div>							
Farm Products		166,228	11.92%	186,047	10.89%	206,310	19.01%	245,523								
Nonmetallic Minerals		114,049	1.51%	115,773	18.72%	137,441	23.38%	169,571								
Waste or Scrap Materials		78,088	9.17%	85,251	8.37%	92,389	33.13%	123,002								
Food or Kindred Products		35,411	16.87%	41,386	12.27%	46,464	11.61%	51,859								
Lumber or Wood Products		11,829	60.09%	18,937	45.19%	27,495	49.09%	40,991								
Fresh Fish or Marine Products		4,952	13.12%	5,601	11.22%	6,230	19.13%	7,422								
Misc Freight Shipments		4,662	15.37%	5,379	18.80%	6,390	56.94%	10,029								
Chemicals or Allied Products		2,123	86.98%	3,969	61.68%	6,417	78.41%	11,449								

Exhibit 42: 2007, 2012, 2017 and 2027 Southern Counties Outbound Commodity Growth (water only)

Outbound Directions: Southern Counties: Local and West to All Destinations (water only) Outbound Flows: All Trade Flows to All Countries Outbound Modes: Water: All Types								Directions: Southern Counties: Local and West to All Destinations Flows: All Trade Flows to All Countries Modes: Water: All Types								
Top 20 Outbound Commodities		2007 Tons	Growth % ►	2012 Tons	Growth % ►	2017 Tons	Growth % ►	2027 Tons	Comparison Chart For Top 10 Outbound Commodities							
Farm Products		1,941,452	(6.30%)	1,819,217	(12.22%)	1,596,880	(23.75%)	1,217,659								
Food or Kindred Products		647,320	26.38%	818,097	18.00%	965,343	15.58%	1,115,751								
Waste or Scrap Materials		421,918	9.17%	460,626	8.37%	499,193	33.13%	664,600								
Fresh Fish or Marine Products		41,756	3.99%	43,422	6.18%	46,103	(5.88%)	43,394								
Clay, Concrete, Glass or Stone		4,891	22.67%	6,000	21.76%	7,306	29.80%	9,483								
Pulp, Paper or Allied Products		353	(10.01%)	317	(9.30%)	288	(27.61%)	208								
Tobacco Products		313	(51.28%)	152	(9.99%)	137	(60.64%)	54								
Nonmetallic Minerals		215	29.94%	279	(13.83%)	240	(47.48%)	126								

The addition of the waterborne freight shows the impact of the tonnage in the pie charts. Without waterborne freight, lumber and secondary freight are the largest and second largest inbound commodities. After waterborne freight is added to the inbound tonnage, petroleum becomes the largest inbound commodity, followed by lumber and then farm products.

Inbound commodity share with waterborne freight included (Exhibit 43): Inbound commodity flows including waterborne freight in 2007 indicates petroleum's prominent share and how it and mineral products will increase in share while lumber and farm products will decrease in share. The top five commodities represent 78 percent of the total inbound tonnage.

- petroleum or coal products is the largest inbound commodity at 16.1 percent
- lumber of wood products is second at 15.7 percent
- farm products are a close third at 15.6 percent
- nonmetallic minerals are right behind at 15.5 percent
- secondary freight rounds out the top five at 14.9 percent.

Outbound commodity share with waterborne freight included (Exhibit 44): The top four commodities represent 84 percent of the total outbound freight. The pie charts easily depict the significance of lumber and nonmetallic minerals in outbound tonnage for the Northern Counties.

- nonmetallic minerals is the largest outbound commodity at 29.1 percent
- farm products are in second position at 22.2 percent
- lumber of wood products are third at 20 percent
- secondary freight rounds out the top four at 12.7 percent.

Exhibit 43: 2007 and 2027 Southern Counties Top Ten Inbound Commodities (with water)

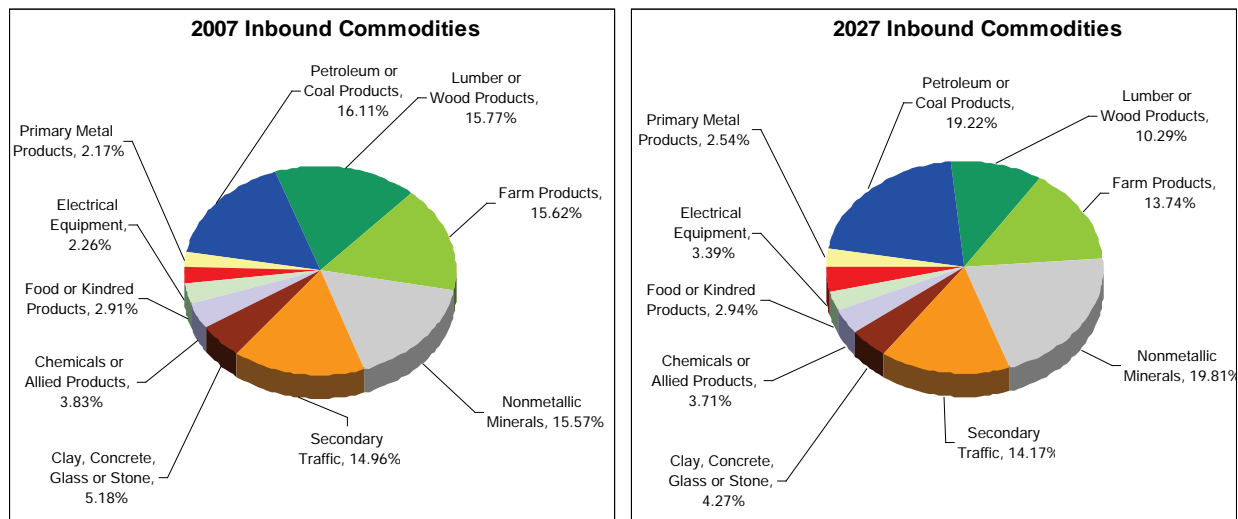
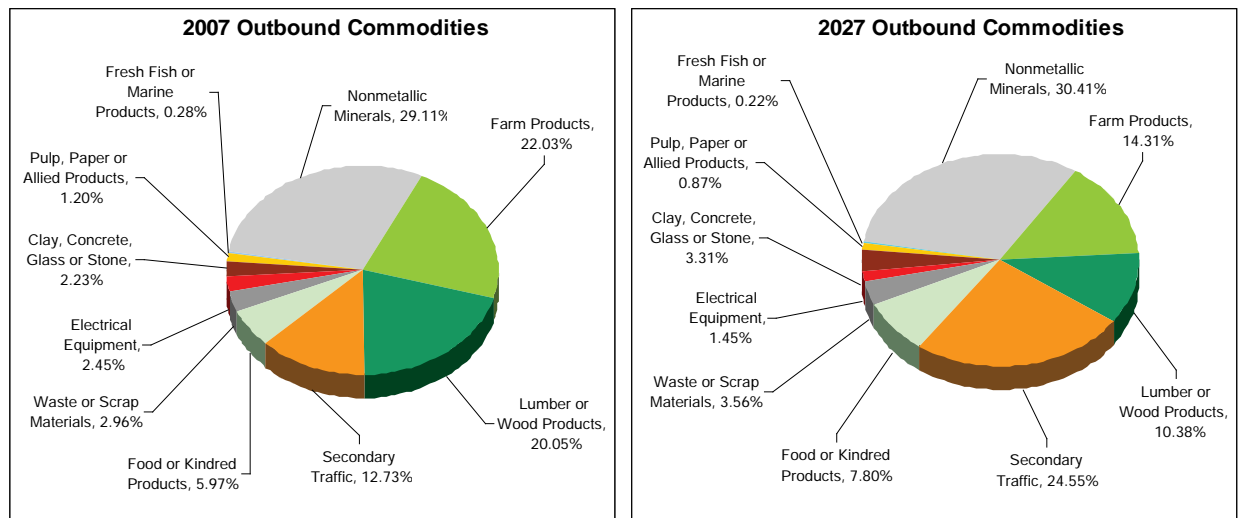


Exhibit 44: 2007 and 2027 Southern Counties Top Ten Outbound Commodities (with water)



The pie charts can be cross referenced with **Exhibit 45** to determine the tonnage changes for the inbound (table on the left) and outbound (table on the right) commodities sorted in descending order for tonnage for the year 2007. The center column indicates the forecast growth percentage for the commodities by 2027.

Inbound commodity forecast growth with waterborne freight included (Exhibit 46): The table and chart shows the forecasted growth from the base year of 2007 and each of study periods.

- petroleum is the largest inbound commodity growing by 78.6 percent by 2027

- lumber products are the only commodity that declines during the study period, by 2.2 percent by 2027, however the decline is not a result of waterborne transit
- farm products increase by 31.8 percent during the study period, both surface transit and water transit have increases during the study period
- nonmetallic minerals increases by 90.6 percent over the study period, but there is minimal contribution to that growth as a result of increases in waterborne transit
- most other commodities take a slight recessionary dip but then experience growth through the remainder of the study period.

Outbound commodity forecast growth with waterborne freight included (Exhibit 47):

- nonmetallic minerals has the largest share of outbound tonnage at 29 percent, increasing slightly to 30.1 percent by 2027, there is only marginal tonnage transported by barge on the river
- farm products have the second largest share in 2007 but after a decline in waterborne tonnage by 14.7 percent, farm share should actually be ranked third in 2027
- lumber or wood products are the third largest commodity and forecast to decrease 32 percent in total tonnage for 2027 over 2007. After the decrease it should be ranked as the fourth largest commodity. Most of the decline will result from surface transportation as not much of the commodity is shipped by barge
- secondary freight increases by 153 percent during the study period, but all of the increase is from surface transportation. Secondary freight is not shown as one of the commodities that are typically transported via barge on the river corridor.

Exhibit 45: 2007 and 2027 Southern Counties Commodities Forecast Changes (with water transport)

Southern Counties Inbound	2007	2007	Growth	2027	2027
Top 20 Commodities (+ Water Freight)	%	Tons	% ►	Tons	%
Petroleum or Coal Products	16.11%	1,359,242	78.67%	2,428,513	19.22%
Lumber or Wood Products	15.77%	1,329,859	(2.21%)	1,300,411	10.29%
Farm Products	15.62%	1,317,378	31.81%	1,736,465	13.74%
Nonmetallic Minerals	15.57%	1,313,702	90.62%	2,504,116	19.81%
Secondary Freight	14.96%	1,262,325	41.88%	1,791,010	14.17%
Clay, Concrete, Glass or Stone	5.18%	437,045	23.59%	540,161	4.27%
Chemicals or Allied Products	3.83%	323,258	44.99%	468,697	3.71%
Food or Kindred Products	2.91%	245,306	51.55%	371,754	2.94%
Electrical Equipment	2.26%	190,701	124.89%	428,862	3.39%
Primary Metal Products	2.17%	183,082	75.03%	320,443	2.54%
Pulp, Paper or Allied Products	1.57%	132,290	16.37%	153,947	1.22%
Waste or Scrap Materials	1.20%	101,566	53.64%	156,049	1.23%
Transportation Equipment	1.08%	91,270	93.48%	176,592	1.40%
Printed Matter	0.29%	24,243	36.97%	33,205	0.26%
Coal	0.29%	24,053	91.96%	46,172	0.37%
Machinery	0.28%	23,573	134.18%	55,203	0.44%
Fabricated Metal Products	0.26%	21,808	65.87%	36,173	0.29%
Furniture or Fixtures	0.12%	10,153	26.85%	12,878	0.10%
Misc Manufacturing Products	0.12%	10,128	134.43%	23,743	0.19%
Rubber or Misc Plastics	0.08%	6,369	79.82%	11,454	0.09%

Southern Counties Outbound	2007	2007	Growth	2027	2027
Top 20 Commodities (+ Water Freight)	%	Tons	% ►	Tons	%
Nonmetallic Minerals	29.11%	4,352,342	37.14%	5,968,668	30.41%
Farm Products	22.03%	3,294,072	(14.73%)	2,808,999	14.31%
Lumber or Wood Products	20.05%	2,997,451	(32.02%)	2,037,611	10.38%
Secondary Freight	12.73%	1,903,133	153.14%	4,817,635	24.55%
Food or Kindred Products	5.97%	892,061	71.59%	1,530,694	7.80%
Waste or Scrap Materials	2.96%	442,744	57.78%	698,545	3.56%
Electrical Equipment	2.45%	365,999	(22.38%)	284,104	1.45%
Clay, Concrete, Glass or Stone	2.23%	333,049	94.86%	648,963	3.31%
Pulp, Paper or Allied Products	1.20%	179,481	(4.95%)	170,600	0.87%
Fresh Fish or Marine Products	0.28%	42,061	4.22%	43,836	0.22%
Chemicals or Allied Products	0.26%	38,750	636.84%	285,522	1.45%
Transportation Equipment	0.21%	31,743	74.47%	55,384	0.28%
Misc Manufacturing Products	0.18%	27,544	518.48%	170,356	0.87%
Printed Matter	0.10%	14,476	128.16%	33,029	0.17%
Fabricated Metal Products	0.08%	11,313	159.81%	29,393	0.15%
Machinery	0.05%	7,522	101.51%	15,157	0.08%
Rail Intermodal Drayage to Ramp	0.04%	5,407	83.99%	9,948	0.05%
Metallic Ores	0.03%	4,165	(46.21%)	2,241	0.01%
Instrument, Photo Equip, Optical Eq	0.02%	3,273	279.98%	12,438	0.06%
Primary Metal Products	0.01%	1,422	(35.84%)	912	0.00%

Exhibit 46: 2007, 2012, 2017 and 2027 Southern Counties Inbound Commodity Growth (with water transport)

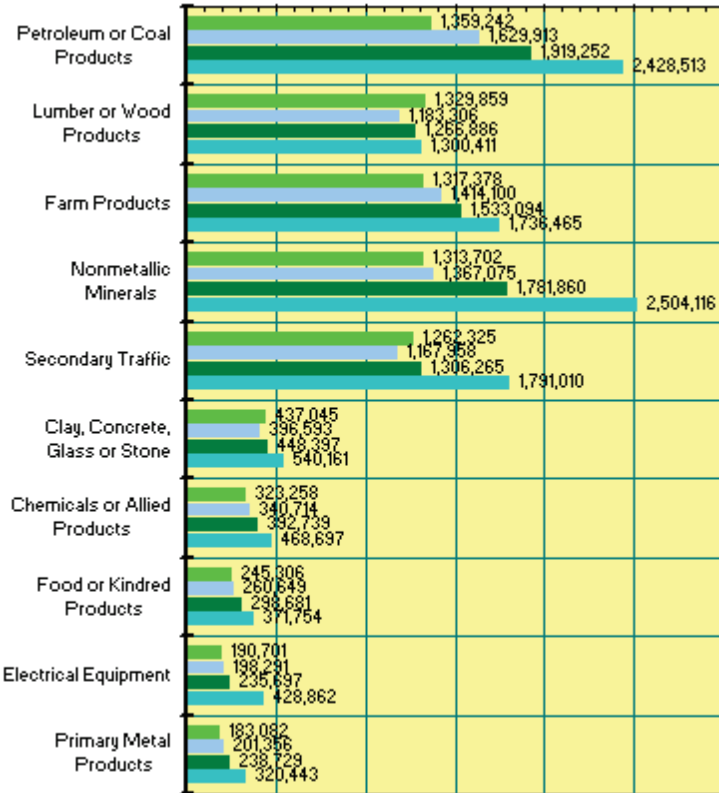
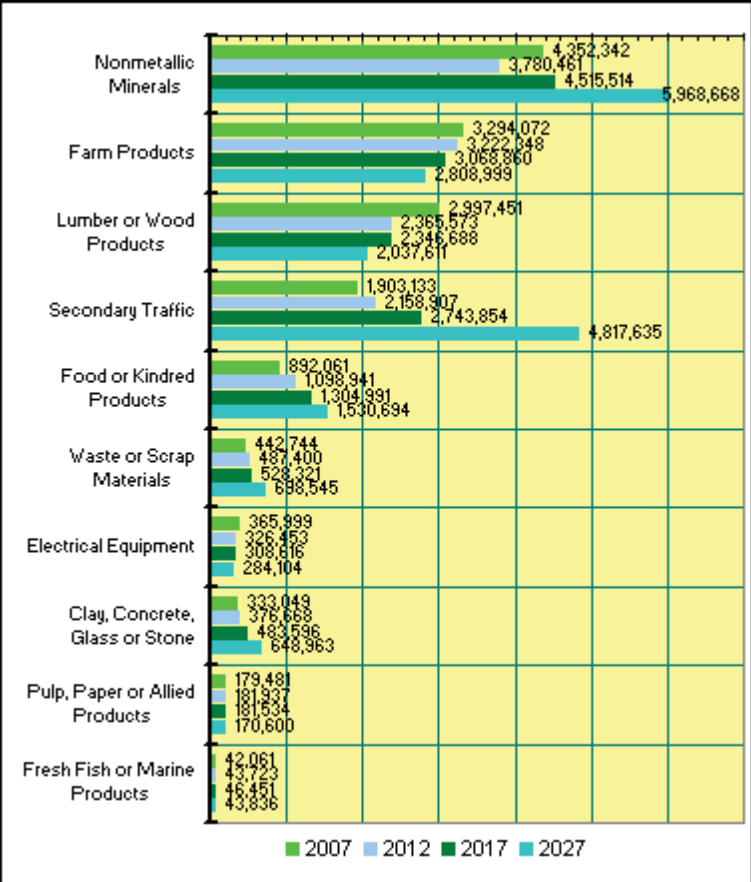
Inbound Directions: Southern Counties: All Directions From All Origins Inbound Flows: All Trade Flows from All Countries Inbound Modes: Truck, Rail and Water: All Types								Directions: Southern Counties: All Directions From All Origins Flows: All Trade Flows from All Countries Modes: Truck, Rail and Water: All Types							
Top 20 Inbound Commodities	2007 Tons	Growth % ►	2012 Tons	Growth % ►	2017 Tons	Growth % ►	2027 Tons	Comparison Chart For Top 10 Inbound Commodities							
Petroleum or Coal Products	1,359,242	19.91%	1,629,913	17.75%	1,919,252	26.53%	2,428,513								
Lumber or Wood Products	1,329,859	(11.02%)	1,183,306	7.06%	1,266,886	2.65%	1,300,411								
Farm Products	1,317,378	7.34%	1,414,100	8.41%	1,533,094	13.27%	1,736,465								
Nonmetallic Minerals	1,313,702	4.06%	1,367,075	30.34%	1,781,860	40.53%	2,504,116								
Secondary Traffic	1,262,325	(7.48%)	1,167,958	11.84%	1,306,265	37.11%	1,791,010								
Clay, Concrete, Glass or Stone	437,045	(9.26%)	396,593	13.06%	448,397	20.47%	540,161								
Chemicals or Allied Products	323,258	5.40%	340,714	15.27%	392,739	19.34%	468,697								
Food or Kindred Products	245,306	6.25%	260,649	14.59%	298,681	24.47%	371,754								
Electrical Equipment	190,701	3.98%	198,291	18.86%	235,697	81.95%	428,862								
Primary Metal Products	183,082	9.98%	201,356	18.56%	238,729	34.23%	320,443								
Pulp, Paper or Allied Products	132,290	(6.94%)	123,114	8.86%	134,027	14.86%	153,947								
Waste or Scrap Materials	101,566	8.19%	109,889	9.56%	120,396	29.61%	156,049								
Transportation Equipment	91,270	8.97%	99,458	20.48%	119,827	47.37%	176,592								
Printed Matter	24,243	(3.52%)	23,390	9.76%	25,674	29.33%	33,205								
Coal	24,053	5.45%	25,364	32.75%	33,670	37.13%	46,172								
Machinery	23,573	9.91%	25,908	29.61%	33,579	64.40%	55,203								
Fabricated Metal Products	21,808	(3.29%)	21,092	19.39%	25,181	43.66%	36,173								
Furniture or Fixtures	10,153	(10.64%)	9,072	14.19%	10,360	24.31%	12,878								
Misc Manufacturing Products	10,128	7.44%	10,882	28.20%	13,950	70.20%	23,743								
Rubber or Misc Plastics	6,369	1.47%	6,463	21.89%	7,878	45.39%	11,454								
Total For Top 10 Commodities															
Total For Top 20 Commodities															
Total For All Commodities Inbound															

Exhibit 47: 2007, 2012, 2017 and 2027 Southern Counties Outbound Commodity Growth (with water transport)

Outbound Directions: Southern Counties: All Directions to All Destinations (with water) Outbound Flows: All Trade Flows to All Countries Outbound Modes: Truck, Rail and Water: All Types								Directions: Southern Counties: All Directions to All Destinations Flows: All Trade Flows to All Countries Modes: Truck, Rail and Water: All Types							
Top 20 Outbound Commodities	2007 Tons	Growth % ►	2012 Tons	Growth % ►	2017 Tons	Growth % ►	2027 Tons	Comparison Chart For Top 10 Outbound Commodities							
Nonmetallic Minerals	4,352,342	(13.14%)	3,780,461	19.44%	4,515,514	32.18%	5,968,668								
Farm Products	3,294,072	(2.18%)	3,222,348	(4.76%)	3,068,860	(8.47%)	2,808,999								
Lumber or Wood Products	2,997,451	(21.08%)	2,365,573	(0.80%)	2,346,688	(13.17%)	2,037,611								
Secondary Traffic	1,903,133	13.44%	2,158,907	27.09%	2,743,854	75.58%	4,817,635								
Food or Kindred Products	892,061	23.19%	1,098,941	18.75%	1,304,991	17.30%	1,530,694								
Waste or Scrap Materials	442,744	10.09%	487,400	8.40%	528,321	32.22%	698,545								
Electrical Equipment	365,999	(10.81%)	326,453	(5.46%)	308,616	(7.94%)	284,104								
Clay, Concrete, Glass or Stone	333,049	13.10%	376,668	28.39%	483,596	34.20%	648,963								
Pulp, Paper or Allied Products	179,481	1.37%	181,937	(0.22%)	181,534	(6.02%)	170,600								
Fresh Fish or Marine Products	42,061	3.95%	43,723	6.24%	46,451	(5.63%)	43,836								
Chemicals or Allied Products	38,750	191.57%	112,983	70.80%	192,972	47.96%	285,522								
Transportation Equipment	31,743	9.03%	34,609	17.56%	40,685	36.13%	55,384								
Misc Manufacturing Products	27,544	59.88%	44,037	53.99%	67,812	151.22%	170,356								
Printed Matter	14,476	18.51%	17,155	26.46%	21,694	52.25%	33,029								
Fabricated Metal Products	11,313	5.00%	11,879	43.32%	17,026	72.64%	29,393								
Machinery	7,522	6.55%	8,014	24.19%	9,953	52.28%	15,157								
Rail Intermodal Drayage to Ramp	5,407	2.07%	5,519	19.72%	6,607	50.55%	9,948								
Metallic Ores	4,165	(43.73%)	2,344	(2.27%)	2,291	(2.18%)	2,241								
Instruments, Photo Equip, Optical Eq	3,273	15.13%	3,769	38.06%	5,203	139.05%	12,438								
Primary Metal Products	1,422	(9.42%)	1,288	(12.44%)	1,128	(19.11%)	912								
Total For Top 10 Commodities	14,802,393	(5.13%)	14,042,411	10.58%	15,528,424	22.42%	19,009,654								
Top 10's Percent of Total	99.01%		98.30%		97.69%		96.86%								
Total For Top 20 Commodities	14,948,008	(4.44%)	14,284,008	11.27%	15,893,794	23.47%	19,624,033								
Top 20's Percent of Total	99.99%		99.99%		99.99%		99.99%								
Total For All Commodities Outbound	14,950,132	(4.44%)	14,285,860	11.27%	15,895,877	23.47%	19,626,610								

NET CHANGES FOR THE IPH'S INBOUND AND OUTBOUND COMMODITY FLOWS

A summary of tonnage change for inbound commodities for 2027 compared to 2007 is shown in **Exhibit 48**. The exhibit sums all tonnage gains and losses for all modes in all directions to indicate which commodities are forecast to experience net gains (9,552,985 tons) or declines (-1,287,923 tons). There is a net increase for inbound commodities of 8,265,062 tons.

Exhibit 48: 2027 Over 2007 IPH's Inbound Commodity Growth

Inbound Commodities - Change in Tonnage 2027 Over 2007			
Commodities with Increased Tonnage		Commodities with Decreased Tonnage	
Secondary Traffic	3,557,913	Lumber or Wood Products	(1,230,546)
Nonmetallic Minerals	1,079,735	Apparel or Related Products	(42,761)
Coal	790,343	Leather or Leather Products	(12,134)
Chemicals or Allied Products	486,879	Air Freight Drayage to Airport	(2,123)
Electrical Equipment	486,379	Tobacco Products	(359)
Transportation Equipment	449,785		
Primary Metal Products	414,071		
Farm Products	398,840		
Food or Kindred Products	383,178		
Petroleum or Coal Products	314,558		
Machinery	204,338		
Rail Intermodal Drayage to Ramp	178,226		
Clay, Concrete, Glass or Stone	133,127		
Misc Manufacturing Products	116,425		
Fabricated Metal Products	96,520		
Rail Intermodal Drayage from Ramp	85,668		
Waste or Scrap Materials	73,692		
Rubber or Misc Plastics	62,552		
Pulp, Paper or Allied Products	54,860		
Furniture or Fixtures	54,013		
Misc Mixed Shipments	42,456		
Printed Matter	29,626		
Instrument, Photo Equip, Optical Eq	23,348		
Freight Forwarder Traffic	16,009		
Air Freight Drayage from Airport	6,015		
Fresh Fish or Marine Products	4,143		
Misc Freight Shipments	3,906		
Small Packaged Freight Shipments	2,088		
Shipping Containers	1,731		
Crude Petrol. or Natural Gas	1,180		
Metallic Ores	865		
Textile Mill Products	461		
Ordnance or Accessories	47		
Forest Products	10		
Total	9,552,985	Total	(1,287,923)
Net Change = 8,265,062			

A summary of tonnage change for outbound commodities for 2027 compared to 2007 is shown in **Exhibit 49**. The exhibit sums all tonnage gains and losses for all modes in all directions to indicate which commodities are forecast to experience net gains (8,955,429) million tons or declines (-4,150,702) tons. There is a net increase for inbound commodities of 4,804,727 tons.

Exhibit 49: 2027 Over 2007 IPH Study Area's Outbound Commodity Growth

Outbound Commodities - Change in Tonnage 2027 Over 2007			
Commodities with Increased Tonnage		Commodities with Decreased Tonnage	
Secondary Traffic	3,896,160	Lumber or Wood Products	(2,927,128)
Nonmetallic Minerals	1,479,975	Farm Products	(936,269)
Machinery	722,467	Primary Metal Products	(162,905)
Chemicals or Allied Products	581,208	Electrical Equipment	(65,682)
Coal	383,033	Food or Kindred Products	(27,932)
Transportation Equipment	374,815	Apparel or Related Products	(17,209)
Waste or Scrap Materials	259,403	Metallic Ores	(5,233)
Furniture or Fixtures	235,138	Leather or Leather Products	(4,329)
Misc Manufacturing Products	214,093	Misc Freight Shipments	(1,887)
Clay, Concrete, Glass or Stone	205,427	Textile Mill Products	(1,828)
Fabricated Metal Products	158,959	Tobacco Products	(248)
Rail Intermodal Drayage to Ramp	99,315	Air Freight Drayage to Airport	(54)
Rail Intermodal Drayage from Ramp	88,518		
Petroleum or Coal Products	60,242		
Pulp, Paper or Allied Products	56,979		
Rubber or Misc Plastics	53,785		
Instrument, Photo Equip, Optical Eq	25,040		
Shipping Containers	23,882		
Misc Mixed Shipments	16,448		
Printed Matter	11,886		
Air Freight Drayage from Airport	3,388		
Freight Forwarder Traffic	2,546		
Fresh Fish or Marine Products	2,280		
Ordnance or Accessories	318		
Forest Products	118		
Small Packaged Freight Shipments	7		
	8,955,429		(4,150,702)
Net Change = 4,804,727			

Integrating the forecasts for 2012 and 2017 shows the impact of the 2008/09 recession. The decrease in both Inbound (**Exhibit 50**) and Outbound (**Exhibit 51**) commodity tonnage reflects a decrease in demand for 2012 with gradual increases in 2017 indicating the economy is recovering to the status prior to the recession. By 2027 overall growth is positive again. The construction and home building industries, whether regional or nationwide, are a large consumer of nonmetallic minerals (sand, gravel, cement, etc.) and lumber. The slowing of construction during a recession creates less of a demand and a following reduction in production output for these products.

Exhibit 50: 2007, 2012, 2017 and 2027 IPH Study Area's Inbound Commodity Growth (all Counties)

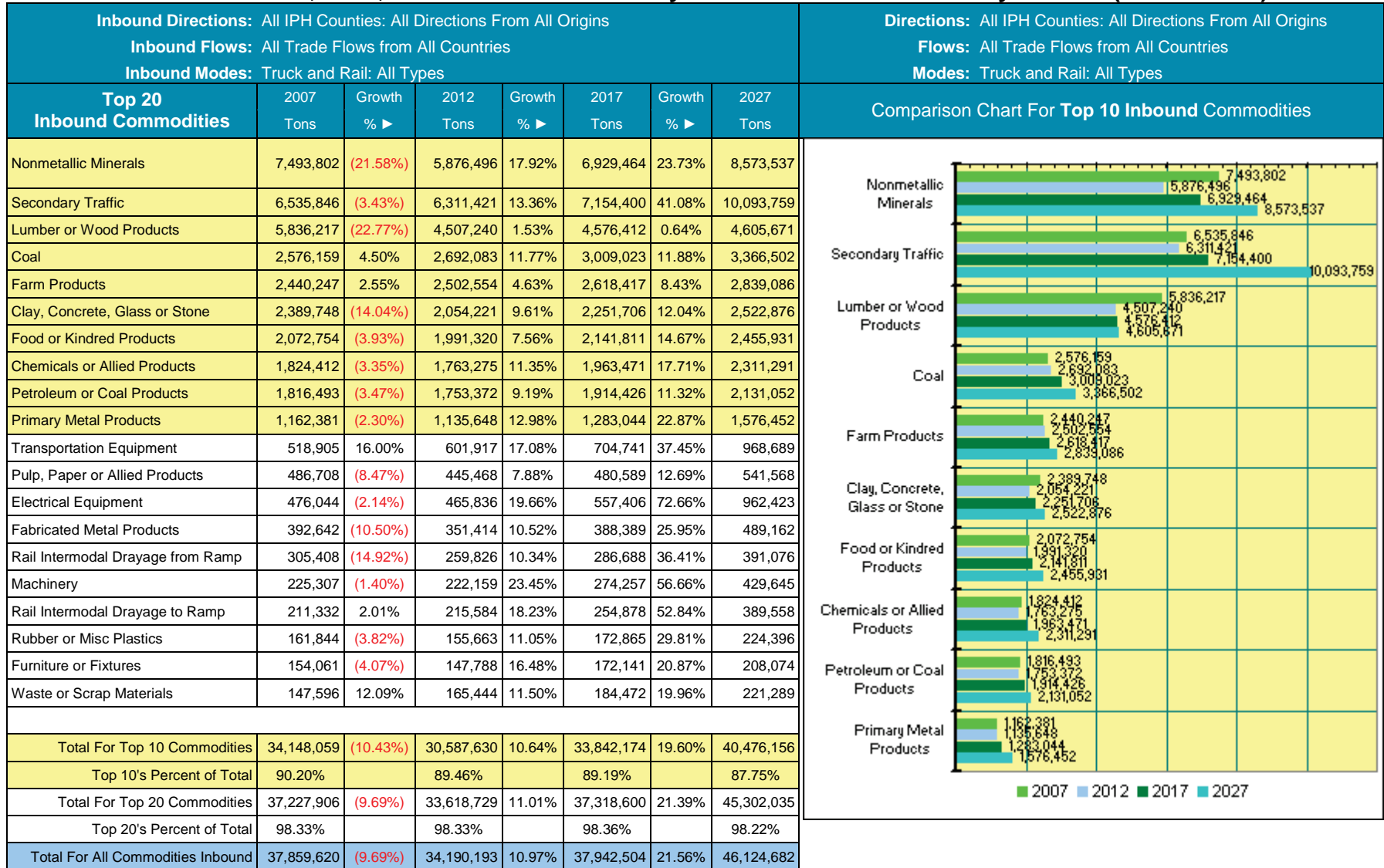


Exhibit 51: 2007, 2012, 2017 and 2027 IPH Study Area's Outbound Commodity Growth (all Counties)

Outbound Directions: All IPH Counties: All Directions to All Destinations Outbound Flows: All Trade Flows to All Countries Outbound Modes: Truck and Rail: All Types								Directions: All IPH Counties: All Directions to All Destinations Flows: All Trade Flows to All Countries Modes: Truck and Rail: All Types							
Top 20 Outbound Commodities	2007 Tons	Growth % ►	2012 Tons	Growth % ►	2017 Tons	Growth % ►	2027 Tons	Comparison Chart For Top 10 Outbound Commodities							
Lumber or Wood Products	12,262,474	(21.60%)	9,613,923	1.66%	9,773,620	(4.48%)	9,335,346								
Nonmetallic Minerals	10,258,514	(19.06%)	8,302,734	16.69%	9,688,531	21.16%	11,738,489								
Secondary Traffic	9,030,395	(2.52%)	8,802,789	9.32%	9,623,474	34.32%	12,926,555								
Farm Products	5,736,309	(5.71%)	5,408,658	(5.15%)	5,130,359	(6.44%)	4,800,040								
Coal	2,583,149	2.72%	2,653,434	0.47%	2,665,949	11.26%	2,966,182								
Clay, Concrete, Glass or Stone	2,048,745	(12.55%)	1,791,677	10.23%	1,974,881	14.14%	2,254,172								
Food or Kindred Products	1,532,905	(5.60%)	1,447,131	3.71%	1,500,773	0.28%	1,504,973								
Chemicals or Allied Products	1,285,187	5.79%	1,359,656	16.43%	1,583,101	17.89%	1,866,395								
Electrical Equipment	755,621	(22.57%)	585,040	1.07%	591,298	16.68%	689,938								
Fabricated Metal Products	692,237	(7.95%)	637,212	7.87%	687,338	23.84%	851,196								
Pulp, Paper or Allied Products	685,912	(6.36%)	642,262	7.82%	692,509	7.28%	742,891								
Machinery	678,738	(2.08%)	664,620	26.99%	843,996	66.02%	1,401,205								
Primary Metal Products	630,611	(4.13%)	604,550	(13.85%)	520,813	(10.20%)	467,706								
Transportation Equipment	486,302	14.33%	555,999	14.87%	638,681	34.83%	861,116								
Waste or Scrap Materials	424,864	(0.15%)	424,242	15.14%	488,457	40.09%	684,267								
Petroleum or Coal Products	347,766	(9.76%)	313,812	16.98%	367,112	11.14%	408,008								
Rail Intermodal Drayage from Ramp	316,179	(14.94%)	268,945	10.33%	296,727	36.39%	404,697								
Furniture or Fixtures	286,280	6.42%	304,658	25.33%	381,834	36.56%	521,418								
Rail Intermodal Drayage to Ramp	117,998	1.99%	120,349	18.31%	142,380	52.63%	217,312								
Rubber or Misc Plastics	107,609	(1.43%)	106,067	16.62%	123,699	30.47%	161,395								
Total For Top 10 Commodities															
Total For Top 20 Commodities															
Total For All Commodities Outbound															

IMPORT AND EXPORT SUMMARY

NAFTA IMPORT FLOWS

NAFTA imports of 6.4 million tons (**Exhibit 52**) represented 25 percent of the 2007 total of 25.6 million inbound tons (from Exhibit 1) that were shipped into the IPH study area. Canada shipped 99.5 percent of the imports into the IPH study area. Most imports originated in British Columbia and Alberta and are destined to Spokane County. Rail moved 53.9 percent of the inbound tonnage. The minimal amount of imports from Mexico all arrived by truck. The NAFTA tonnage below is included in the tonnage totals in the Inbound and Outbound tables (**Exhibits 8 through 33**).

Exhibit 52: 2007 NAFTA Import Tonnage

2007 Tons Imported From NAFTA Origins:				2007 NAFTA Import Tons Received By IPH Destinations:			
Origin Province/State	Truck	Rail	Total	Destination County	Truck	Rail	Total
British Columbia, BC	2,019,419	1,327,927	3,347,346	Spokane County, WA	717,607	2,097,020	2,814,627
Alberta, AB	503,479	1,667,132	2,170,611	Adams County, WA	162,809	363,913	526,722
Saskatchewan, NB	55,672	356,014	411,686	Nez Perce County, ID	65,413	358,063	423,476
Ontario, ON	203,837	42,644	246,481	Kootenai County, ID	224,835	173,394	398,229
Quebec, PQ	109,159		109,159	Garfield County, WA	126,826	259,331	386,157
Manitoba, MB	15,774	44,146	59,920	Whitman County, WA	245,272	112,793	358,066
New Brunswick, NB	25,151		25,151	Stevens County, WA	278,559		278,559
Nova Scotia, NS	5,040		5,040	Ferry County, WA	191,764		191,764
Newfoundland, NL	677		677	Pend Oreille County, WA	176,557	10,319	186,876
Prince Edward Island, PE	354		354	Lincoln County, WA	155,490	15,244	170,734
From Canada Total	2,938,563	3,437,863	6,376,426	Asotin County, WA	168,442		168,442
Mexico, MEX	7,694		7,694	Columbia County, WA	162,370		162,370
Distrito Federal, DF	6,185		6,185	Bonner County, ID	98,099		98,099
Chihuahua, CHI	4,114		4,114	Boundary County, ID	23,621	26,985	50,606
Veracruz, VER	3,357		3,357	Lewis County, ID	28,378	20,800	49,178
Nuevo Leon, NUL	3,236		3,236	Latah County, ID	36,231		36,231
Jalisco, JAL	2,350		2,350	Benewah County, ID	31,139		31,139
Coahuila De Zaragoza, COA	1,066		1,066	Clearwater County, ID	24,175		24,175
Guanajuato, GUA	741		741	Shoshone County, ID	20,976		20,976
Tamaulipas, TAM	724		724	From Canada Total	2,938,563	3,437,863	6,376,426
Michoacan, MIC	509		509	Spokane County, WA	24,350		24,350
Puebla, PUE	396		396	Kootenai County, ID	1,857		1,857
Sinaloa, SIN	289		289	Nez Perce County, ID	1,135		1,135
San Luis Potosi, SLP	288		288	Whitman County, WA	1,022		1,022
Sonora, SON	146		146	Bonner County, ID	743		743
Baja California Norte, BCN	142		142	Stevens County, WA	632		632
Queretaro, QUE	97		97	Lincoln County, WA	420		420
Hidalgo, HID	74		74	Latah County, ID	379		379
Morelos, MOR	45		45	Asotin County, WA	330		330
Aguascalientes, AGS	21		21	Adams County, WA	265		265
Tlaxcala, TLX	9		9	Benewah County, ID	130		130
Durango, DUR	8		8	Clearwater County, ID	107		107
From Mexico Total	31,491		31,491	Shoshone County, ID	62		62
NAFTA Total	2,970,055	3,437,863	6,407,917	Boundary County, ID	50		50
Canada Percentage	98.9%	100.0%	99.5%	Pend Oreille County, WA	6		6
Mexico Percentage	1.1%		0.5%	Ferry County, WA	2		2
				From Mexico Total	31,491		31,491
				From NAFTA Total	2,970,055	3,437,863	6,407,917
				Canada Percentage	98.9%	100.0%	99.5%
				Mexico Percentage	1.1%		0.5%

NAFTA EXPORT FLOWS

The IPH exports 4.6 million tons (**Exhibit 53**) to Canada and Mexico. This represented 11.6 percent of the 2007 total of 39.9 million outbound tons (from Exhibit 1). Canada received 94.6 percent of the exports. Most of the exports originated in Spokane and Stevens Counties and were destined to British Columbia. Truck moved 95.7 percent of the outbound tonnage to Canada. The minimal exports to Mexico are all shipped by truck.

Exhibit 53: 2007 NAFTA Export Tonnage

2007 Import Tons Shipped From NAFTA Origins:			
Origin Province/State	Truck	Rail	Total
British Columbia, BC	2,019,419	1,327,927	3,347,346
Alberta, AB	503,479	1,667,132	2,170,611
Saskatchewan, NB	55,672	356,014	411,686
Ontario, ON	203,837	42,644	246,481
Quebec, PQ	109,159		109,159
Manitoba, MB	15,774	44,146	59,920
New Brunswick, NB	25,151		25,151
Nova Scotia, NS	5,040		5,040
Newfoundland, NL	677		677
Prince Edward Island, PE	354		354
From Canada Total	2,938,563	3,437,863	6,376,426
Mexico, MEX	7,694		7,694
Distrito Federal, DF	6,185		6,185
Chihuahua, CHI	4,114		4,114
Veracruz, VER	3,357		3,357
Nuevo Leon, NUL	3,236		3,236
Jalisco, JAL	2,350		2,350
Coahuila De Zaragoza, COA	1,066		1,066
Guanajuato, GUA	741		741
Tamaulipas, TAM	724		724
Michoacan, MIC	509		509
Puebla, PUE	396		396
Sinaloa, SIN	289		289
San Luis Potosi, SLP	288		288
Sonora, SON	146		146
Baja California Norte, BCN	142		142
Queretaro, QUE	97		97
Hidalgo, HID	74		74
Morelos, MOR	45		45
Aguascalientes, AGS	21		21
Tlaxcala, TLX	9		9
Durango, DUR	8		8
From Mexico Total	31,491		31,491
NAFTA Total	2,970,055	3,437,863	6,407,917
Canada Percentage	98.9%	100.0%	99.5%
Mexico Percentage	1.1%		0.5%

2007 NAFTA Import Tons Received By IPH Counties:			
Destination County	Truck	Rail	Total
Spokane County, WA	717,607	2,097,020	2,814,627
Adams County, WA	162,809	363,913	526,722
Nez Perce County, ID	65,413	358,063	423,476
Kootenai County, ID	224,835	173,394	398,229
Garfield County, WA	126,826	259,331	386,157
Whitman County, WA	245,272	112,793	358,066
Stevens County, WA	278,559		278,559
Ferry County, WA	191,764		191,764
Pend Oreille County, WA	176,557	10,319	186,876
Lincoln County, WA	155,490	15,244	170,734
Asotin County, WA	168,442		168,442
Columbia County, WA	162,370		162,370
Bonner County, ID	98,099		98,099
Boundary County, ID	23,621	26,985	50,606
Lewis County, ID	28,378	20,800	49,178
Latah County, ID	36,231		36,231
Benewah County, ID	31,139		31,139
Clearwater County, ID	24,175		24,175
Shoshone County, ID	20,976		20,976
From Canada Total	2,938,563	3,437,863	6,376,426
Spokane County, WA	24,350		24,350
Kootenai County, ID	1,857		1,857
Nez Perce County, ID	1,135		1,135
Whitman County, WA	1,022		1,022
Bonner County, ID	743		743
Stevens County, WA	632		632
Lincoln County, WA	420		420
Latah County, ID	379		379
Asotin County, WA	330		330
Adams County, WA	265		265
Benewah County, ID	130		130
Clearwater County, ID	107		107
Shoshone County, ID	62		62
Boundary County, ID	50		50
Pend Oreille County, WA	6		6
Ferry County, WA	2		2
From Mexico Total	31,491		31,491
From NAFTA Total	2,970,055	3,437,863	6,407,917
Canada Percentage	98.9%	100.0%	99.5%
Mexico Percentage	1.1%		0.5%

2007 IMPORT AND EXPORT COMMODITY FLOWS BETWEEN THE IPH AND CANADA

Total import tons from Canada into the IPH study area were 6.4 million tons in 2007. Imports of the top ten commodities from the top five Provinces (**Exhibit 54**) were 6.1 million tons or 95.6 percent of the total tonnage. The top commodities imported include chemicals, petroleum products, lumber and wood products, paper and pulp, food products and clay products. The majority originate in British Columbia or Alberta.

Total export tons to Canada from the IPH study area counties were 4.5 million tons in 2007. Exports of the top ten commodities from the top five Counties were 3.5 million tons or 77.3 percent of the total. The top commodities imported include farm and food products, lumber, wood, paper and pulp, and nonmetallic minerals. The majority originate in Spokane and Stevens County.

Exhibit 54: 2007 Canadian Import and Export Tonnage

2007 IPH Import Tons from Canada Top 5 Export Provinces With Top 10 Commodities					2007 IPH Export Tonnage To Canada Top 5 IPH Origin Counties With Top 10 Commodities				
Origin Province	Commodity	Truck	Rail	Total	IPH Origin County	Commodity	Truck	Rail	Total
British Columbia, BC	Clay, Concrete, Glass Or Stone	296,577	582,165	878,742	Spokane County, WA	Transportation Equipment	235,826		235,826
	Lumber Or Wood Products	566,304	218,246	784,550		Chemicals Or Allied Products	201,460		201,460
	Waste Or Scrap Materials	237,027	203,586	440,613		Food Or Kindred Products	162,243		162,243
	Chemicals Or Allied Products	186,234	233,286	419,520		Lumber Or Wood Products	131,487		131,487
	Food Or Kindred Products	210,114		210,114		Clay, Concrete, Glass Or Stone	100,987	28,827	129,813
	Pulp, Paper Or Allied Products	93,483	51,303	144,786		Electrical Equipment	123,102		123,102
	Farm Products	122,326		122,326		Petroleum Or Coal Products	87,857		87,857
	Nonmetallic Minerals	104,562		104,562		Machinery	80,893		80,893
	Primary Metal Products	31,724	35,200	66,924		Farm Products	75,894		75,894
	Fresh Fish Or Marine Products	35,376		35,376		Pulp, Paper Or Allied Products	74,139		74,139
Alberta, AB	Chemicals Or Allied Products	154,745	629,696	784,441	Stevens County, WA	Nonmetallic Minerals	357,929	339,136	697,065
	Petroleum Or Coal Products	10,423	708,973	719,396		Lumber Or Wood Products	233,110		233,110
	Pulp, Paper Or Allied Products	18,601	196,745	215,346		Waste Or Scrap Materials	98,821		98,821
	Lumber Or Wood Products	25,878	108,671	134,549		Pulp, Paper Or Allied Products	26,663		26,663
	Farm Products	94,493		94,493		Farm Products	24,946		24,946
	Food Or Kindred Products	60,375		60,375		Fresh Fish Or Marine Products	13,018		13,018
	Waste Or Scrap Materials	20,515	23,047	43,563		Fabricated Metal Products	8,193		8,193
	Nonmetallic Minerals	40,119		40,119		Metallic Ores	2,745		2,745
	Clay, Concrete, Glass Or Stone	25,738		25,738		Ordnance Or Accessories	1,211		1,211
	Crude Petrol. Or Natural Gas	21,629		21,629		Machinery	947		947
Saskatchewan, NB	Petroleum Or Coal Products	730	201,066	201,796	Adams County, WA	Farm Products	363,012		363,012
	Food Or Kindred Products	7,638	92,224	99,862		Food Or Kindred Products	21,600		21,600
	Chemicals Or Allied Products	16,126	62,723	78,849		Waste Or Scrap Materials	6,594		6,594
	Farm Products	18,910		18,910		Chemicals Or Allied Products	1,786		1,786
	Primary Metal Products	4,164		4,164		Metallic Ores	1,658		1,658
	Lumber Or Wood Products	1,882		1,882		Clay, Concrete, Glass Or Stone	1,345		1,345
	Nonmetallic Minerals	1,774		1,774		Fresh Fish Or Marine Products	851		851
	Waste Or Scrap Materials	1,727		1,727		Pulp, Paper Or Allied Products	298		298
	Machinery	1,485		1,485		Machinery	94		94
	Rubber Or Misc Plastics	734		734		Forest Products	16		16

2007 IPH Import Tons from Canada (Continued) Top 5 Export Provinces With Top 10 Commodities				
Origin Province	Commodity	Truck	Rail	Total
Ontario, ON	Pulp, Paper Or Allied Products	97,315	30,756	128,071
	Waste Or Scrap Materials	27,396		27,396
	Transportation Equipment	7,831	11,887	19,718
	Machinery	13,541		13,541
	Chemicals Or Allied Products	12,634		12,634
	Food Or Kindred Products	11,900		11,900
	Electrical Equipment	5,910		5,910
	Nonmetallic Minerals	5,752		5,752
	Lumber Or Wood Products	5,259		5,259
	Rubber Or Misc Plastics	4,910		4,910
Quebec, PQ	Chemicals Or Allied Products	35,890		35,890
	Pulp, Paper Or Allied Products	31,391		31,391
	Food Or Kindred Products	9,006		9,006
	Transportation Equipment	7,586		7,586
	Primary Metal Products	5,418		5,418
	Machinery	4,597		4,597
	Nonmetallic Minerals	4,083		4,083
	Rubber Or Misc Plastics	3,228		3,228
	Lumber Or Wood Products	1,724		1,724
	Misc Manufacturing Products	1,183		1,183

2007 IPH Export Tonnage To Canada (Continued) Top 5 IPH Origin Counties With Top 10 Commodities				
IPH Origin County	Commodity	Truck	Rail	Total
Boundary County, ID	Clay, Concrete, Glass Or Stone		136,722	136,722
	Transportation Equipment		63,139	63,139
	Farm Products	876	50,546	51,422
	Lumber Or Wood Products	18,947	24,478	43,424
	Rubber Or Misc Plastics		21,111	21,111
	Primary Metal Products	51	17,669	17,720
	Chemicals Or Allied Products	38	14,542	14,580
	Petroleum Or Coal Products	2,107		2,107
	Metallic Ores	1,322		1,322
	Food Or Kindred Products	591		591
Kootenai County, ID	Machinery	192,142		192,142
	Primary Metal Products	29,213		29,213
	Lumber Or Wood Products	23,109		23,109
	Pulp, Paper Or Allied Products	19,609		19,609
	Food Or Kindred Products	9,439		9,439
	Metallic Ores	8,608		8,608
	Misc Manufacturing Products	5,321		5,321
	Clay, Concrete, Glass Or Stone	3,801		3,801
	Farm Products	3,412		3,412
	Transportation Equipment	2,236		2,236

2007 IMPORT AND EXPORT COMMODITY FLOWS BETWEEN THE IPH **STUDY AREA** AND MEXICO

Total import tons from Mexico into the IPH study area were 31,491 tons in 2007. Imports of the top ten commodities from the top five Mexican States (**Exhibit 55**) were 24,381 tons, or 77.7 percent of the total tonnage. Imports were very diversified and included furniture, chemicals, food, machinery and equipment.

Total export tons to Mexico from the IPH study area were 168,468 tons in 2007. Exports of the top ten commodities from the top five Counties were 138,660 tons, or 82.3 percent of the total. The top commodities imported include farm and food products, lumber, wood, paper and pulp, and machinery. The majority originates in Spokane and Kootenai County.

Exhibit 55: 2007 Mexican Import and Export Tonnage

2007 IPH Import Tons from Mexico Top 5 Export States With Top 10 Commodities				
Origin MX State	Commodity	Truck	Rail	Total
Mexico, MEX	Furniture Or Fixtures	2,385	2,385	2,385
	Electrical Equipment	1,540	1,540	1,540
	Transportation Equipment	824	824	824
	Printed Matter	666	666	666
	Food Or Kindred Products	499	499	499
	Clay, Concrete, Glass Or Stone	481	481	481
	Chemicals Or Allied Products	415	415	415
	Primary Metal Products	381	381	381
	Machinery	214	214	214
	Pulp, Paper Or Allied Products	147	147	147
Distrito Federal, DF	Furniture Or Fixtures	1,956	1,956	1,956
	Chemicals Or Allied Products	1,462	1,462	1,462
	Electrical Equipment	904	904	904
	Transportation Equipment	651	651	651
	Primary Metal Products	301	301	301
	Food Or Kindred Products	286	286	286
	Pulp, Paper Or Allied Products	197	197	197
	Clay, Concrete, Glass Or Stone	187	187	187
	Machinery	144	144	144
	Fabricated Metal Products	38	38	38
Chihuahua, CHI	Furniture Or Fixtures	3,194	3,194	3,194
	Clay, Concrete, Glass Or Stone	537	537	537
	Machinery	263	263	263
	Waste Or Scrap Materials	63	63	63
	Chemicals Or Allied Products	23	23	23
	Transportation Equipment	16	16	16
	Apparel Or Related Products	13	13	13
	Lumber Or Wood Products	5	5	5

2007 IPH Export Tonnage To Mexico Top 5 IPH Origin Counties With Top 10 Commodities				
Origin County	Commodity	Truck	Rail	Total
Spokane County, WA	Farm Products	13,652		13,652
	Pulp, Paper Or Allied Products	8,419		8,419
	Machinery	6,104		6,104
	Waste Or Scrap Materials	4,989		4,989
	Food Or Kindred Products	3,856		3,856
	Electrical Equipment	2,837		2,837
	Chemicals Or Allied Products	2,506		2,506
	Transportation Equipment	807		807
	Lumber Or Wood Products	794		794
	Textile Mill Products	479		479
Kootenai County, ID	Food Or Kindred Products	14,954		14,954
	Pulp, Paper Or Allied Products	12,468		12,468
	Farm Products	1,494		1,494
	Transportation Equipment	1,169		1,169
	Chemicals Or Allied Products	1,011		1,011
	Machinery	671		671
	Waste Or Scrap Materials	310		310
	Lumber Or Wood Products	274		274
	Electrical Equipment	190		190
	Primary Metal Products	109		109
Nez Perce County, ID	Food Or Kindred Products	11,083		11,083
	Pulp, Paper Or Allied Products	10,723		10,723
	Transportation Equipment	1,006		1,006
	Farm Products	874		874
	Chemicals Or Allied Products	868		868
	Machinery	523		523
	Waste Or Scrap Materials	268		268
	Lumber Or Wood Products	227		227
	Electrical Equipment	146		146
	Rubber Or Misc Plastics	49		49

2007 IPH Import Tons from Mexico (Continued) Top 5 Export States With Top 10 Commodities				
Origin MX State	Commodity	Truck	Rail	Total
Veracruz, VER	Farm Products	2,508	2,508	2,508
	Food Or Kindred Products	498	498	498
	Primary Metal Products	285	285	285
	Fabricated Metal Products	25	25	25
	Pulp, Paper Or Allied Products	17	17	17
	Chemicals Or Allied Products	17	17	17
	Transportation Equipment	7	7	7
Nuevo Leon, NUL	Primary Metal Products	1,107	1,107	1,107
	Food Or Kindred Products	736	736	736
	Fabricated Metal Products	403	403	403
	Furniture Or Fixtures	346	346	346
	Transportation Equipment	256	256	256
	Electrical Equipment	170	170	170
	Clay, Concrete, Glass Or Stone	110	110	110
	Pulp, Paper Or Allied Products	48	48	48
	Machinery	43	43	43
	Waste Or Scrap Materials	13	13	13

2007 IPH Export Tonnage To Mexico (Continued) Top 5 IPH Origin Counties With Top 10 Commodities				
Origin County	Commodity	Truck	Rail	Total
Bonner County, ID	Food Or Kindred Products	10,785		10,785
	Pulp, Paper Or Allied Products	10,440		10,440
	Transportation Equipment	979		979
	Farm Products	849		849
	Chemicals Or Allied Products	845		845
	Machinery	440		440
	Waste Or Scrap Materials	239		239
	Lumber Or Wood Products	219		219
	Electrical Equipment	63		63
	Rubber Or Misc Plastics	48		48
Whitman County, WA	Farm Products	4,242		4,242
	Waste Or Scrap Materials	1,524		1,524
	Pulp, Paper Or Allied Products	1,416		1,416
	Machinery	1,195		1,195
	Food Or Kindred Products	1,045		1,045
	Chemicals Or Allied Products	602		602
	Electrical Equipment	468		468
	Transportation Equipment	192		192
	Textile Mill Products	109		109
	Lumber Or Wood Products	102		102

CONCLUSIONS

There are several key observations about freight movement by mode, growth by county cluster and commodity tonnage changes within the IPH study area.

Freight Movements by Mode

- Freight on the highways in 2007 for internal, inbound and outbound was at 61.4 million tons and is forecast to grow to 72.8 million tons by 2027, an increase of 18.5 percent (Exhibit 7: Summary of IPH Study Area Inbound and Outbound Freight Flows).
- Freight on the rails in 2007 for internal, inbound and outbound was at 13.3 million tons and is forecast to grow to 13.4 million tons by 2027, an increase of 1 percent (Exhibit 11: 2007 and 2027 Rail Carload and Intermodal Summary, on the continued page).
- Carload tonnage will decrease by 99,000 tons while intermodal will increase by 228,000 tons. The TRANSEARCH™ rail forecast for inbound and outbound tonnage indicates in 2007 rail carload tonnage was at 12.7 million tons and will be at 12.6 tons in 2027, a decrease of 0.8 percent.
- Intermodal tonnage was at 534,000 tons in 2007 and at 763,000 tons in 2027 for an increase of 42.7 percent.

The changes in freight movement tonnage is a clear indication that freight is switching even more toward highway trailers and intermodal trailers and containers and away from rail carload service. At the public stakeholder freight forums, several participants mentioned that carload service with the short line railroads is decreasing as the number of lumber mills declines.

Tonnage Growth by County Cluster

- The Northern Counties will grow from 16.2 million tons in 2007 to 17.2 million tons in 2027, a growth rate of 6.2 percent over 20 years (Exhibit 9: Tonnage Summary for Northern and Central Clusters). For the Northern Counties most of the growth will occur with inbound and outbound freight with the west and to Canada.
- The Central Counties will grow from 53.4 million tons in 2007 to 57.9 million tons in 2027 or 8.4 percent. The Central Counties will have increases with the west, east, and south directions.
- The Southern Counties will grow from 18.8 million tons in 2007 to 26.4 million tons in 2027, or 40.4 percent. Most of the growth in highway tonnage will occur in the Southern Counties either as internal circulation at 3.3 million tons or approximately 40 percent, or as outbound shipments to the West at 2.7 million tons for over 109 percent.

Inbound and Outbound Commodity Flows

Key observations about commodity flows for the IPH study area indicate that:

- Inbound commodity total tonnage in 2007 was 37.8 million tons and is forecast to grow by 8.3 million tons by 2027 to reach 46.1 million tons. (Exhibit 50: 2007, 2012, 2017 and 2027 IPH Study Area's Inbound Commodity Growth (all Counties), and Exhibit 48: 2027 Over 2007 IPH's Inbound Commodity Growth).
- Outbound commodities tonnage total tonnage in 2007 was 50.6 million tons and is forecast to grow by 4.8 million tons by 2027 to reach 55.4 million tons. (Exhibit 51: 2007, 2012, 2017 and 2027 IPH Study Area's Outbound Commodity Growth (all Counties), and Exhibit 49: 2027 Over 2007 IPH Study Area 's Outbound Commodity Growth)

Commodities Flows Related to Natural Resources

The commodities are produced from mining, farming and forestry activities.

- Lumber and wood products are the largest natural resource commodity by tonnage shipped.
 - ↓ Inbound tonnage for 2007 was at 5.8 million tons and is forecast to decrease by 21.08 percent by 2027 down to 4.6 million tons.
 - ↓ Outbound tonnage for 2007 was at 12.2 million tons and is forecast to decrease by 23.87 percent by 2027 down to 9.3 million tons.
- Nonmetallic minerals are the second largest natural resource commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 7.5 million tons and is forecast to grow by 14.41 percent by 2027 to reach 8.5 million tons.
 - ↑ Outbound tonnage for 2007 was at 10.2 million tons and is forecast to grow by 14.43 percent by 2027 to reach 11.7 million tons.
- Farm products are the third largest natural resource commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 2.2 million tons and is forecast to grow by 16.34 percent by 2027 to reach 2.8 million tons.
 - ↓ Outbound tonnage for 2007 was at 5.7 million tons and is forecast to decrease by 16.32 percent by 2027 down to 4.8 million tons.
- Clay, Concrete, glass or stone products are the fourth largest natural resource commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 2.3 million tons and is forecast to grow by 5.57 percent by 2027 to reach 2.5 million tons.
 - ↑ Outbound tonnage for 2007 was at 2.0 million tons and is forecast to grow by 10.03 percent by 2027 to reach 2.2 million tons.
- Food and kindred products are the fifth largest natural resource commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 2.1 million tons and is forecast to grow by 18.49 percent by 2027 to reach 2.4 million tons.
 - ↓ Outbound tonnage for 2007 was at 1.5 million tons and is forecast to decrease by 1.82 percent by 2027 staying around 1.5 million tons.

- Petroleum and coal products are the sixth largest natural resource commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 1.8 million tons and is forecast to grow by 17.32 percent by 2027 to reach 2.1 million tons.
 - ↑ Outbound tonnage for 2007 was at 347,000 tons and is forecast to grow by 17.32 percent by 2027 to reach 408,000 tons.

Commodities Flows Related to Transportation and Logistics Activities

The commodities are involved in transportation related activities such as pick-ups and deliveries, warehousing and logistics.

- Secondary freight is the largest transportation related commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 6.5 million tons and is forecast to grow by 54.44 percent by 2027 to reach 10.1 million tons.
 - ↑ Outbound tonnage for 2007 was at 9.0 million tons and is forecast to grow by 43.14 percent by 2027 to reach 12.9 million tons.
- Rail intermodal drayage to and from ramps is included in transportation related commodities by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 516,000 tons and is forecast to grow by 51.07 percent by 2027 to reach 780,000 tons.
 - ↑ Outbound tonnage for 2007 was at 434,000 tons and is forecast to grow by 43.26 percent by 2027 to reach 622,000 tons.

Commodities Flows Related to Manufacturing or Value-added Processes

The commodities are involved in activities related to manufacturing or value-added processes.

- Chemical or allied products are the largest manufacturing or value-added commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 1.8 million tons and is forecast to grow by 26.69 percent by 2027 to reach 2.3 million tons.
 - ↑ Outbound tonnage for 2007 was at 1.2 million tons and is forecast to grow by 45.22 percent by 2027 to reach 1.8 million tons.
- Primary metal products are the largest manufacturing or value-added commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 1.1 million tons and is forecast to grow by 35.62 percent by 2027 to reach 1.5 million tons.
 - ↓ Outbound tonnage for 2007 was at 630,000 tons and is forecast to decrease by 25.83 percent by 2027 down to 467,000 tons.
- Electrical equipment is the largest manufacturing or value-added commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 476,000 tons and is forecast to grow by 102.17 percent by 2027 to reach 962,000 tons.

- ↓ Outbound tonnage for 2007 was at 756,000 tons and is forecast to decrease by 8.69 percent by 2027 down to 689,000 tons.
- Fabricated metal products are the largest manufacturing or value-added commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 392,000 tons and is forecast to grow by 24.58 percent by 2027 to reach 489,000 tons.
 - ↑ Outbound tonnage for 2007 was at 692,000 tons and is forecast to grow by 22.96 percent by 2027 to reach 851,000 tons.
- Pulp, paper or allied products are the largest manufacturing or value-added commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 486,000 tons and is forecast to grow by 11.27 percent by 2027 to reach 541,000 tons.
 - ↑ Outbound tonnage for 2007 was at 686,000 tons and is forecast to grow by 8.31 percent by 2027 to reach 743,000 tons.
- Machinery is the largest manufacturing or value-added commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 225,000 tons and is forecast to grow by 90.69 percent by 2027 to reach 429,000 tons.
 - ↑ Outbound tonnage for 2007 was at 678,000 tons and is forecast to grow by 106.44 percent by 2027 to reach 1.4 million tons.
- Transportation equipment is the largest manufacturing or value-added commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 519,000 tons and is forecast to grow by 86.68 percent by 2027 to reach 968,000 tons.
 - ↑ Outbound tonnage for 2007 was at 486,000 tons and is forecast to grow by 77.07 percent by 2027 to reach 861,000 tons.
- Furniture or fixtures are the largest manufacturing or value-added commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 154,000 tons and is forecast to grow by 35.06 percent by 2027 to reach 208,000 tons.
 - ↑ Outbound tonnage for 2007 was at 286,000 tons and is forecast to grow by 82.14 percent by 2027 to reach 521,000 tons.
- Rubber or miscellaneous products are the largest manufacturing or value-added commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 162,000 tons and is forecast to grow by 38.65 percent by 2027 to reach 224,000 tons.
 - ↑ Outbound tonnage for 2007 was at 107,000 tons and is forecast to grow by 49.98 percent by 2027 to reach 161,000 tons.

APPENDIX A: DATA SOURCES AND PROCESSES USED TO CREATE TRANSEARCH™

TRANSEARCH™ is an annual, nationwide database of freight flows between U.S. county or ZIP code markets, with an overlay of flow across infrastructure. The database draws from a wide variety of data sources covering commodity volume and modal flow, including a long-term, proprietary motor carrier traffic sample, proprietary railroad data, and numerous commercial and federal government surveys, samples, and census data. To compose the database, these multiple and diverse information sources are cast together in a single, consistent format.

Development of the Database

Each annual version of the TRANSEARCH™ U.S. database begins by establishing state production volumes by industry or commodity. This information is drawn from the Census Bureau's Annual Survey of Manufactures and the Census of Manufactures. Both of these sources report production in dollars, which are converted to tons using commodity value/weight relationships maintained by Global Insight.

Once the production volumes are established, tonnages moving by rail, water, air, and pipeline¹ are netted from the totals (which serve as control totals), leaving the remaining freight volumes allocated to truck distribution patterns. Since the process begins with production data, which include items produced for both domestic and foreign consumption, export volumes are developed by the same procedure. Import volumes, drawn from US Department of Commerce data, are subsequently combined into the freight flows at the point of importation. Separate databases for NAFTA traffic are produced and offered in conjunction with the U.S. data set.

Development of Domestic Production Statistics

As national, multimodal freight databases do not readily exist depicting commodity flows in a detailed way, the data must be developed from many sources. The Global Insight TRANSEARCH™ database estimates local production and consumption of domestic transportation. By linking production and consumption patterns and modal freight flow, estimates of freight activity can be established.

Production and shipment estimates are developed from the survey and census of manufactures, which describe industrial activity by state. This information is updated to the base year through industrial production indices, and supplemented by trade association and industry reports. Shipments are localized to the level of counties using street address, employment, population data, industry reports, and proprietary freight information from freight carriers. Relationships between industries are determined with input/output patterns.

¹ Pipeline flows were excluded from TRANSEARCH™ although some of the supporting databases do report information on pipeline flows.

The chief sources of production and shipment estimates are shown (**Exhibit A 1**) along with the modes they influence. Some sources are used for certain modes of traffic and not for others; for example, port directories are employed exclusively to help localize waterway freight patterns. Railroad data in its original source (the full STB Waybill Sample) are highly localized and specific. Although some adjustment is made for through cargos, the majority of the Waybill Sample does not require further processing for presentation in the database.

Exhibit A 1: Data Elements Used in Developing Production/Consumption Patterns

Database	Used for Estimating Modal Flows
US Dept. of Commerce Census/Survey of Manufactures	<i>Truck, water, air</i>
GII Industrial Production Indices	<i>Truck, water, air</i>
Trade Association Production & Shipment Reports	<i>Truck, water, air</i>
US Geological Survey Mineral Industry Reports	<i>Truck, water</i>
GII/InfoUSA Street-Address Industrial Employment & Activity	<i>Truck</i>
County Population Data	<i>Truck</i>
Inter-Industry Trade Patterns (Input/Output Table)	<i>Truck, Air</i>
Motor Carrier Industry Financial & Operating Statistics	<i>Truck</i>
Railroad Industry Proprietary Traffic Factors	<i>Truck</i>
Private Port Directories	<i>Water</i>

Development of Domestic Modal Database Flows

Global Insight constructs the TRANSEARCH™ database from the most recent set of publicly available freight flow information. The result is a database of county-level origin-to-destination flows by commodities for seven modes of transportation: for-hire truckload, less-than-truckload, private truck, conventional rail, rail/truck intermodal, air, and water. Volume is presented in terms of tonnage, and then translated to units (such as truck counts), value, VMT and ton-miles using conversion tables and route distances. For any given county, traffic coverage will include flows that are intra-county (internal), inbound and outbound (external-internal and internal-external), and overhead (external-external).

Overhead volumes are estimated with modal routing models applied to the nationwide data. These sources are not uniform in terms of the geographic areas used, commodity definitions, units of measure, and the base years presented. The development process draws these disparate sources together, checking their completeness and basic validity, assigning commodity, geography and mode descriptions before putting them into a common format. Each mode will be explained in turn.

Railroad Freight Activities

For most applications, TRANSEARCH™ rail traffic is taken from the fully detailed (and confidential) version of the Surface Transportation Board's (STB) annual Railroad Waybill Sample. The Waybill Sample is a statistically based stratified sample of shipments terminated by U.S. rail carriers. All carriers terminating 4,000 or more carloads per year are required to report and 62 railroad systems thus are captured, encompassing all Class I and II railroads, and the more prominent short lines. (Carriers smaller than 4,000 annual loads may be sampled when they act as haulage agents for

larger railroads, in which the latter appears as the carrier of record on a shipment). The full Waybill Sample file contains detailed information on the origin, destination, commodity and volume of each sampled movement.

For this study, the STB's proprietary Carload Waybill Sample was used in the TRANSEARCH™ database. Since the full Carload Waybill Sample contains specific waybill information such as origin and termination freight station, junction points and rail carrier identification, it is not suitable for public release.² The analysis in the working papers and technical memoranda was presented in summary format to not divulge any confidential shipper or carrier information.

Major railroads share proprietary freight data with Global Insight as well. This information is not utilized in the rail flows appearing in TRANSEARCH™ but is employed indirectly to sharpen the netting process by which initial estimates of truck activity are derived. The proprietary sources create three advantages for the database. First, they give a more precise picture of rail activity in county markets than public editions of the Waybill Sample allow. Second, they permit the data to be corrected for the so-called rebilling problem, in which the rail carrier recording process for interchanged shipments can mask the true origins and destinations of some rail freight. Finally, the proprietary data is more timely than that available through the Waybill Sample.

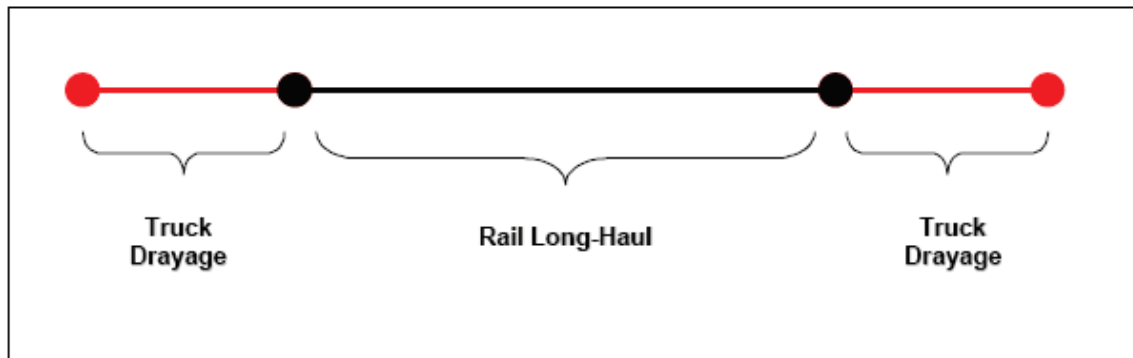
For NAFTA traffic, international rail volumes and border crossing points have been incorporated. The STB Waybill Sample currently has full coverage of U.S./Canada flows, both north and south. For freight moving between Mexico and the United States, information is taken from BTS border crossing statistics and from routings suggested in the Waybill, interpreted with a rail network routing model.

Throughout the development process, carload and intermodal trailer-on-flat-car/container-on-flat-car (TOFC/COFC) traffic are maintained as separate³ volumes. The identification of which shipments utilized TOFC/COFC services is based on intermodal record flags in the Waybill file. As illustrated in **Exhibit A 2**, intermodal freight movements consist of both truck and rail portions. For the long-haul portion of the trip, the goods are carried by rail. The shorter, drayage portion of the trip occurs on truck.

² STB explanation of Public Way Bill Samples, [http://www.stb.dot.gov/stb/docs/Waybill/Creation of the Public Use Waybill Sample.pdf](http://www.stb.dot.gov/stb/docs/Waybill/Creation%20of%20the%20Public%20Use%20Waybill%20Sample.pdf)

³ The separation of carload from intermodal traffic is not possible for U.S./Mexico freight, due to limitations in the source data.

Exhibit A 2: Intermodal Freight Movement



Freight that is classified as the mode “Intermodal” represents the rail portion of a truck-rail shipment. The origin corresponds to the point at which the shipment is put on a rail car, and the destination is the point at which a shipment is taken off the rail car. The commodities carried on rail are identified by a STCC (Standard Transportation Commodity Classification) code; while the STCC normally corresponds to a specific product, for much of the intermodal freight the commodity is identified only by the general classification FAK (Freight All Kinds) in the primary source data (the STB Waybill Sample).

TRANSEARCH™ also captures the drayage portion of rail-truck intermodal shipments. This traffic is shown in the “truckload” mode and is all identified by STCC 5020. Drayage appears both as movement from the ultimate origin (producing) point to the railroad and from the railroad’s destination terminal to the consignee’s ultimate destination point. On a tonnage basis, each intermodal shipment appears in the dataset as three separate records, first as a “truckload” mode movement of STCC 5020 from true origin to the railhead, then as an “intermodal” mode movement from one railhead to another, and finally as an additional “truckload” mode movement from the terminating railhead to the final destination point. When modal volumes are totaled by tons, the separate segments will cause the shipment in a sense to be “triple-counted”. However, when volumes are totaled on a ton-mile basis, the miles in each truck or rail segment appear just one time, so the shipment in ton-mile terms is counted only once.

Waterborne Commerce Activities

The US Army Corps of Engineers (ACE) annually collects information on all shipments moving on the nation's waterways to support its management and planning activities. TRANSEARCH™ uses various components of the data issued by the Corps to develop its waterborne flow data. While the raw information collected is comprehensive, that released to the public is summarized in ways that mask the details of traffic flows; the data development process in TRANSEARCH™ aims to reestablish some of this detail. The primary dataset employed is the annual ACE file of waterborne commerce. This source provides state-to-state annual volumes of broad commodity groupings. Complementing these flow data are originating and terminating volumes by port and more specific commodity type, which are also provided by the ACE. The less detailed state-to-state flow data are disaggregated to the port level using the more detailed origination and termination information, supplemented by directories profiling public and

private port facilities.⁴ For example, the general flow of goods from Pennsylvania to Louisiana is refined to steel products from Pittsburgh-area counties to counties in Southern Louisiana by comparison of sources. Commodity descriptions adopted by the Corps are transformed to STCC codes through data bridges Global Insight developed and maintains.

Air Cargo Activities

Air cargo represents by far the smallest portion, on a tonnage basis, of the TRANSEARCH™ Database. Air activity is constructed using BTS Airport Activity Statistics.

The BTS enplanement data report the total tonnage originating at each airport. In addition, a separate data series, BTS T-100, reports cover airport-to-airport flow volumes. The origin tonnage is then disaggregated into flows to the destination airport based on this second set of data. The data is then translated from airports to counties, based on airport location information maintained by the Federal Aviation Administration (FAA). In some cases, where there is more than one airport in a county, the data is subject to a further aggregation. Because the data is meant to portray domestic freight between origin and destination markets, adjustments are made to account for international freight, and the use of intermediate airport hubs. Consequently, air freight is captured from source airport market to consuming market, and any use of hub facilities en route is not depicted.

Commodity identification is then introduced. The Commodity Flow Survey (CFS) provides a broad level identification of commodity types. This broader detail is further refined based on the origin at the production region, and consumption at the destination region, by using full detail commodity information for each market.

Finally, TRANSEARCH™ also captures the dray portions of air freight shipments, which are the segments moved over the road to and from airports. This traffic is shown in the truck mode, and is identified by STCC 5030. This truck portion shows both the movement from ultimate origin (producing) point to an airport, and from the destination airport destination to the consignee's ultimate destination point. As with rail intermodal shipments (discussed above), each air shipment appears in the dataset as three separate records: origin truck dray from shipper to airport, aircraft line-haul, and destination truck dray. When modal volumes are totaled by tons, each shipment's tonnage will be counted three times; however, when volumes are totaled by ton-miles, each shipment mile segment is counted only once.

Truck Flow Activities

Truck freight remains the most complex mode to estimate because of its broader market areas and lack of unified databases. As mentioned earlier, the truck portion of

⁴ Drayage for marine ports is captured in TRANSEARCH™, through its treatment of import and export traffic. Drayage for inland waterway ports is not captured as a standard part of the database, although it is generated on a custom basis for interested clients.

TRANSEARCH™ begins as the share of total freight not identified on other modal shipments, derived through a netting process. To develop truck estimates, Global Insight allocates the remaining freight (truck) volumes between the for-hire and private sectors of the industry based on relative volumes reported in the CFS. The for-hire segment is then split between truckload and less-than-truckload (LTL) components using industry data on the level of LTL shipments, and prior TRANSEARCH™ patterns.

At this point, the data is ready to be split into origin-to-destination flow volumes. The sources used for this processing step consist of a combination of proprietary data collected and compiled by Global Insight, and information collected and disseminated by government sources. The information from GI includes the Motor Carrier Data Exchange and databases of shipping establishments. TRANSEARCH™ elements from prior years are considered as a repository of historical patterns. The government sources are the BTS, CFS, and the Bureau of Economic Analysis (BEA) Industrial Input/Output (I/O) tables.

The TRANSEARCH™ database uses its proprietary Motor Carrier Data Exchange as the starting point and main driver for developing domestic truck flows. Carriers that participate in the Exchange program submit a summary of their annual freight flows that includes origin, destination, and volume. Commodity indications are captured through Standard Industrial Codes (SIC), carrier commodity codes, or equipment types. Freight is reported by 3-digit ZIP code, with a large subset containing the majority of shipments reported by county or 5-digit ZIP code. All of this information is provided on an origin-to-destination basis. ZIP codes are converted to counties as part of the database preparation process.

There is some variation in the sample achieved each year through this program, but in recent years it has included about 70 million⁵ individual truck shipments, covering both the truckload and LTL segments of the industry. Participating carriers are primarily large truckload and LTL operators with average lengths of haul over 500 miles. However, the sample also takes in owner-operator business, portions of private carriage and dray activity, and significant amounts of regional (under 500-mile) traffic. The sampling rate is about 7 percent overall, 3 percent under 500 miles, and 1 percent under 100 miles.⁶ Because the program depends on cooperation and carriers' business interests, it does not create a stratified random sample; to offset this, coverage is pursued and obtained for a broad cross section of the trucking market, including diverse industrial and geographic segments.

To supplement the Data Exchange data, Global Insight draws on proprietary datasets providing information on the specific locations of manufacturing and distribution facilities, along with profiles of their industrial output, employment and sales level. This

⁵ As a point of comparison, the 1997 CFS sampled 6 million on shipments and the 2002 CFS 3 million, and these samples were addressed to all of the modes, not just to truck.

⁶ As another point of comparison, the STB Waybill Sample runs 1 to 2% - but it is a stratified random sample.

information, in conjunction with that gathered through the Motor Carrier Data Exchange, guides the establishment of origination volumes at the county level, and is relied on particularly in markets where the Data Exchange sample is small. This location information is employed further in the procedure that translates the raw Data Exchange submissions from a ZIP code to a county basis. Where the ZIP codes submitted by carriers overlap county boundaries, the relative activity levels as estimated in the facilities dataset are used in the translation process.

Just as business establishment information is used to supplement origination data, it is also used, in conjunction with the BEA Industrial I/O tables, in a similar manner to enhance the destination or consumption volumes by county. Based on the production volumes by industry derived from such data, the I/O relationships are analyzed to develop necessary input commodities and volumes that would be needed to satisfy production demands.

An initial screening and analysis of the Data Exchange information adjusts and eliminates any discrepancies in reporting formats or procedures by various participants. Summary results are also tabulated, and a variety of statistics are derived to judge the reasonableness of the data. The most important numbers that are developed are the sample rates at both the national and state levels.

The sample rates are calculated by dividing the amount of traffic reported by Data Exchange carriers by the amount of relevant truck traffic determined in earlier processing. These sample rates are then used to determine the degree to which flow pattern development will rely on either the carrier-reported patterns or historical patterns, including those from the CFS. Where the Data Exchange sample rates are most robust, the flow patterns reported by the carriers are adopted almost in their entirety. This typically covers longer-haul shipments and commodities that are moved in dry-van trailers, as this segment of the trucking industry is best represented amongst the participating carriers.

Where Data Exchange coverage is thin, CFS data (also used to distinguish the for-hire and private sectors of the trucking industry) is used more heavily. Shorter-haul truck volumes and patterns in TRANSEARCH™ show greater influence from the CFS, due to lesser coverage of this type of traffic in Data Exchange. In addition, certain kinds of non-manufactured goods transported by truck begin with this source. For example, CFS is used as the starting point for developing truck movements of ores and non-metallic minerals. County-level detail is introduced into this segment of the data through identification of specific mining locations, and local distribution patterns are modeled from CFS data that profile the lengths of haul for these commodities. Volumes are updated to current levels through industrial production indices, and are changed to reflect local production information where it is available.

Specialized Truck Flow Development

Several important classes of truck traffic are developed for TRANSEARCH™ in distinct ways: secondary shipments, agricultural products, and empty movements.

Secondary - Secondary shipments are distinguished from primary shipments in that they are steps in the distribution chain where a movement occurs after (and sometimes before) the major trip has taken place. In the TRANSEARCH™ database, primary moves may be thought of as shipments originating at locations where goods are produced or assembled and receive their Industrial Classification (NAICS or SIC) number. The terminations of these shipments are where the product or commodity comes to rest, either to be consumed or subjected to further processing. If the product moves instead to a staging point and is mixed with other products of a similar nature and then reshipped; from a data source perspective it is a secondary movement. The prior shipment may have involved a different mode of transportation, but the product carried is physically still the same as it was for the primary stage. Examples of secondary freight include shipments from warehouses and distribution centers (DCs), or to and from certain terminal facilities. Typically this is a short-haul truck activity.

Secondary freight in TRANSEARCH™ is divided into warehouse and distribution freight, and drayage. The latter was treated in the previous discussions of air and rail intermodal freight. For the former, three sources of information are used. First, TRANSEARCH™ commodity shipments inbound to markets, combined with input/output tables and analysis of certain aspects of the CFS, give a preliminary picture of volumes. Second, locations of warehouse facilities are compiled from street address establishment data and from information provided by the Public Warehouse Association. Based on employment levels and facility size where available (square footage, number of doors), GI algorithms are applied to estimate output. Finally, portions of data from the Motor Carrier Exchange program are useful for secondary shipping, and are employed to help calibrate distribution patterns. Warehouse and DC truck volumes are coded in TRANSEARCH™ with STCC code 5010.

Agriculture - County-to-county truck flows of domestic agricultural products are a vital component of transportation requirements in many parts of the nation. In TRANSEARCH™, freight of fresh produce is modeled using production data and distribution patterns historically gathered by the U.S. Department of Agriculture, and updated for current output. Otherwise, the process for truck shipments of agriculture commences with county production figures by type of crop, product or livestock obtained from the USDA, and from state sources for major agricultural states. Conversion tables are applied to translate such endemic output measurements as bushels and heads of cattle into standard tonnage measurements. Allowance is made for on-farm storage and foreign trade activity, captured elsewhere in the database. County consumption volumes are based on establishment level factors for relevant facilities, including grain elevators, processing businesses, and rail and water transfer points, and reflect output portrayed elsewhere in TRANSEARCH™. Distribution is estimated with a two-step national model that employs a gravity algorithm in its first stage, followed by iterative proportional fitting. The model is calibrated to conform to truck travel distances by use, product and body type reported in the BTS Vehicle Inventory and Use Survey (VIUS); because trucks devoted to agriculture are typically local vehicles, the VIUS Registration State can be used to understand regional distinctions. Commodities are uniformly reported in the database by 4-digit STCC code,

although several are handled at a finer level of detail to observe such distinctive distribution patterns as between corn and wheat.

One further significant segment of truck activity in non-manufactured goods captured in a different way is the movement of coal, whose freight patterns and volumes are based on those reported by the Department of Energy. Prominent coverage gaps in truck shipments of non-manufactured goods that are not filled in the standard TRANSEARCH™ dataset, but are developed for clients on a custom basis, are primary (raw) products of forests and fisheries, and haulage of waste and scrap.

Empties – Movements of trucks between the termination of one payload and the origination of the next constitute a material portion of local activity. Motor carriers strive to minimize the distance over which this occurs, and it is strongly affected by the range and class of operation for a truck fleet and the trailer types employed. All of these elements are observed in the processing of empty movements for TRANSEARCH™ which begins with county imbalances of inbound and outbound loads, and by category of trailer on a nationwide basis. A two-step model of the type used for agricultural products is adopted to resolve imbalances, drawing on empty mileage factors from VIUS, and checking results against industry factors and market conditions. Empty truck activity is reported in TRANSEARCH™ under STCC code 4221, with volumes displayed in numbers of trucks but with no associated tonnage.

Development of Domestic Flows of International Movements

International freight data in TRANSEARCH™ is largely derived from independent information sources and overlap partially with the domestic database. Export freight is embedded in U.S. TRANSEARCH™ because of its use of production statistics. Maritime imports are explicitly added. To the extent possible, NAFTA overland trade was separated from the domestic dataset. No overland imports from Mexico and Canada appear, and modal volume that clearly moves for NAFTA export also has been eliminated – but most remains embedded in border state traffic patterns.⁶ Thus, between the domestic and international datasets, there is some double counting of international freight flows moving to and from inland markets. International air freight traffic is not a part of TRANSEARCH™, except for those flows between the U.S. and Canada.

Based on independent information sources, three classes of international data are used alongside data for domestic shipments: inland maritime, U.S./Mexico, and U.S./Canada. The first is left mixed with domestic activity in the U.S. database. The two classes of NAFTA traffic appear in stand-alone databases; each portrays commodity modal movements internal to the U.S., traveling between counties and international gateways, and beyond those gateways to and from foreign points⁷. International traffic that the U.S. database contains is used in the analysis of production and consumption patterns; other international traffic is treated in a separate process in the parallel databases.

⁷ International traffic that the U.S. database contains is used in the analysis of production and consumption patterns; other international traffic is treated in a separate process in the parallel databases.

Inland maritime activity is the portion of international shipments traveling within the United States, to and from U.S. seaports. Substantial volumes move by rail or by the inland waterway system, and this tonnage is contained within but not fully identified among the domestic freight data for these modes. For shipments moved by road, production for export remains blended with domestic production in outbound truck volume; the data depicts significant volumes moving to port counties because of local and export demand, but do not distinguish the international from the local domestic portion. Truck movements of import volume are handled in TRANSEARCH™ as outbound flows from the seaport, based on foreign trade data and inland distribution patterns originally created for the Latin American Trade & Transportation Study (LATTS).⁸ In current editions of TRANSEARCH™, historic LATTS patterns are adjusted for present-day import volumes and contemporary economic geography. The tonnage of imports trucked inland is then added to domestic truck tonnage in the database, and again is not individually presented. However, because to a large degree inland maritime flows are developed separately for import traffic, and to a lesser degree for export, they can be broken out on a custom basis for client requirements.

Mexico/U.S. Surface Freight Movements

The TRANSEARCH™ U.S./Mexico database derives from trans-border statistics produced by the US Census Bureau, under contract to the US Department of Transportation Bureau of Transportation Statistics. This source provides information on cross border shipments by truck and rail, in terms of declared value (US dollars) at customs inspection points on the border. Information on southbound shipments includes U.S. state of origin, crossing point, and Mexican state of destination. For northbound shipments, U.S. state of destination and the crossing point are shown, but origins are displayed simply as Mexico; however, physical volume (tons) is reported for these shipments, along with their value. Commodities are indicated by the Mexican version of the “harmonized” coding system.

Processing the data involves allocating the northbound traffic to Mexican State of origin. In addition, the data are converted from the Harmonized Code to STCC commodity codes and from volume units (dollars) into tons. This is done by means of a bridge table. After a review, some further checks are made during the process of converting volume units from dollars to tons. This conversion relies on a table of product values; however, adjustments are made in some instances where a dollar value is deemed more appropriate for import/export trade in a given STCC category.

The database includes both production and consumption regions in Mexico and the United States. To determine the Mexican state of origin for northbound shipments, source data are processed further. The method employed hinges on a set of tables produced by Global Insight from a variety of Mexican sources. These tables give a

⁸ Flows in LATTS were first developed by Wilbur Smith Associates and Global Insight, utilizing information from PIERS (Port Import Export Reporting Service), TRANSEARCH™, and econometric analysis. A consortium of southeastern U.S. states funded the initial LATTS effort, as part of an examination of international trade activity.

quantified breakdown of all 32 states within Mexico as origin areas for world exports from Mexico. Further, each table represents an industrial group, approximating a two digit STCC code. It is assumed that Mexican exports to the United States are proportionately in the same source patterns as exports to the rest of the world.

TRANSEARCH™ for U.S./Mexico is offered on a state-to-state basis. Nevertheless, for some users the U.S. state volumes of imports from and exports to Mexico are further allocated down to the county level. This procedure utilizes domestic U.S. production and consumption levels within counties, by specific commodity types. The relative weighting of each county's inbound and outbound volumes, as a percent of a state's total volumes by specific commodity type, are used to create disaggregation factors, which are then applied to Mexican freight flows. Primary source information from the TRANSEARCH™ Data Exchange, which includes material volumes of U.S./Mexico truck traffic, is further employed as a check against flow patterns at the state and the county level. Even so, caution should be exercised, as allocation to the county level is undertaken chiefly for the purpose of developing flow routing assignments. It has limited reliability as a localized picture of U.S./Mexico traffic and information on separate border crossing activities. When applied to flow maps, the freight flows through these multiple border crossings within the same county become routed based upon the shortest flow, not necessarily through the specific gateway facility.

Canada/U.S. Freight Movements

The TRANSEARCH™ U.S./Canada database draws from original customs data obtained from Statistics Canada. In this source, all origins and destinations are defined as U.S. states or Canadian provinces. Commodities are coded in accordance with the Harmonized Commodity Description and Coding System (HS). Canada/U.S. freight flow data is translated into equivalent four-digit STCC definitions.

Five separate modes are reported: truck, rail, water, air, and other. Where the mode of transport is unknown or not clearly specified on the customs documents, the shipment is included in the "other" grouping, which is overwhelmingly dominated by pipeline shipments of crude petroleum and natural gas. In addition, the STB Railroad Waybill Sample also reports U.S. import and export freight from Canada. Waybill data are used in place of the customs information for authorized users, because of the superior detail in the original source information.

For U.S. origins and destinations, domestic traffic volumes at the county level are used to allocate the international origins and destinations⁹. This process uses the same U.S. domestic data and processing techniques that are used with the Mexican data, although the greater dispersion of Canadian shipping activity renders the resulting patterns more robust. Again, primary source information from the TRANSEARCH™ Data Exchange, which includes significant volumes of U.S./Canada truck traffic, is further employed as a check against flow patterns for U.S. counties. Canadian origins and destinations are

⁹ This step is unnecessary for rail traffic based on the STB Waybill, since granular geographic information is available in the sample.

disaggregated to the metropolitan market level based on patterns of Canadian domestic truck traffic, reported by Statistics Canada. Reports identify commodities and Canadian Metropolitan Areas (CMAs). Significant portions of traffic appear in non-CMA, “remainder of Province” territories, and these residual geographic classifications also are carried forward into the international dataset. A final enhancement to the dataset is the assignment of border crossing points to each of the flows, once more using BTS reports of crossing volumes or railroad route indications from the STB.

How Freight Flows Are Routed

Once the linkages between production and transportation flows are developed, they are mapped across geo-coded modal networks for determination of overhead traffic, and for GIS display. The highway network was developed by the Oak Ridge National Laboratory (ORNL), and adapted by them for the county unit structure of the TRANSEARCH™ database. Highway routes are determined by an ORNL algorithm that selects a single, lowest impedance path between any pair of counties.¹⁰ Impedances reflect distance, class of highway and travel speed, and tolls. The algorithm follows the same principles that guide dispatch software used by motor carriers to manage their drivers. The resulting routes are a practical representation of the path favored by trucks operating in any given county-to-county lane.¹¹ It is different from an assignment program in that it is not attempting to distribute a trip table according to counts on many competing routes; rather, it shows the central tendency of truck flows in a given corridor, which can then be elaborated in a local assignment process.

Rail routes are established by a Global Insight routing model that considers carrier and junction information contained in the Waybill traffic data, and contains regional and short line as well as Class I railroad track in its network. Impedances take account of line ownership, trackage and haulage rights, track types, and the operating preferences of railroads for dispatching particular classes of freight. The routing for a given county pair may follow a variety of rail paths, each with specific, associated commodity volumes.

Routing of inland waterway traffic on its network is not supplied with most deliveries of TRANSEARCH™, although it can be for clients who require it. Waterway routes are applied according to patterns established in a network table, prepared by Global Insight, for a waterway service and costing model supplied to ACE. The waterway network has few path alternatives, so a least-miles routing is adequate.¹² Mile posts in the table are associated with counties to create alignment with the freight database, but only one path is used for any pair of counties for highway and waterway flows.

¹⁰ One consequence of the county unit is that artificial connections are used at origin and destination, to link county centroids to the nearest network point. This causes the routes for intra-county traffic, and for traffic originating and terminating between adjacent counties, to be not really meaningful.

¹¹ The traffic captured in the database is U.S. domestic and international volume. Highway and rail traffic between points in Canada can use U.S. infrastructure; and traffic between Canada and Mexico certainly will; but neither appears in the dataset.

¹² The really significant alternative route is the Tennessee-Tombigbee waterway – but this typically is a high cost operation. Normally for TRANSEARCH™, only points physically located along the Tenn-Tom system are assigned that route.

County-to-county flows of freight by air are not routed on detailed airport networks. Because the data reflects travel between origin and destination markets, flows can be represented as straight-line county-to-county connections in GIS displays. However, the use of hubs in air travel is not captured in this way, so the GIS would not depict operating routes for volumes that are subject to intermediate re-handling.

Commodity Groupings Used

Standard Transportation Commodity Codes (STCC) are used by the railroad industry to organize and present commodity information and TRANSEARCH™ has the capability to use these codes. These reasons include: 1) the suitability of STCC codes to transportation and their general adequacy of nested detail; 2) comparability to Standard Industrial Codes (SIC) used in production and consumption data; 3) convertibility from international codes; 4) continuity with historical information; and 5) use in the STB waybill data.

STCCs up to the 4-digit level of detail are employed in TRANSEARCH™ thus, in the general category of Transportation Equipment; transportation of new motor vehicles (code 3711) is distinguished from auto parts (code 3714). In addition, non-standard codes have been added by Global Insight to represent various forms of secondary truck traffic: from wholesalers, warehouses, and distribution centers (code 5010), and drayage for rail terminals and airports (codes 5020 and 5030). Commodity codes 4200 and above (chiefly describing miscellaneous categories) appear in domestic data but not in international; this is because the customs documentation that is the primary international information source routinely requires specific commodity identification in order to apply appropriate duties.

For additional information including a listing of modal data sources, inclusions/exclusions and caveats regarding the TRANSEARCH™ dataset see *Development of the TRANSEARCH™ Database* available from Global Insight: info@globalinsight.com.

APPENDIX B: COUNTY CLUSTER FREIGHT FLOWS: 2007 AND 2012 FORECAST

Appendix B contains tables showing freight tonnage flows for 2007 as the base year and a forecast for 2012. Flows shown are formatted the same as the main body of the report. There is a section for each of the county clusters: Northern Counties, Central Counties, and Southern Counties. Flows for each county cluster are subdivided into Inbound and Outbound. Charts depict the top ten commodities for inbound and outbound flows to easily visualize how the commodities will change over the five year forecast period.

Exhibit B 1: 2007 and 2012 Northern Counties Inbound Tonnage

Northern Counties Inbound Tonnage		2007	2012	Growth	% Growth
Local Freight					
Truck Only	Tonnage & Growth Rate	1,328,884	1,124,820	(204,064)	(15.4%)
Rail Only	Tonnage & Growth Rate	70,960	48,848	(22,112)	(31.2%)
Truck + Rail	Tonnage & Growth Rate	1,399,844	1,173,668	(226,176)	(16.2%)
Directional Freight (to West, East, North or South)					
Truck Only	Tonnage & Growth Rate	2,836,679	2,669,026	(167,653)	(5.9%)
Rail Only	Tonnage & Growth Rate	119,400	105,988	(13,412)	(11.2%)
Truck + Rail	Tonnage & Growth Rate	2,956,079	2,775,015	(181,064)	(6.1%)
Combined Local and Directional Freight					
Truck Only	Tonnage & Growth Rate	4,165,563	3,793,846	(371,717)	(8.9%)
Rail Only	Tonnage & Growth Rate	190,360	154,836	(35,524)	(18.7%)
Truck + Rail	Tonnage & Growth Rate	4,355,923	3,948,683	(407,240)	(9.3%)

Exhibit B 2: 2007 and 2012 Northern Counties Inbound Distribution

Northern Counties Inbound Tonnage			Local Freight: Circulates within IPH Counties		Inbound from Western Origins: Routes = I-90, US2, US12, US20		Inbound from Eastern Origins: Routes = I-90, US2, US12, ID200		Inbound from Northern Origins: Routes = US95, US195, US395		Inbound from Southern Origins: Routes = US95, US195, US395		Commodity Total	County %
County	Year	Data	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail		
Stevens County, WA	2007	Tonnage	315,894		1,342,380		47,390		57,572		33,404		1,796,639	41.2%
	2012	Tonnage	290,494		1,185,367		43,321		60,348		32,918		1,612,449	40.8%
		% vs 2007	(8.0%)		(11.7%)		(8.6%)		4.8%		(1.5%)		(10.3%)	
Bonner County, ID	2007	Tonnage	786,041	70,960	81,130		201,858		22,087		543,801		1,705,877	39.2%
	2012	Tonnage	637,411	48,848	64,312		189,600		21,474		564,021		1,525,667	38.6%
		% vs 2007	(18.9%)	(31.2%)	(20.7%)		(6.1%)		(2.8%)		3.7%		(10.6%)	
Boundary County, ID	2007	Tonnage	159,353		9,320	62,080	33,489	17,120	5,444	7,960	78,468	23,280	396,514	9.1%
	2012	Tonnage	131,521		7,387	53,198	33,782	17,874	5,030	5,573	88,087	21,243	363,695	9.2%
		% vs 2007	(17.5%)		(20.7%)	(14.3%)	0.9%	4.4%	(7.6%)	(30.0%)	12.3%	(8.8%)	(8.3%)	
Pend Oreille County, WA	2007	Tonnage	43,866		145,126		17,456	5,320	37,829	2,560	9,857		262,014	6.0%
	2012	Tonnage	40,458		127,110		19,393	4,793	37,756	2,452	9,158		241,120	6.1%
		% vs 2007	(7.8%)		(12.4%)		11.1%	(9.9%)	(0.2%)	(4.2%)	(7.1%)		(8.0%)	
Ferry County, WA	2007	Tonnage	23,730		119,879	1,080	5,109		41,145		3,935		194,878	4.5%
	2012	Tonnage	24,936		129,528	855	5,479		40,437		4,517		205,752	5.2%
		% vs 2007	5.1%		8.0%	(20.9%)	7.2%		(1.7%)		14.8%		5.6%	
County Summary	2007	Tonnage	1,328,884	70,960	1,697,835	63,160	305,303	22,440	164,077	10,520	669,464	23,280	4,355,923	100.0%
	2012	Tonnage	1,124,820	48,848	1,513,703	54,053	291,577	22,667	165,045	8,025	698,701	21,243	3,948,683	100.0%
		% vs 2007	(15.4%)	(31.2%)	(10.8%)	(14.4%)	(4.5%)	1.0%	0.6%	(23.7%)	4.4%	(8.8%)	(9.3%)	

2007 Truck Freight	2007	Tons %	30.5%	65.1%				100.0%
2007 Rail Freight	2007	Tons %	1.6%	2.7%				
2012 Truck Freight	2012	Tons %	28.5%	67.6%				100.0%
2012 Rail Freight	2012	Tons %	1.2%	2.7%				
2007 Truck + Rail	2007	Tons %	32.1%	40.4%	7.5%	4.0%	15.9%	100.0%
2012Truck Freight	2012	Tons %	29.7%	39.7%	8.0%	4.4%	18.2%	100.0%

Exhibit B 3: 2007 and 2012 Northern Counties Outbound Tonnage

Northern Counties Outbound Tonnage		2007	2012	Growth	% Growth
Local Freight					
Truck Only	Tonnage & Growth Rate	4,341,656	3,123,204	(1,218,452)	(28.1%)
Rail Only	Tonnage & Growth Rate	81,440	57,587	(23,853)	(29.3%)
Truck + Rail	Tonnage & Growth Rate	4,423,096	3,180,791	(1,242,305)	(28.1%)
Directional Freight (to West, East, North or South)					
Truck Only	Tonnage & Growth Rate	5,612,369	4,656,541	(955,828)	(17.0%)
Rail Only	Tonnage & Growth Rate	1,866,586	1,695,568	(171,018)	(9.2%)
Truck + Rail	Tonnage & Growth Rate	7,478,955	6,352,109	(1,126,846)	(15.1%)
Combined Local and Directional Freight					
Truck Only	Tonnage & Growth Rate	9,954,025	7,779,745	(2,174,280)	(21.8%)
Rail Only	Tonnage & Growth Rate	1,948,026	1,753,155	(194,871)	(10.0%)
Truck + Rail	Tonnage & Growth Rate	11,902,051	9,532,900	(2,369,151)	(19.9%)

Exhibit B 4: 2007 and 2012 Northern Counties Outbound Distribution

Northern Counties Outbound Tonnage			Local Freight: Circulates within IPH Counties		Outbound to Western Destinations: Routes = I-90, US2, US12, US20		Outbound to Eastern Destinations: Routes = I-90, US2, US12, ID200		Outbound to Northern Destinations: Routes = US95, US195, US395		Outbound to Southern Destinations: Routes = US95, US195, US395		Commodity Total	County %
County	Year	Data	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail		
Bonner County, ID	2007	Tonnage	3,125,780	66,880	148,983	11,400	562,625	196,360	10,011		819,734	112,960	5,054,734	42.5%
	2012	Tonnage	2,265,620	46,840	124,376	7,444	522,590	192,908	9,503		446,898	99,302	3,715,481	39.0%
		% vs 2007	(27.5%)	(30.0%)	(16.5%)	(34.7%)	(7.1%)	(1.8%)	(5.1%)		(45.5%)	(12.1%)	(26.5%)	
Stevens County, WA	2007	Tonnage	698,031		1,581,893	299,728	167,845	213,120	170,156	75,116	206,870	16,000	3,428,758	28.8%
	2012	Tonnage	456,499		1,077,669	262,743	146,548	186,265	175,105	81,027	188,019	12,848	2,586,722	27.1%
		% vs 2007	(34.6%)		(31.9%)	(12.3%)	(12.7%)	(12.6%)	2.9%	7.9%	(9.1%)	(19.7%)	(24.6%)	
Boundary County, ID	2007	Tonnage	218,713	14,560	51,739	199,782	266,729	231,560	5,559	63,120	702,336	377,680	2,131,778	17.9%
	2012	Tonnage	164,924	10,747	51,803	179,056	263,639	215,271	5,434	69,425	502,655	328,512	1,791,465	18.8%
		% vs 2007	(24.6%)	(26.2%)	0.1%	(10.4%)	(1.2%)	(7.0%)	(2.3%)	10.0%	(28.4%)	(13.0%)	(16.0%)	
Pend Oreille County, WA	2007	Tonnage	266,919		421,193		21,810	27,400	11,221		33,126	42,360	824,030	6.9%
	2012	Tonnage	184,120		391,810		20,091	25,045	10,486		32,455	35,724	699,730	7.3%
		% vs 2007	(31.0%)		(7.0%)		(7.9%)	(8.6%)	(6.6%)		(2.0%)	(15.7%)	(15.1%)	
Ferry County, WA	2007	Tonnage	32,213		363,535		23,849		6,850		36,304		462,750	3.9%
	2012	Tonnage	52,041		582,841		48,496		6,222		49,901		739,501	7.8%
		% vs 2007	61.6%		60.3%		103.3%		(9.2%)		37.5%		59.8%	
County Summary	2007	Tonnage	4,341,656	81,440	2,567,343	510,910	1,042,857	668,440	203,798	138,236	1,798,370	549,000	11,902,051	100.0%
	2012	Tonnage	3,123,204	57,587	2,228,498	449,243	1,001,364	619,488	206,750	150,452	1,219,929	476,386	9,532,900	100.0%
		% vs 2007	(28.1%)	(29.3%)	(13.2%)	(12.1%)	(4.0%)	(7.3%)	1.4%	8.8%	(32.2%)	(13.2%)	(19.9%)	

2007 Truck Freight	2007	Tons %	36.5%			47.2%		
2007 Rail Freight	2007	Tons %		0.7%		15.7%		100.0%
2012 Truck Freight	2012	Tons %	32.8%			48.8%		
2012 Rail Freight	2012	Tons %		0.6%		17.8%		100.0%
2007 Truck + Rail	2007	Tons %	37.2%		25.9%	14.4%	2.9%	19.7%
2012 Truck Freight	2012	Tons %	33.4%		28.1%	17.0%	3.7%	17.8%

Exhibit B 5: 2007 and 2012 Northern Counties Top Ten Inbound Commodities

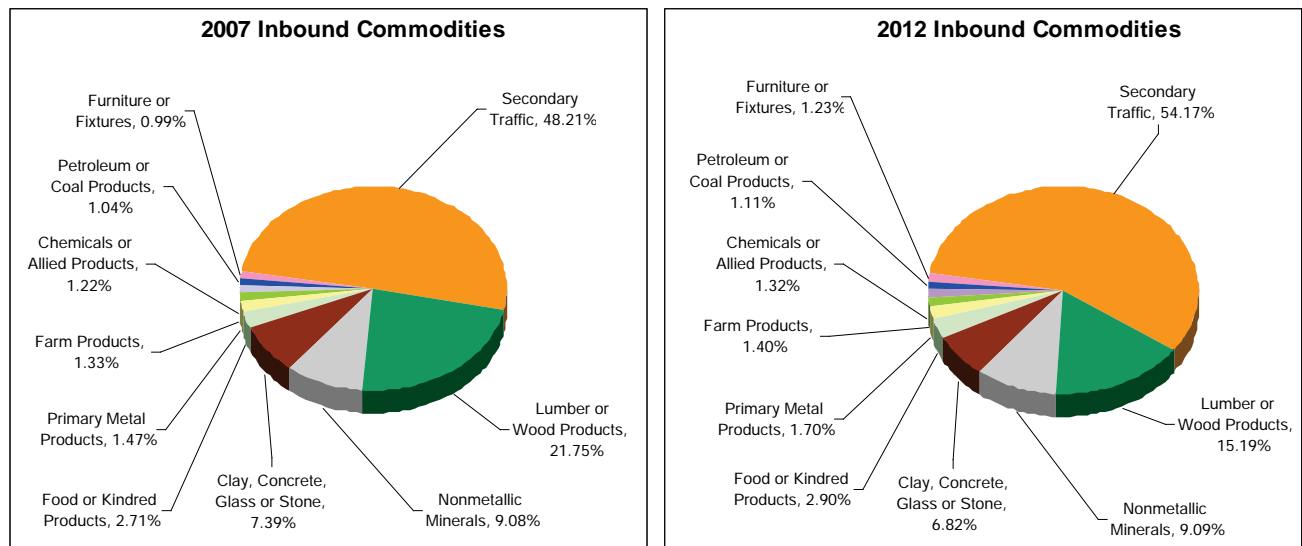


Exhibit B 6: 2007 and 2012 Northern Counties Top Ten Outbound Commodities

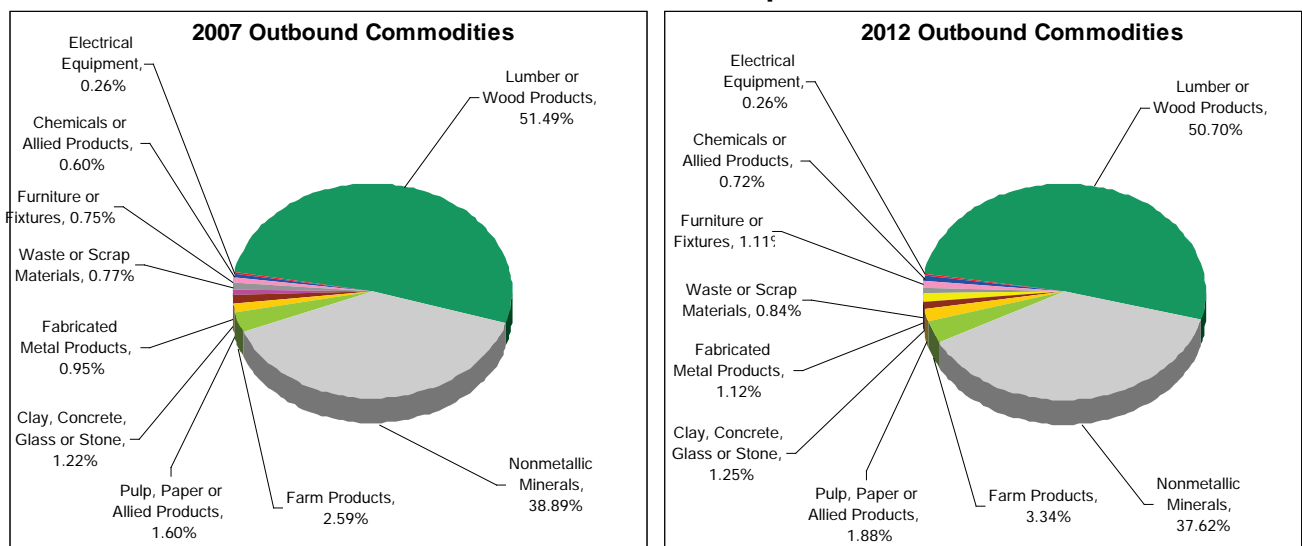


Exhibit B 7: 2007 and 2012 Northern Counties Commodities Forecast Changes

Northern Counties Inbound	2007	2007	Growth	2012	2012
Top 20 Commodities	%	Tons	% ►	Tons	%
Secondary Freight	48.21%	2,099,804	1.87%	2,139,119	54.17%
Lumber or Wood Products	21.75%	947,405	(36.69%)	599,846	15.19%
Nonmetallic Minerals	9.08%	395,413	(9.20%)	359,045	9.09%
Clay, Concrete, Glass or Stone	7.39%	321,711	(16.29%)	269,288	6.82%
Food or Kindred Products	2.71%	118,222	(3.19%)	114,456	2.90%
Primary Metal Products	1.47%	64,021	5.06%	67,262	1.70%
Farm Products	1.33%	57,765	(4.55%)	55,136	1.40%
Chemicals or Allied Products	1.22%	52,984	(1.68%)	52,094	1.32%
Petroleum or Coal Products	1.04%	45,151	(2.63%)	43,965	1.11%
Furniture or Fixtures	0.99%	42,978	12.61%	48,398	1.23%
Pulp, Paper or Allied Products	0.98%	42,641	(6.89%)	39,704	1.01%
Rail Intermodal Drayage from Ramp	0.63%	27,403	(14.94%)	23,310	0.59%
Electrical Equipment	0.59%	25,847	(21.10%)	20,393	0.52%
Fabricated Metal Products	0.49%	21,314	(6.97%)	19,829	0.50%
Transportation Equipment	0.47%	20,557	2.63%	21,096	0.53%
Waste or Scrap Materials	0.44%	19,017	3.97%	19,772	0.50%
Coal	0.39%	17,201	(1.67%)	16,913	0.43%
Rubber or Misc Plastics	0.24%	10,290	(3.53%)	9,926	0.25%
Machinery	0.20%	8,850	15.85%	10,253	0.26%
Misc Manufacturing Products	0.17%	7,288	22.65%	8,938	0.23%

Northern Counties Outbound	2007	2007	Growth	2012	2012
Top 20 Commodities	%	Tons	% ►	Tons	%
Lumber or Wood Products	51.49%	6,128,070	(21.13%)	4,832,978	50.70%
Nonmetallic Minerals	38.89%	4,628,855	(22.53%)	3,585,947	37.62%
Farm Products	2.59%	308,288	3.26%	318,329	3.34%
Pulp, Paper or Allied Products	1.60%	189,859	(5.76%)	178,926	1.88%
Clay, Concrete, Glass or Stone	1.22%	145,315	(17.89%)	119,316	1.25%
Fabricated Metal Products	0.95%	113,431	(5.79%)	106,859	1.12%
Waste or Scrap Materials	0.77%	91,154	(12.33%)	79,911	0.84%
Furniture or Fixtures	0.75%	89,048	18.98%	105,950	1.11%
Chemicals or Allied Products	0.60%	71,049	(3.37%)	68,656	0.72%
Electrical Equipment	0.26%	30,788	(18.19%)	25,189	0.26%
Food or Kindred Products	0.19%	22,932	6.44%	24,409	0.26%
Secondary Freight	0.15%	17,861	26.70%	22,630	0.24%
Primary Metal Products	0.15%	17,561	(30.11%)	12,273	0.13%
Transportation Equipment	0.12%	14,682	17.72%	17,284	0.18%
Rail Intermodal Drayage to Ramp	0.09%	11,184	2.01%	11,409	0.12%
Rubber or Misc Plastics	0.07%	7,946	(4.96%)	7,552	0.08%
Apparel or Related Products	0.03%	3,165	52.36%	4,822	0.05%
Fresh Fish or Marine Products	0.03%	2,986	(1.28%)	2,947	0.03%
Metallic Ores	0.02%	2,902	(36.78%)	1,835	0.02%
Printed Matter	0.02%	2,188	34.74%	2,949	0.03%

Exhibit B 8: 2007 and 2012 Central Counties Inbound Tonnage

Central Counties Inbound Tonnage		2007	2012	Growth	% Growth
Local Freight					
Truck Only	Tonnage & Growth Rate	8,868,718	6,875,613	(1,993,105)	(22.5%)
Rail Only	Tonnage & Growth Rate	22,044	17,950	(4,094)	(18.6%)
Truck + Rail	Tonnage & Growth Rate	8,890,762	6,893,562	(1,997,200)	(22.5%)
Directional Freight (to West, East, North or South)					
Truck Only	Tonnage & Growth Rate	12,897,378	11,846,378	(1,051,000)	(8.1%)
Rail Only	Tonnage & Growth Rate	4,811,408	4,682,202	(129,206)	(2.7%)
Truck + Rail	Tonnage & Growth Rate	17,708,786	16,528,580	(1,180,206)	(6.7%)
Combined Local and Directional Freight					
Truck Only	Tonnage & Growth Rate	21,766,096	18,721,991	(3,044,105)	(14.0%)
Rail Only	Tonnage & Growth Rate	4,833,452	4,700,152	(133,300)	(2.8%)
Truck + Rail	Tonnage & Growth Rate	26,599,548	23,422,143	(3,177,405)	(11.9%)

Exhibit B 9: 2007 and 2012 Central Counties Inbound Distribution

Central Counties Inbound Tonnage			Local Freight: Circulates within IPH Counties		Inbound from Western Origins: Routes = I-90, US2, US12, US20		Inbound from Eastern Origins: Routes = I-90, US2, US12, ID200		Inbound from Northern Origins: Routes = US95, US195, US395		Inbound from Southern Origins: Routes = US95, US195, US395		Commodity Total	County %
County	Year	Data	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail		
Spokane County, WA	2007	Tonnage	6,703,832	18,084	8,403,410	401,916	962,855	3,498,236	148,804	498,264	525,569	60,240	21,221,210	79.8%
	2012	Tonnage	4,922,242	15,074	7,281,890	337,962	920,291	3,480,165	156,478	455,494	512,621	57,362	18,139,579	77.4%
		% vs 2007	(26.6%)	(16.6%)	(13.3%)	(15.9%)	(4.4%)	(0.5%)	5.2%	(8.6%)	(2.5%)	(4.8%)	(14.5%)	
Kootenai County, ID	2007	Tonnage	1,234,365	3,960	525,056	3,280	379,073	58,308	44,826	36,600	604,640	18,840	2,908,948	10.9%
	2012	Tonnage	949,743	2,875	465,924	1,954	367,435	68,614	48,906	37,144	601,887	17,024	2,561,506	10.9%
		% vs 2007	(23.1%)	(27.4%)	(11.3%)	(40.4%)	(3.1%)	17.7%	9.1%	1.5%	(0.5%)	(9.6%)	(11.9%)	
Lincoln County, WA	2007	Tonnage	469,949		392,457		68,301	3,920	33,350	3,160	78,913		1,050,050	3.9%
	2012	Tonnage	552,525		534,780		94,669	5,274	34,100	3,214	84,111		1,308,673	5.6%
		% vs 2007	17.6%		36.3%		38.6%	34.5%	2.2%	1.7%	6.6%		24.6%	
Adams County, WA	2007	Tonnage	244,572		503,432	4,000	16,908	145,604	34,905	73,400	22,646	5,640	1,051,107	4.0%
	2012	Tonnage	229,798		500,149	3,898	21,034	129,788	35,512	78,451	22,858	5,859	1,027,345	4.4%
		% vs 2007	(6.0%)		(0.7%)	(2.6%)	24.4%	(10.9%)	1.7%	6.9%	0.9%	3.9%	(2.3%)	
Shoshone County, ID	2007	Tonnage	216,000		33,097		62,467		4,843		51,826		368,233	1.4%
	2012	Tonnage	221,306		33,726		73,605		4,454		51,948		385,040	1.6%
		% vs 2007	2.5%		1.9%		17.8%		(8.0%)		0.2%		4.6%	
County Summary	2007	Tonnage	8,868,718	22,044	9,857,453	409,196	1,489,604	3,706,068	266,728	611,424	1,283,593	84,720	26,599,548	100.0%
	2012	Tonnage	6,875,613	17,950	8,816,470	343,814	1,477,034	3,683,841	279,449	574,303	1,273,426	80,244	23,422,143	100.0%
		% vs 2007	(22.5%)	(18.6%)	(10.6%)	(16.0%)	(0.8%)	(0.6%)	4.8%	(6.1%)	(0.8%)	(5.3%)	(11.9%)	

2007 Truck Freight	2007	Tons %	33.3%	48.5%						100.0%
2007 Rail Freight	2007	Tons %	0.1%	18.1%						
2012 Truck Freight	2012	Tons %	29.4%	50.6%						
2012 Rail Freight	2012	Tons %	0.1%	20.0%						100.0%
2007 Truck + Rail	2007	Tons %	33.4%	38.6%	19.5%	3.3%	5.1%			100.0%
2012 Truck Freight	2012	Tons %	29.4%	39.1%	22.0%	3.6%	5.8%			100.0%

Exhibit B 10: 2007 and 2012 Central Counties Outbound Tonnage

Central Counties Outbound Tonnage		2007	2012	Growth	% Growth
Local Freight					
Truck Only	Tonnage & Growth Rate	4,372,966	3,564,684	(808,282)	(18.5%)
Rail Only	Tonnage & Growth Rate	6,256	5,156	(1,100)	(17.6%)
Truck + Rail	Tonnage & Growth Rate	4,379,222	3,569,839	(809,383)	(18.5%)
Directional Freight (to West, East, North or South)					
Truck Only	Tonnage & Growth Rate	17,931,927	16,324,350	(1,607,577)	(9.0%)
Rail Only	Tonnage & Growth Rate	6,418,537	5,829,796	(588,741)	(9.2%)
Truck + Rail	Tonnage & Growth Rate	24,350,464	22,154,146	(2,196,318)	(9.0%)
Combined Local and Directional Freight					
Truck Only	Tonnage & Growth Rate	22,304,893	19,889,034	(2,415,860)	(10.8%)
Rail Only	Tonnage & Growth Rate	6,424,793	5,834,952	(589,841)	(9.2%)
Truck + Rail	Tonnage & Growth Rate	28,729,686	25,723,986	(3,005,701)	(10.5%)

Exhibit B 11: 2007 and 2012 Central Counties Outbound Distribution

Central Counties Outbound Tonnage			Local Freight: Circulates within IPH Counties		Outbound to Western Destinations: Routes = I-90, US2, US12, US20		Outbound to Eastern Destinations: Routes = I-90, US2, US12, ID200		Outbound to Northern Destinations: Routes = US95, US195, US395		Outbound to Southern Destinations: Routes = US95, US195, US395		Commodity Total	County %
County	Year	Data	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail		
Spokane County, WA	2007	Tonnage	1,672,550	4,496	8,843,907	3,300,477	1,004,653	374,932	287,471	5,600	943,720	80,056	16,517,862	57.5%
	2012	Tonnage	1,471,817	3,512	7,878,333	3,352,069	902,423	341,727	310,486	6,067	873,410	69,665	15,209,508	59.1%
		% vs 2007	(12.0%)	(21.9%)	(10.9%)	1.6%	(10.2%)	(8.9%)	8.0%	8.3%	(7.5%)	(13.0%)	(7.9%)	
Kootenai County, ID	2007	Tonnage	2,291,415		664,034	6,600	863,336	242,400	59,181		1,967,748	82,800	6,177,513	21.5%
	2012	Tonnage	1,754,852		629,817	5,807	842,700	216,777	64,283		1,862,338	67,255	5,443,830	21.2%
		% vs 2007	(23.4%)		(5.2%)	(12.0%)	(2.4%)	(10.6%)	8.6%		(5.4%)	(18.8%)	(11.9%)	
Adams County, WA	2007	Tonnage	175,293	880	297,272	1,011,116	57,175	147,760	87,522		1,044,816	3,960	2,825,795	9.8%
	2012	Tonnage	144,294	822	255,457	741,246	50,312	140,110	88,825		970,480	3,859	2,395,405	9.3%
		% vs 2007	(17.7%)	(6.6%)	(14.1%)	(26.7%)	(12.0%)	(5.2%)	1.5%		(7.1%)	(2.6%)	(15.2%)	
Lincoln County, WA	2007	Tonnage	175,293	880	297,272	1,011,116	57,175	147,760	87,522		1,044,816	3,960	2,825,795	9.8%
	2012	Tonnage	144,294	822	255,457	741,246	50,312	140,110	88,825		970,480	3,859	2,395,405	9.3%
		% vs 2007	(17.7%)	(6.6%)	(14.1%)	(26.7%)	(12.0%)	(5.2%)	1.5%		(7.1%)	(2.6%)	(15.2%)	
Shoshone County, ID	2007	Tonnage	58,416		17,176		189,996		8,303		108,830		382,721	1.3%
	2012	Tonnage	49,425		14,496		148,918		8,684		58,314		279,836	1.1%
		% vs 2007	(15.4%)		(15.6%)		(21.6%)		4.6%		(46.4%)		(26.9%)	
County Summary	2007	Tonnage	4,372,966	6,256	10,119,662	5,329,309	2,172,336	912,852	529,999	5,600	5,109,930	170,776	28,729,686	100.0%
	2012	Tonnage	3,564,684	5,156	9,033,561	4,840,368	1,994,664	838,725	561,103	6,067	4,735,022	144,637	25,723,986	100.0%
		% vs 2007	(18.5%)	(17.6%)	(10.7%)	(9.2%)	(8.2%)	(8.1%)	5.9%	8.3%	(7.3%)	(15.3%)	(10.5%)	

2007 Truck Freight	2007	Tons %	15.2%	62.4%						100.0%
2007 Rail Freight	2007	Tons %	0.0%	22.3%						
2012 Truck Freight	2012	Tons %	13.9%	63.5%						
2012 Rail Freight	2012	Tons %	0.0%	22.7%						100.0%
2007 Truck + Rail	2007	Tons %	15.2%	53.8%	10.7%	1.9%	18.4%			100.0%
2012 Truck + Rail	2012	Tons %	13.9%	53.9%	11.0%	2.2%	19.0%			100.0%

Exhibit B 12: 2007 and 2012 Central Counties Top Ten Inbound Commodities

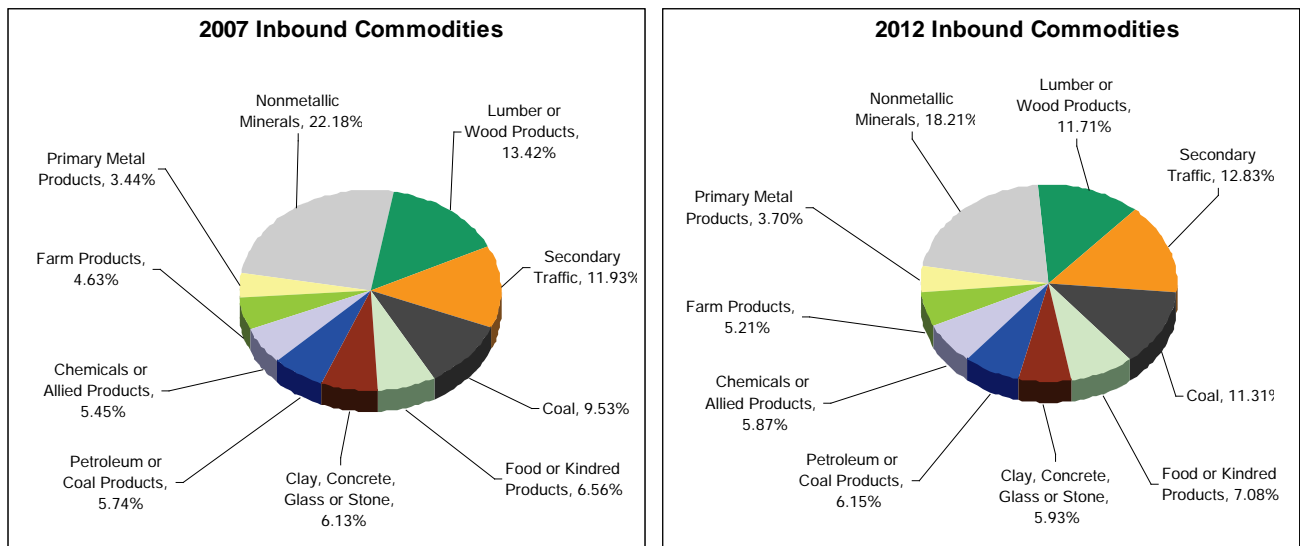


Exhibit B 13: 2007 and 2012 Central Counties Top Ten Outbound Commodities

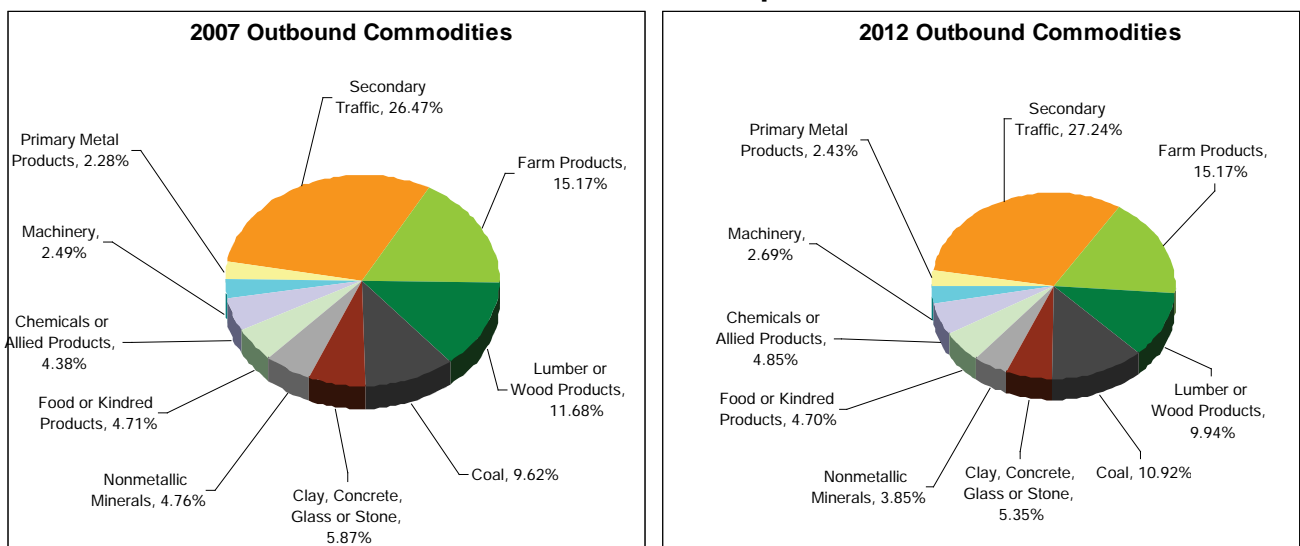


Exhibit B 14: 2007 and 2012 Central Counties Commodities Forecast Changes

Central Counties Inbound						Central Counties Outbound					
Top 20 Commodities	2007 %	2007 Tons	Growth % ►	2012 Tons	2012 %	Top 20 Commodities	2007 %	2007 Tons	Growth % ►	2012 Tons	2012 %
Nonmetallic Minerals	22.18%	5,898,736	(27.68%)	4,266,149	18.21%	Secondary Freight	26.47%	7,109,401	(6.87%)	6,621,252	27.24%
Lumber or Wood Products	13.42%	3,570,781	(23.18%)	2,743,025	11.71%	Farm Products	15.17%	4,075,401	(9.53%)	3,687,198	15.17%
Secondary Freight	11.93%	3,173,717	(5.34%)	3,004,344	12.83%	Lumber or Wood Products	11.68%	3,136,953	(23.00%)	2,415,372	9.94%
Coal	9.53%	2,534,905	4.53%	2,649,806	11.31%	Coal	9.62%	2,583,149	2.72%	2,653,434	10.92%
Food or Kindred Products	6.56%	1,744,637	(4.99%)	1,657,600	7.08%	Clay, Concrete, Glass or Stone	5.87%	1,575,272	(17.37%)	1,301,693	5.35%
Clay, Concrete, Glass or Stone	6.13%	1,630,992	(14.88%)	1,388,339	5.93%	Nonmetallic Minerals	4.76%	1,277,532	(26.69%)	936,605	3.85%
Petroleum or Coal Products	5.74%	1,526,093	(5.57%)	1,441,142	6.15%	Food or Kindred Products	4.71%	1,265,232	(9.75%)	1,141,878	4.70%
Chemicals or Allied Products	5.45%	1,450,293	(5.23%)	1,374,437	5.87%	Chemicals or Allied Products	4.38%	1,175,388	0.22%	1,178,017	4.85%
Farm Products	4.63%	1,231,331	(0.97%)	1,219,366	5.21%	Machinery	2.49%	669,599	(2.17%)	655,066	2.69%
Primary Metal Products	3.44%	915,278	(5.27%)	867,031	3.70%	Primary Metal Products	2.28%	611,628	(3.37%)	590,989	2.43%
Transportation Equipment	1.53%	407,078	18.25%	481,362	2.06%	Fabricated Metal Products	2.11%	567,492	(8.64%)	518,474	2.13%
Fabricated Metal Products	1.31%	349,519	(11.17%)	310,494	1.33%	Transportation Equipment	1.64%	439,877	14.60%	504,105	2.07%
Pulp, Paper or Allied Products	1.17%	311,778	(9.34%)	282,650	1.21%	Electrical Equipment	1.34%	358,834	(34.96%)	233,399	0.96%
Rail Intermodal Drayage from Ramp	1.02%	272,237	(14.93%)	231,583	0.99%	Petroleum or Coal Products	1.29%	346,946	(9.78%)	313,018	1.29%
Electrical Equipment	0.98%	259,496	(4.76%)	247,152	1.06%	Pulp, Paper or Allied Products	1.18%	316,925	(11.11%)	281,716	1.16%
Rail Intermodal Drayage to Ramp	0.79%	211,332	2.01%	215,584	0.92%	Rail Intermodal Drayage from Ramp	1.18%	316,179	(14.94%)	268,945	1.11%
Machinery	0.73%	192,885	(3.57%)	185,998	0.79%	Waste or Scrap Materials	1.16%	312,885	1.49%	317,556	1.31%
Rubber or Misc Plastics	0.55%	145,185	(4.07%)	139,273	0.59%	Furniture or Fixtures	0.73%	196,923	0.70%	198,293	0.82%
Misc Mixed Shipments	0.51%	135,760	(15.92%)	114,147	0.49%	Rail Intermodal Drayage to Ramp	0.38%	101,407	1.99%	103,421	0.43%
Waste or Scrap Materials	0.40%	105,101	15.16%	121,034	0.52%	Rubber or Misc Plastics	0.37%	99,631	(1.15%)	98,481	0.41%

Exhibit B 15: 2007 and 2012 Southern Counties Inbound Tonnage

Southern Counties Inbound Tonnage		2007	2012	Growth	% Growth
Local Freight					
Truck Only	Tonnage & Growth Rate	3,532,327	4,846,167	1,313,840	37.2%
Rail Only	Tonnage & Growth Rate	5,016	5,815	799	15.9%
Truck + Rail	Tonnage & Growth Rate	3,537,343	4,851,982	1,314,639	37.2%
Directional Freight (to West, East, North or South)					
Truck Only	Tonnage & Growth Rate	2,934,598	4,419,367	1,484,769	50.6%
Rail Only	Tonnage & Growth Rate	432,208	545,920	113,712	26.3%
Truck + Rail	Tonnage & Growth Rate	3,366,806	4,965,287	1,598,481	47.5%
Combined Local and Directional Freight					
Truck Only	Tonnage & Growth Rate	6,466,925	9,265,534	2,798,609	43.3%
Rail Only	Tonnage & Growth Rate	437,224	551,735	114,511	26.2%
Truck + Rail	Tonnage & Growth Rate	6,904,149	9,817,269	2,913,120	42.2%

Exhibit B 16: 2007 and 2012 Southern Counties Inbound Distribution

Southern Counties Inbound Tonnage			Local Freight: Circulates within IPH Counties		Inbound from Western Origins: Routes = I-90, US2, US12, US20		Inbound from Eastern Origins: Routes = I-90, US2, US12, ID200		Inbound from Northern Origins: Routes = US95, US195, US395		Inbound from Southern Origins: Routes = US95, US195, US395		Commodity Total	County %
County	Year	Data	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail		
Nez Perce County, ID	2007	Tonnage	1,118,226		121,334	84,640	276,841	88,328	14,250	85,320	438,423	12,440	2,239,802	32.4%
	2012	Tonnage	1,341,228		126,875	102,465	355,407	86,638	20,644	103,311	659,794	14,268	2,810,630	28.6%
		% vs 2007	19.9%		4.6%	21.1%	28.4%	(1.9%)	44.9%	21.1%	50.5%	14.7%	25.5%	
Whitman County, WA	2007	Tonnage	675,425	3,120	571,510	7,960	26,333	22,600	52,578	23,120	25,807		1,408,454	20.4%
	2012	Tonnage	888,788	3,608	849,174	6,816	49,576	26,248	78,399	37,199	58,615		1,998,423	20.4%
		% vs 2007	31.6%	15.6%	48.6%	(14.4%)	88.3%	16.1%	49.1%	60.9%	127.1%		41.9%	
Asotin County, WA	2007	Tonnage	731,238		153,019		16,143		35,755		9,064		945,219	13.7%
	2012	Tonnage	1,375,928		164,803		22,380		55,400		15,977		1,634,488	16.6%
		% vs 2007	88.2%		7.7%		38.6%		54.9%		76.3%		72.9%	
Latah County, ID	2007	Tonnage	390,477		121,933		142,110		8,152		251,361		914,032	13.2%
	2012	Tonnage	410,892		140,456		248,073		11,209		511,404		1,322,034	13.5%
		% vs 2007	5.2%		15.2%		74.6%		37.5%		103.5%		44.6%	
Clearwater County, ID	2007	Tonnage	244,104		23,160	1,840	62,268		5,606		153,526		490,505	7.1%
	2012	Tonnage	375,078		23,682	2,142	100,030		7,444		260,906		769,282	7.8%
		% vs 2007	53.7%		2.3%	16.4%	60.6%		32.8%		69.9%		56.8%	
Benewah County, ID	2007	Tonnage	302,385	1,896	19,113		59,725		7,081		142,328		532,529	7.7%
	2012	Tonnage	356,296	2,207	13,965		72,246		9,805		205,903		660,423	6.7%
		% vs 2007	17.8%	16.4%	(26.9%)		21.0%		38.5%		44.7%		24.0%	
Garfield County, WA	2007	Tonnage	491		6,805		329	32,240	26,344	52,960	182	15,600	134,952	2.0%
	2012	Tonnage	2,182		20,037		691	45,004	41,962	86,110	571	30,234	226,790	2.3%
		% vs 2007	344.0%		194.4%		110.0%	39.6%	59.3%	62.6%	214.0%	93.8%	68.1%	

Southern Counties Inbound Tonnage (continued)			Local Freight: Circulates within IPH Counties		Inbound from Western Origins: Routes = I-90, US2, US12, US20		Inbound from Eastern Origins: Routes = I-90, US2, US12, ID200		Inbound from Northern Origins: Routes = US95, US195, US395		Inbound from Southern Origins: Routes = US95, US195, US395		Commodity Total	County %
County	Year	Data	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail		
Lewis County, ID	2007	Tonnage	51,913		3,442		28,989		6,635	5,160	29,781		125,919	1.8%
	2012	Tonnage	67,621		7,082		63,838		8,735	5,485	72,557		225,318	2.3%
		% vs 2007	30.3%		105.8%		120.2%		31.6%	6.3%	143.6%		78.9%	
Columbia County, WA	2007	Tonnage	18,068		52,395		4,884		33,420		3,969		112,737	1.6%
	2012	Tonnage	28,154		68,450		12,501		53,291		7,486		169,882	1.7%
		% vs 2007	55.8%		30.6%		156.0%		59.5%		88.6%		50.7%	
County Summary	2007	Tonnage	3,532,327	5,016	1,072,711	94,440	617,622	143,168	189,822	166,560	1,054,442	28,040	6,904,149	100.0%
	2012	Tonnage	4,846,167	5,815	1,414,524	111,423	924,741	157,890	286,889	232,104	1,793,213	44,502	9,817,269	100.0%
		% vs 2007	37.2%	15.9%	31.9%	18.0%	49.7%	10.3%	51.1%	39.4%	70.1%	58.7%	42.2%	

2007 Truck Freight	2007	Tons %	51.2%		42.5%					100.0%
2007 Rail Freight	2007	Tons %		0.1%	6.3%					
2012 Truck Freight	2012	Tons %	49.4%		45.0%					100.0%
2012 Rail Freight	2012	Tons %		0.1%	5.6%					
2007 Truck + Rail	2007	Tons %	51.2%		16.9%	11.0%	5.2%	15.7%		100.0%
2012 Truck + Rail	2012	Tons %	49.4%		15.5%	11.0%	5.3%	18.7%		100.0%

Exhibit B 17: 2007 and 2012 Southern Counties Outbound Tonnage

Southern Counties Outbound Tonnage		2007	2012	Growth	% Growth
Local Freight					
Truck Only	Tonnage & Growth Rate	4,862,539	6,883,240	2,020,702	41.6%
Rail Only	Tonnage & Growth Rate	3,800	2,654	(1,146)	(30.2%)
Truck + Rail	Tonnage & Growth Rate	4,866,339	6,885,894	2,019,555	41.5%
Directional Freight (to West, East, North or South)					
Truck Only	Tonnage & Growth Rate	6,532,864	9,311,771	2,778,907	42.5%
Rail Only	Tonnage & Growth Rate	492,712	377,670	(115,042)	(23.3%)
Truck + Rail	Tonnage & Growth Rate	7,025,576	9,689,441	2,663,866	37.9%
Combined Local and Directional Freight					
Truck Only	Tonnage & Growth Rate	11,395,402	16,195,011	4,799,609	42.1%
Rail Only	Tonnage & Growth Rate	496,512	380,324	(116,188)	(23.4%)
Truck + Rail	Tonnage & Growth Rate	11,891,914	16,575,335	4,683,421	39.4%

Exhibit B 18: 2007 and 2012 Southern Counties Outbound Distribution

Southern Counties Outbound Tonnage			Local Freight: Circulates within IPH Counties		Outbound to Western Destinations: Routes = I-90, US2, US12, US20		Outbound to Eastern Destinations: Routes = I-90, US2, US12, ID200		Outbound to Northern Destinations: Routes = US95, US195, US395		Outbound to Southern Destinations: Routes = US95, US195, US395		Commodity Total	County %
County	Year	Data	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail		
Nez Perce County, ID	2007	Tonnage	2,069,127		287,991	34,120	787,416	194,160	20,461		1,961,931	72,000	5,427,206	45.6%
	2012	Tonnage	2,467,904		478,621	39,757	795,556	165,956	29,313		2,249,371	62,489	6,288,968	37.9%
		% vs 2007	19.3%		66.2%	16.5%	1.0%	(14.5%)	43.3%		14.7%	(13.2%)	15.9%	
Whitman County, WA	2007	Tonnage	723,642		255,846	43,552	169,394	1,920	40,103		182,741		1,417,199	11.9%
	2012	Tonnage	796,076		273,568	18,032	169,515	1,363	56,794		225,555		1,540,903	9.3%
		% vs 2007	10.0%		6.9%	(58.6%)	0.1%	(29.0%)	41.6%		23.4%		8.7%	
Asotin County, WA	2007	Tonnage	170,099		520,987		31,299		12,407		44,226		779,018	6.6%
	2012	Tonnage	918,378		2,752,121		86,269		22,817		181,235		3,960,819	23.9%
		% vs 2007	439.9%		428.3%		175.6%		83.9%		309.8%		408.4%	
Latah County, ID	2007	Tonnage	664,561		46,457		100,352	28,760	4,153		173,310	3,600	1,021,193	8.6%
	2012	Tonnage	1,266,296		67,090		272,973	18,665	5,668		129,917	2,257	1,762,867	10.6%
		% vs 2007	90.5%		44.4%		172.0%	(35.1%)	36.5%		(25.0%)	(37.3%)	72.6%	
Clearwater County, ID	2007	Tonnage	391,256		62,451		57,792	3,560	3,066		209,517	2,920	730,562	6.1%
	2012	Tonnage	355,493		52,231		35,109	3,556	3,607		80,080	3,138	533,213	3.2%
		% vs 2007	(9.1%)		(16.4%)		(39.3%)	(0.1%)	17.6%		(61.8%)	7.5%	(27.0%)	
Benewah County, ID	2007	Tonnage	654,388	3,800	69,464		629,686	59,680	6,095		424,874	30,600	1,878,586	15.8%
	2012	Tonnage	851,580	2,654	72,186		578,961	37,811	7,102		331,664	16,589	1,898,547	11.5%
		% vs 2007	30.1%	(30.2%)	3.9%		(8.1%)	(36.6%)	16.5%		(21.9%)	(45.8%)	1.1%	
Garfield County, WA	2007	Tonnage	52,507		8,586		6,380		5,561		9,337		82,371	0.7%
	2012	Tonnage	58,799		8,622		27,790		7,643		8,678		111,532	0.7%
		% vs 2007	12.0%		0.4%		335.6%		37.4%		(7.1%)		35.4%	

Southern Counties Outbound Tonnage (continued)			Local Freight: Circulates within IPH Counties		Outbound to Western Destinations: Routes = I-90, US2, US12, US20		Outbound to Eastern Destinations: Routes = I-90, US2, US12, ID200		Outbound to Northern Destinations: Routes = US95, US195, US395		Outbound to Southern Destinations: Routes = US95, US195, US395		Commodity Total	County %
County	Year	Data	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail		
Lewis County, ID	2007	Tonnage	99,498		17,427		57,981	6,800	1,477		108,330	7,600	299,113	2.5%
	2012	Tonnage	117,441		5,960		26,324	2,733	1,814		58,217	1,227	213,716	1.3%
		% vs 2007	18.0%		(65.8%)		(54.6%)	(59.8%)	22.8%		(46.3%)	(83.9%)	(28.6%)	
Columbia County, WA	2007	Tonnage	37,460		194,335		130	3,440	8,314		12,988		256,667	2.2%
	2012	Tonnage	51,275		184,106		121	4,096	11,429		13,743		264,770	1.6%
		% vs 2007	36.9%		(5.3%)		(6.9%)	19.1%	37.5%		5.8%		3.2%	
County Summary	2007	Tonnage	4,862,539	3,800	1,463,544	77,672	1,840,430	298,320	101,636		3,127,254	116,720	11,891,914	100.0%
	2012	Tonnage	6,883,240	2,654	3,894,506	57,789	1,992,619	234,180	146,187		3,278,459	85,700	16,575,335	100.0%
		% vs 2007	41.6%	(30.2%)	166.1%	(25.6%)	8.3%	(21.5%)	43.8%		4.8%	(26.6%)	39.4%	

2007 Truck Freight	2007	Tons %	40.9%	54.9%				100.0%
2007 Rail Freight	2007	Tons %	0.0%	4.1%				
2012 Truck Freight	2012	Tons %	41.5%	56.2%				100.0%
2012 Rail Freight	2012	Tons %	0.0%	2.3%				
2007 Truck + Rail	2007	Tons %	40.9%	13.0%	18.0%	0.9%	27.3%	100.0%
2012 Truck + Rail	2012	Tons %	41.5%	23.8%	13.4%	0.9%	20.3%	100.0%

Exhibit B 19: 2007 and 2012 Southern Counties Top Ten Inbound Commodities (no water transport)

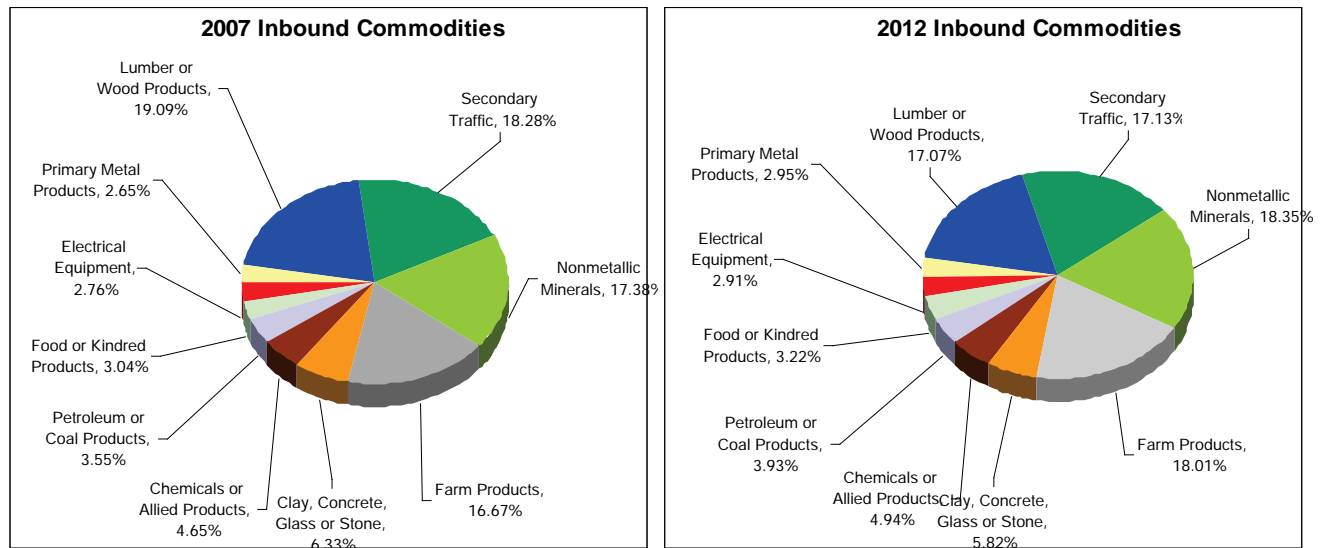


Exhibit B 20: 2007 and 2012 Southern Counties Top Ten Outbound Commodities (no water transport)

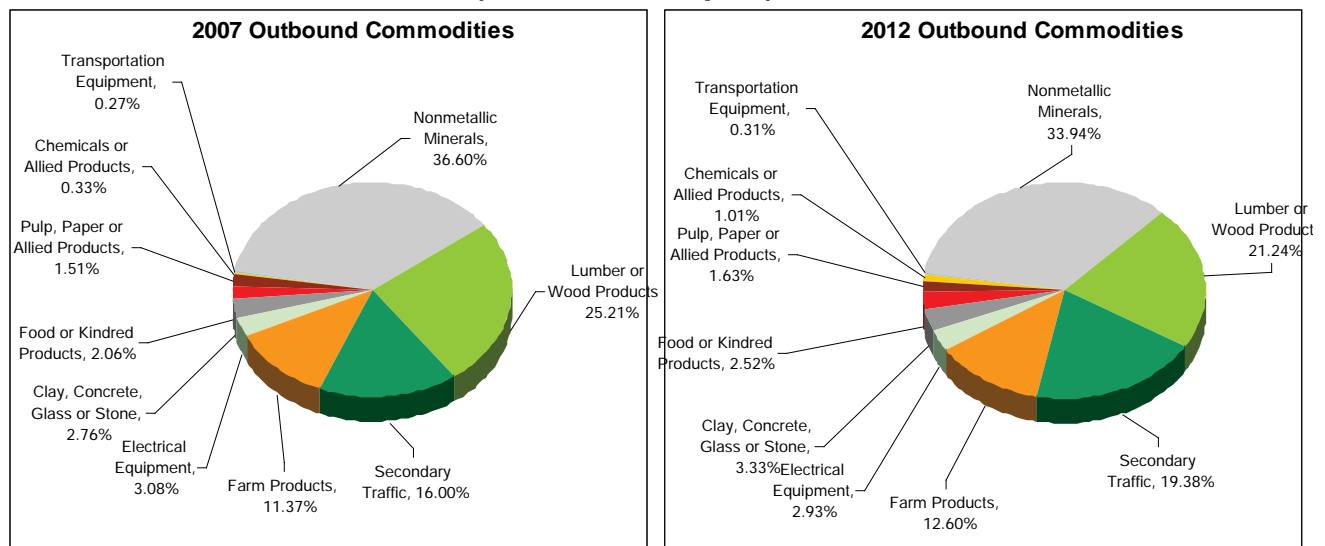


Exhibit B 21: 2007 and 2012 Southern Counties Top Ten Inbound Commodities (with water transport)

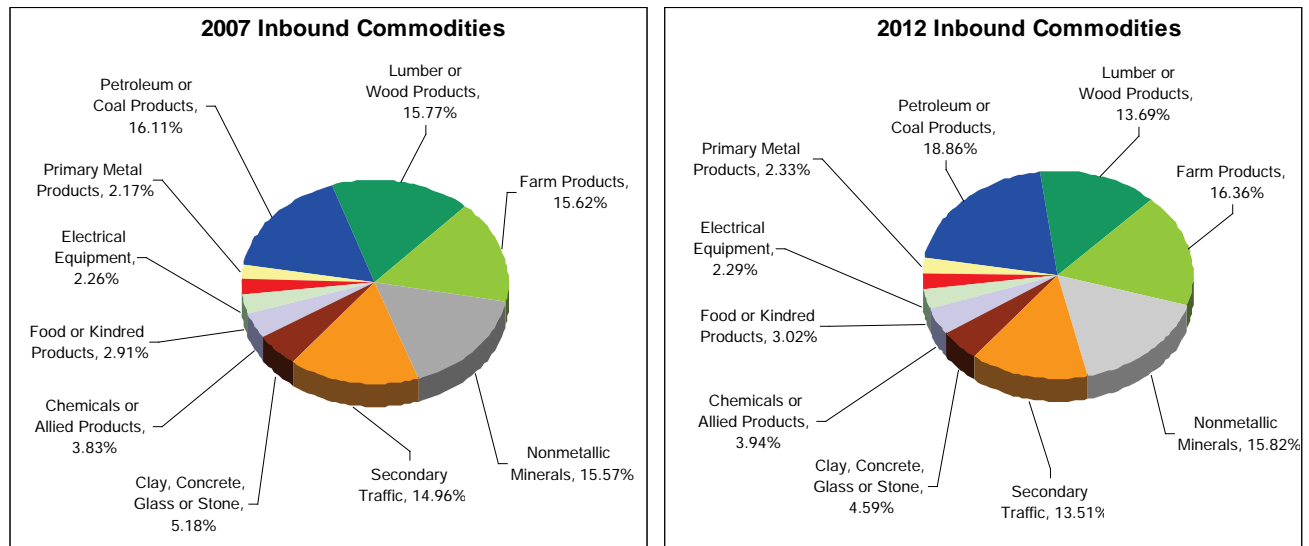


Exhibit B 22: 2007 and 2012 Southern Counties Top Ten Outbound Commodities (with water transport)

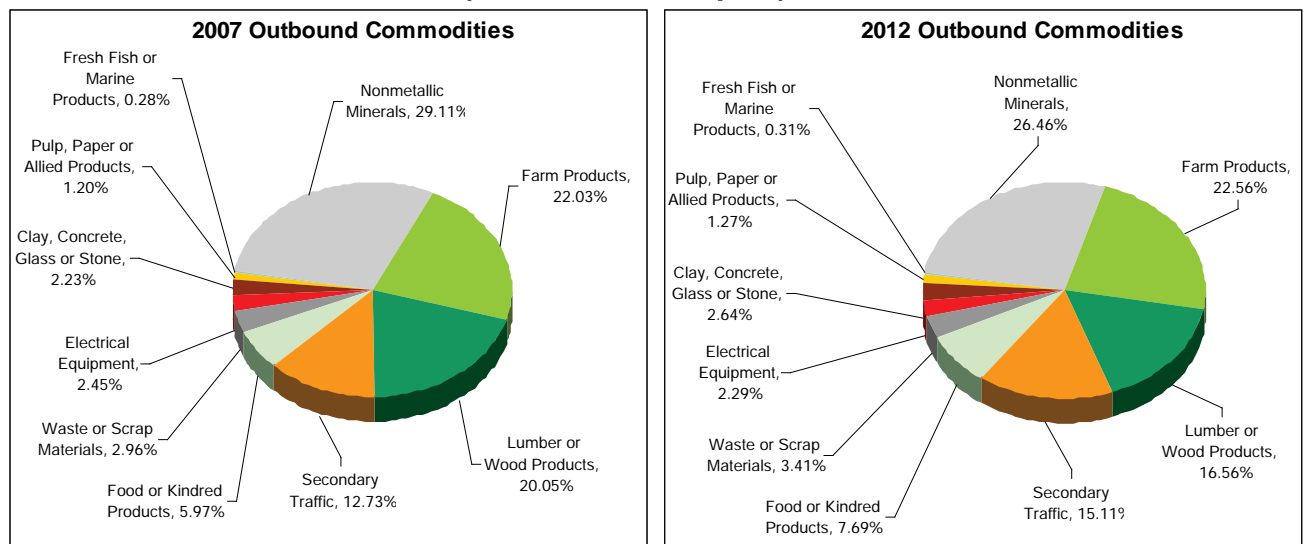


Exhibit B 23: 2007 and 2012 Southern Counties Commodities Forecast Changes (no water transport)

Southern Counties Inbound	2007	2007	Growth	2012	2012
Top 20 Commodities (no Water Freight)	%	Tons	% ►	Tons	%
Lumber or Wood Products	19.09%	1,318,031	(11.66%)	1,164,369	17.07%
Secondary Freight	18.28%	1,262,325	(7.48%)	1,167,958	17.13%
Nonmetallic Minerals	17.38%	1,199,653	4.31%	1,251,303	18.35%
Farm Products	16.67%	1,151,150	6.68%	1,228,052	18.01%
Clay, Concrete, Glass or Stone	6.33%	437,045	(9.26%)	396,593	5.82%
Chemicals or Allied Products	4.65%	321,136	4.86%	336,745	4.94%
Petroleum or Coal Products	3.55%	245,249	9.38%	268,265	3.93%
Food or Kindred Products	3.04%	209,895	4.46%	219,263	3.22%
Electrical Equipment	2.76%	190,701	3.98%	198,291	2.91%
Primary Metal Products	2.65%	183,082	9.98%	201,356	2.95%
Pulp, Paper or Allied Products	1.92%	132,290	(6.94%)	123,114	1.81%
Transportation Equipment	1.32%	91,270	8.97%	99,458	1.46%
Printed Matter	0.35%	24,243	(3.52%)	23,390	0.34%
Coal	0.35%	24,053	5.45%	25,364	0.37%
Machinery	0.34%	23,573	9.91%	25,908	0.38%
Waste or Scrap Materials	0.34%	23,479	4.94%	24,638	0.36%
Fabricated Metal Products	0.32%	21,808	(3.29%)	21,092	0.31%
Furniture or Fixtures	0.15%	10,153	(10.64%)	9,072	0.13%
Misc Manufacturing Products	0.15%	10,128	7.44%	10,882	0.16%
Rubber or Misc Plastics	0.09%	6,369	1.47%	6,463	0.09%

Southern Counties Outbound	2007	2007	Growth	2012	2012
Top 20 Commodities (no Water Freight)	%	Tons	% ►	Tons	%
Nonmetallic Minerals	36.60%	4,352,127	(13.14%)	3,780,182	33.94%
Lumber or Wood Products	25.21%	2,997,451	(21.08%)	2,365,573	21.24%
Secondary Freight	16.00%	1,903,133	13.44%	2,158,907	19.38%
Farm Products	11.37%	1,352,620	3.73%	1,403,131	12.60%
Electrical Equipment	3.08%	365,999	(10.81%)	326,453	2.93%
Clay, Concrete, Glass or Stone	2.76%	328,158	12.95%	370,668	3.33%
Food or Kindred Products	2.06%	244,741	14.75%	280,844	2.52%
Pulp, Paper or Allied Products	1.51%	179,129	1.39%	181,620	1.63%
Chemicals or Allied Products	0.33%	38,750	191.57%	112,983	1.01%
Transportation Equipment	0.27%	31,743	9.03%	34,609	0.31%
Misc Manufacturing Products	0.23%	27,544	59.88%	44,037	0.40%
Waste or Scrap Materials	0.18%	20,826	28.57%	26,775	0.24%
Printed Matter	0.12%	14,476	18.51%	17,155	0.15%
Fabricated Metal Products	0.10%	11,313	5.00%	11,879	0.11%
Machinery	0.06%	7,522	6.55%	8,014	0.07%
Rail Intermodal Drayage to Ramp	0.05%	5,407	2.07%	5,519	0.05%
Metallic Ores	0.04%	4,165	(43.73%)	2,344	0.02%
Instrument, Photo Equip, Optical Eq	0.03%	3,273	15.13%	3,769	0.03%
Primary Metal Products	0.01%	1,422	(9.42%)	1,288	0.01%
Tobacco Products	0.01%	676	(22.49%)	524	0.00%

Exhibit B 24: 2007 and 2012 Southern Counties Commodities Forecast Changes (with water transport)

Southern Counties Inbound	2007	2007	Growth	2012	2012
Top 20 Commodities (+ Water Freight)	%	Tons	% ►	Tons	%
Petroleum or Coal Products	16.11%	1,359,242	19.91%	1,629,913	18.86%
Lumber or Wood Products	15.77%	1,329,859	(11.02%)	1,183,306	13.69%
Farm Products	15.62%	1,317,378	7.34%	1,414,100	16.36%
Nonmetallic Minerals	15.57%	1,313,702	4.06%	1,367,075	15.82%
Secondary Freight	14.96%	1,262,325	(7.48%)	1,167,958	13.51%
Clay, Concrete, Glass or Stone	5.18%	437,045	(9.26%)	396,593	4.59%
Chemicals or Allied Products	3.83%	323,258	5.40%	340,714	3.94%
Food or Kindred Products	2.91%	245,306	6.25%	260,649	3.02%
Electrical Equipment	2.26%	190,701	3.98%	198,291	2.29%
Primary Metal Products	2.17%	183,082	9.98%	201,356	2.33%
Pulp, Paper or Allied Products	1.57%	132,290	(6.94%)	123,114	1.42%
Waste or Scrap Materials	1.20%	101,566	8.19%	109,889	1.27%
Transportation Equipment	1.08%	91,270	8.97%	99,458	1.15%
Printed Matter	0.29%	24,243	(3.52%)	23,390	0.27%
Coal	0.29%	24,053	5.45%	25,364	0.29%
Machinery	0.28%	23,573	9.91%	25,908	0.30%
Fabricated Metal Products	0.26%	21,808	(3.29%)	21,092	0.24%
Furniture or Fixtures	0.12%	10,153	(10.64%)	9,072	0.10%
Misc Manufacturing Products	0.12%	10,128	7.44%	10,882	0.13%
Fresh Fish or Marine Products	0.07%	6,177	13.68%	7,022	0.08%

Southern Counties Outbound	2007	2007	Growth	2012	2012
Top 20 Commodities (+ Water Freight)	%	Tons	% ►	Tons	%
Nonmetallic Minerals	29.11%	4,352,342	(13.14%)	3,780,461	26.46%
Farm Products	22.03%	3,294,072	(2.18%)	3,222,348	22.56%
Lumber or Wood Products	20.05%	2,997,451	(21.08%)	2,365,573	16.56%
Secondary Freight	12.73%	1,903,133	13.44%	2,158,907	15.11%
Food or Kindred Products	5.97%	892,061	23.19%	1,098,941	7.69%
Waste or Scrap Materials	2.96%	442,744	10.09%	487,400	3.41%
Electrical Equipment	2.45%	365,999	(10.81%)	326,453	2.29%
Clay, Concrete, Glass or Stone	2.23%	333,049	13.10%	376,668	2.64%
Pulp, Paper or Allied Products	1.20%	179,481	1.37%	181,937	1.27%
Fresh Fish or Marine Products	0.28%	42,061	3.95%	43,723	0.31%
Chemicals or Allied Products	0.26%	38,750	191.57%	112,983	0.79%
Transportation Equipment	0.21%	31,743	9.03%	34,609	0.24%
Misc Manufacturing Products	0.18%	27,544	59.88%	44,037	0.31%
Printed Matter	0.10%	14,476	18.51%	17,155	0.12%
Fabricated Metal Products	0.08%	11,313	5.00%	11,879	0.08%
Machinery	0.05%	7,522	6.55%	8,014	0.06%
Rail Intermodal Drayage to Ramp	0.04%	5,407	2.07%	5,519	0.04%
Metallic Ores	0.03%	4,165	(43.73%)	2,344	0.02%
Instrument, Photo Equip, Optical Eq	0.02%	3,273	15.13%	3,769	0.03%
Primary Metal Products	0.01%	1,422	(9.42%)	1,288	0.01%

APPENDIX C: COUNTY CLUSTER FREIGHT FLOWS: 2007 AND 2017 FORECAST

Appendix C contains tables showing freight tonnage flows for 2007 as the base year and a forecast for 2017. Flows shown are formatted the same as the main body of the report. There is a section for each of the county clusters: Northern Counties, Central Counties, and Southern Counties. Flows for each county cluster are subdivided into Inbound and Outbound. Charts depict the top ten commodities for inbound and outbound flows to easily visualize how the commodities will change over the ten year forecast period.

Exhibit C 1: 2007 and 2017 Northern Counties Inbound Tonnage

Northern Counties Inbound Tonnage		2007	2017	Growth	% Growth
Local Freight					
Truck Only	Tonnage & Growth Rate	1,328,884	1,252,608	(76,276)	(5.7%)
Rail Only	Tonnage & Growth Rate	70,960	44,733	(26,227)	(37.0%)
Truck + Rail	Tonnage & Growth Rate	1,399,844	1,297,341	(102,503)	(7.3%)
Directional Freight (to West, East, North or South)					
Truck Only	Tonnage & Growth Rate	2,836,679	2,996,916	160,237	5.6%
Rail Only	Tonnage & Growth Rate	119,400	109,702	(9,698)	(8.1%)
Truck + Rail	Tonnage & Growth Rate	2,956,079	3,106,618	150,539	5.1%
Combined Local and Directional Freight					
Truck Only	Tonnage & Growth Rate	4,165,563	4,249,524	83,961	2.0%
Rail Only	Tonnage & Growth Rate	190,360	154,435	(35,925)	(18.9%)
Truck + Rail	Tonnage & Growth Rate	4,355,923	4,403,959	48,036	1.1%

Exhibit C 2: 2007 and 2017 Northern Counties Inbound Distribution

Northern Counties Inbound Tonnage			Local Freight: Circulates within IPH Counties		Inbound from Western Origins: Routes = I-90, US2, US12, US20		Inbound from Eastern Origins: Routes = I-90, US2, US12, ID200		Inbound from Northern Origins: Routes = US95, US195, US395		Inbound from Southern Origins: Routes = US95, US195, US395		Commodity Total	County %
County	Year	Data	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail		
Stevens County, WA	2007	Tonnage	315,894		1,342,380		47,390		57,572		33,404		1,796,639	41.2%
	2017	Tonnage	330,821		1,323,700		48,012		69,851		38,409		1,810,792	41.1%
		% vs 2007	4.7%		(1.4%)		1.3%		21.3%		15.0%		0.8%	
Bonner County, ID	2007	Tonnage	786,041	70,960	81,130		201,858		22,087		543,801		1,705,877	39.2%
	2017	Tonnage	700,652	44,733	62,972		220,903		24,294		627,329		1,680,882	38.2%
		% vs 2007	(10.9%)	(37.0%)	(22.4%)		9.4%		10.0%		15.4%		(1.5%)	
Boundary County, ID	2007	Tonnage	159,353		9,320	62,080	33,489	17,120	5,444	7,960	78,468	23,280	396,514	9.1%
	2017	Tonnage	145,192		7,514	54,965	37,291	20,465	5,799	6,212	99,947	19,841	397,226	9.0%
		% vs 2007	(8.9%)		(19.4%)	(11.5%)	11.4%	19.5%	6.5%	(22.0%)	27.4%	(14.8%)	0.2%	
Pend Oreille County, WA	2007	Tonnage	43,866		145,126		17,456	5,320	37,829	2,560	9,857		262,014	6.0%
	2017	Tonnage	45,844		140,288		25,021	4,661	43,808	2,586	11,580		273,787	6.2%
		% vs 2007	4.5%		(3.3%)		43.3%	(12.4%)	15.8%	1.0%	17.5%		4.5%	
Ferry County, WA	2007	Tonnage	23,730		119,879	1,080	5,109		41,145		3,935		194,878	4.5%
	2017	Tonnage	30,099		151,120	972	5,792		47,453		5,834		241,271	5.5%
		% vs 2007	26.8%		26.1%	(10.0%)	13.4%		15.3%		48.3%		23.8%	
County Summary	2007	Tonnage	1,328,884	70,960	1,697,835	63,160	305,303	22,440	164,077	10,520	669,464	23,280	4,355,923	100.0%
	2017	Tonnage	1,252,608	44,733	1,685,594	55,937	337,019	25,126	191,205	8,798	783,099	19,841	4,403,959	100.0%
		% vs 2007	(5.7%)	(37.0%)	(0.7%)	(11.4%)	10.4%	12.0%	16.5%	(16.4%)	17.0%	(14.8%)	1.1%	

2007 Truck Freight	2007	Tons %	30.5%	65.1%				
2007 Rail Freight	2007	Tons %	1.6%	2.7%				100.0%
2017 Truck Freight	2017	Tons %	28.4%	68.1%				
2017 Rail Freight	2017	Tons %	1.0%	2.5%				100.0%
2007 Truck + Rail	2007	Tons %	32.1%	40.4%	7.5%	4.0%	15.9%	100.0%
2017 Truck Freight	2017	Tons %	29.5%	39.5%	8.2%	4.5%	18.2%	100.0%

Exhibit C 3: 2007 and 2017 Northern Counties Outbound Tonnage

Northern Counties Outbound Tonnage		2007	2017	Growth	% Growth
Local Freight					
Truck Only	Tonnage & Growth Rate	4,341,656	3,555,376	(786,280)	(18.1%)
Rail Only	Tonnage & Growth Rate	81,440	53,752	(27,688)	(34.0%)
Truck + Rail	Tonnage & Growth Rate	4,423,096	3,609,128	(813,968)	(18.4%)
Directional Freight (to West, East, North or South)					
Truck Only	Tonnage & Growth Rate	5,612,369	5,153,919	(458,450)	(8.2%)
Rail Only	Tonnage & Growth Rate	1,866,586	1,734,192	(132,394)	(7.1%)
Truck + Rail	Tonnage & Growth Rate	7,478,955	6,888,112	(590,844)	(7.9%)
Combined Local and Directional Freight					
Truck Only	Tonnage & Growth Rate	9,954,025	8,709,295	(1,244,730)	(12.5%)
Rail Only	Tonnage & Growth Rate	1,948,026	1,787,945	(160,081)	(8.2%)
Truck + Rail	Tonnage & Growth Rate	11,902,051	10,497,240	(1,404,812)	(11.8%)

Exhibit C 4: 2007 and 2017 Northern Counties Outbound Distribution

Northern Counties Outbound Tonnage			Local Freight: Circulates within IPH Counties		Outbound to Western Destinations: Routes = I-90, US2, US12, US20		Outbound to Eastern Destinations: Routes = I-90, US2, US12, ID200		Outbound to Northern Destinations: Routes = US95, US195, US395		Outbound to Southern Destinations: Routes = US95, US195, US395		Commodity Total	County %
County	Year	Data	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail		
Bonner County, ID	2007	Tonnage	3,125,780	66,880	148,983	11,400	562,625	196,360	10,011		819,734	112,960	5,054,734	42.5%
	2017	Tonnage	2,670,953	43,535	148,228	6,126	621,036	183,091	10,764		456,505	87,230	4,227,467	40.3%
		% vs 2007	(14.6%)	(34.9%)	(0.5%)	(46.3%)	10.4%	(6.8%)	7.5%		(44.3%)	(22.8%)	(16.4%)	
Stevens County, WA	2007	Tonnage	698,031		1,581,893	299,728	167,845	213,120	170,156	75,116	206,870	16,000	3,428,758	28.8%
	2017	Tonnage	498,297		1,057,444	336,652	144,680	180,471	192,244	86,183	190,020	13,206	2,699,198	25.7%
		% vs 2007	(28.6%)		(33.2%)	12.3%	(13.8%)	(15.3%)	13.0%	14.7%	(8.1%)	(17.5%)	(21.3%)	
Boundary County, ID	2007	Tonnage	218,713	14,560	51,739	199,782	266,729	231,560	5,559	63,120	702,336	377,680	2,131,778	17.9%
	2017	Tonnage	152,312	10,218	57,911	187,388	283,845	206,584	6,047	82,913	483,761	303,586	1,774,564	16.9%
		% vs 2007	(30.4%)	(29.8%)	11.9%	(6.2%)	6.4%	(10.8%)	8.8%	31.4%	(31.1%)	(19.6%)	(16.8%)	
Pend Oreille County, WA	2007	Tonnage	266,919		421,193		21,810	27,400	11,221		33,126	42,360	824,030	6.9%
	2017	Tonnage	153,382		411,483		19,443	24,168	11,665		32,472	36,594	689,208	6.6%
		% vs 2007	(42.5%)		(2.3%)		(10.9%)	(11.8%)	4.0%		(2.0%)	(13.6%)	(16.4%)	
Ferry County, WA	2007	Tonnage	32,213		363,535		23,849		6,850		36,304		462,750	3.9%
	2017	Tonnage	80,432		882,120		74,002		6,803		63,446		1,106,802	10.5%
		% vs 2007	149.7%		142.7%		210.3%		(0.7%)		74.8%		139.2%	
County Summary	2007	Tonnage	4,341,656	81,440	2,567,343	510,910	1,042,857	668,440	203,798	138,236	1,798,370	549,000	11,902,051	100.0%
	2017	Tonnage	3,555,376	53,752	2,557,187	530,165	1,143,006	594,315	227,522	169,097	1,226,205	440,616	10,497,240	100.0%
		% vs 2007	(18.1%)	(34.0%)	(0.4%)	3.8%	9.6%	(11.1%)	11.6%	22.3%	(31.8%)	(19.7%)	(11.8%)	

2007 Truck Freight	2007	Tons %	36.5%	47.2%						100.0%
2007 Rail Freight	2007	Tons %	0.7%	15.7%						
2017 Truck Freight	2017	Tons %	33.9%	49.1%						
2017 Rail Freight	2017	Tons %	0.5%	16.5%						100.0%
2007 Truck + Rail	2007	Tons %	37.2%	25.9%	14.4%	2.9%	19.7%			100.0%
2017 Truck Freight	2017	Tons %	34.4%	29.4%	16.6%	3.8%	15.9%			100.0%

Exhibit C 5: 2007 and 2017 Northern Counties Top Ten Inbound Commodities

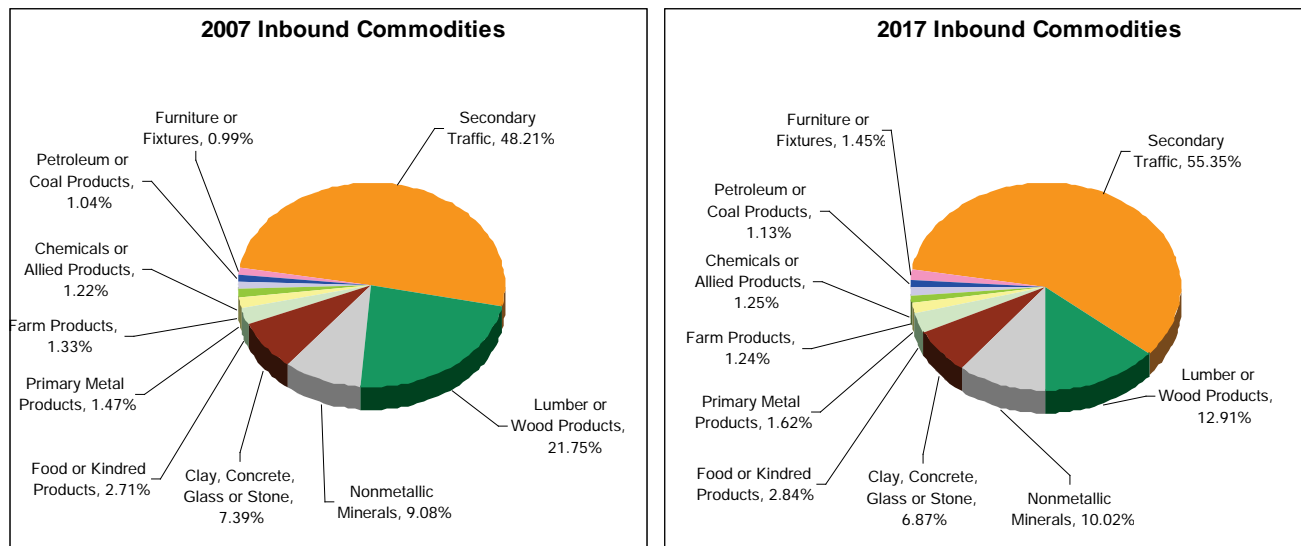


Exhibit C 6: 2007 and 2017 Northern Counties Top Ten Outbound Commodities

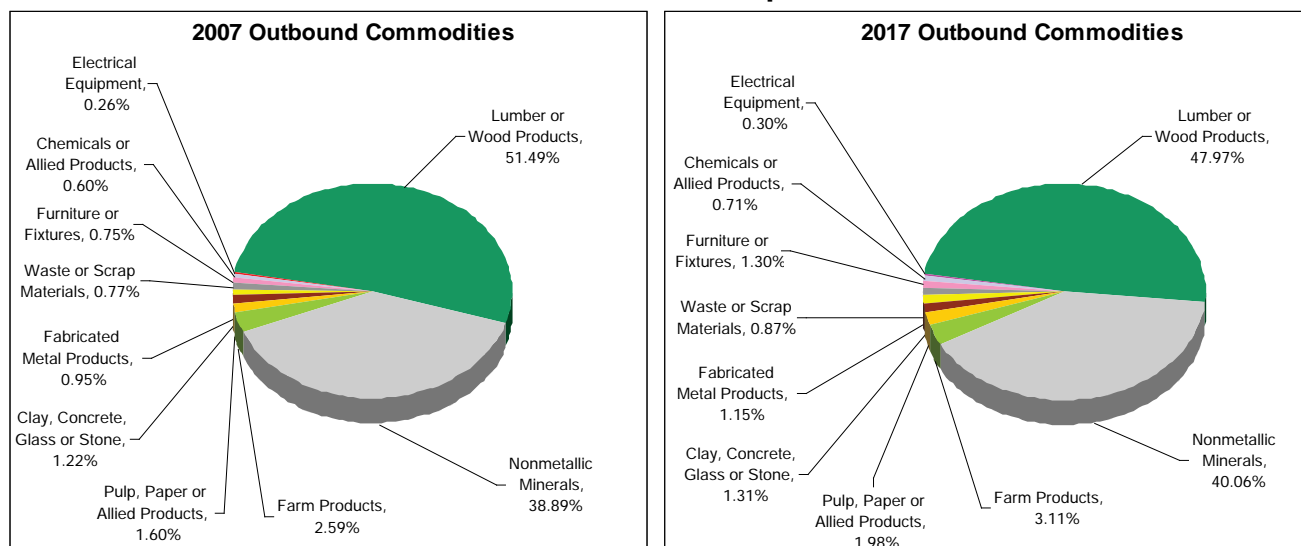


Exhibit C 7: 2007 and 2017 Northern Counties Commodities Forecast Changes

Northern Counties Inbound						Northern Counties Outbound					
Top 20 Commodities	2007 %	2007 Tons	Growth % ►	2017 Tons	2017 %	Top 20 Commodities	2007 %	2007 Tons	Growth % ►	2017 Tons	2017 %
Secondary Freight	48.21%	2,099,804	16.10%	2,437,801	55.35%	Lumber or Wood Products	51.49%	6,128,070	(17.82%)	5,035,838	47.97%
Lumber or Wood Products	21.75%	947,405	(40.00%)	568,442	12.91%	Nonmetallic Minerals	38.89%	4,628,855	(9.14%)	4,205,699	40.06%
Nonmetallic Minerals	9.08%	395,413	11.64%	441,455	10.02%	Farm Products	2.59%	308,288	5.73%	325,953	3.11%
Clay, Concrete, Glass or Stone	7.39%	321,711	(5.92%)	302,675	6.87%	Pulp, Paper or Allied Products	1.60%	189,859	9.38%	207,666	1.98%
Food or Kindred Products	2.71%	118,222	5.71%	124,972	2.84%	Clay, Concrete, Glass or Stone	1.22%	145,315	(5.43%)	137,430	1.31%
Primary Metal Products	1.47%	64,021	11.39%	71,316	1.62%	Fabricated Metal Products	0.95%	113,431	6.46%	120,756	1.15%
Farm Products	1.33%	57,765	(5.75%)	54,443	1.24%	Waste or Scrap Materials	0.77%	91,154	0.18%	91,322	0.87%
Chemicals or Allied Products	1.22%	52,984	4.08%	55,147	1.25%	Furniture or Fixtures	0.75%	89,048	52.72%	135,990	1.30%
Petroleum or Coal Products	1.04%	45,151	10.60%	49,936	1.13%	Chemicals or Allied Products	0.60%	71,049	4.24%	74,063	0.71%
Furniture or Fixtures	0.99%	42,978	48.26%	63,717	1.45%	Electrical Equipment	0.26%	30,788	3.58%	31,891	0.30%
Pulp, Paper or Allied Products	0.98%	42,641	1.53%	43,295	0.98%	Food or Kindred Products	0.19%	22,932	10.58%	25,358	0.24%
Rail Intermodal Drayage from Ramp	0.63%	27,403	(6.15%)	25,718	0.58%	Secondary Freight	0.15%	17,861	92.01%	34,296	0.33%
Electrical Equipment	0.59%	25,847	1.24%	26,168	0.59%	Primary Metal Products	0.15%	17,561	(48.22%)	9,093	0.09%
Fabricated Metal Products	0.49%	21,314	10.66%	23,586	0.54%	Transportation Equipment	0.12%	14,682	44.90%	21,274	0.20%
Transportation Equipment	0.47%	20,557	19.80%	24,627	0.56%	Rail Intermodal Drayage to Ramp	0.09%	11,184	20.61%	13,488	0.13%
Waste or Scrap Materials	0.44%	19,017	17.51%	22,348	0.51%	Rubber or Misc Plastics	0.07%	7,946	8.98%	8,660	0.08%
Coal	0.39%	17,201	18.27%	20,344	0.46%	Apparel or Related Products	0.03%	3,165	101.14%	6,366	0.06%
Rubber or Misc Plastics	0.24%	10,290	13.47%	11,676	0.27%	Fresh Fish or Marine Products	0.03%	2,986	13.96%	3,402	0.03%
Machinery	0.20%	8,850	48.13%	13,109	0.30%	Metallic Ores	0.02%	2,902	(37.17%)	1,823	0.02%
Misc Manufacturing Products	0.17%	7,288	72.83%	12,596	0.29%	Printed Matter	0.02%	2,188	67.05%	3,656	0.03%

Exhibit C 8: 2007 and 2017 Central Counties Inbound Tonnage

Central Counties Inbound Tonnage		2007	2017	Growth	% Growth
Local Freight					
Truck Only	Tonnage & Growth Rate	8,868,718	7,658,928	(1,209,790)	(13.6%)
Rail Only	Tonnage & Growth Rate	22,044	17,722	(4,322)	(19.6%)
Truck + Rail	Tonnage & Growth Rate	8,890,762	7,676,650	(1,214,112)	(13.7%)
Directional Freight (to West, East, North or South)					
Truck Only	Tonnage & Growth Rate	12,897,378	12,918,293	20,915	0.2%
Rail Only	Tonnage & Growth Rate	4,811,408	5,131,603	320,195	6.7%
Truck + Rail	Tonnage & Growth Rate	17,708,786	18,049,896	341,110	1.9%
Combined Local and Directional Freight					
Truck Only	Tonnage & Growth Rate	21,766,096	20,577,221	(1,188,875)	(5.5%)
Rail Only	Tonnage & Growth Rate	4,833,452	5,149,326	315,874	6.5%
Truck + Rail	Tonnage & Growth Rate	26,599,548	25,726,547	(873,001)	(3.3%)

Exhibit C 9: 2007 and 2017 Central Counties Inbound Distribution

Central Counties Inbound Tonnage			Local Freight: Circulates within IPH Counties		Inbound from Western Origins: Routes = I-90, US2, US12, US20		Inbound from Eastern Origins: Routes = I-90, US2, US12, ID200		Inbound from Northern Origins: Routes = US95, US195, US395		Inbound from Southern Origins: Routes = US95, US195, US395		Commodity Total	County %
County	Year	Data	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail		
Spokane County, WA	2007	Tonnage	6,703,832	18,084	8,403,410	401,916	962,855	3,498,236	148,804	498,264	525,569	60,240	21,221,210	79.8%
	2017	Tonnage	5,388,819	15,109	7,816,605	356,760	994,701	3,844,780	180,411	514,447	573,908	60,737	19,746,277	76.8%
		% vs 2007	(19.6%)	(16.4%)	(7.0%)	(11.2%)	3.3%	9.9%	21.2%	3.2%	9.2%	0.8%	(7.0%)	
Kootenai County, ID	2007	Tonnage	1,234,365	3,960	525,056	3,280	379,073	58,308	44,826	36,600	604,640	18,840	2,908,948	10.9%
	2017	Tonnage	1,101,535	2,613	504,888	1,376	421,235	63,542	56,722	43,378	698,508	16,237	2,910,033	11.3%
		% vs 2007	(10.8%)	(34.0%)	(3.8%)	(58.1%)	11.1%	9.0%	26.5%	18.5%	15.5%	(13.8%)	0.0%	
Lincoln County, WA	2007	Tonnage	469,949		392,457		68,301	3,920	33,350	3,160	78,913		1,050,050	3.9%
	2017	Tonnage	645,341		619,480		116,927	5,755	38,963	3,947	97,489		1,527,901	5.9%
		% vs 2007	37.3%		57.8%		71.2%	46.8%	16.8%	24.9%	23.5%		45.5%	
Adams County, WA	2007	Tonnage	244,572		503,432	4,000	16,908	145,604	34,905	73,400	22,646	5,640	1,051,107	4.0%
	2017	Tonnage	213,882		501,778	4,203	23,541	119,764	40,662	93,505	23,783	3,173	1,024,291	4.0%
		% vs 2007	(12.5%)		(0.3%)	5.1%	39.2%	(17.7%)	16.5%	27.4%	5.0%	(43.7%)	(2.6%)	
Shoshone County, ID	2007	Tonnage	216,000		33,097		62,467		4,843		51,826		368,233	1.4%
	2017	Tonnage	309,350		38,678		96,813		5,147		68,057		518,044	2.0%
		% vs 2007	43.2%		16.9%		55.0%		6.3%		31.3%		40.7%	
County Summary	2007	Tonnage	8,868,718	22,044	9,857,453	409,196	1,489,604	3,706,068	266,728	611,424	1,283,593	84,720	26,599,548	100.0%
	2017	Tonnage	7,658,928	17,722	9,481,427	362,340	1,653,217	4,033,841	321,905	655,276	1,461,744	80,147	25,726,547	100.0%
		% vs 2007	(13.6%)	(19.6%)	(3.8%)	(11.5%)	11.0%	8.8%	20.7%	7.2%	13.9%	(5.4%)	(3.3%)	

2007 Truck Freight	2007	Tons %	33.3%	48.5%						100.0%
2007 Rail Freight	2007	Tons %	0.1%	18.1%						
2017 Truck Freight	2017	Tons %	29.8%	50.2%						
2017 Rail Freight	2017	Tons %	0.1%	19.9%						100.0%
2007 Truck + Rail	2007	Tons %	33.4%	38.6%	19.5%	3.3%	5.1%			100.0%
2017 Truck Freight	2017	Tons %	29.8%	38.3%	22.1%	3.8%	6.0%			100.0%

Exhibit C 10: 2007 and 2017 Central Counties Outbound Tonnage

Central Counties Outbound Tonnage		2007	2017	Growth	% Growth
Local Freight					
Truck Only	Tonnage & Growth Rate	4,372,966	3,716,961	(656,005)	(15.0%)
Rail Only	Tonnage & Growth Rate	6,256	5,914	(342)	(5.5%)
Truck + Rail	Tonnage & Growth Rate	4,379,222	3,722,875	(656,347)	(15.0%)
Directional Freight (to West, East, North or South)					
Truck Only	Tonnage & Growth Rate	17,931,927	16,743,840	(1,188,087)	(6.6%)
Rail Only	Tonnage & Growth Rate	6,418,537	5,395,133	(1,023,404)	(15.9%)
Truck + Rail	Tonnage & Growth Rate	24,350,464	22,138,973	(2,211,491)	(9.1%)
Combined Local and Directional Freight					
Truck Only	Tonnage & Growth Rate	22,304,893	20,460,802	(1,844,091)	(8.3%)
Rail Only	Tonnage & Growth Rate	6,424,793	5,401,047	(1,023,746)	(15.9%)
Truck + Rail	Tonnage & Growth Rate	28,729,686	25,861,849	(2,867,838)	(10.0%)

Exhibit C 11: 2007 and 2017 Central Counties Outbound Distribution

Central Counties Outbound Tonnage			Local Freight: Circulates within IPH Counties		Outbound to Western Destinations: Routes = I-90, US2, US12, US20		Outbound to Eastern Destinations: Routes = I-90, US2, US12, ID200		Outbound to Northern Destinations: Routes = US95, US195, US395		Outbound to Southern Destinations: Routes = US95, US195, US395		Commodity Total	County %
County	Year	Data	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail		
Spokane County, WA	2007	Tonnage	1,672,550	4,496	8,843,907	3,300,477	1,004,653	374,932	287,471	5,600	943,720	80,056	16,517,862	57.5%
	2017	Tonnage	1,554,568	4,012	7,871,726	3,356,030	979,628	344,192	361,324	7,249	911,354	73,363	15,463,444	59.8%
		% vs 2007	(7.1%)	(10.8%)	(11.0%)	1.7%	(2.5%)	(8.2%)	25.7%	29.4%	(3.4%)	(8.4%)	(6.4%)	
Kootenai County, ID	2007	Tonnage	2,291,415		664,034	6,600	863,336	242,400	59,181		1,967,748	82,800	6,177,513	21.5%
	2017	Tonnage	1,867,154		712,260	7,513	961,797	220,433	76,447		2,074,657	65,860	5,986,122	23.1%
		% vs 2007	(18.5%)		7.3%	13.8%	11.4%	(9.1%)	29.2%		5.4%	(20.5%)	(3.1%)	
Adams County, WA	2007	Tonnage	175,293	880	297,272	1,011,116	57,175	147,760	87,522		1,044,816	3,960	2,825,795	9.8%
	2017	Tonnage	118,550	951	252,330	531,506	46,698	124,580	99,100		881,228	4,161	2,059,104	8.0%
		% vs 2007	(32.4%)	8.1%	(15.1%)	(47.4%)	(18.3%)	(15.7%)	13.2%		(15.7%)	5.1%	(27.1%)	
Lincoln County, WA	2007	Tonnage	175,293	880	297,272	1,011,116	57,175	147,760	87,522		1,044,816	3,960	2,825,795	9.8%
	2017	Tonnage	118,550	951	252,330	531,506	46,698	124,580	99,100		881,228	4,161	2,059,104	8.0%
		% vs 2007	(32.4%)	8.1%	(15.1%)	(47.4%)	(18.3%)	(15.7%)	13.2%		(15.7%)	5.1%	(27.1%)	
Shoshone County, ID	2007	Tonnage	58,416		17,176		189,996		8,303		108,830		382,721	1.3%
	2017	Tonnage	58,139		16,105		147,543		10,233		62,055		294,075	1.1%
		% vs 2007	(0.5%)		(6.2%)		(22.3%)		23.2%		(43.0%)		(23.2%)	
County Summary	2007	Tonnage	4,372,966	6,256	10,119,662	5,329,309	2,172,336	912,852	529,999	5,600	5,109,930	170,776	28,729,686	100.0%
	2017	Tonnage	3,716,961	5,914	9,104,750	4,426,554	2,182,364	813,784	646,203	7,249	4,810,522	147,546	25,861,849	100.0%
		% vs 2007	(15.0%)	(5.5%)	(10.0%)	(16.9%)	0.5%	(10.9%)	21.9%	29.4%	(5.9%)	(13.6%)	(10.0%)	

2007 Truck Freight	2007	Tons %	15.2%	62.4%						100.0%
2007 Rail Freight	2007	Tons %	0.0%	22.3%						
2017 Truck Freight	2017	Tons %	14.4%	64.7%						
2017 Rail Freight	2017	Tons %	0.0%	20.9%						100.0%
2007 Truck + Rail	2007	Tons %	15.2%	53.8%	10.7%	1.9%	18.4%			100.0%
2017 Truck Freight	2017	Tons %	14.4%	52.3%	11.6%	2.5%	19.2%			100.0%

Exhibit C 12: 2007 and 2017 Central Counties Top Ten Inbound Commodities

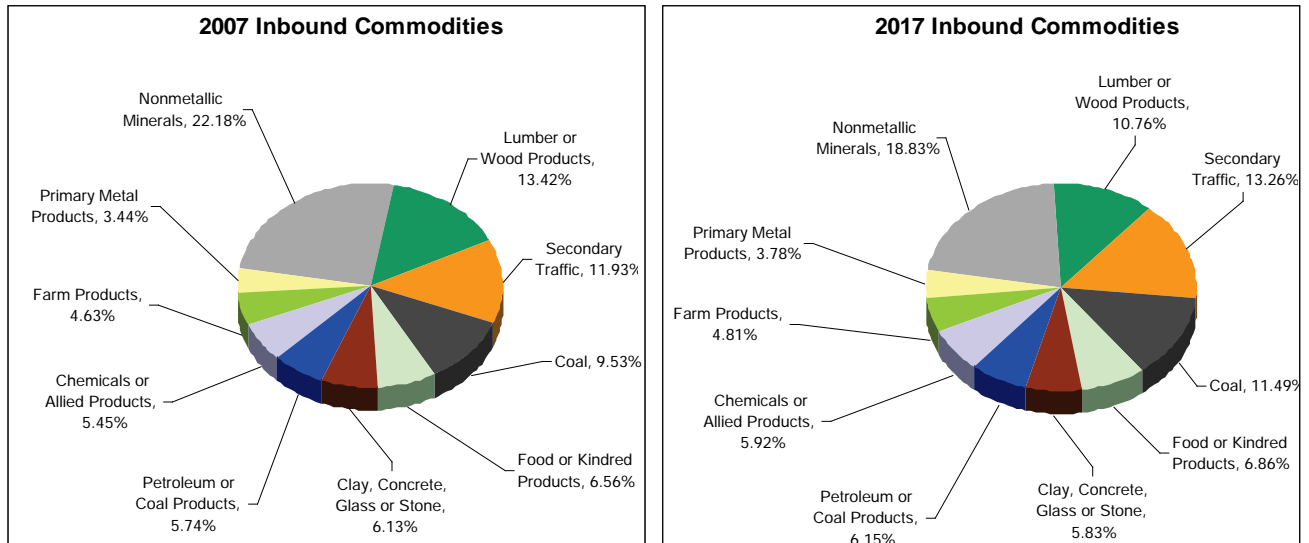


Exhibit C 13: 2007 and 2017 Central Counties Top Ten Outbound Commodities

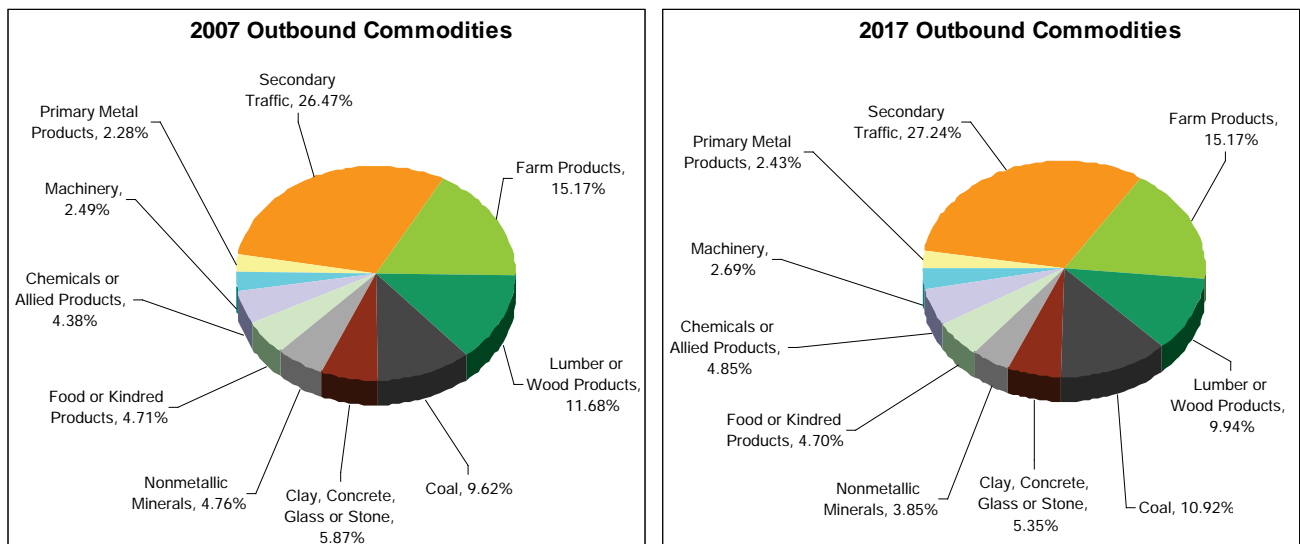


Exhibit C 14: 2007 and 2017 Central Counties Commodities Forecast Changes

Central Counties Inbound	2007	2007	Growth	2017	2017
Top 20 Commodities	%	Tons	% ►	Tons	%
Nonmetallic Minerals	22.18%	5,898,736	(17.89%)	4,843,591	18.83%
Lumber or Wood Products	13.42%	3,570,781	(22.47%)	2,768,578	10.76%
Secondary Freight	11.93%	3,173,717	7.46%	3,410,334	13.26%
Coal	9.53%	2,534,905	16.57%	2,955,010	11.49%
Food or Kindred Products	6.56%	1,744,637	1.15%	1,764,623	6.86%
Clay, Concrete, Glass or Stone	6.13%	1,630,992	(7.99%)	1,500,634	5.83%
Petroleum or Coal Products	5.74%	1,526,093	3.70%	1,582,573	6.15%
Chemicals or Allied Products	5.45%	1,450,293	4.94%	1,522,002	5.92%
Farm Products	4.63%	1,231,331	0.48%	1,237,190	4.81%
Primary Metal Products	3.44%	915,278	6.31%	972,999	3.78%
Transportation Equipment	1.53%	407,078	37.64%	560,287	2.18%
Fabricated Metal Products	1.31%	349,519	(2.83%)	339,623	1.32%
Pulp, Paper or Allied Products	1.17%	311,778	(2.73%)	303,267	1.18%
Rail Intermodal Drayage from Ramp	1.02%	272,237	(6.14%)	255,510	0.99%
Electrical Equipment	0.98%	259,496	13.89%	295,541	1.15%
Rail Intermodal Drayage to Ramp	0.79%	211,332	20.61%	254,878	0.99%
Machinery	0.73%	192,885	17.98%	227,568	0.88%
Rubber or Misc Plastics	0.55%	145,185	5.60%	153,311	0.60%
Misc Mixed Shipments	0.51%	135,760	(6.10%)	127,474	0.50%
Waste or Scrap Materials	0.40%	105,101	27.61%	134,118	0.52%

Central Counties Outbound	2007	2007	Growth	2017	2017
Top 20 Commodities	%	Tons	% ►	Tons	%
Secondary Freight	26.47%	7,109,401	(6.87%)	6,621,252	27.24%
Farm Products	15.17%	4,075,401	(9.53%)	3,687,198	15.17%
Lumber or Wood Products	11.68%	3,136,953	(23.00%)	2,415,372	9.94%
Coal	9.62%	2,583,149	2.72%	2,653,434	10.92%
Clay, Concrete, Glass or Stone	5.87%	1,575,272	(17.37%)	1,301,693	5.35%
Nonmetallic Minerals	4.76%	1,277,532	(26.69%)	936,605	3.85%
Food or Kindred Products	4.71%	1,265,232	(9.75%)	1,141,878	4.70%
Chemicals or Allied Products	4.38%	1,175,388	0.22%	1,178,017	4.85%
Machinery	2.49%	669,599	(2.17%)	655,066	2.69%
Primary Metal Products	2.28%	611,628	(3.37%)	590,989	2.43%
Fabricated Metal Products	2.11%	567,492	(8.64%)	518,474	2.13%
Transportation Equipment	1.64%	439,877	14.60%	504,105	2.07%
Electrical Equipment	1.34%	358,834	(34.96%)	233,399	0.96%
Petroleum or Coal Products	1.29%	346,946	(9.78%)	313,018	1.29%
Pulp, Paper or Allied Products	1.18%	316,925	(11.11%)	281,716	1.16%
Rail Intermodal Drayage from Ramp	1.18%	316,179	(14.94%)	268,945	1.11%
Waste or Scrap Materials	1.16%	312,885	1.49%	317,556	1.31%
Furniture or Fixtures	0.73%	196,923	0.70%	198,293	0.82%
Rail Intermodal Drayage to Ramp	0.38%	101,407	1.99%	103,421	0.43%
Rubber or Misc Plastics	0.37%	99,631	(1.15%)	98,481	0.41%

Exhibit C 15: 2007 and 2017 Southern Counties Inbound Tonnage

Southern Counties Inbound Tonnage		2007	2017	Growth	% Growth
Local Freight					
Truck Only	Tonnage & Growth Rate	3,532,327	4,846,167	1,313,840	37.2%
Rail Only	Tonnage & Growth Rate	5,016	5,815	799	15.9%
Truck + Rail	Tonnage & Growth Rate	3,537,343	4,851,982	1,314,639	37.2%
Directional Freight (to West, East, North or South)					
Truck Only	Tonnage & Growth Rate	2,934,598	4,419,367	1,484,769	50.6%
Rail Only	Tonnage & Growth Rate	432,208	545,920	113,712	26.3%
Truck + Rail	Tonnage & Growth Rate	3,366,806	4,965,287	1,598,481	47.5%
Combined Local and Directional Freight					
Truck Only	Tonnage & Growth Rate	6,466,925	9,265,534	2,798,609	43.3%
Rail Only	Tonnage & Growth Rate	437,224	551,735	114,511	26.2%
Truck + Rail	Tonnage & Growth Rate	6,904,149	9,817,269	2,913,120	42.2%

Exhibit C 16: 2007 and 2017 Southern Counties Inbound Distribution

Southern Counties Inbound Tonnage			Local Freight: Circulates within IPH Counties		Inbound from Western Origins: Routes = I-90, US2, US12, US20		Inbound from Eastern Origins: Routes = I-90, US2, US12, ID200		Inbound from Northern Origins: Routes = US95, US195, US395		Inbound from Southern Origins: Routes = US95, US195, US395		Commodity Total	County %
County	Year	Data	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail		
Nez Perce County, ID	2007	Tonnage	1,118,226		121,334	84,640	276,841	88,328	14,250	85,320	438,423	12,440	2,239,802	32.4%
	2017	Tonnage	1,341,228		126,875	102,465	355,407	86,638	20,644	103,311	659,794	14,268	2,810,630	28.6%
		% vs 2007	19.9%		4.6%	21.1%	28.4%	(1.9%)	44.9%	21.1%	50.5%	14.7%	25.5%	
Whitman County, WA	2007	Tonnage	675,425	3,120	571,510	7,960	26,333	22,600	52,578	23,120	25,807		1,408,454	20.4%
	2017	Tonnage	888,788	3,608	849,174	6,816	49,576	26,248	78,399	37,199	58,615		1,998,423	20.4%
		% vs 2007	31.6%	15.6%	48.6%	(14.4%)	88.3%	16.1%	49.1%	60.9%	127.1%		41.9%	
Asotin County, WA	2007	Tonnage	731,238		153,019		16,143		35,755		9,064		945,219	13.7%
	2017	Tonnage	1,375,928		164,803		22,380		55,400		15,977		1,634,488	16.6%
		% vs 2007	88.2%		7.7%		38.6%		54.9%		76.3%		72.9%	
Latah County, ID	2007	Tonnage	390,477		121,933		142,110		8,152		251,361		914,032	13.2%
	2017	Tonnage	410,892		140,456		248,073		11,209		511,404		1,322,034	13.5%
		% vs 2007	5.2%		15.2%		74.6%		37.5%		103.5%		44.6%	
Clearwater County, ID	2007	Tonnage	244,104		23,160	1,840	62,268		5,606		153,526		490,505	7.1%
	2017	Tonnage	375,078		23,682	2,142	100,030		7,444		260,906		769,282	7.8%
		% vs 2007	53.7%		2.3%	16.4%	60.6%		32.8%		69.9%		56.8%	
Benewah County, ID	2007	Tonnage	302,385	1,896	19,113		59,725		7,081		142,328		532,529	7.7%
	2017	Tonnage	356,296	2,207	13,965		72,246		9,805		205,903		660,423	6.7%
		% vs 2007	17.8%	16.4%	(26.9%)		21.0%		38.5%		44.7%		24.0%	
Garfield County, WA	2007	Tonnage	491		6,805		329	32,240	26,344	52,960	182	15,600	134,952	2.0%
	2017	Tonnage	2,182		20,037		691	45,004	41,962	86,110	571	30,234	226,790	2.3%
		% vs 2007	344.0%		194.4%		110.0%	39.6%	59.3%	62.6%	214.0%	93.8%	68.1%	

Southern Counties Inbound Tonnage (continued)			Local Freight: Circulates within IPH Counties		Inbound from Western Origins: Routes = I-90, US2, US12, US20		Inbound from Eastern Origins: Routes = I-90, US2, US12, ID200		Inbound from Northern Origins: Routes = US95, US195, US395		Inbound from Southern Origins: Routes = US95, US195, US395		Commodity Total	County %
County	Year	Data	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail		
Lewis County, ID	2007	Tonnage	51,913		3,442		28,989		6,635	5,160	29,781		125,919	1.8%
	2017	Tonnage	67,621		7,082		63,838		8,735	5,485	72,557		225,318	2.3%
		% vs 2007	30.3%		105.8%		120.2%		31.6%	6.3%	143.6%		78.9%	
Columbia County, WA	2007	Tonnage	18,068		52,395		4,884		33,420		3,969		112,737	1.6%
	2017	Tonnage	28,154		68,450		12,501		53,291		7,486		169,882	1.7%
		% vs 2007	55.8%		30.6%		156.0%		59.5%		88.6%		50.7%	
County Summary	2007	Tonnage	3,532,327	5,016	1,072,711	94,440	617,622	143,168	189,822	166,560	1,054,442	28,040	6,904,149	100.0%
	2017	Tonnage	4,846,167	5,815	1,414,524	111,423	924,741	157,890	286,889	232,104	1,793,213	44,502	9,817,269	100.0%
		% vs 2007	37.2%	15.9%	31.9%	18.0%	49.7%	10.3%	51.1%	39.4%	70.1%	58.7%	42.2%	

2007 Truck Freight	2007	Tons %	51.2%		42.5%					100.0%
2007 Rail Freight	2007	Tons %		0.1%	6.3%					
2017 Truck Freight	2027	Tons %	49.4%		45.0%					100.0%
2017 Rail Freight	2027	Tons %		0.1%	5.6%					
2007 Truck + Rail	2007	Tons %	51.2%		16.9%	11.0%	5.2%		15.7%	100.0%
2027 Truck + Rail	2027	Tons %	49.4%		15.5%	11.0%	5.3%		18.7%	100.0%

Exhibit C 17: 2007 and 2017 Southern Counties Outbound Tonnage

Southern Counties Outbound Tonnage		2007	2017	Growth	% Growth
Local Freight					
Truck Only	Tonnage & Growth Rate	4,862,539	6,883,240	2,020,702	41.6%
Rail Only	Tonnage & Growth Rate	3,800	2,654	(1,146)	(30.2%)
Truck + Rail	Tonnage & Growth Rate	4,866,339	6,885,894	2,019,555	41.5%
Directional Freight (to West, East, North or South)					
Truck Only	Tonnage & Growth Rate	6,532,864	9,311,771	2,778,907	42.5%
Rail Only	Tonnage & Growth Rate	492,712	377,670	(115,042)	(23.3%)
Truck + Rail	Tonnage & Growth Rate	7,025,576	9,689,441	2,663,866	37.9%
Combined Local and Directional Freight					
Truck Only	Tonnage & Growth Rate	11,395,402	16,195,011	4,799,609	42.1%
Rail Only	Tonnage & Growth Rate	496,512	380,324	(116,188)	(23.4%)
Truck + Rail	Tonnage & Growth Rate	11,891,914	16,575,335	4,683,421	39.4%

Exhibit C 18: 2007 and 2017 Southern Counties Outbound Distribution

Southern Counties Outbound Tonnage			Local Freight: Circulates within IPH Counties		Outbound to Western Destinations: Routes = I-90, US2, US12, US20		Outbound to Eastern Destinations: Routes = I-90, US2, US12, ID200		Outbound to Northern Destinations: Routes = US95, US195, US395		Outbound to Southern Destinations: Routes = US95, US195, US395		Commodity Total	County %
County	Year	Data	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail		
Nez Perce County, ID	2007	Tonnage	2,069,127		287,991	34,120	787,416	194,160	20,461		1,961,931	72,000	5,427,206	45.6%
	2017	Tonnage	2,467,904		478,621	39,757	795,556	165,956	29,313		2,249,371	62,489	6,288,968	37.9%
		% vs 2007	19.3%		66.2%	16.5%	1.0%	(14.5%)	43.3%		14.7%	(13.2%)	15.9%	
Whitman County, WA	2007	Tonnage	723,642		255,846	43,552	169,394	1,920	40,103		182,741		1,417,199	11.9%
	2017	Tonnage	796,076		273,568	18,032	169,515	1,363	56,794		225,555		1,540,903	9.3%
		% vs 2007	10.0%		6.9%	(58.6%)	0.1%	(29.0%)	41.6%		23.4%		8.7%	
Asotin County, WA	2007	Tonnage	170,099		520,987		31,299		12,407		44,226		779,018	6.6%
	2017	Tonnage	918,378		2,752,121		86,269		22,817		181,235		3,960,819	23.9%
		% vs 2007	439.9%		428.3%		175.6%		83.9%		309.8%		408.4%	
Latah County, ID	2007	Tonnage	664,561		46,457		100,352	28,760	4,153		173,310	3,600	1,021,193	8.6%
	2017	Tonnage	1,266,296		67,090		272,973	18,665	5,668		129,917	2,257	1,762,867	10.6%
		% vs 2007	90.5%		44.4%		172.0%	(35.1%)	36.5%		(25.0%)	(37.3%)	72.6%	
Clearwater County, ID	2007	Tonnage	391,256		62,451		57,792	3,560	3,066		209,517	2,920	730,562	6.1%
	2017	Tonnage	355,493		52,231		35,109	3,556	3,607		80,080	3,138	533,213	3.2%
		% vs 2007	(9.1%)		(16.4%)		(39.3%)	(0.1%)	17.6%		(61.8%)	7.5%	(27.0%)	
Benewah County, ID	2007	Tonnage	654,388	3,800	69,464		629,686	59,680	6,095		424,874	30,600	1,878,586	15.8%
	2017	Tonnage	851,580	2,654	72,186		578,961	37,811	7,102		331,664	16,589	1,898,547	11.5%
		% vs 2007	30.1%	(30.2%)	3.9%		(8.1%)	(36.6%)	16.5%		(21.9%)	(45.8%)	1.1%	
Garfield County, WA	2007	Tonnage	52,507		8,586		6,380		5,561		9,337		82,371	0.7%
	2017	Tonnage	58,799		8,622		27,790		7,643		8,678		111,532	0.7%
		% vs 2007	12.0%		0.4%		335.6%		37.4%		(7.1%)		35.4%	

Southern Counties Outbound Tonnage (continued)			Local Freight: Circulates within IPH Counties		Outbound to Western Destinations: Routes = I-90, US2, US12, US20		Outbound to Eastern Destinations: Routes = I-90, US2, US 12, ID200		Outbound to Northern Destinations: Routes = US95, US195, US395		Outbound to Southern Destinations: Routes = US95, US195, US395		Commodity Total	County %
County	Year	Data	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail		
Lewis County, ID	2007	Tonnage	99,498		17,427		57,981	6,800	1,477		108,330	7,600	299,113	2.5%
	2017	Tonnage	117,441		5,960		26,324	2,733	1,814		58,217	1,227	213,716	1.3%
		% vs 2007	18.0%		(65.8%)		(54.6%)	(59.8%)	22.8%		(46.3%)	(83.9%)	(28.6%)	
Columbia County, WA	2007	Tonnage	37,460		194,335		130	3,440	8,314		12,988		256,667	2.2%
	2017	Tonnage	51,275		184,106		121	4,096	11,429		13,743		264,770	1.6%
		% vs 2007	36.9%		(5.3%)		(6.9%)	19.1%	37.5%		5.8%		3.2%	
County Summary	2007	Tonnage	4,862,539	3,800	1,463,544	77,672	1,840,430	298,320	101,636		3,127,254	116,720	11,891,914	100.0%
	2017	Tonnage	6,883,240	2,654	3,894,506	57,789	1,992,619	234,180	146,187		3,278,459	85,700	16,575,335	100.0%
		% vs 2007	41.6%	(30.2%)	166.1%	(25.6%)	8.3%	(21.5%)	43.8%		4.8%	(26.6%)	39.4%	

2007 Truck Freight	2007	Tons %	40.9%		54.9%					100.0%
2007 Rail Freight	2007	Tons %		0.0%	4.1%					
2017 Truck Freight	2027	Tons %	41.5%		56.2%					100.0%
2017 Rail Freight	2027	Tons %		0.0%	2.3%					
2007 Truck + Rail	2007	Tons %	40.9%		13.0%	18.0%	0.9%	27.3%		100.0%
2027 Truck + Rail	2027	Tons %	41.5%		23.8%	13.4%	0.9%	20.3%		100.0%

Exhibit C 19: 2007 and 2017 Southern Counties Top Ten Inbound Commodities (no water transport)

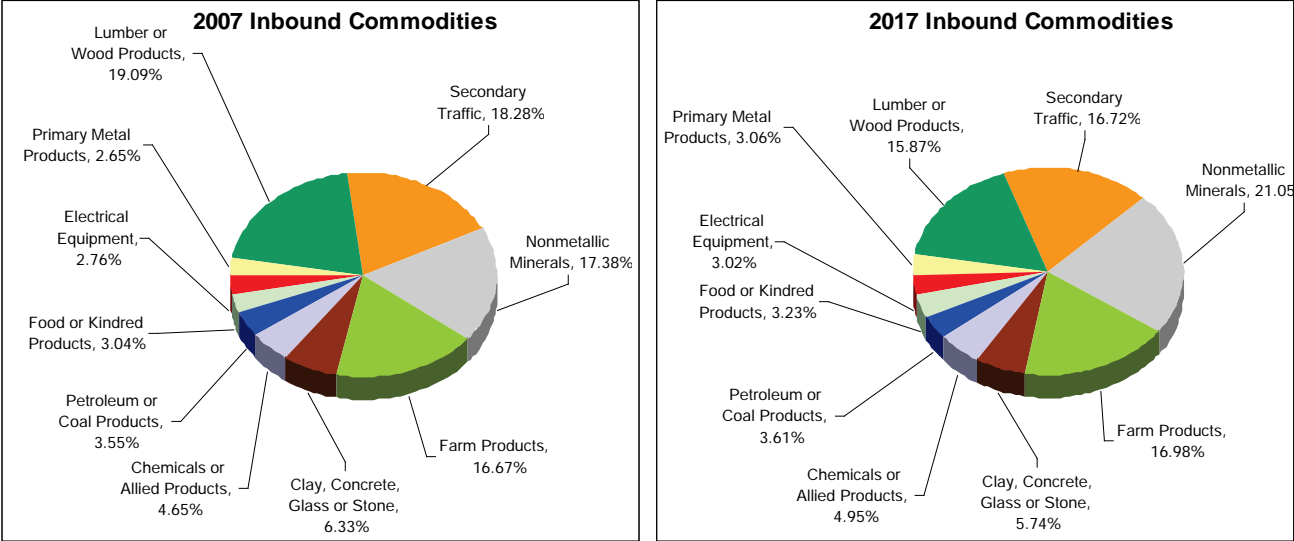


Exhibit C 20: 2007 and 2017 Southern Counties Top Ten Outbound Commodities (no water transport)

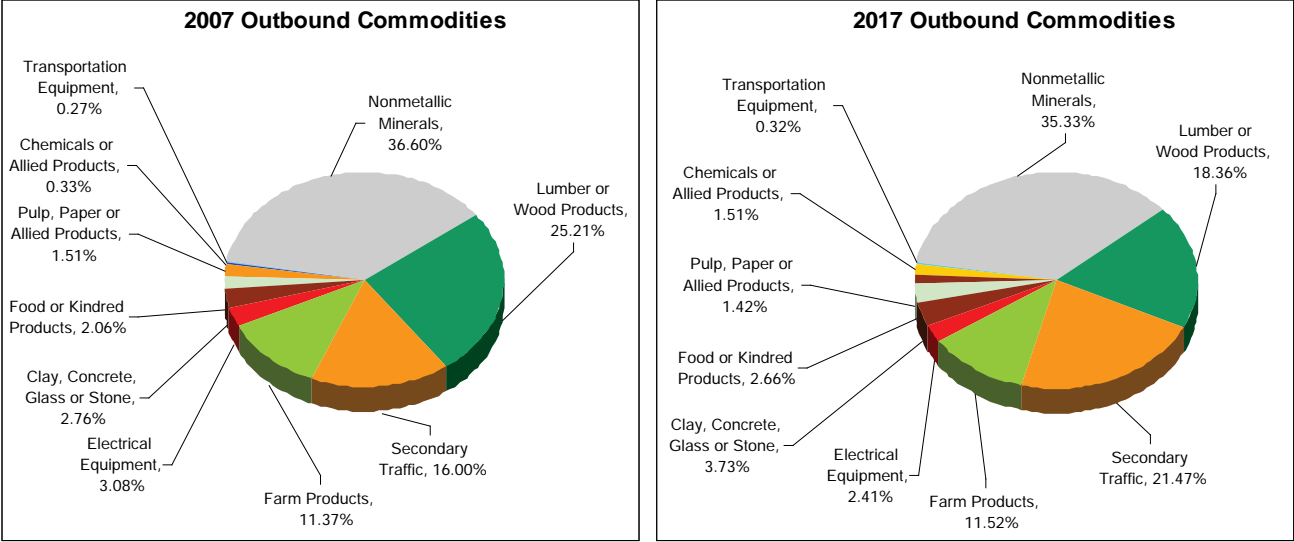


Exhibit C 21: 2007 and 2017 Southern Counties Top Ten Inbound Commodities (with water transport)

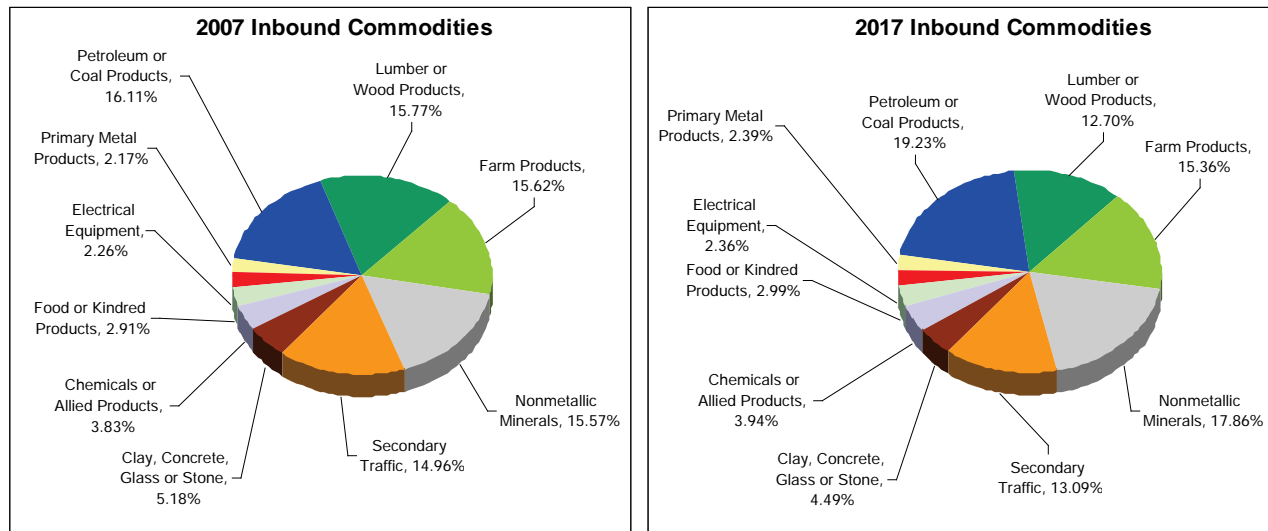


Exhibit C 22: 2007 and 2017 Southern Counties Top Ten Outbound Commodities (with water transport)

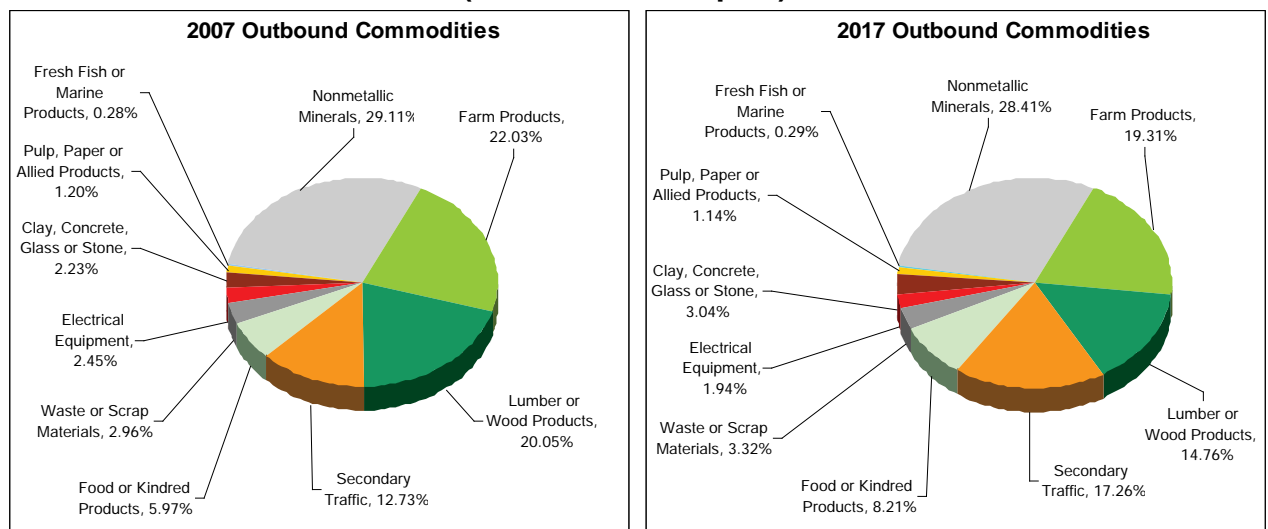


Exhibit C 23: 2007 and 2017 Southern Counties Commodities Forecast Changes (no water transport)

Southern Counties Inbound	2007	2007	Growth	2017	2017
Top 20 Commodities (no Water Freight)	%	Tons	% ►	Tons	%
Lumber or Wood Products	19.09%	1,318,031	(5.97%)	1,239,391	15.87%
Secondary Freight	18.28%	1,262,325	3.48%	1,306,265	16.72%
Nonmetallic Minerals	17.38%	1,199,653	37.07%	1,644,419	21.05%
Farm Products	16.67%	1,151,150	15.26%	1,326,784	16.98%
Clay, Concrete, Glass or Stone	6.33%	437,045	2.60%	448,397	5.74%
Chemicals or Allied Products	4.65%	321,136	20.30%	386,322	4.95%
Petroleum or Coal Products	3.55%	245,249	14.95%	281,917	3.61%
Food or Kindred Products	3.04%	209,895	20.16%	252,217	3.23%
Electrical Equipment	2.76%	190,701	23.60%	235,697	3.02%
Primary Metal Products	2.65%	183,082	30.39%	238,729	3.06%
Pulp, Paper or Allied Products	1.92%	132,290	1.31%	134,027	1.72%
Transportation Equipment	1.32%	91,270	31.29%	119,827	1.53%
Printed Matter	0.35%	24,243	5.90%	25,674	0.33%
Coal	0.35%	24,053	39.98%	33,670	0.43%
Machinery	0.34%	23,573	42.45%	33,579	0.43%
Waste or Scrap Materials	0.34%	23,479	19.29%	28,007	0.36%
Fabricated Metal Products	0.32%	21,808	15.46%	25,181	0.32%
Furniture or Fixtures	0.15%	10,153	2.04%	10,360	0.13%
Misc Manufacturing Products	0.15%	10,128	37.74%	13,950	0.18%
Rubber or Misc Plastics	0.09%	6,369	23.69%	7,878	0.10%

Southern Counties Outbound	2007	2007	Growth	2017	2017
Top 20 Commodities (no Water Freight)	%	Tons	% ►	Tons	%
Nonmetallic Minerals	36.60%	4,352,127	3.75%	4,515,274	35.33%
Lumber or Wood Products	25.21%	2,997,451	(21.71%)	2,346,688	18.36%
Secondary Freight	16.00%	1,903,133	44.18%	2,743,854	21.47%
Farm Products	11.37%	1,352,620	8.82%	1,471,980	11.52%
Electrical Equipment	3.08%	365,999	(15.68%)	308,616	2.41%
Clay, Concrete, Glass or Stone	2.76%	328,158	45.14%	476,290	3.73%
Food or Kindred Products	2.06%	244,741	38.78%	339,648	2.66%
Pulp, Paper or Allied Products	1.51%	179,129	1.18%	181,246	1.42%
Chemicals or Allied Products	0.33%	38,750	398.00%	192,972	1.51%
Transportation Equipment	0.27%	31,743	28.17%	40,685	0.32%
Misc Manufacturing Products	0.23%	27,544	146.19%	67,812	0.53%
Waste or Scrap Materials	0.18%	20,826	39.86%	29,128	0.23%
Printed Matter	0.12%	14,476	49.86%	21,694	0.17%
Fabricated Metal Products	0.10%	11,313	50.49%	17,026	0.13%
Machinery	0.06%	7,522	32.32%	9,953	0.08%
Rail Intermodal Drayage to Ramp	0.05%	5,407	22.21%	6,607	0.05%
Metallic Ores	0.04%	4,165	(45.01%)	2,291	0.02%
Instrument, Photo Equip, Optical Eq	0.03%	3,273	58.95%	5,203	0.04%
Primary Metal Products	0.01%	1,422	(20.69%)	1,128	0.01%
Tobacco Products	0.01%	676	(25.80%)	501	0.00%

Exhibit C 24: 2007 and 2017 Southern Counties Commodities Forecast Changes (with water transport)

Southern Counties Inbound						Southern Counties Outbound					
Top 20 Commodities (+ Water Freight)	2007 %	2007 Tons	Growth % ►	2017 Tons	2017 %	Top 20 Commodities (+ Water Freight)	2007 %	2007 Tons	Growth % ►	2017 Tons	2017 %
Petroleum or Coal Products	16.11%	1,359,242	41.20%	1,919,252	19.23%	Nonmetallic Minerals	29.11%	4,352,342	3.75%	4,515,514	28.41%
Lumber or Wood Products	15.77%	1,329,859	(4.74%)	1,266,886	12.70%	Farm Products	22.03%	3,294,072	(6.84%)	3,068,860	19.31%
Farm Products	15.62%	1,317,378	16.37%	1,533,094	15.36%	Lumber or Wood Products	20.05%	2,997,451	(21.71%)	2,346,688	14.76%
Nonmetallic Minerals	15.57%	1,313,702	35.64%	1,781,860	17.86%	Secondary Freight	12.73%	1,903,133	44.18%	2,743,854	17.26%
Secondary Freight	14.96%	1,262,325	3.48%	1,306,265	13.09%	Food or Kindred Products	5.97%	892,061	46.29%	1,304,991	8.21%
Clay, Concrete, Glass or Stone	5.18%	437,045	2.60%	448,397	4.49%	Waste or Scrap Materials	2.96%	442,744	19.33%	528,321	3.32%
Chemicals or Allied Products	3.83%	323,258	21.49%	392,739	3.94%	Electrical Equipment	2.45%	365,999	(15.68%)	308,616	1.94%
Food or Kindred Products	2.91%	245,306	21.76%	298,681	2.99%	Clay, Concrete, Glass or Stone	2.23%	333,049	45.20%	483,596	3.04%
Electrical Equipment	2.26%	190,701	23.60%	235,697	2.36%	Pulp, Paper or Allied Products	1.20%	179,481	1.14%	181,534	1.14%
Primary Metal Products	2.17%	183,082	30.39%	238,729	2.39%	Fresh Fish or Marine Products	0.28%	42,061	10.44%	46,451	0.29%
Pulp, Paper or Allied Products	1.57%	132,290	1.31%	134,027	1.34%	Chemicals or Allied Products	0.26%	38,750	398.00%	192,972	1.21%
Waste or Scrap Materials	1.20%	101,566	18.54%	120,396	1.21%	Transportation Equipment	0.21%	31,743	28.17%	40,685	0.26%
Transportation Equipment	1.08%	91,270	31.29%	119,827	1.20%	Misc Manufacturing Products	0.18%	27,544	146.19%	67,812	0.43%
Printed Matter	0.29%	24,243	5.90%	25,674	0.26%	Printed Matter	0.10%	14,476	49.86%	21,694	0.14%
Coal	0.29%	24,053	39.98%	33,670	0.34%	Fabricated Metal Products	0.08%	11,313	50.49%	17,026	0.11%
Machinery	0.28%	23,573	42.45%	33,579	0.34%	Machinery	0.05%	7,522	32.32%	9,953	0.06%
Fabricated Metal Products	0.26%	21,808	15.46%	25,181	0.25%	Rail Intermodal Drayage to Ramp	0.04%	5,407	22.21%	6,607	0.04%
Furniture or Fixtures	0.12%	10,153	2.04%	10,360	0.10%	Metallic Ores	0.03%	4,165	(45.01%)	2,291	0.01%
Misc Manufacturing Products	0.12%	10,128	37.74%	13,950	0.14%	Instrument, Photo Equip, Optical Eq	0.02%	3,273	58.95%	5,203	0.03%
Rubber or Misc Plastics	0.08%	6,369	23.69%	7,878	0.08%	Primary Metal Products	0.01%	1,422	(20.69%)	1,128	0.01%

APPENDIX D: TRANSEARCH™ DATA ERRATA

The TRANSEARCH™ database on freight flows is developed in a top down process. Due to the large aggregate amounts for freight flows at the national level small shifts in shipping tonnage at the county level produce very small changes in percentage of growth. However, that same amount of absolute change at the county level will generate a much larger percentage change because the base number of tonnage at the county level is only a very small aggregate portion of the national total.

Focus on Benewah County, ID

During final review of Working Paper 4.1 – County Profiles, in Table 20, on page 64, it was observed that the rate of growth for Benewah County for miscellaneous manufactured products grew 1101 percent from 2007 to 2027. In 2007 total outbound tonnage was 11,472 and in 2027 it was shown to be 137,739 tons. The 126,666 tons of growth, when divided by the small starting base number of 11,472 produced the large percentage. The growth in question appeared to be eastbound truck freight to New York and Pennsylvania forecast to grow over the 20 years from 2007. The large end result number was considered to be a computational or transpositional error in the dataset that resulted in the decimal point being shifted one space to the right. After adjusting the decimal location on space to the left, the 2027 tonnage would be 13,774 tons with a resulting growth rate of 19.6 percent. This is reasonable as Benewah County does not have a large manufacturing activity base. That said, the amount for miscellaneous manufactured products in Working Paper 4.1 – County Profiles, in Table 20, on page 64, was adjusted to 13,774 tons. The total amount for the column was also adjusted. The same adjustments were made for values in Table 20.

The IPH regional impact from the adjustment was observed in Working Paper 3.2 – Regional Freight Profile, across the following Exhibits: Exhibit 1 and Exhibit 7. Adjusting the 126,266 ton variance for the new 2027 amount of 13,774 tons leaves a net adjustment of 112,492 tons. **Exhibit 1** indicates where freight flow total amounts could be impacted. Overall outbound tonnage in the lower right hand corner of the table would change the 2027 total from 86,199,468 tons as shown in the initial Working Paper 3.2 – Regional Freight Profile Exhibit 7 down to 86,086,976 or only 0.13 percent. Note it should be taken into consideration this reflects a very small change on assumptions about a 20 year forecast. Observation at a finer level of detail, in Exhibit 1 the 2027 eastbound truck tonnage would adjust from 6,168,589 down to 6,056,097. This equates to a 1.82 percent for 2027 eastbound truck freight adjustment in 20 years; again it is not a very significant change considering it is on a 20 year forecast. Because the forecast spans many years, and the absolute amount as well as percentage of change are not significant to the outbound freight flows, much less the total inbound, outbound and through freight flows from Exhibit 1 which would be less than seven hundredths of a percent, it was determined the remaining tables in all working papers and technical memos would not be materially impacted and were allowed to remain as initially presented.

Exhibit D 1: Errata Table List of Changes

Exhibit Number & Cell Location	Initial 2027 Amount	Adjusted 2027 Amount	Percent Change
Exhibit 7: <u>Row 4:</u> Truck Outbound <u>Column 6:</u> Eastern Flows	6,168,589	6,056,097	1.82%
Exhibit 7: <u>Row 4:</u> Truck Outbound <u>Column 9:</u> Totals	48,484,473	48,371,981	0.23%
Exhibit 7: <u>Row 12:</u> Truck + Rail Outbound <u>Column 6:</u> Eastern Flows	7,501,800	7,389,308	1.50%
Exhibit 7: <u>Row 12:</u> Truck + Rail Outbound <u>Column 9:</u> Totals	55,457,046	55,344,564	0.20%
Exhibit 7: <u>Row 13:</u> Truck + Rail <u>Column 6:</u> Eastern Flows	15,631,046	15,518,555	0.72%
Exhibit 7: <u>Row 13:</u> Truck + Rail Outbound <u>Column 9:</u> Totals	86,199,468	86,086,976	0.13%
Exhibit 10: Row 9: Outbound To Column 8: Eastern Flows	1,992,619	1,866,353	6.34%
Exhibit 10: Row 9: Outbound To Column 12: Southern Flows	3,278,459	3,152,193	3.85%
Exhibit 10: Row 10: Outbound To Column 9: Eastern Flows	2,226,799	2,100,533	5.67%
Exhibit 10: Row 10: Outbound To Column 12: Southern Flows	3,364,159	3,237,893	3.75%
Exhibit 10: Row 10: Outbound To Column 14: Commodity Total	16,575,335	16,449,069	0.76%
Exhibit 10: Row 15: Subtotal Column 8: Eastern Flows	2,917,360	2,791,094	4.33%
Exhibit 10: Row 15: Subtotal Column 12: Southern Flows	5,071,672	4,945,406	2.49%

Exhibit Number & Cell Location	Initial 2027 Amount	Adjusted 2027 Amount	Percent Change
Exhibit 10: Row 16: Subtotal Column 8: Eastern Flows	3,309,431	3,183,165	3.82%
Exhibit 10: Row 16: Subtotal Column 12: Southern Flows	5,201,875	5,075,609	2.43%
Exhibit 10: Row 16: Subtotal Column 14: Commodity Total	26,392,604	26,266,338	0.48%
Exhibit 10: Row 28: Outbound To Column 8: Eastern Flows	6,168,589	6,042,323	2.05%
Exhibit 10: Row 28: Outbound To Column 12: Southern Flows	9,024,875	8,898,609	1.40%
Exhibit 10: Row 29: Outbound To Column 8: Eastern Flows	7,501,800	7,375,534	1.68%
Exhibit 10: Row 29: Outbound To Column 12: Southern Flows	9,629,743	9,503,477	1.31%
Exhibit 10: Row 29: Outbound To Column 14: Commodity Total	55,457,056	55,330,790	0.23%
Exhibit 10: Row 34: Total Column 8: Eastern Flows	9,597,171	9,470,905	1.32%
Exhibit 10: Row 34: Total Column 12: Southern Flows	9,024,875	8,898,609	1.40%
Exhibit 10: Row 35: Total Column 8: Eastern Flows	15,631,046	15,504,780	0.81%
Exhibit 10: Row 35: Total Column 12: Southern Flows	14,611,037	14,484,771	0.86%
Exhibit 10: Row 35: Total Column 14: Commodity Total	86,199,468	86,073,202	0.15%

Exhibit Number & Cell Location	Initial 2027 Amount	Adjusted 2027 Amount	Percent Change
Exhibit 34: Row 4: Truck Only Column 4: 2027	9,311,771	9,185,505	1.36%
Exhibit 34: Row 4: Truck Only Column 5: Growth	2,778,907	2,652,641	4.54%
Exhibit 34: Row 6: Truck + Rail Column 4: 2027	9,689,441	9,563,175	1.30%
Exhibit 34: Row 6: Truck + Rail Column 5: Growth	2,663,866	2,537,600	4.74%
Exhibit 34: Row 8: Truck Only Column 4: 2027	16,195,011	16,068,745	0.78%
Exhibit 34: Row 8: Truck Only Column 5: Growth	4,799,609	4,673,343	2.63%
Exhibit 34: Row 10: Truck + Rail Column 4: 2027	16,575,335	16,449,069	0.76%
Exhibit 34: Row 10: Truck + Rail Column 5: Growth	4,683,421	4,557,155	2.67%
Exhibit 35: Row 17: Benewah County, ID Column 8: Truck	578,961	452,695	21.81%
Exhibit 35: Row 17: Benewah County, ID Column 14: Commodity Total	1,898,547	1,772,281	6.65%

Observation on Latah County, ID

During final review of Working Paper 4.1 – County Profiles, it was pointed out that in Table 60, on page 128, the rate of growth for Latah County for chemicals and allied products grew 540 percent from 2007 to 2027. In 2007 total outbound tonnage was 35,560 and in 2027 it was shown to be 278,138 tons. The chemical and allied products growth in questions appeared to be eastbound and southbound truck freight going to many destinations enabling the amount of growth to be plausible considering it was off of a low starting number in 2007 and no adjustment was needed.

Observation on Lincoln County, WA

Also during final review of Working Paper 4.1 – County Profiles, it was pointed out that in Table 70, on page 144, the rate of growth for Lincoln County for machinery grew 430 percent from 88,516 tons in 2007 up to 469,932 tons in 2027. The machinery growth in question appeared to be westbound, eastbound and southbound truck freight going to many destinations so this growth also seemed plausible and no adjustment was needed.

INLAND PACIFIC HUB

Transportation Study



Working Paper 3.3

Regional Competitiveness (Work Element 3.3)

Final

May, 2010

WilburSmith
ASSOCIATES

In Association with

Halcrow

and

HNTB

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INTRODUCTION

The Inland Pacific Hub (IPH) study area is comprised of nineteen counties located in eastern Washington and northern Idaho. The economic interests of this region are represented in part by the Inland Pacific Hub Advisory Board, a public-private partnership established by and consisting of representatives from both states. The Board's objective is to establish the Inland Pacific Hub study area as a multimodal global gateway to increase international commerce.

The IPH Board has partnered with the Washington State Department of Transportation and the Idaho Transportation Department to study the region's capacity for economic development. The Inland Pacific Hub Transportation Study has two objectives: 1) To identify the Inland Pacific Hub study area's capacity as a globally-connected, multimodal transportation gateway; and 2) To identify the critical infrastructure requirements needed to drive the IPH study area's future economic growth.

Report Organization and Composition of Task 3

To accomplish the objectives established by the IPH Advisory Board, Wilbur Smith Associates, in association with HNTB and Halcrow, proposed a work plan based on six tasks:

- Task 1: Analyze Existing Transportation Market
- Task 2: Profile Existing Multimodal Transportation Infrastructure (Tech Memo 1)
- Task 3: Profile Regional Economic Assets (Tech Memo 2)
- Task 4: Profile Commercial and Technology Assets (Tech Memo 3)
- Task 5: Identify Public Education and Stakeholder Involvement
- Task 6: Compile Final Report and Phase II Recommendations

Several tasks (2, 3 and 4) have Technical Memoranda as final task deliverables. Technical Memoranda 2 and 3 are each made up of several internal working papers that break the analysis associated with these tasks into discrete work elements, to allow study team members to work concurrently on sub-tasks.

This Working Paper

This Working Paper (3.3), *Regional Competitiveness* is associated with Work Element 3.3. The Regional Competitiveness working paper presents the issues the region faces when competing with other areas of the country with respect to freight and logistics. The presentation puts forward the ways in which the conditions around freight mobility in the region affect the ability of the region to attract and maintain business directed toward economic development and job creation.

This paper is organized into four sections: Logistics Competitiveness, Applications in the Supply Chain, Case Examples, and Conclusions. The first section describes certain aspects of logistics that are important for freight and goods movement. The Applications in the Supply Chain segment presents three relevant supply chain examples: Retail, Grain, and Potatoes. The Case Examples which follows presents information about two regions of the country selected for comparative purposes. Each section is independent with summaries presented in the Conclusions.

LOGISTICS COMPETITIVENESS FACTORS

In order to promote economic development and related job growth, a region must be able to maintain its existing base of business and attract new companies. When selecting locations for new facilities, many businesses rely on publications that research and publish information about the business climate in cities and regions.

In March of 2009 Forbes released its list of Best Places for Business and Careers. The rankings examine characteristics of the 200 largest metropolitan areas in the U.S. Spokane was ranked # 29 out of 200, between Houston and Fort Worth, ranging from the New York metro area at 11.7 million people to Olympia, Washington with 241,000 people. Eleven different criteria are considered including data on job growth, labor supply and quality of life information such as college attainment, crime rates, local colleges, as well as cultural and recreational opportunities.¹ Two categories were added to the most recent rankings research: 1) projected job growth; and, 2) subprime mortgages. This information was added as a way to reflect the potential for growth and exposure given the current economic climate. The detail of the data regarding Spokane's ranking and that of the surrounding cities is shown in **Appendix A**.

The Forbes rankings focus largely on the overall economic climate, quality of life, and educational opportunities of an area. Spokane placed at quite a high level, particularly given its size in comparison to those cities ranked just below and above. A key element in the ranking is the category related to the cost of doing business. The educational access also contributed to the placement. Spokane received a low ranking on cultural and leisure activities. Since the area has such a rich heritage and wonderful opportunities for outdoor activities, the low score might reflect a need for improved public relations regarding tourism.

A business prospect would certainly see Spokane in a favorable light based on this Forbes ranking. However, there are other categories of investigation that go into the site selection process for industry, accessibility to transportation, and logistics being a primary one. As the following discussion indicates, the logistics ranking for the metropolitan statistical area (MSA) of Spokane is not as favorable. There is work to be done to improve the image of the region in the area of infrastructure and supply chain services.

Access to efficient freight transportation is a key element in business site selection. To compete in the global market it is critical for companies to maintain efficient, reliable, and secure supply chain networks. Certainly retail and manufacturing operations rely heavily on their logistics capabilities, not only to meet the supply needs of their customers but also to contribute to their profitability. Freight transportation has a critical role in a company's site selection decisions. However, it isn't just the physical facilities and infrastructure that are important. The conditions in an area that drive pricing, safety, and security in logistics are equally important, if not more, than the infrastructure. Resiliency is a key criterion, that being access to a network which offers mode choice, service flexibility, and reliability -- not dependent on only one or a few components which might fail. The idea of resiliency is to return

¹ Moody's Economy.com supplied data on job growth over the past five years and projections through 2011. Labor supply and quality of life information supplied by Bert T. Sperling, a city researcher and co-author of *Cities Ranked and Rated*

to normal or near normal business conditions as quickly as possible in the event of a service interruption of some sort, for example highway closures.

Logistics Quotient and 5-Star Rankings²

A meaningful discussion of regional competitiveness relative to transportation and logistics covers a broad range of factors. In recent years the magazines *Expansion Management* and *Logistics Today* have jointly produced a metric identified as the Logistics Quotient in an effort to identify America's most logistics friendly locations. The analysis ranks 362 metropolitan statistical areas (MSA) defined by the US Census Bureau as cities of at least 50,000 population. The logistics quotient ranking compares MSA according to ten major categories:

- 1. Overall transportation and warehousing industry climate** (Source: U.S. Department of Commerce)
 - The number of carriers that provide service
 - The number of transportation and warehouse employees currently working in the area
 - The prices, routes, quality, and business specific issues
- 2. Labor availability, cost, skill level, etc.** (Source: U.S. Department of Commerce)
 - Transportation and warehousing employees by specific occupation
 - Prevailing wage rates
 - Productivity measurements
 - Reliability indicators such as work stoppages
- 3. Basic infrastructure** (Source: Federal Highway Administration - FHWA)
 - Accessibility of modes
 - Suitability for specific commodity needs
 - Center of gravity, land use for distribution, other location conditions that affect price, schedule, safety, and security
- 4. Density and congestion** (Source: FHWA)
 - Level of congestion on key routes
 - Quality of traffic controls
 - Limited mixed use of highways
- 5. Physical condition of roads and bridges** (Source: FHWA)
 - Safety concerns
 - Cost of doing business – future taxation for improvements, etc.
- 6. Interstate highway access both main and auxiliary** (Source: FHWA)
 - Ready access in all directions allowing movement of goods to be quick, safe, and at lower cost
 - Auxiliary routes like bypasses and beltways along with reliable grid routes for simple operations within the metro area
- 7. State and local taxes and fees** (Source: Wisconsin Motor Carriers Association & Federation of Tax Administrators)
 - Vehicle taxes and fees
 - Income, sales, employment, property taxes, etc.
 - Inventory tax
- 8. Railroad service** (Source: ALK Technologies, Inc.)
 - Access to carload and intermodal service

² Source: Expansion Management and Logistics Today Joint Study, 2007

- Reliability of schedule and transit time
- Cost.
- 9. **Water ports – river, lake, ocean** (Source: U.S. Army Corps of Engineers' Waterborne Commerce Statistics Center)
 - Port access
 - Inland waterways for certain commodities
- 10. **Air cargo service** (Source: Federal Aviation Administration & Bureau of Transportation Statistics)
 - Proximity to air cargo hub
 - Availability of wide body service for cargo and passengers
 - Critical to high value products and research and development initiatives
 - There is seldom a substitute when a commodity requires air transport

In the most recent years the magazine has only published the top 100 cities in the study and Spokane and Coeur d'Alene MSAs were not included. A listing for 2007 which includes Portland and Seattle is shown in **Appendix A** for informational purposes.

The most recent ranking of all of the 362 MSAs occurred in 2005. While the data from 2005 is not the most current, it serves to show the areas of comparison and the relative ranking of cities in different areas of the country and of differing size. **Exhibit 1A** shows the top 40 most logistics friendly cities in 2005, while **Exhibit 1B** shows the groupings that include Spokane ranked 153rd, and Coeur d'Alene ranked 308th. While not a precise comparison, the numbers serve for the purposes of this research, and the categorical rankings suggest areas viewed positively or poorly by site selection professionals. Of note is that in some categories where Spokane ranks highly, Coeur d'Alene ranks poorly and vice versa. For example, Spokane ranks relatively high in road infrastructure, but poorly in road condition. Coeur d'Alene on the other hand ranks low in road infrastructure, but relatively high in road condition.

Exhibit 1A: 2005 Logistics Quotient Rankings – Top 40

Site Selector: The Most Logistics-Friendly Cities in the U.S., 2005

NATIONAL RANK	METROPOLITAN AREA	T&D Industry Metro Rank	Work Force Labor Metro Rank	Road Infrastructure Metro Rank	Road D/C/S Metro Rank	Road Condition State Rank	Interstate Highways Metro Rank	Taxes & Fees State Rank	Rail Road State Rank	Waterborne Commerce Metro Rank	Air Cargo Metro Rank
1	New York, NY	3	38	5	238	339	1	170	2	3	1
2	Houston, TX	4	33	145	322	134	52	90	17	2	6
3	Chicago, IL	1	65	117	341	75	2	288	1	10	3
4	Cleveland, OH	24	46	120	112	186	5	241	17	31	38
5	Detroit, MI	8	41	130	348	221	5	70	7	27	23
6	St. Louis, MO	12	1	202	264	179	5	177	5	21	27
7	Minneapolis-St. Paul, MN	13	96	213	291	18	5	169	7	41	25
8	San Francisco-Oakland, CA	17	87	41	209	288	12	184	34	17	10
9	Kansas City, MO - Kansas City, KS	22	11	267	93	208	9	165	17	51	33
10	Jacksonville, FL	27	21	17	283	24	52	251	63	29	48
11	Louisville, KY	29	2	205	220	214	15	121	10	39	55
11	Philadelphia, PA	7	60	82	283	328	15	219	3	6	12
13	Baltimore, MD	19	30	118	241	277	3	220	34	16	22
14	Los Angeles, CA	2	26	41	302	288	9	184	102	4	2
15	Boston, MA	10	55	83	270	341	23	139	34	23	7
16	Miami, FL	5	4	17	355	24	36	251	151	19	5
16	Virginia Beach-Norfolk-Newport News, VA	39	86	199	233	178	36	61	34	15	39
18	Pittsburgh, PA	25	99	84	82	342	23	340	4	14	10
19	Cincinnati, OH	28	66	185	234	185	15	157	34	37	28
20	Washington, DC	10	18	187	293	209	9	122	63	72	4
21	Dallas-Fort Worth, TX	8	90	145	279	134	4	90	7	178	9
22	Seattle, WA	14	78	72	247	241	52	310	15	13	18
23	New Orleans, LA	20	26	296	252	277	52	62	17	1	42
24	Atlanta, GA	6	100	278	341	4	12	1	34	178	8
25	Savannah, GA	84	12	278	244	4	52	1	63	28	108
26	Nashville, TN	36	64	226	231	81	36	84	102	48	43
27	San Diego, CA	34	10	41	249	288	23	184	102	55	24
28	Indianapolis, IN	26	23	145	323	87	12	128	34	178	34
29	Memphis, TN	22	122	274	336	133	52	123	34	30	16
30	Buffalo, NY	45	14	6	157	317	81	297	6	65	58
31	Albany, NY	80	96	6	144	317	15	297	34	40	69
31	Sacramento, CA	49	32	41	303	288	52	184	34	73	36
33	San Antonio, TX	42	19	145	172	134	23	90	102	178	45
34	Chattanooga, TN	100	77	252	176	49	52	29	63	54	113
35	Rochester, NY	77	28	6	146	317	52	297	10	79	65
36	Phoenix, AZ	15	39	111	339	44	81	214	24	178	13
37	Portland, OR	18	89	212	289	220	36	336	10	20	32
38	Tulsa, OK	44	92	296	101	332	81	16	34	58	61
39	Denver, CO	21	71	104	296	125	15	229	63	178	15
40	Richmond, VA	45	109	188	133	161	15	36	225	59	49

Source: Logistics Today Magazine, October 10, 2005. Bill King and Michael Keating
http://logisticstoday.com/global_markets/outlog_story_7495/index.html

Exhibit 1B: 2005 Logistics Quotient Rankings – Spokane & Coeur d'Alene

NATIONAL RANK	METROPOLITAN AREA	T&D Industry Metro Rank	Work Force Labor Metro Rank	Road Infrastructure Metro Rank	Road D/C/S Metro Rank	Road Condition State Rank	Interstate Highways Metro Rank	Taxes & Fees State Rank	Rail Road State Rank	Waterborne Commerce Metro Rank	Air Cargo Metro Rank
124	Palm Bay-Melbourne-Titusville, FL	88	126	17	353	24	157	251	310	47	126
126	Kingsport-Bristol, TN	176	132	209	66	103	120	48	225	178	139
127	Huntington-Ashland, WV	149	195	211	35	252	157	228	151	7	195
127	Johnson City, TN	119	214	226	298	81	81	84	151	178	139
129	Augusta, GA	134	100	307	276	64	120	15	151	178	164
130	Longview, WA	217	300	72	26	241	157	310	102	36	149
131	Reno, NV	109	67	278	213	1	120	328	225	178	60
132	Durham, NC	200	109	350	275	104	81	144	151	178	40
133	Lexington, KY	118	187	233	349	259	81	117	102	178	91
134	Burlington, VT	196	162	278	81	315	120	237	34	178	88
135	Montgomery, AL	167	116	214	311	197	81	48	151	178	136
136	Colorado Springs, CO	123	176	104	135	125	157	229	225	178	90
137	Macon, GA	189	275	278	228	4	52	1	151	178	199
138	Pascagoula, MS	151	140	308	328	181	120	139	151	22	176
139	Bakersfield, CA	86	113	41	235	288	288	184	63	178	128
140	Fort Smith, AR	125	106	275	146	264	120	116	34	178	266
141	Fayetteville-Springdale-Rogers, AR	89	3	262	106	221	288	167	151	178	95
142	Wilmington, NC	157	88	350	339	104	157	144	151	42	163
143	Roanoke, VA	157	161	188	259	161	120	36	225	178	105
144	Billings, MT	147	93	330	82	122	81	272	225	178	111
145	Huntsville, AL	181	137	214	345	197	120	48	151	178	99
146	Fresno, CA	66	50	41	329	288	288	184	151	178	72
147	Dalton, GA	242	53	278	117	4	157	1	225	178	173
148	Elkhart, IN	163	175	145	249	87	81	128	151	178	237
149	Springfield, IL	225	267	84	256	65	81	320	34	178	189
150	Eugene-Springfield, OR	134	115	252	210	215	120	331	63	178	150
151	Bridgeport-Stamford-Norwalk, CT	86	197	67	187	332	157	284	151	43	237
152	York, PA	126	34	84	281	342	157	340	63	178	144
153	Spokane, WA	126	76	72	311	241	157	310	151	178	92
154	Gainesville, GA	185	272	278	117	4	120	1	225	178	173
155	Tuscaloosa, AL	215	219	214	325	197	52	48	34	178	237
295	Rome, GA	336	277	278	32	4	288	1	310	178	173
296	Columbus, IN	322	342	145	117	87	157	128	310	178	205
297	Bristol, VA	362	359	188	69	161	157	36	347	178	139
298	Warner-Robins, GA	355	257	278	208	4	288	1	225	178	173
299	Punta Gorda, FL	354	272	17	222	24	157	251	310	178	205
300	Rapid City, SD	276	270	348	168	158	120	175	310	178	162
301	Hinesville-Fort Stewart, GA	361	249	278	117	4	288	1	347	178	108
302	Wenatchee, WA	261	339	72	203	241	288	310	151	178	149
303	Bend, OR	230	306	252	94	215	288	331	151	178	174
304	Gainesville, FL	338	325	17	357	24	157	251	225	178	237
305	Waterloo-Cedar Falls, IA	222	177	321	189	270	280	178	151	178	224
306	Pocatello, ID	353	332	335	21	76	81	292	225	178	262
307	Sherman-Denison, TX	340	361	145	16	134	288	90	151	178	290
308	Coeur d'Alene, ID	246	237	335	217	76	157	292	310	178	169
309	Florence, SC	315	305	335	253	169	157	20	225	178	223
310	Vero Beach, FL	303	262	17	321	24	288	251	310	178	124
311	Great Falls, MT	330	280	330	103	122	120	272	310	178	154
312	Bloomington, IN	349	327	145	262	87	288	128	63	178	299
313	Burlington, NC	294	282	350	207	104	157	144	310	178	170
314	Salinas, CA	137	203	41	331	288	288	184	347	86	274
315	Gadsden, AL	335	245	214	268	197	120	48	225	178	315

Source: Logistics Today Magazine, October 10, 2005. Bill King and Michael Keating
http://logisticstoday.com/global_markets/outlog_story_7495/index.html

Spokane Logistics Competitiveness Profile

For 2005, Spokane ranked in the top 100 in the area of workforce, overall access to infrastructure and air cargo services. Unfortunately there were also some very low scores for road conditions, congestion and factors affecting ease of movement, and also on taxes and regulatory issues. When looking at the chart it is interesting to compare the rankings for Spokane in different categories with respect to other cities. This table gives clear indication of what areas of improvement would move Spokane to a higher level.

Some of the categories in the Logistics Quotient development have been covered in other portions of this study such as road conditions and infrastructure access. The primary focus in this section is to look at those freight mobility factors that affect the ability to compete with other locations. These are factors that are related to pricing and accessibility, reliability, travel time, etc. The factors concern not only business in general but also the types of businesses and commodities that can succeed given regional issues. Differentiation needs to be made with respect to commodity requirements for specific services and the ability of certain commodities to absorb higher levels of cost associated with different types of service in the supply chain.

The following material related to the economics of supply chain decisions will be a review of known material for some readers. However, it is important to understand the individual factors, how they are interconnected with the Logistics Quotient results, and the effect that they have on the competitiveness of the Inland Pacific Hub (IPH) study area with respect to other areas in the Pacific Northwest and the country.

When developing a supply chain network, a firm's primary goal is to balance the economics of labor, the inventory carrying cost, the cost of the transportation and market responsiveness (e.g., point of sale trends).

The drivers in supply chain decision are:

- Costs: Global Labor, Fuel, Carbon, Commodity Values
 - Fuel and carbon can offset labor
- Capacity, Capacity Pricing, and Performance
 - Water, Highway, Rail, and Air
- *Network Connectivity*

These drivers have specific structural effects leading to:

- Changes in Economic Geography
- Supply Chain Redesign
- Uncertainty

Economic geography describes the costs associated with having vendors or other business entities such as a distribution center located in particular countries or regions. For example the labor rates in China compared to the shipping costs from China have made that an attractive place to do business. If the labor rates increase and/or fuel prices

drive up the cost of shipping, the business being done in China may shift to another locale, such as Southeast Asia or India. This creates a need for *supply chain redesign* to accommodate the new network configuration based on shifting locations. In this particular example, when business moves south of Hanoi or to India the Suez canal to the east coast ports becomes a more cost effective route of transport. Depending on the degree of investment in the supplier or distribution center location, a shift may occur quickly, over some time, or not at all. The nature of labor and the price of fuel create a level of *uncertainty* over what the future will hold in this regard.

As the price of fuel rises the shorter distance to the Pacific Northwest ports from parts of China may favor growth in those locations. This could also open more competition from Prince Rupert and the Canadian railways on the existing land bridge dominated now by LA/Long Beach and the BNSF intermodal system.

Another looming factor in economic geography is the widening of the Panama Canal allowing larger capacity vessels to reach the population centers in the east, bypassing the west coast ports and the rail land bridge that is heavily utilized today. This creates another set of cost evaluations in the network modeling exercises used to plan supply chain routing. It is believed that the rather than call directly at east coast ports the vessels will in fact transload in the Caribbean, allowing vessels to carry traffic bound to the East Coast, the Gulf Coast, and South America, creating greater utilization opportunities for the ocean lines.

The cost model used in these decisions has the basic form as shown in **Exhibit 2**.

Exhibit 2: Cost Models: Inventory vs. Transportation Framework

Cost Models: Inventory vs. Transportation

Minimize Total Cost = Ordering Cost (affects shipment frequency/size)
+ Inventory Carrying Cost (affects shipment frequency/size)
+ Transportation Cost (slower, cheaper modes more desirable)
+ Inventory-In-Transit (slower, cheaper modes less desirable)
+ Safety Stock (modes with inconsistent service less desirable)

Source: J B Hunt Transportation Services, Inc.

The first two variables in the model, ordering cost and carrying cost, have relevance to this discussion to the extent that the cost of labor, warehouse, and manufacturing space are key components of the network decisions. In these categories, Spokane has an advantage as the Forbes data and the Logistics Quotient surveys indicate. In the other three factors there is some variation that includes positives and negatives depending on the type of industry in question.

Transportation Cost

The basic elements of transportation cost by mode are the same or similar across the country – driver wages, equipment costs, insurance, etc. Even fuel cost in a specific time period levels out in a long-haul operation despite different levels of taxation by region. The biggest cost factors for a trucker are fuel and driver wages which are both variable based on distance for an over-the-road fleet. Length of haul is a critical element for these carriers. Another area of variability that is important to the competitiveness of the IPH study area is in the balance of market demand for equipment. Equipment and volume balance are significant factors in every mode. Air freight carriers look for balance in a market as do the intermodal companies, and all others where asset utilization is important. As has been presented throughout this research, the Inland Pacific Hub study area has a heavy reliance on trucking to support area business. Therefore, factors affecting trucking have particular significance to the competitive position of the region.

How Transportation Cost Affects Development Targets and Domestic Competition

Task 3 of the IPH Transportation Study Scope of Work provides for a discussion regarding the ways in which reductions in transportation costs can facilitate economic development in the region. While the word “cost” often implies monetary considerations, the analysis contained herein presents transportation costs that are not necessarily measured in monetary terms. This section presents some discrete charts to establish the relationship between these costs and economic development.

An earlier section in this report presented the “Logistics Quotient,” a measure developed from data collected by Expansion Management Magazine. The authors of this measure have combined the Logistics Quotient with other metrics and created a ranked list of “5-Star Business Opportunity Metros”. These are the areas of the country represented as the most desirable locations for business expansion

The “5-Star Business Opportunity Metros” chart, **Exhibit 3**, includes all factors for the top ranked cities. Spokane is ranked 57th with an overall rating of 84. Its rating is heavily affected by the Health Care Cost Quotient. This is outside the scope of our research but might merit a separate review of the related index.

Exhibit 3: 5-Star Business Opportunity Metros

★★★★★

5-Star Business Opportunity Metros

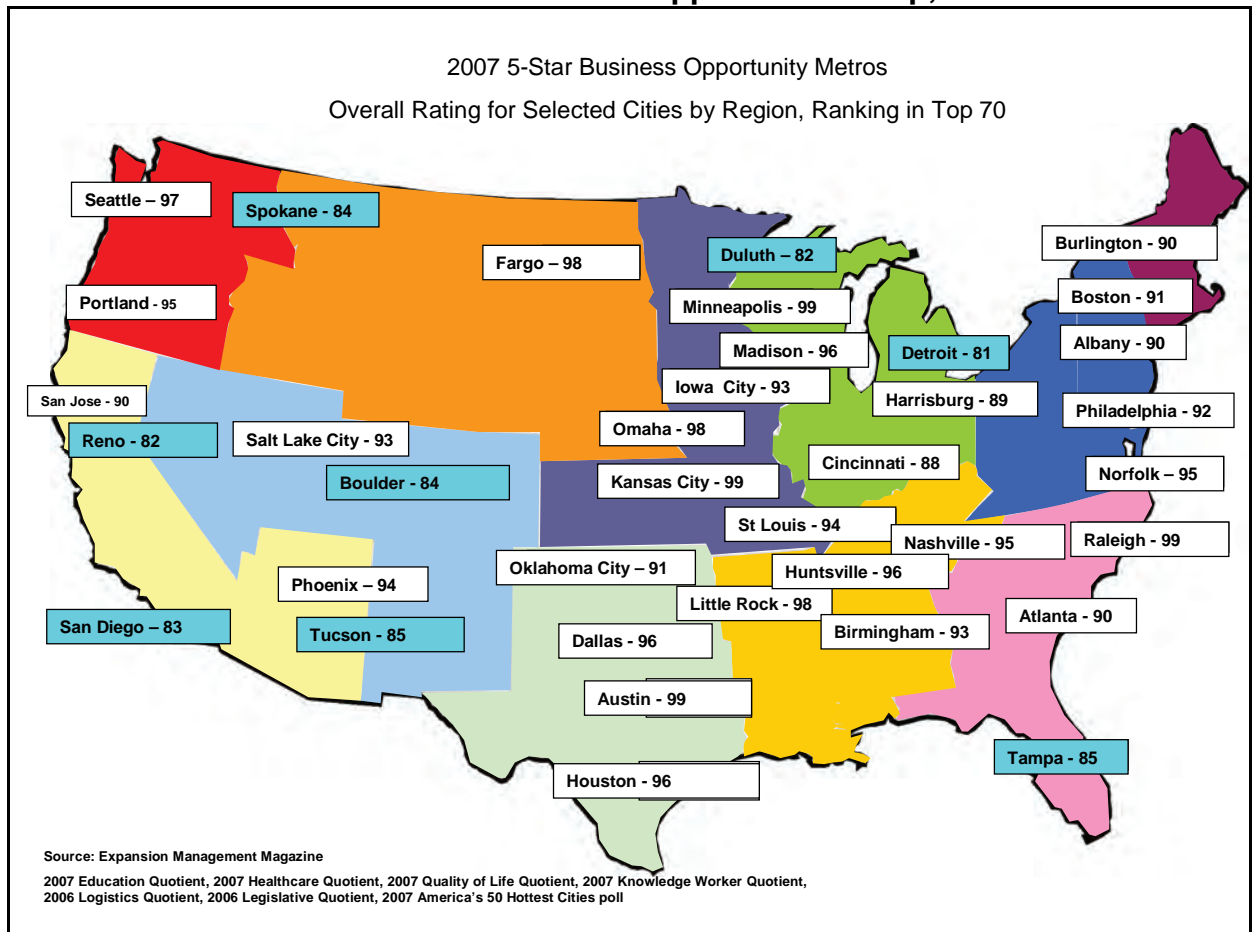
All Ratings are Percentiles, with 99 being highest & 1 being lowest.

Rank	Overall Rating	Metropolitan Statistical Area	Public Schools	Quality of Life	College Educated Workers	Logistics Infrastructure	Healthcare Costs	Taxes & Govt. Spending	Reputation Among Site Consultants
1	99	Austin-Round Rock, Texas	80	85	91	83	32	99	97
2	99	Minneapolis-St. Paul-Bloomington, Minn.-Wis.	76	83	94	99	36	50	86
3	99	Raleigh-Cary, N.C.	91	93	93	72	88	75	99
4	99	Washington-Arlington-Alexandria, D.C.-Md.-Va.-W.Va.	88	80	99	94	51	47	82
5	99	Kansas City, Mo.-Kan.	77	78	76	99	95	56	96
6	98	Richmond, Va.	78	75	85	87	72	61	98
7	98	Pittsburgh, Pa.	78	89	87	94	99	30	90
8	98	Omaha-Council Bluffs, Neb.-Iowa	68	91	85	85	92	71	83
9	98	Fargo, N.D.-Minn.	85	99	80	72	93	65	85
10	97	Seattle-Tacoma-Bellevue, Wash.	73	60	97	97	20	70	91
11	97	Knoxville, Tenn.	54	72	81	85	65	92	98
12	97	Columbia, Mo.	97	99	95	62	95	65	45
13	96	Dallas-Fort Worth-Arlington, Texas	56	58	78	99	32	99	99
14	96	Madison, Wis.	99	97	98	77	84	24	59
15	96	Huntsville, Ala.	69	83	85	73	77	59	95
16	96	Houston-Saytown-Sugar Land, Texas	46	52	86	99	32	99	89
17	95	Virginia Beach-Norfolk-Newport News, Va.-N.C.	68	61	78	92	68	59	90
18	95	Nashville-Davidson-Murfreesboro, Tenn.	35	46	84	93	45	92	98
19	95	Portland-Vancouver-Beaverton, Ore.-Wash.	81	73	92	91	11	44	86
20	94	Des Moines, Iowa	89	94	52	82	74	67	87
21	94	Tallahassee, Fla.	75	77	90	49	40	87	88
22	94	Phoenix-Mesa-Scottsdale, Ariz.	84	54	70	83	14	82	99
23	94	St. Louis, Mo.-Ill.	53	65	83	99	73	44	88
24	93	Salt Lake City, Utah	43	50	79	90	72	90	83
25	93	Birmingham-Hoover, Ala.	41	61	78	94	77	59	94
26	93	Durham, N.C.	58	41	99	53	88	75	79
27	93	Iowa City, Iowa	96	99	98	33	74	67	45
28	92	Philadelphia-Camden-Wilmington, Pa.-N.J.-Del.-Md.	60	60	94	97	46	20	91
29	92	Lincoln, Neb.	78	96	88	69	20	35	75
30	92	Ann Arbor, Mich.	84	82	100	46	91	35	45
31	91	Rochester, N.Y.	79	91	92	85	43	13	70
32	91	Boston-Cambridge-Quincy, Mass.-N.H.	66	85	99	98	16	25	69
33	91	Lexington-Fayette, Ky.	72	92	95	61	47	44	70
33	91	Oklahoma City, Okla.	44	78	75	88	35	71	95
35	90	Baltimore-Towson, Md.	80	57	97	96	21	15	78
36	90	Albany-Schenectady-Troy, N.Y.	83	83	93	86	43	13	67
37	90	San Jose-Sunnyvale-Santa Clara, Calif.	70	84	99	64	40	8	86
38	90	Atlanta-Sandy Springs-Marietta, Ga.	28	54	89	96	8	80	98
38	90	Burlington-South Burlington, Vt.	99	96	95	68	24	42	45
40	89	Harrisburg-Carlisle, Pa.	87	89	69	86	99	30	54
41	89	Charlottesville, Va.	99	88	96	30	72	61	45
42	88	Cincinnati-Middletown, Ohio-Ky.-Ind.	45	65	76	96	64	44	93
43	88	Milwaukee-Waukesha-West Allis, Wis.	66	69	82	88	84	24	70
44	88	Columbus, Ohio	51	64	88	92	63	17	88
45	88	La Crosse, Wis.-Minn.	95	98	67	72	92	42	45
46	87	Rochester, Minn.	95	93	75	49	96	35	45
47	87	College Station-Bryan, Texas	92	86	90	22	32	99	56
48	87	Amarillo, Texas	87	75	47	75	32	99	77
49	86	Springfield, Mo.	85	91	44	79	95	65	64
50	86	Indianapolis, Ind.	41	49	75	92	80	39	96
51	86	Lubbock, Texas	65	85	70	78	32	99	54
52	86	Flagstaff, Ariz.	94	63	81	32	14	82	87
53	85	Tucson, Ariz.	60	35	92	66	14	82	82
54	85	Lawrence, Kan.	98	94	88	20	95	48	53
55	85	San Antonio, Texas	29	48	65	93	32	99	97
56	85	Tampa-St. Petersburg-Clearwater, Fla.	48	32	67	87	40	87	96
57	84	Boulder, Colo.	73	67	98	44	23	50	83
57	84	Spokane, Wash.	85	72	64	70	20	70	80
59	84	Asheville, N.C.	67	78	63	55	88	75	73
60	83	Wichita, Kan.	45	88	61	87	95	48	77
61	83	Blackburg-Cheney-Radford, Va.	93	91	79	23	72	61	65
62	83	San Diego-Carlsbad-San Marcos, Calif.	44	59	94	89	60	8	88
63	83	Columbia, S.C.	57	56	76	81	46	42	92
64	82	Ames, Iowa	96	98	90	1	74	67	56
64	82	Reno-Sparks, Nev.	53	49	72	69	2	99	93
66	82	Duluth, Minn.-Wis.	94	90	51	81	93	46	45
67	81	Champaign-Urbana, Ill.	81	89	86	83	51	20	45
68	81	State College, Pa.	99	96	87	26	99	30	45
69	81	Detroit-Warren-Livonia, Mich.	50	37	77	91	91	55	59
70	81	Bellingham, Wash.	93	64	69	45	20	70	84
71	80	Kalamazoo-Portage, Mich.	76	87	85	42	91	55	45
72	80	Topeka, Kan.	90	76	44	59	95	48	84

Source: Expansion Management Magazine

In order to better characterize the competitive position of the region with other areas of the country a map has been created (**Exhibit 4**) which groups states and portions of states in ways that reflect the similar costs of moving freight to and from the region. This map displays representative city names and their rank on the 5-Star Business Opportunity Metros list. This gives some sense of the geographic relationships among the ranked cities and also puts them in the context of their transportation advantages or disadvantages.

Exhibit 4: 5-Star Business Opportunities Map, 2007



Source: Expansion Management Magazine

Exhibit 5 indicates that the more isolated areas of the country face higher transportation costs. This reinforces the idea that transportation cost and market access is largely a function of geographic location.

Exhibit 5: Transportation Cost and Market Access in Isolated Areas

Region	Regional Market	Domestic Directional Access	Major Port Access	Modal Options	Equipment Balance Capacity	Inbound Truckload Rates	Outbound Truckload Rates	NAFTA Access Proximity and Service
New England	Small	South	Distant	Carload	More Inbound	High	Low	Good Canada
			Halifax	Truck				Poor Mexico
			NY/NJ					
NY,NJ, Eastern PA, Mid Atlantic	Large	South	Good	Carload	More Inbound	High	Low	Moderate Canada
		West	NY/NJ	Intermodal				Distant Mexico
			Norfolk	Truck				
South East Coastal	Large	North	Good	Carload	Balanced	Average	High Average	Distant Canada
		West	Savannah	Intermodal				and Mexico
			Jacksonville	Truck				
			Norfolk					
Eastern Mid-west West PA	Large	All	Distant	Carload	More Outbound	Average	High Average	Good Canada
			NY/NJ	Intermodal				Moderate Mexico
			Norfolk	Truck				due to Intermodal
			West Coast					
Western Mid-west	Moderate	All	Distant	Carload	More Outbound	Average	High Average	Good Canada
			NY/NJ	Moderate Intermodal				Moderate Mexico
			Norfolk	Truck				due to Intermodal
			West Coast					
South Central	Moderate	All	Distant	Carload	More Inbound	High-Avg	Low Average	Distant Canada
			Los Angeles	Moderate Intermodal				Good Mexico
			Savannah	Truck				
			Gulf Coast					
West Central	Moderate	East	Moderate	Carload	More Inbound	High-Avg	Low Average	Distant Canada
		West	Houston	Intermodal				Good Mexico
			Los Angeles	Truck				
Great Plains	Small	East	Distant	Carload	More Inbound	High	Low	Good Canada
		West	Seattle	Truck				Distant Mexico
			NY/NJ					
			Los Angeles					
Mountains	Small	East	Distant	Carload	More Inbound	High	Low	Distant Canada
		West	Los Angeles	Limited Intermodal				Distant Mexico
				Truck				Except NM
Southwest	Large	East	Good		Balanced	Average	Average	Distant Canada
		North	Los Angeles					Good Mexico
Inland Pacific Hub	Moderate	South	Good	Carload	More Inbound	High	Low	Good Canada
		West	Seattle	Truck				Distant Mexico

A study by the American Transportation Research Institute (ATRI) shows the operational costs for trucking:

Exhibit 6: Operational Costs for Trucking

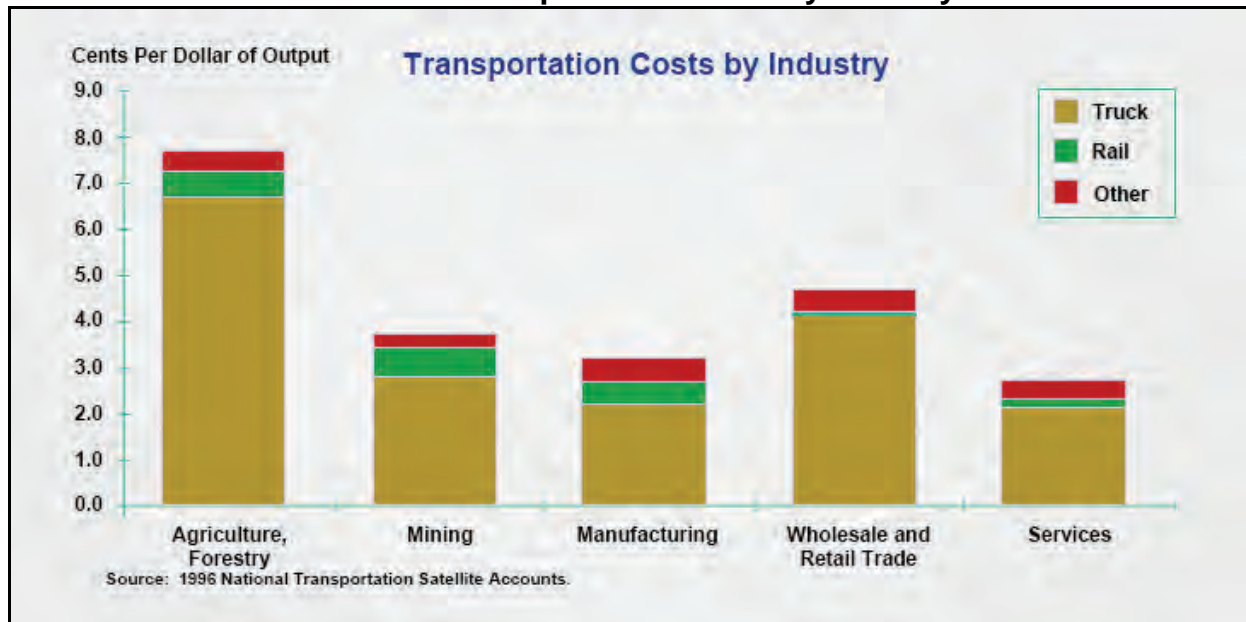
Motor Carrier Marginal Expenses	Costs Per Mile	Costs Per Hour
Vehicle -based		
Fuel-Oil costs	\$0.634	\$33.00
Truck/Trailer Lease or Purchase Payments	\$0.206	\$10.72
Repair and Maintenance	\$0.092	\$3.23
Fuel Taxes	\$0.062	\$3.12
Truck Insurance Premiums	\$0.060	\$1.56
Tires	\$0.030	\$1.25
Licensing and Permits	\$0.024	\$0.99
Tolls	\$0.019	
Driver Based		
Driver Pay	\$0.441	\$16.59
Driver Benefits	\$0.126	\$6.56
Driver Bonus Pay	\$0.036	\$1.87
Total Marginal Costs	\$1.73	\$83.68

Source: American Transportation Research Institute (ATRI) Analysis of the Operational Costs of Trucking (2009)

The distance-based costs of fuel and driver wages for long haul trucking are the most significant items, as shown in **Exhibit 7**. For this reason, geographic location and distance to market is a clear determinant of transportation cost. These characteristics obviously cannot be changed. Therefore if a region is dependent on trucking, the focus must be on closer markets and commodities with a high enough value to support the additional cost.

Data from the National Transportation Satellite Accounts indicates that all industries depend on a multimodal transportation system. Agriculture spends the most on transportation as a percentage of total output, followed by wholesale and retail trade, mining, and manufacturing. Also of note is the fact that trucking constitutes the most significant transportation expenditure for all industries, indicating that efficient highway linkages are essential for meeting the freight needs of all industries.

Exhibit 7: Transportation Costs by Industry



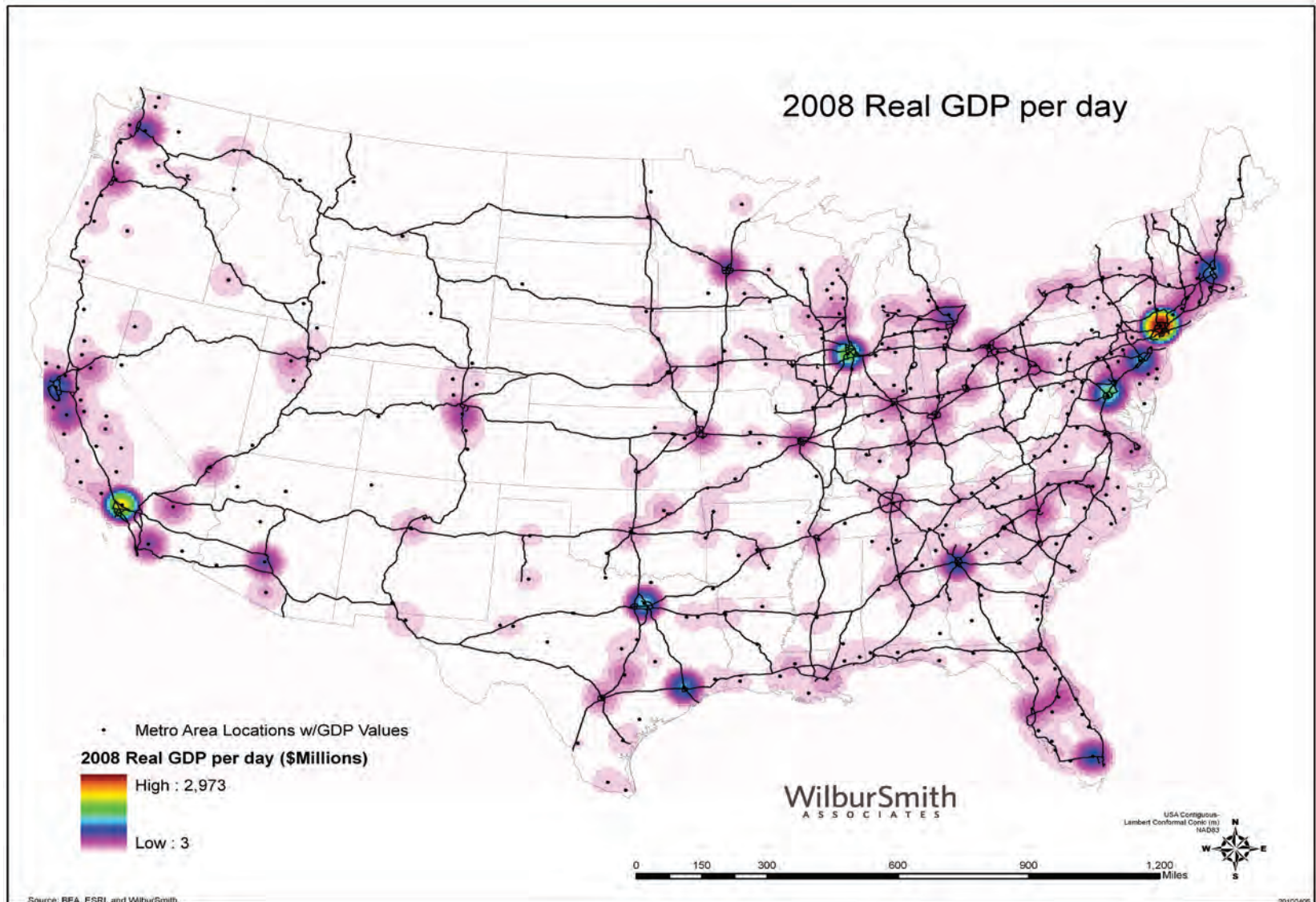
Source: 1996 National Transportation Satellite Accounts

As previously discussed, capacity balance is another indicator of cost. Balance occurs when a market size is sufficient to demand inbound freight traffic at a level equivalent to its rate of production such that equipment coming in loaded is able to leave loaded and the numbers are relatively equal and consistent with time. The most balanced areas have good manufacturing potential or trade opportunities coupled with a population center with matching demand. When one of these categories is out of line then imbalance generates additional costs.

In order to target markets and promote economic growth, a region must have the necessary transportation connectivity to reach desired market locations. Population density is one of the primary drivers of freight density and geography, plus connectivity drives many modal service options. The Inland Pacific Hub study area is well connected to coastal population centers in the Pacific Northwest with Interstate 90, several Class I rail lines, the Columbia-Snake River systems and frequent air service between Spokane and Seattle. What the IPH study area lacks are similar connections to Canadian population centers to the north, namely Calgary and Edmonton, and U.S. population centers to the south, namely Boise, Salt Lake City, Las Vegas, Phoenix and southern California.

In *Working Paper 3.4: Trade Opportunities* the necessity and benefits of focusing trade efforts on a north-south axis were discussed. The map in **Exhibit 8** displays economic activity across the U.S in terms of real gross domestic product (GDP) per day. The map also shows the Interstate Highway System of the U.S. Examining this map closely suggests that the IPH study may be the most isolated economic center of its size in terms of access to north-south interstate highway facilities.

Exhibit 8: Population and Economic Activity Centers in the U.S.



This material has all been largely focused on the geographic and distance factors. From a competitive perspective with regard to the nation, the Inland Pacific Hub study area is both blessed and challenged by its geography. The ports of Seattle, Tacoma, Portland and Vancouver are major “gateways” to prolific Asian trade markets, and the IPH study area is on the door step of those gateways. Similarly, counties in both Idaho and Washington in the study area border British Columbia, one of the fastest growing provinces in Canada. However, the region has second tier transportation access to Canada, and access to European market gateways is costly and/or time consuming. As a result, activities to support greater trade in the study area should adapt a market focus that takes these advantages and disadvantages into consideration.

There are of course other competitive elements to consider that affect transportation costs and impact development potential. Changes to these elements in a positive or negative direction have a definite bearing on the effectiveness of a marketing plan. Some of these costs are purely economic and some are less quantifiable, but lead to an economic impact in the end.

Assessing Competitiveness

The template shown in **Exhibit 9** provides specific targets for development, their related transportation and logistics factors, and the ways in which the development can be affected by each. This template is intended not only for a current assessment but as a gauge for evaluating future plans and options.

For example, the factor of transit time appears in more than one targeted area. This study has addressed the regional needs for infrastructure improvement under current conditions. Both physical infrastructure and policy changes such as truck restrictions can impact transit time. This template can be used as a checklist to evaluate the impact of proposed changes. It can also be used to reassess the shifts that occur naturally over time to point out the need for updating the plan.

The factors presented include many topics from stakeholder needs and from the framework for updated interview and survey assessments to maintain the freight mobility plans. Additionally, these categories are useful in comparing the Inland Pacific Hub study area with other regions where a competitive assessment might be useful. The factors listed in the template have held over time and will continue to be the primary measures for freight and logistics productivity and the impact on areas of development such as jobs and quality of life.

Exhibit 9: Targets of Regional Development

Targets of Regional Development	Transportation & Logistics Factors	Impact	Cost Effect
Jobs			
Manufacturing	Transportation Cost	Cost of Materials to Produce Products	High inbound rates increase the cost of raw materials and component parts therefore cost of goods sold.
		Cost to Reach Point of Sale	High outbound rates drive up product pricing relative to competition from areas with lower cost service
	Transit Time/Congestion	Consistent, Timely Access to Materials	Production costs rise when materials are not available to schedule, conditions also drive up cost to transport
	Capacity	On time shipping	Lack of capacity causes inconsistent levels of service to the end customer and threatens business
	Mode Choice	Cost, Market Limitations	Low cost options are unavailable or in short supply
	Market Access	Sales Volume	Geographic placement and distance affect both cost and viability to reach distant populations centers and international gateways.
	Market Viability	Commodity Choice	Geography and mode choice restrict ability to produce some commodities and reach certain target markets
	Quality, Consistency	Customer Service Quality	Inconsistent availability of capacity creates problems in meeting shipping schedules and the delivery expectations of customers.
		Sustainability of Service	Geographic location affects weather related service interruptions
		Consistency of Service	Congestion affects transit time and service Infrastructure conditions and congestion increase cost through maintenance and time delay
Service	Inbound Transportation Cost	Cost for Materials Necessary to the Service	High inbound rates for materials increase the price of offering service
	Market Access	Availability of Required Products	Certain products needed in the service may be unavailable or costly, both affecting the quality of the services offered.
	Transit Time	Replenishment Time	Stock outs on materials deters customers from shopping and increases the overall cost to provide the service
	Quality, Consistency	Materials to Provide Service	Service processes depend upon consistent access to materials without which costs will increase of services will diminish.

Targets of Regional Development	Transportation & Logistics Factors	Impact	Cost Effect
Economic Growth			
	Transportation Costs	Attractiveness to Industry	High cost transportation, inbound or outbound, detract from a region's ability to attract industry.
	Mode Choice	Industry Type	Industries desiring specific modes of transport will not locate if the preferred mode is unavailable, difficult or expensive to utilize.
	Congestion	Mobility -Local, Regional	Local and regional goods movement depends on ready access and smooth flow. If missing then costs increase.
	Market Access	Types of Industries to Attract	Transport access to markets is affected by geographic placement and by mode, also cost Market access important to industry cost.
	Capacity	Access to Transport	Consistent availability of capacity is important for cost, reliability, and quality of market delivery
	Infrastructure Quality	Cost of Transport, Particularly Local, Regional	Poor infrastructure reduces transit time and increases maintenance expense, increasing cost overall
	Freight Policy	Availability of Transport Service	Policies determine equipment type and size, labor requirements, services, facilities etc. all determinants of overall cost
	Labor and Tax Policies	Availability of Logistics Service	Asset based providers - carriers, warehouse operators, are concerned about costs created through taxes and labor rates and policy
	Labor Availability	Availability of Logistics/Regional Transport	Workforce availability with various skill sets, low to high are required in supply chain activities
	Freight Zoning	Facility Location	Policies that promote location of freight facilities in areas that provide services and ready access are attractive
Industrial Diversity and Modernization			
	Mode Choice	Access to required/preferred service	Modal limitations either limit diversity or increase the cost to a level of deterrence
	Ancillary Freight Service	Availability of specific required services	Support services - final assembly facilities, customs, etc may be necessary for a particular industry to be cost effective
	Market Access	Access to materials and point of sale	Geographic placement and modal options determine ready access to both materials and markets.
	Capacity	Requirement for types, volumes of equipment	Consistency of transport, logistics services, and types are important to maintain service levels to point of sale
	Labor	Service availability for industry requirements	Particular high tech industry may require specific warehousing and logistics support with skilled labor

Targets of Regional Development	Transportation & Logistics Factors	Impact	Cost Effect
Quality of Life			
	Infrastructure Quality	Infrastructure affects both freight and passenger	The quality of the infrastructure supports freight but it is also important to passenger travel in a region.
	Separation of Freight Areas	Mixed use roadways create safety issues	Separating freight traffic from passenger traffic improves safety, can reduce congestion, and improves public perception
	Market Access	Air Quality	Planned freight zones, routing and access reduces congestion and improves air quality
	Cost of Inbound Transportation	Access to goods from distant markets	Limited access to distant markets reduces the types and volume of products available to the consumer
		Cost of goods and services in the region	High costs for inbound transportation limits products and services and increases the costs to the consumer.
Economic Sustainability			
	Infrastructure Planning	Long range plans for connectivity and quality	Companies looking to develop recognize the value of infrastructure planning to their future costs
	Freight Mobility Planning	Long range attention to freight holds costs	
	Addressing Factors from:		
	Logistics Quotient	Promotion of population and job growth creates	Balance is critical to transportation pricing, improved balance holds costs, attracts more quality carriers and improves service
	5-Star Business Opportunity	Demand and supply balance	

How to apply the Regional Development template:

Using the first regional development target shown on the template; *Manufacturing* as an example. The following discussion suggests how the template can be applied to impact transportation and logistics costs for manufacturing firms in the IPH study area: If, from a strategic perspective the IPH study area wishes to target job growth in the manufacturing sector, there are a number of *Transportation and Logistics Factors* that are of key importance to modern manufacturing operations:

- Transportation Cost
- Transit Time
- Capacity
- Mode Choice
- Market Access
- Market Viability
- Quality/Consistency of Service

Each of these factors has cost implications for businesses engaged in manufacturing in the IPH study area. And for each transportation and logistics factor there exist strategic policy decisions and potential infrastructure investments can influence the costs associated with a particular factor. For transportation cost – the stakeholder outreach and analysis conducted for this study suggests that the IPH study area has a cost advantage for goods being shipped to Asian markets, and that lane imbalances (more flows exiting the region than entering the region) suggest that economic development might target businesses that rely inputs coming from through Pacific Northwest gateways or population centers to the south such as Boise, ID. It is likely that the volume of empty backhauls from these areas would result in very competitive transportation rates on inbound shipments.

Similarly, many manufacturing businesses, especially those producing “hi-tech” products market themselves based on quality and consistency of service. When service consistency declines, manufacturers and/or receivers must hold higher levels of inventory to ensure consistent production schedules. Higher inventory levels result in higher transportation and warehousing costs, which in turn make the IPH study area less attractive to potential manufacturing developments. During stakeholder outreach sessions a number of key truck routes in the region were cited as dangerous or unreliable under various climatic conditions. Improving key routes to all weather roadways is one example of a strategic infrastructure investment than could be taken to improve consistency of service.

Logistics Competitiveness Analysis

From **Exhibit 10** it is possible to identify those areas where the Inland Pacific Hub study area has the most potential to improve its position and compete effectively with other regions of the country, drawing on its strengths and taking advantage of apparent opportunities.

Exhibit 10: Inland Pacific Hub Study Area SWOT

Inland Pacific SWOT With Respect to Transportation and Logistics

Strengths

- Low Outbound Truck Rates
- Good Carload Service
- Proximity to Ports
- Proximity to Canada
- Population Centers in California
- Skilled Workforce
- Airport
- Strong Historical Products
- New Developing Products

Weaknesses

- High Inbound Truck Rates
- Weak Domestic Intermodal Capability
- Geographic Position wrt Markets
- Distance from Markets
- Access and Resiliency of Infrastructure
- Strong N-S Corridor
- Infrastructure Needs
- Policy, Regulatory Issues State & Federal
- Taxation

Opportunities

- Improved North South Corridor
- Improve Local Infrastructure
- Support for Regional Solutions
- Promotion of Developing Industries
- Interest from Canadian Public Sector
- Look for Consistency and Opportunity in Policy and Regulatory Issues
- Support Evolution of Existing Industries
- Promote Tourism and Quality of Life to Improve Logistics Quotient

Risks

- Failure to act Regionally
- Price of Fuel Drives Up Truck Pricing and Makes Intermodal More Necessary for Certain Industries
- Lack of Development on Canadian Trade

The Effect of Equipment Balance on Pricing

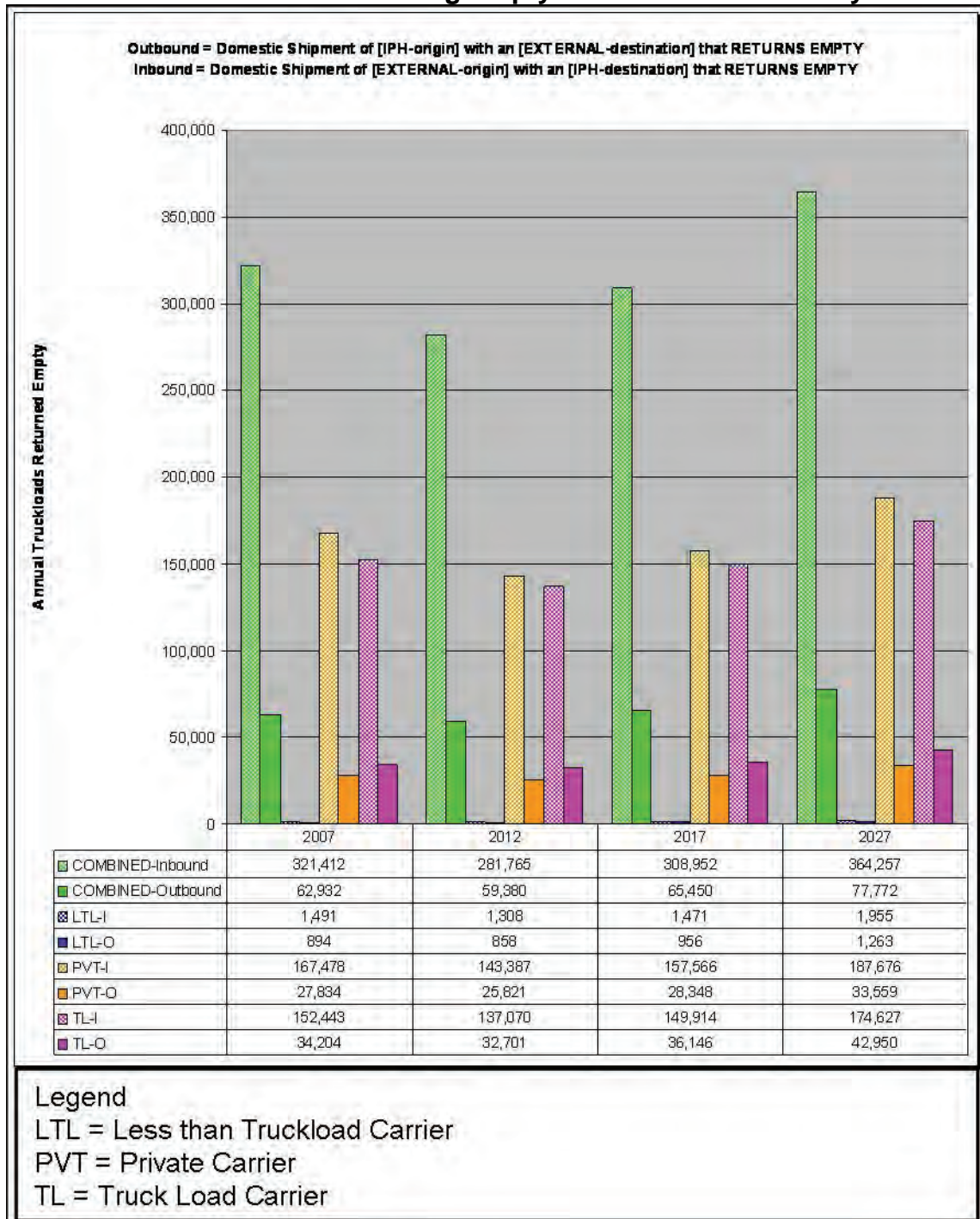
Market pricing for the IPH is a serious consideration relative to the need for long-haul truck service. In the IPH study area, the demand for inbound truckload equipment exceeds the number of loads moving out. Inbound pricing is high because the outbound competition for loads reduces the revenue going out and increases the waiting time and potential empty miles. Some motor carriers and individual owner operators may choose not to serve the region, affecting the availability, type, and quality of services that can be obtained. The result is that businesses requiring inbound materials pay a premium for transportation either directly or through the cost of the goods they are purchasing. While outbound shippers may see a price advantage, their carrier choices and service selection may be limited. These concerns were presented by region's businesses during the IPH interview process. While the businesses in the region have managed to address the problems for their own needs there remains a concern about the effect this has on the ability to manage a surge in demands, such as the need for additional capacity is needed to meet increased customer demand or seasonal shifts in volume. There is also a potential limit on the ability to grow the business over the longer term. This definitely is also an issue in the potential to attract new business.

These same equipment balance issues come into play with the other modes, particularly intermodal service where empty container and drayage movements add to the cost experienced by shippers. Drayage charges to an intermodal hub or port location are usually predicated on the round trip distance unless the carrier has access to sufficient freight in both directions to allow for a one way charge. If a location has a systemic imbalance of containers, the intermodal service is costly or simply not provided.

The key elements for equipment balance are base volume and lane density. Lane density develops from saturated, target outbound markets that also supply the goods needed in the region such that the lanes have a balanced flow.

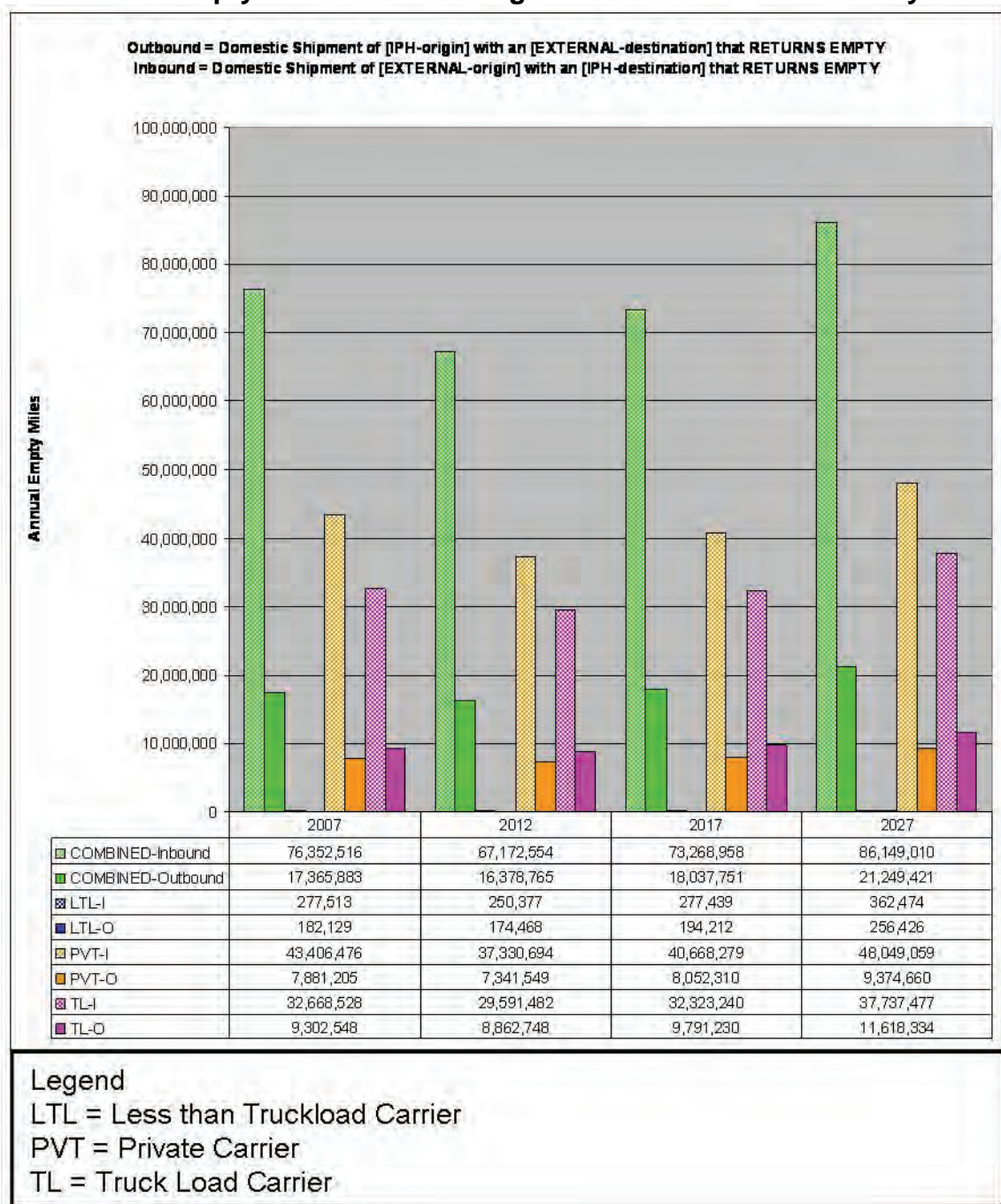
The empty flow data from the TRANSEARCH™ database, shown in **Exhibit 11** and **Exhibit 12**, shows a significant gap in truck balance for 2007 which continues to widen if the conditions do not change in a way that will positively impact future outbound from the region. The charts display truck movements and empty miles separately by mode and also combined.

Exhibit 11: Unit Trucks Moving Empty To and From IPH Study Area



Source: WSA analysis of TRANSEARCH™ data 2007

Exhibit 12: Empty Truck Miles Moving into and out of the IPH Study Area



Source: WSA analysis of TRANSEARCH™ data 2007

The ability of the region to foster higher outbound volumes to offset this gap in empties is important for competitive pricing for transportation as well as for service quality and consistency. A better empty balance will be an improvement but it must also be accompanied by more focused lane density, the additional factor affecting the availability and price of services.

A second effect of empty miles is the exposure for cost and service that stems from rising fuel prices. Carriers are not able to directly recover empty fuel expense through the fuel

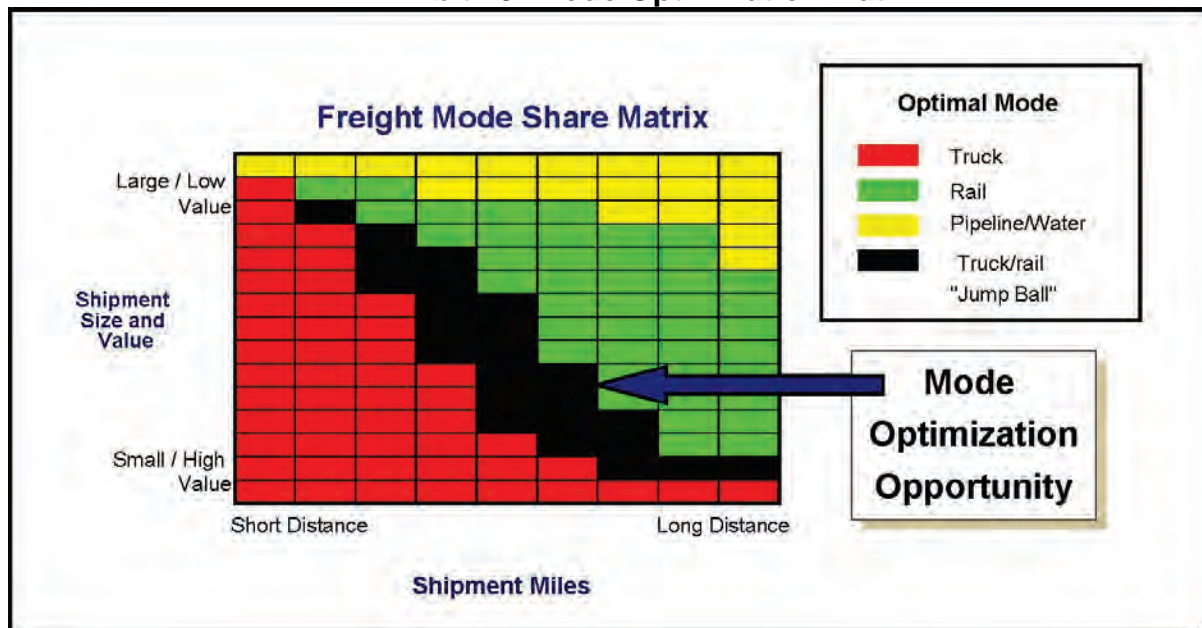
surcharge mechanism which is based on loaded miles between origin and destination. This creates complications when carriers try to estimate this cost in their base pricing. Because the variability can be significant, it is difficult to accomplish and acts as a deterrent to business, something that will decrease the availability and quality of capacity.

Length of Haul

In order to service the primary metropolitan areas of the country, with the exception of the west coast, an IPH business must engage in long haul transportation. The distance increases costs for the major transportation expense. It also adds to the inventory cost for goods in transit over a longer period of time and can therefore be a disincentive to shippers when examining their total supply chain cost. The price of fuel has a particularly strong effect on the costs over a long haul. As fuel returns to higher pricing levels the pressure for shippers to near source and make mode shifts increases. Shippers are more likely to seek a less costly intermodal option when trucking prices increase.

In June 2009, Matthew K. Rose, Chairman, President and CEO of BNSF Railway presented the graphic in **Exhibit 13** in testimony before the Senate Commerce, Science and Transportation Subcommittee of Surface Transportation and Merchant Marine Infrastructure, Safety and Security. Mr. Rose's presentation to members of Congress suggested that trucks perform best on short-hauls of 250 miles or less and that railroads performed best moving large volumes of goods between freight gateways and major population centers. The main area of competition between truck and rail, the competitive "jump ball" arose as the length of haul increases and the value of the freight declines. This "jump ball" area will fluctuate based on a number of factors such as regional highway congestion and fuel prices. For example, eastern railroads tend to be more competitive on many medium distance corridors due to higher urban density (and hence freight density), and greater delays on many highway corridors in heavily urbanized areas.

Exhibit 13: Mode Optimization Matrix



Source: BNSF Railway, Presentation by Matthew K. Rose to the Senate Commerce, Science and Transportation Subcommittee on Surface Transportation and Merchant Marine Infrastructure, Safety and Security

The intermodal service in the IPH study area does not support wide coverage in a cost effective fashion. There is limited intermodal service to Minneapolis and Chicago via the Burlington Northern Santa Fe (BNSF) Railway and a circuitous drayage gives access to the Canadian railroads. The circuitry issue was raised by several shippers during interviews: Because none of the U.S. Class I railroads operate coast to coast (the major carriers all interchange in Chicago or other Midwest hubs), some IPH shippers' truck containers bound for Europe to Vancouver, BC. After draying the containers to Vancouver they are lifted onto a double stack intermodal train on the Canada National Railway and railed to the Port of Montreal and from there loaded to a container ship.

To draw improved intermodal service to the region requires the development of volume and vector (directional) density. One potential alternative is a less circuitous drayage to the Canadian rail system by focusing on the north south connection in cooperation with Canadian cities and railways. Also, an examination of other potential connections such as Railex, and Port of Quincy which is adjacent to and accessible from the region, could be very beneficial. Developing good highway connections that support efficient drayage to existing domestic intermodal points will improve the potential for intermodal service options for the area.

Other Geographic Considerations -- Coordinating Resources

In addition to the long-haul transportation issue, the region also faces a more basic challenge from the overall geography that combines two states, three urbanized areas and multiple smaller communities, along with an international border. The need to best utilize resources and promote development requires cooperation, planning, and a desire for change across a wide spectrum of agencies. This need for coordination certainly adds a layer of complexity when competing with other less fragmented regions.

On the transportation side, one challenge is to reconcile differences in regulatory issues such as weight and length limitations. Border security planning requires coordination, and commodity tariffs and restrictions need to be examined as a way to promote cross border cooperation and increased trade.

The urbanized areas in Spokane County and Kootenai County have completed independent traffic volume studies at their respective border crossings. The border crossing data is important for the investigation of future opportunities and needs for east/west connectivity and to direct traffic to selected border points. This type of investigation emphasizes the need for the two urban areas to begin planning as a region and also emphasizes the broader need for the study area to reach out to Canadian border cities and regions.

It isn't sufficient to only consider the physical aspects of infrastructure planning. Policy plays an important role. Coordinating policy to be consistent through a freight corridor is equally important to better mobility. Fewer differences in policy and regulation reduce costs for carriers and therefore shippers. For instance, differences in truck size and weight regulation between jurisdictions often result in shippers having to employ configurations that meet the lowest common denominator in a regional regulatory scheme. Differences in business taxation are also an issue that is likely to lead to more

freight dispersion. The coordination of policy and infrastructure planning are important considerations. An equal concern growing out of the geographic study area is the combination of both rural and municipal needs, along with the cultural concerns of the Native American population.

Access, Resiliency, Security, and the Environment

Supply chain processes and technology have continued to evolve to a point where shippers can begin to focus attention on concerns beyond pickup and delivery. National and international issues have also contributed to this shift. Among the supply chain areas that are of increasing importance to shippers are resiliency, security, and impacts on the environment.

Resiliency is the term used to describe the ability of a supply chain to recover and/or continue to operate in the face of some adversity, either natural or man-made. An often cited example is WalMart which maintains very complex models to simulate what changes need to occur when disasters such as Hurricane Katrina disrupt transportation and may prevent access to some distribution centers in the retailer's network.

In the case of the Inland Pacific Hub study area, weather is a direct threat to resiliency and one that is primary to the infrastructure. To its credit the Washington State DOT has undertaken a number of studies and even has a page on the Freight Office website devoted to the topic of "resiliency" (<http://www.wsdot.wa.gov/Freight/publications/Resiliency.htm>).

In 2008 WSDOT also completed an analysis and report regarding the effect of storm related closures of I-5 and I-90 and their impacts on the state's economy.[‡] The study estimated that total losses to the economy from freight delays due to storm related closures in the two corridors totaled nearly \$75 million. While the report focuses on two key interstate corridors in Washington State, the regional impact is clear as weather related delays, especially closures of Snoqualmie Pass carry over into the Idaho portion of the study area.

One of the specific actions that WSDOT has undertaken is the establishment of an "all weather" road network. The all-weather standard currently applies mostly to the state highway network. The all-weather standard indicates the pavement structure is such that these roadways are not weight restricted during spring thaw periods. In its 2008 transportation plan update WSDOT recommended the following: "*Identify, establish, and fund a statewide core all-weather county road system.*"[§] In 2007, through its research partnership with Washington State University the department identified the top all weather road needs by county. However, in the eastern region of the state the researchers noted:

"Many of the individual county transportation projects appear to have no connectivity with neighboring counties, as is evidenced by the regional map..."^{**}

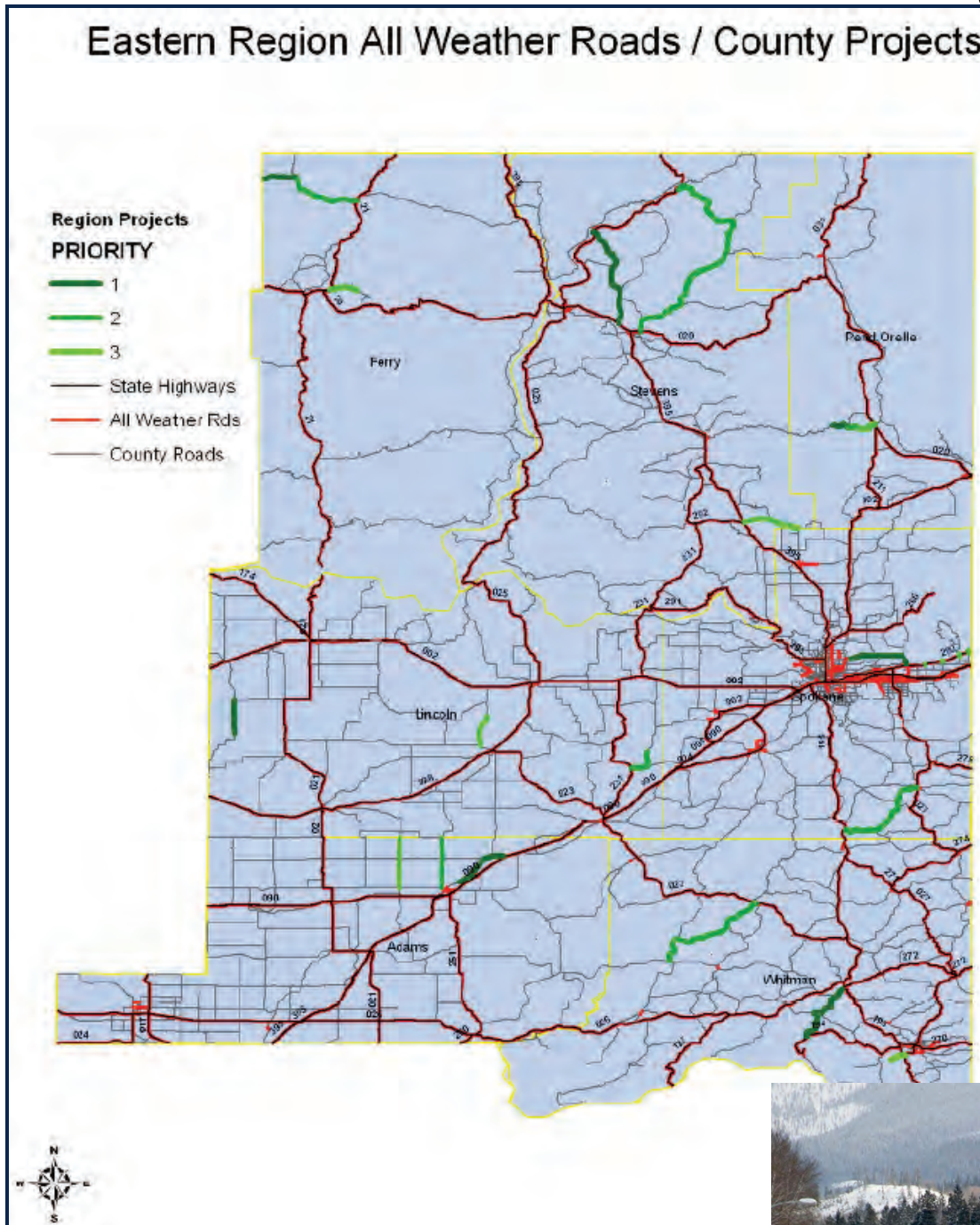
[‡] *Storm-Related Closures of I-5 and I-90: Freight Transportation Economic Impact Assessment Report*. Final Report, September 2008. Washington Department of Transportation.

[§] Washington Transportation Plan Update Freight Movement, September 2008. Pg. 11.

^{**} Jessup, Eric L., Cullen, Kelley L., Lenzi, Jerry, Cassavant, Ken: *All Weather Road Projects for the State of Washington: A GIS Application/Analysis*. SFTA Research Report #23, September 2007. Pg. 91.

The map referenced by the researchers appears as **Exhibit 14** below:

Exhibit 14: All Weather Road Needs Identified in Eastern Washington



For the IPH study area, weather is an ongoing threat, but resilience planning is another planning area that would benefit greatly from a comprehensive regional approach.



In the Logistics Quotient ranking introduced earlier, Spokane lost ground because of the conditions of the infrastructure and operating conditions in the immediate area. Regulatory and taxation issues also had a dampening effect on the ranking. These issues were discussed previously in this document and also more extensively in working papers 4.1 and 4.2. They are being raised again here because they have a direct effect on pricing offered by motor carriers and on the service quality and transit times that can be provided. Companies considering a location will also take into account how the infrastructure will affect the employees as well as the freight mobility. Below are some target elements that can improve the infrastructure issues in the region.

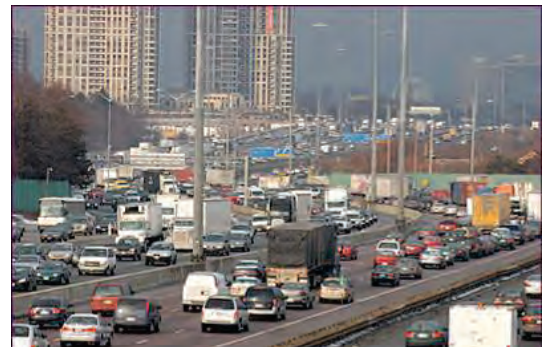
Resiliency and Safety - Regional Initiatives for Highway Improvements

- Strategies to better monitor, respond to, and clear incidents quickly
- Road weather management
- Using various techniques to limit congestion during highway construction activities

It should be noted that recently WSDOT implemented a Commercial Vehicle Pass System as a new way of supporting freight movement by safely and efficiently authorizing emergency, essential, and other goods delivery to and through affected areas during highway disruptions of two to seven days in duration. WSDOT has also implemented a incident and construction email notification system for commercial operators. However, during interviews some carriers and shippers, while pleased with the progress, noted improvements could be made in terms of delivery mechanisms of the information, and having the information cover the entire study area in both Washington and Idaho. While these initiatives will likely improve commercial vehicle safety, the biggest benefit to the IPH study is likely to come from improvements in resiliency and predictability of shipments moving to and from coastal gateways.

Infrastructure Improvement

- Consideration of roadway needs for freight transport
- Increased road capacity
- Wider lanes
- Consideration of road alignment such as grades and curves
- Truck-only lanes



During stakeholder interviews, the greatest frequency of comments from shippers and carriers in the study area concerned the adequacy and condition of regional roadways and city streets. Key routes such as Division Street, Bigelow Gulch Road, Francis Avenue, US-95, US-395 and US-2 were just some of the routes noted as needing improvements. Haulers operating in Idaho noted that on some key routes in the study area they receive warnings for encroaching on the center line when operating long combination vehicle (LCV) configurations. Others noted low bridge clearances. Several carriers commented on the poor road conditions of key routes in and around Spokane and Coeur d'Alene, noting the need for bypass routes and long delays during highway construction activities.

Environment

The SmartWay organization points to a rising concern with environmental issues in the supply chain and a willingness of shippers and carriers to participate in improving conditions. SmartWay is a U.S. EPA organization that is supported by major carriers and shippers. The organization promotes the development of environmental standards and a process of certification throughout the industry.

As a newly developing logistics zone the Inland Pacific Hub study area has the opportunity to place emphasis on the development of facilities that are environmentally friendly. There are also opportunities to examine the infrastructure development in order to promote improved operating conditions that reduce congestion and promote designated land use, both things that contribute to reducing carbon emissions and concentrations.

Security

Security in the supply chain is also an issue of increasing concern. Certainly the international border is an obvious area of focus but there are also concerns about cargo security and hazardous materials movement both nationally and internationally. In terms of cargo security and theft the most vulnerable aspect of the supply chain is the drayage movement for containers between the origin shipper and the port or other intermodal terminal. While this is not at the high end of the Inland Pacific traffic, it does occur and therefore warrants some consideration particularly in the development of new facilities. Certain high value and highly marketable commodities are subject to theft throughout the transportation process. It is common for trucks carrying saleable cargo to be followed from origin and accessed when they are at vulnerable points. Again, secure facility development is important.

One aspect of security carries over into the area of “freight friendliness”. This has to do with the provision of adequate facilities for trucks and drivers for services, break time, and for staging for pickup and delivery of freight. Planning new distribution facilities with adequate parking and staging areas that are secure and accessible to drivers is one action that can be taken in this regard. Another is the development of truck stop facilities with current technology for operations and the environment such as access to electricity at the parking space to power heating and cooling systems without running the engine. There is a significant shortage of driver facilities across the country and a focus on this area of development can enhance the attractiveness of the Inland Pacific Hub study area and improve the pricing on transportation as well.

Recessionary Effect on Capacity

During the recent economic recession, many motor carriers have gone out of business and the trend will likely continue until the economy regains momentum. Some carriers have sold off equipment to Asian markets to reduce their capacity. When a recovery begins, capacity in the trucking industry will be in short supply and the carriers remaining in operation will be selective about the markets they serve, seeking those that offer the best profit margin. As discussed earlier, it is more difficult to extract a profit from a truck haul, if one leg of the round trip is traveled empty.

In the Inland Pacific Hub study area, the higher level of empty miles diminishes the attractiveness to a long haul truck carrier to provide inbound service. When capacity is diminished overall, carriers have many choices for their operations and will avoid trip lanes that result in extra empty miles. This unbalanced load condition in a recessionary economy is likely to put the region at a greater risk of shortages for reliable, high quality long haul capacity. Higher fuel costs magnify this overall effect. As the price of fuel goes up, as it is predicted to do in the future, there are multiple effects through the supply chain. In combination, the overall shortage of trucking equipment and potentially higher fuel costs will likely raise shipper interests' in intermodal rail options for long-haul transportation. However, since the Inland Pacific study area lacks local access to the most efficient intermodal capabilities (i.e. double stack unit trains) the area becomes less attractive as a location for business. **Exhibit 15** highlights some of the behaviors adopted by shippers and carriers as costs increase.

Exhibit 15: Cost Consideration and Behavioral Adaptation

- As the Price of Fuel Goes from \$2 to \$4 to \$8 per gallon:
 - Fuel becomes a large percentage of a shipper's transportation cost
 - The cost gap between more fuel efficient transportation modes widens considerably
 - Inventory Costs vs. Transportation Costs
 - The cost gap will favor slower, more fuel efficient modes; however, the inventory cost for a slower, *inconsistent* mode is still a major issue
 - What Will Shipper's Do?
 - They will respond to rising costs by shortening distances, reducing the number of moves and reducing the cost of the move
 - Carbon costs will be factored into the optimization formula
- At what point does an increase in fuel drive mode conversion?
- \$2 Diesel (8%-20% of shipper's cost)
 - \$4 Diesel (15%-32% of shipper's cost)

Source: J.B. Hunt Transport Services, Inc. Transportation Research Board 2009 Session 577, How Supply Chains Respond to Fuel Volatility, January 13, 2009

When transportation costs exceed the increased inventory-in-transit and safety stock costs, shippers will seek a less costly mode (e.g., truck moves to intermodal, some intermodal moves to rail carload and in some cases the structure of the supply chain shifts to different locations for sourcing and distribution). Not only does the mode shift but the length of haul over which the mode shift is attractive shortens. Historically the shift point has been at a length of haul around 700 to 750 miles. As fuel prices rise, the effect on trucking is much stronger and the trade-off between the inventory expenses related to transit time of the intermodal service changes. Intermodal service has become competitive at 500 miles in some markets and rising fuel cost will support this trend.

Of course, the transportation cost isn't the only area of concern when companies are making location decisions. Many other considerations are important that affect not only the North American locations but the points of foreign sourcing and therefore the ports of

entry for materials, parts, and products. Along with these factors there are a number of issues present in regional operating conditions that can influence a location decision. The charts included below give illustration to some of these.

Exhibit 16 shows the relationship among factors which are critical in making site location decisions. The chart is split between the needs of distribution centers and those of a manufacturing site. Costs and conditions are evaluated as either critical or important. These factors relate back to the data presented in the Forbes ranking and also in the Logistics Profile. For the IPH study area, the lack of a north-south corridor that is designed to meet interstate type design standards likely hurts its ability to compete as a distribution hub. In addition, many of the manufacturers in the region, as well as the carriers serving them noted the long drive times required to “get through” Spokane when moving on a north/south axis. It can be generally said that the existing transportation system has served traditional industries like agriculture, mining and forest products quite well. The existing system has also been adequate in serving traditional manufacturing industries. However, high technology manufacturing, medical services, and other services industries such as transportation and warehousing are far more agile and rely much more heavily on less than truckload, and express package services. Many of these businesses generate or depend on transportation service frequency where “just in time” is measured in hours or minutes.

Exhibit 16: Site Considerations for Manufacturing and Distribution Centers



Source: Cushman & Wakefield, 2008 Transportation Research Board

Supply Chain Examples

This section of the paper discusses supply chain examples, their relationship to modes of transportation and their relevance to the Inland Pacific Hub study area. **Exhibit 17** indicates the preferred modes by commodity group.

The information in **Exhibit 17** provides the basis for matching the transportation capabilities of the Inland Pacific Hub study area with those commodities and industries that the region would like to expand and attract.

The industries presented in the categories where the Inland Pacific Hub study area has the most opportunity to compete are the industries that depend primarily on trucking, including regional or long-haul. There are some challenges on the long-haul trucking side but with improvements to lane balance issues, over time those challenges can be overcome. Similarly, rail carload service is such that the industrial elements utilizing rail are in a good position should market dictate further expansion of trade with Canada and Asia. Direct air freight services in the area are good via integrated carriers such as Fed Ex and UPS; however, the study area is unlikely to ever attract and sustain wide body air freighter cargo services unless it becomes a major international passenger hub as well. The primary short fall for the IPH study area is the lack of a good intermodal connection

that offers a lower cost substitute for trucking over long distances. This is a significant industrial and geographic challenge to the region.

What follows is a discussion of three specific supply chain examples: Retail, Grain, and Potatoes. These were selected as they represent commodities that are important in the region. High value products are also of interest to the study. Those commodities follow a supply chain quite similar to retail products, show in diagrams below. The primary difference is that high value goods are most likely to utilize trucking services although there are some applications where intermodal service will also be used. In some cases airfreight is also an option as a connector between nodes.

Exhibit 17: Key Industry Modal Preferences and Concerns

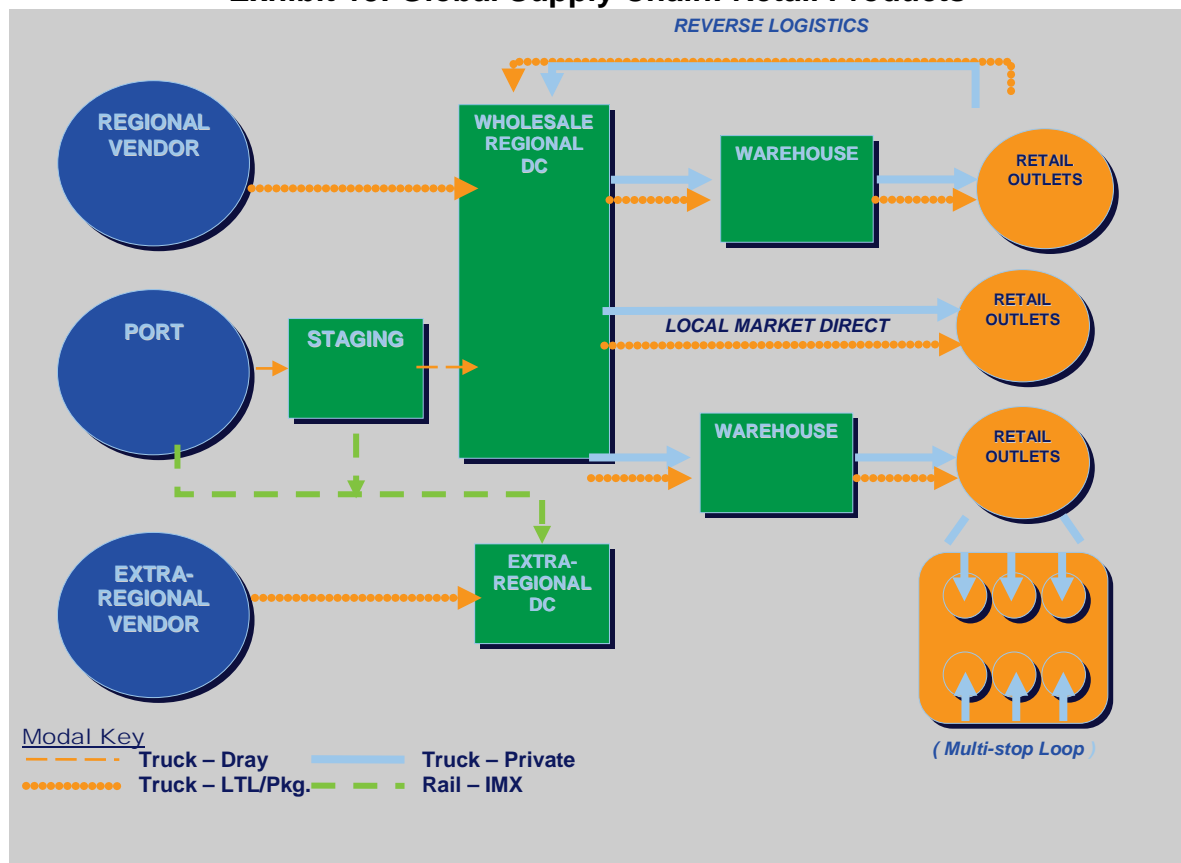
Key Industries		Inbound Modal Preference	Inbound Modal Concerns	Outbound Modal Preference	Outbound Modal Concerns	Implications for IPH
Technology	Electronics	Air Ride Truck Rail Intermodal	Rapid Port & Air Access	Air Ride Truck, Package	Security, Speed	Intermodal Options
	Pharmaceuticals	Package Carrier, Less Than Truckload	Cost Effective	Less Than Truckload, Air	Reliability	Capacity
	Energy	Air	Secure	Tanker, Flat Bed Truck & Rail	Market Reach	Geographic Service Area, Transit Time
						Quality, Reliability
Manufacturing & Processing	Light	Truck, Package Carriers, Less Than Truckload	Timely service for inventory	Truck, Package Carriers, Less Than Truckload	Truck, Package Carriers, Less Than Truckload	Intermodal Options
	Medium/Heavy	Truck & Rail Intermodal, Rail Carload	Balance production needs with cost to stock materials	Truck & Rail Intermodal,	Truck, Intermodal, Rail Car	Capacity
				Rail Carload		Geographic Service Area, Transit Time
						Quality, Reliability
Agriculture	Refrigerated	Truck	Capacity, Seasonality, Transit Time	Truck, Intermodal	Truck	Seasonal Capacity,
	Dry Van/IM	Truck, Intermodal	Capacity, Seasonality, Transit Time	Truck	Truck, Intermodal	Intermodal Options
	Bulk	Specialized Trucking	Capacity, Seasonality, Transit Time	Specialized Trucking, Rail Car	Specialized Trucking	Quality, Reliability, Security
						Geographic Service Area
Processed Foods	Refrigerated	Truck	Capacity, Seasonality, Transit Time	Truck, Intermodal	Truck	Seasonal Capacity
	Dry	Truck, Intermodal, Rail Car	Capacity, Seasonality	Truck, Intermodal, Rail Car	Truck, Intermodal, Rail Car	Intermodal Options
						Quality, Reliability, Security
						Geographic Service Area
Retail	Store Direct	Truckload, Intermodal, Less Than Truckload, Package	Capacity, Seasonality, Security	Truckload, Intermodal, Less Than Truckload, Package	Truckload Returns	Transit Time, Capacity
	Distribution Center	Truckload, Intermodal, Rail Car, Less Than Truckload	Capacity, Seasonality, Security	Truckload, Intermodal, Less Than Truckload, Package	Truckload, Less Than Truckload, Package	Intermodal Options, Security, Reliability
Mining / Lumber		Limited Inbound, specialized truck and rail car	Capacity	Specialized Truck, Rail Car	Specialized Truck, Rail Car	Capacity, Security, Reliability
Services		Package Service, Less Than Truckload	Schedule, Security	Limited Outbound, Package	Limited	Transit Time, Reliability

Retail Products

In **Exhibit 18**, there is an illustration of the pieces of the retail supply chain. The lengths of haul and modal options that form the links vary, obviously dependent on the geographic location of the nodes. Where the proximity of locations is regional, the service is provided by trucks. The longer haul lanes are divided among truck, rail, and intermodal. One critical node in this network is the port of entry or exit for import and export goods. If there is a change in the foreign point of sourcing then there is a likelihood that the port of entry will shift, altering the length of haul and potentially the modal choices in the network. Because of this uncertainty, shippers are rethinking the distribution locations, seeking flexibility and agility in their network. Locations which can reach large market areas over a short distance are likely to develop as primary hubs.

This form is fairly typical of retail chains as seen for the “big box” stores in the Inland Pacific Hub study area and shows the points in the chain that the region might choose to develop.

Exhibit 18: Global Supply Chain: Retail Products



Source: National Freight Forum I-10 Corridor

In a strategy to position the IPH study area to be one of these nodes there are several options to consider:

1. **Regional Vendor:** A regional vendor is a source of products and services located within the region supplying a retail outlet or distribution point also located within the region.
2. **Extra-regional Vendor:** An extra-regional vendor is away from the primary supply chain points and is sending products over a distance to the customer. An example of this would be Litehouse Foods in Sandpoint, ID providing product to Wal-Mart.
3. **Staging:** A staging node would be a location where materials are stored and prepped, possibly with some assembly or packaging work completed for distribution further along in the supply chain.
4. **Wholesale Regional Distribution Center:** A regional distribution center is a point of collection for products and materials coming from multiple locations intended for distribution within a geographic area defined by the business entity, usually based on volume of sales and location. This can be viewed as a hub with spokes leading to the retail outlets.
5. **Warehouse:** A warehouse serves to hold pre-production materials or finished goods in proximity to the original origin or the final destination in the supply chain. This is differentiated from the Distribution Center in that it doesn't supply a wider market.

The IPH study area currently serves as both a regional and extra-regional vendor but the extra-regional dimension is limited by the region's geographic location relative to eastern and southeastern markets, as well as the international markets accessed from the east and gulf coast ports. Milk processing for Darigold is both regional and extra-regional as the products go to California and elsewhere. Zak Designs, the manufacturer of children's plastic ware located in Spokane is an extra-regional vendor. In this case and in the case of Litehouse Foods, the products have found a wide market through very large retailers with their own distribution systems in place. The retailer's large size and network gives the local producer wider reach than it would have if marketing its products to individual locations on its own. Products which meet the needs of the big box stores do offer opportunity for Inland Pacific area manufacturers to expand in a wider market.

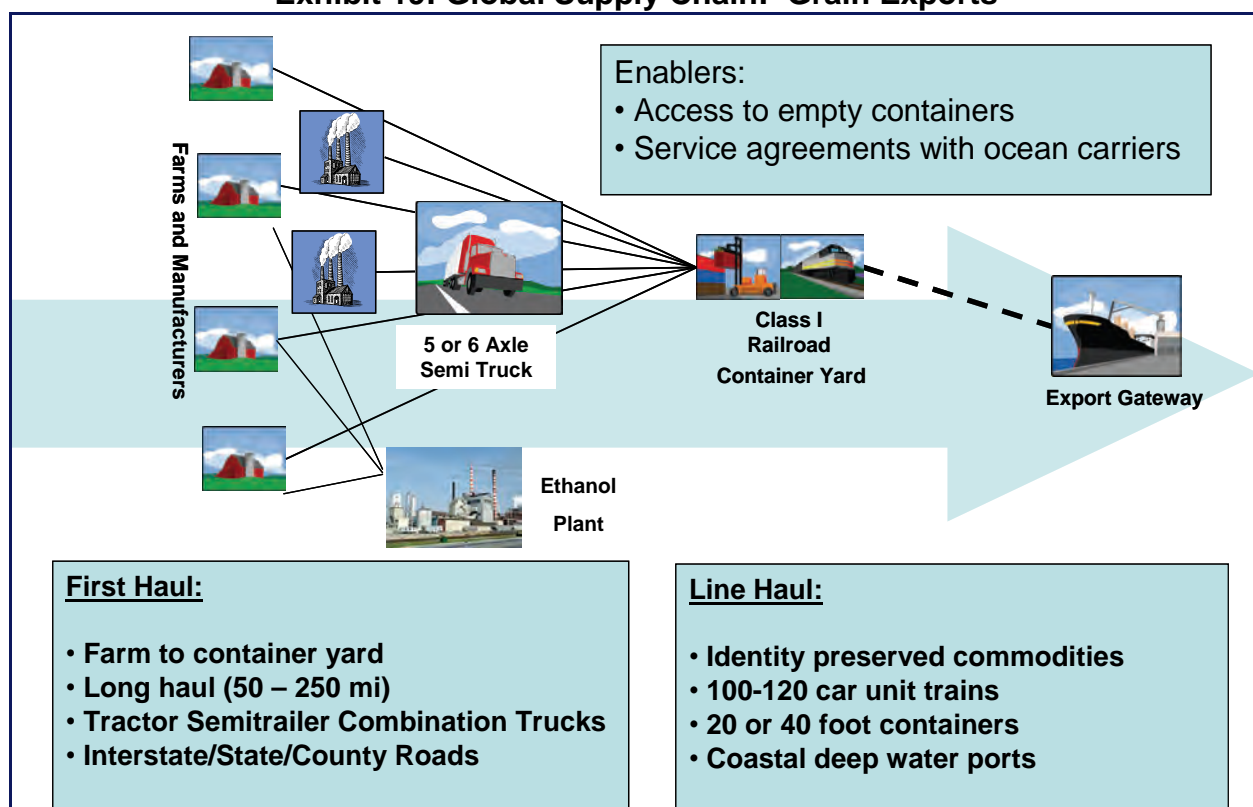
As a staging area, the distance to the Pacific Northwest ports is somewhat long but could be workable if there were nearby markets to be served. If the distance to the receiving distribution centers and consignees is long then it doesn't make operational sense to use the IPH for staging. Both wholesale distribution centers and warehousing are developed around access to market. The market volume around the IPH is not currently sufficient for the wholesale regional distribution center to develop on a large scale. However, for certain target commodities where the distribution center would serve a group of local industries there might be potential. Warehousing for both inbound and outbound materials and products serving the local and regional industry currently exists and can expand if the needs increase.

Grain Products

As shown in **Exhibit 19**, the supply chain model for grain is changing to accommodate the increasing production and distribution of ethanol, as well as containerization of specialized or “identity preserved grain products. The use of mid-stage grain elevators is diminishing and more products are going directly from field into the distribution chain, or from field to other value added processing such as food product production, or directly from field to an ocean export container. The Inland Pacific Hub study area is already involved in the adapting variation of this supply chain models in many areas of the region. It is likely that food scares such as the U.S. peanut and tomato scares of recent years will continue to diminish the demand for bulk shipping of grain and other agriculture products. Opportunities exist to support value-added functions of preserving the identity and origin of the agricultural products as a way of maintaining security and quality in the end product and through the food chain. This is an element that is gaining in popularity and practice from both a public interest and a regulatory perspective.

It is important for the region to protect and improve the viability of grain transportation. This requires that attention be given to those factors demonstrated in Exhibit 10. One of the more significant of these is the use of secondary state and county roads in the first haul portion of the chain. Regulatory consistency for weight, length, and other factors is also important. The resiliency of the system, to be discussed further on, is also important as both fuel and grain are critical commodities.

Exhibit 19: Global Supply Chain: Grain Exports



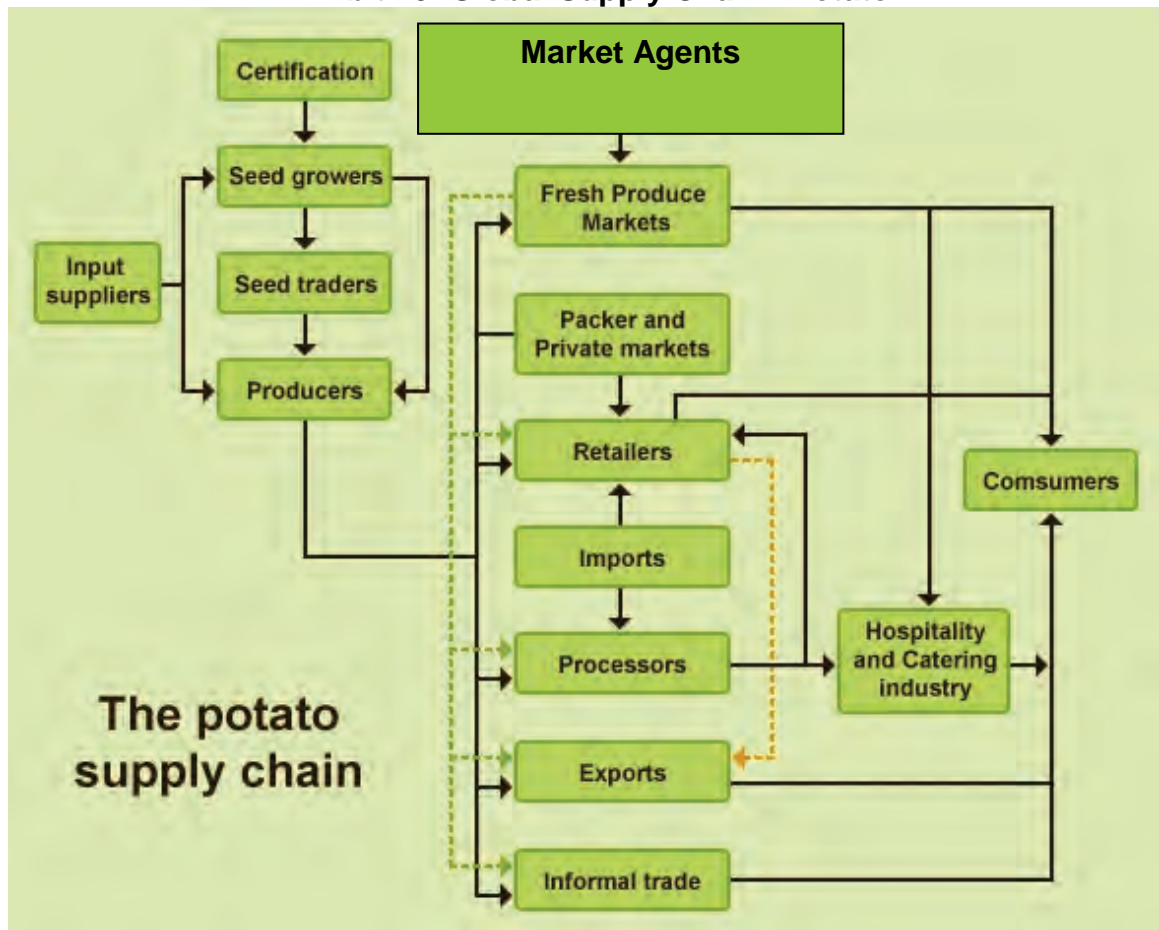
Source: Wilbur Smith Associates

Potato Products

The potato is one of the most important commodities for certain counties in the Inland Pacific Hub study area and counties in the Columbia Basin area adjacent to it. The charts and information below give some insight into the complexity and importance of the supply chain.

Exhibit 20 presents a detailed description of the various nodes in the potato supply chain, which is of particular importance to the Inland Pacific Hub. This diagram covers the process from the basic level of the seed moving on to the consumer. Within this chain a variety of transportation forms are involved, the most simple of those being farm trucks using local roads to reach fresh markets, the more complex using trucks, rail, and ocean transport to the international consumer.

Exhibit 20: Global Supply Chain: Potato



Source: Potatoes South Africa. Accessed: www.potatoes.co.za

In 2007 total world production of potatoes was more than 320 million tons, and about two-thirds were consumed by people as food. The other one-third was used as animal feed, and as potato starch in pharmaceuticals, textiles, adhesives, and in the wood and paper industries, etc.

The top 5 potato producing countries in 2007:

- China produced 72 million tons
- Russian Federation produced 36.8 million tons
- India produced 26.3 million tons
- Ukraine produced 19 million tons
- USA produced 17.7 million tons

According to USDA data from 2006, Idaho and Washington were the leaders for the top ten potato producing states. Washington and Idaho accounted for 57 percent of the 38.4 billion pounds of potatoes coming from the ten states listed below:

Top 10 Potato Producing States (2006 USDA)

1. Idaho produced 12.89 billion pounds
2. Washington produced 8.99 billion pounds
3. Wisconsin produced 2.94 billion pounds
4. North Dakota produced 2.55 billion pounds
5. Colorado produced 2.40 billion pounds
6. Minnesota produced 2.04 billion pounds
7. Oregon produced 1.85 billion pounds
8. Maine produced 1.80 billion pounds
9. California produced 1.51 billion pounds
10. Michigan produced 1.42 billion pounds

It should be noted that Idaho's potato production is centered in the southern portion of the state, however the crop data presented in working paper 3.1 suggests that in 2006 the study area harvested over 2 billion tons of potatoes. This implies that the Inland Pacific Hub's infrastructure be able to handle the same amount of volume as many other states in total. Additionally, some of these states have primarily a single or maybe a two dimensional flow of product. For example, Wisconsin would be shipping primarily to the South for the longer haul redistribution of product. The same is true of Minnesota and Maine. The highway requirements in those cases are focused on a set of primary routes. In other states, such as Washington and Idaho there is flow to the west coast ports, to the south, east, and north into Canada, all in relatively high volume. The importance of the crop and the processing to the economy not only of the region but on a wider scale means that more attention must be paid to the resiliency of the supply chain in maintaining constant availability. This issue of resiliency will be discussed in more detail below.

The maps in **Exhibits 21, 22 and 23**, taken from the Washington State DOT research report, *Development and Analysis of a GIS-based Statewide Freight Data Flow Network, November 2009*, show the flow of the potato supply chain from the primary source locations within the state of Washington. While some of the locations are not in the defined county region they do make use of the highway system through the region, particularly I-90, and they do present a question about a more direct connection to Canadian markets than the westerly route shown on the maps.

Exhibit 21: Shipment Destinations for Lower Basin Potato Production

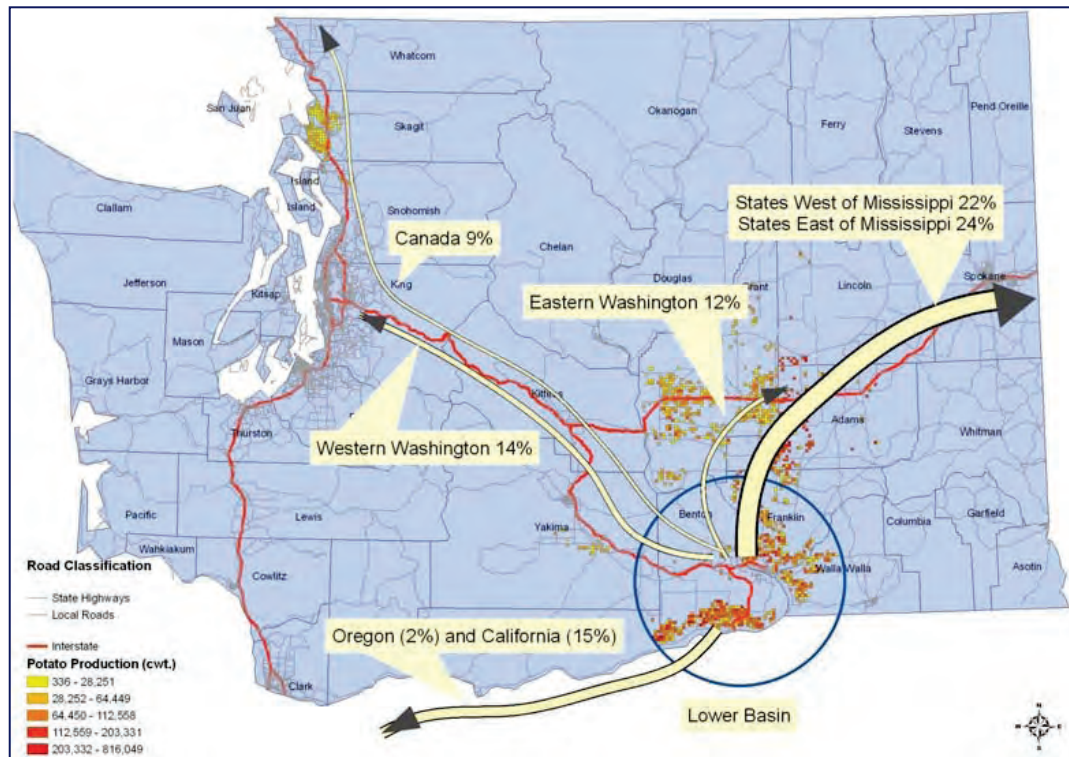
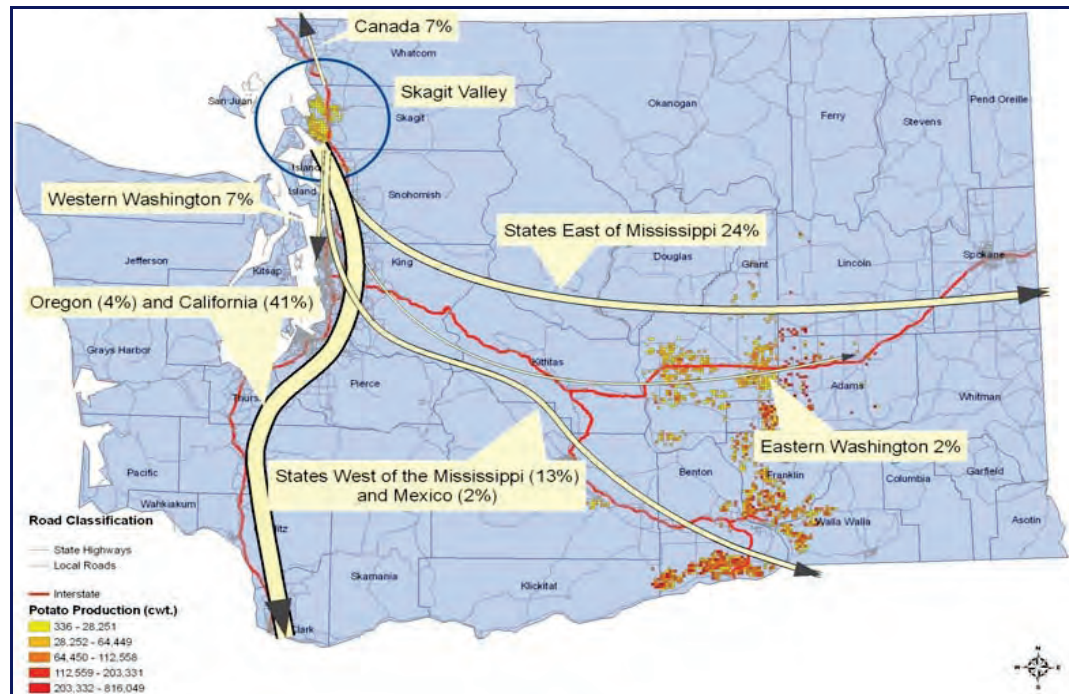
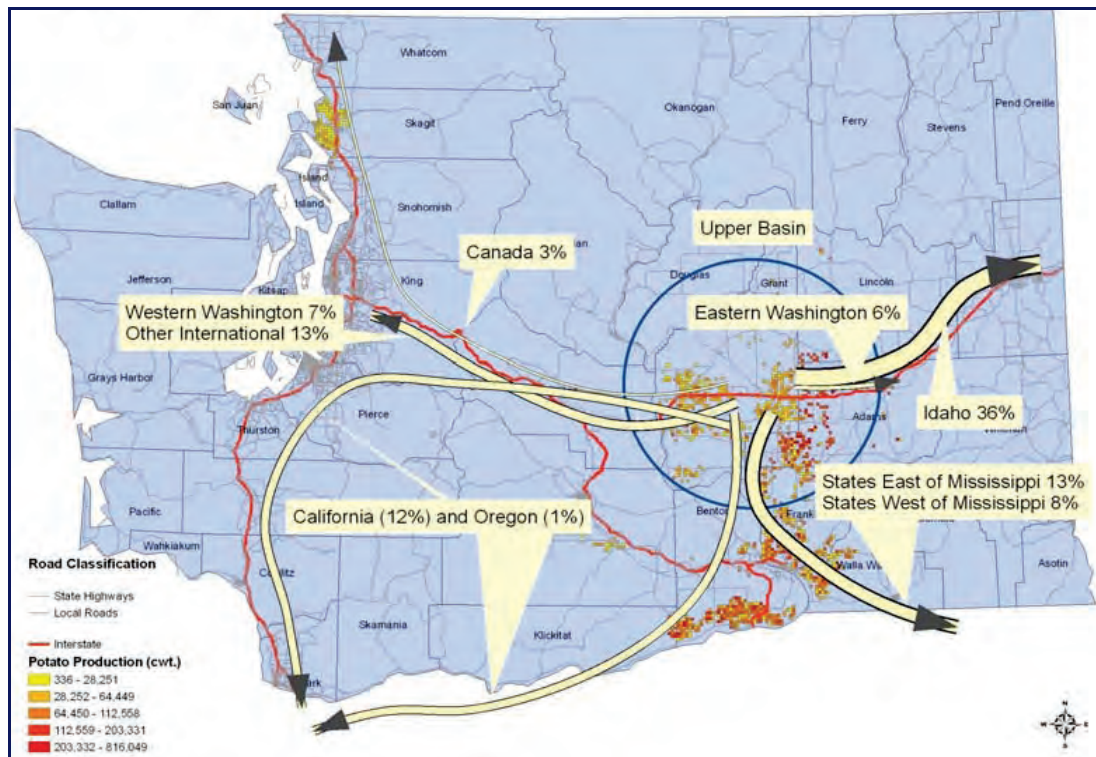


Exhibit 22: Shipment Destinations for Skagit Valley Potato Production



Source: WSDOT - Development and Analysis of a GIS-based Statewide Freight Data Flow Network, November 2009

Exhibit 23: Shipment Destinations for Upper Basin Potato Production



Source: WSDOT - Development and Analysis of a GIS-based Statewide Freight Data Flow Network, November 2009.

The study scope included some discussion of the differences between Maine and Washington with regard to potato transport. Interestingly enough, the geographic placement of Maine is similar to that of the Inland Pacific area in that it is somewhat isolated from population centers. Maine is also primarily dependent on trucking and has the same capacity and rate issues as does the IPH study area. The difference between the two from a supply chain perspective is market access. Maine has access to the population centers in the Midwest and down the east coast into the southeast via truck and intermodal service that begins south of Boston. Maine can also reach the markets in western and eastern Europe, eastern South America, the Middle East, India and beyond via the east coast ports and the Suez canal. Exports from the IPH area are restricted to Asia off the pacific coast ports, lacking an efficient land bridge to the east.

CASE COMPARISONS

It is useful to go beyond the data presented in the Logistics Quotient and similar comparative information and examine other areas of the country directly. The consultant team decided to complete two case comparisons and set about selecting cities with similar characteristics of the Inland Pacific study area. These characteristics included:

- Size and mix of population
- Geographic placement relative to major freight routes
- Mix of urban and non-urban areas
- Border proximity
- Similar modal challenges
- Location with respect to port access
- Bulk and agricultural commodity base
- Need for regional planning and cooperation
- Cities with current freight mobility and inland port initiatives

When combining these factors and including specific knowledge of the team it was determined that Duluth, MN/Superior, WI and Tucson, AZ would be useful comparisons for the study. Each of the three comparison regions make up the second largest urban areas in their respective states. Each of these While the Duluth/Superior region is an inland port (in that it is not a coastal port city), it borders on Lake Superior with its port established as one of the major tenets of the regional economy. Tucson, on the other hand, maintains a similar distance to a major coastal gateway port as Spokane/Coeur d'Alene. Each of the three areas is relatively close to an international border and so each shares the challenges and opportunities that land based border crossings present. Falling outside the primary freight routes of the country, they have a similar geographic challenge as the IPH study area.

Duluth/Superior and Spokane/Coeur d'Alene

The likely role of port infrastructure in the Duluth/Superior economy is significantly different than one might expect in Spokane/Coeur d'Alene, where there is no feature comparable to Lake Superior associated with the inland port. **Exhibit 24** shows the geographic areas of the two regions. Some meaningful criteria that make the comparison of the Spokane/ Coeur d'Alene economy with the Duluth/Superior economy include:

- Cities of comparable size
- Similar mix of urban and non-urban areas including ethnic populations
- Similar proximity to a border crossing (both regions border Canada to the north)
- Geographic placement relative to freight routes and major hubs.
- The importance of agriculture to the regional economy
- Similar challenges to the infrastructure from weather and commodity weights

Duluth/Superior is also relevant because the region crosses state borders and faces similar challenges as the IPH study area for regional resource allocation and cooperation.

Exhibit 24: IPH Study Area and Duluth/Superior Area

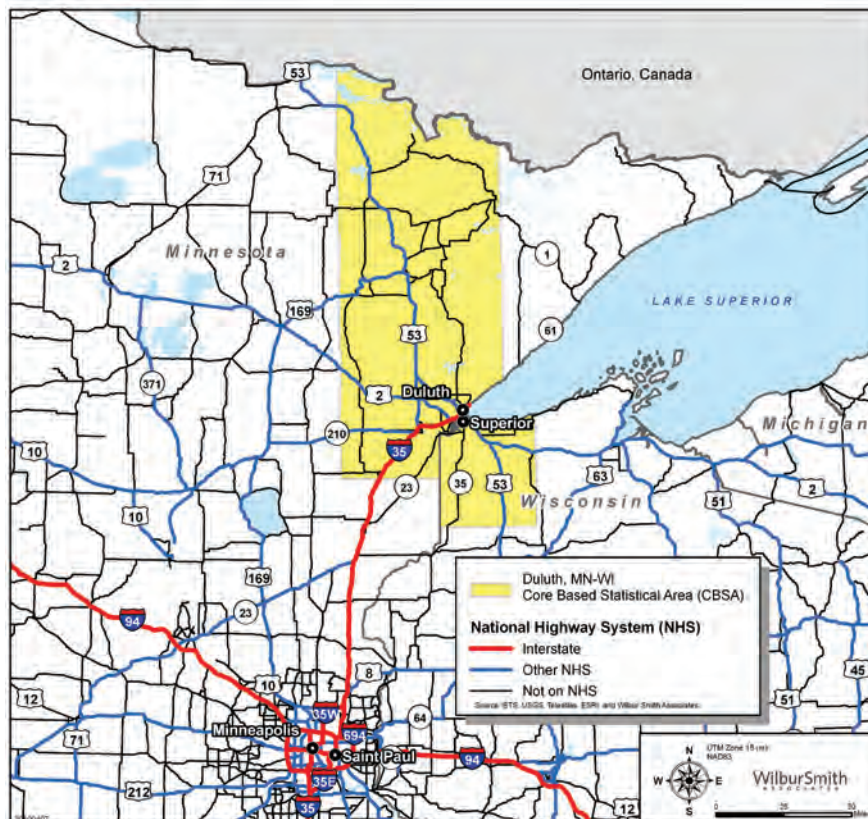
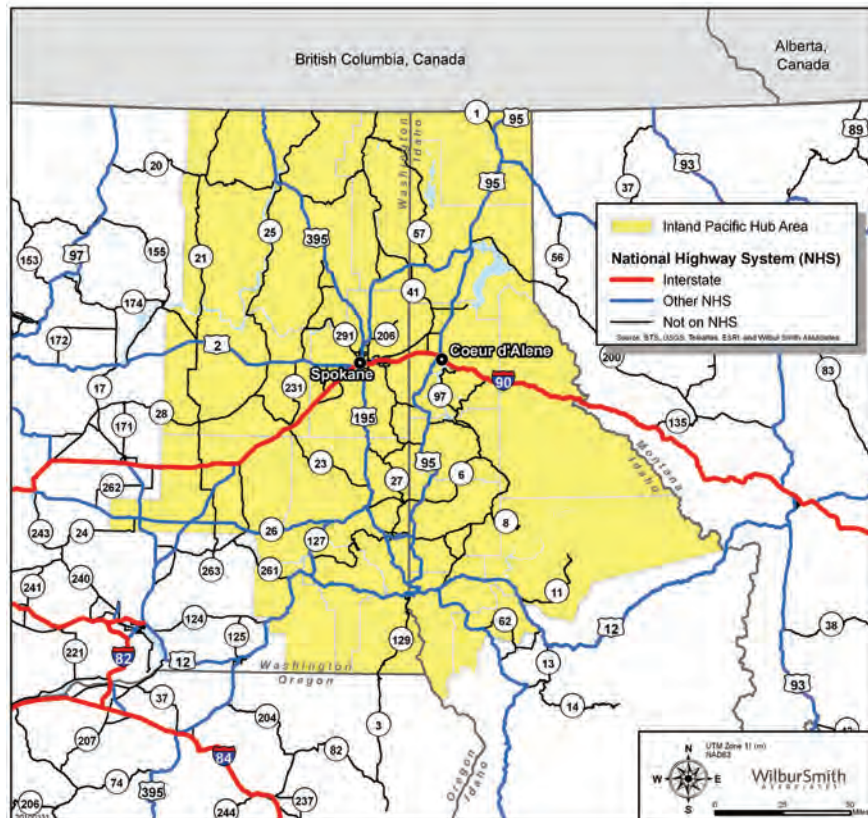


Exhibit 25 shows some basic statistics for each of the regions that indicate their suitability for comparison.

Exhibit 25: Comparisons between IPH Study Area and Duluth

	IPH Study Area	Duluth/Superior MSA
Land Area (square miles)	28,875	21,022
Population	922,000	349,000
Total Employment	534,000	210,000
Number of Counties	19	8
Water Passages	Snake River	Lake Superior
Railroad (miles)	1621	1140
Interstates	I-90	I-35
Airport	Yes	Yes

The two regions are similar in respect to size, modes of transportation, and economic makeup. There are four key differences between them:

- Duluth is better able to function as a transportation hub because of its Lake Superior port
- Duluth is more centrally located in the country. While it lacks an east west interstate connection by going south to Chicago it has more east west access than does the IPH study area.
- The Inland Pacific Hub study area has a much larger population and the level of employment is much higher than in the Duluth/Superior area.
- The Inland Pacific Study area has better proximity to an ocean port with Asian connections

The Duluth hub is comprised of eight counties and 21021.6 square miles, and is serviced by nine different railroad owners and 1139.9 miles of track. Duluth is also on the shores of Lake Superior giving it access to the St. Lawrence Seaway and international shipping corridors to the east. The area is connected to the interstate system with I-35 and contains an international airport.

The IPH study area covers 19 counties, 28875.4 square miles, and is serviced by eight different railroad owners with a total of 1621.2 miles of track. The area is connected to the Pacific Ocean and Portland by the Columbia/Snake River System, which traverses 465 miles between Lewiston/Clarkston and the mouth of the Columbia River at Astoria. The area is also connected to major shipping ports in Portland and Seattle by BNSF and UP rail lines and I-90 and I-84.

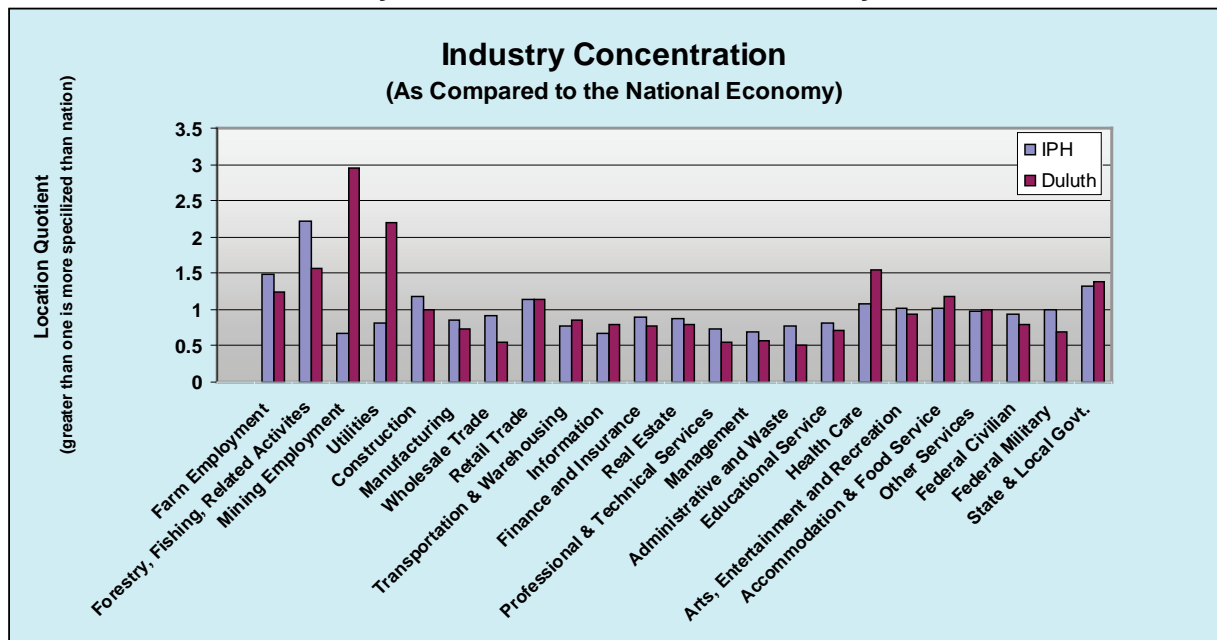
Key Economic Comparisons

In comparing the economies of the regions, the IPH study area in 2008 had greater total population (922,000) and employment (534,000) than the area serviced by Duluth's inland hub with a population of 349,000 and employment of 210,000. Although IPH is

smaller in total land area the amount of population and employment are two and a half times larger than Duluth.

Using a location quotient approach to estimate basic and non-basic employment indicates the industries of farming, mining, construction, retail trade, health care, arts/recreation, accommodation, military, and state government are more specialized in the IPH study area than the nation as a whole (**Exhibit 26**). Many of the same industries are also considered basic industries in the Duluth area. Some of these industries are very much related to the geographic areas, specifically agriculture and recreation. While the geographic placement is a detraction from a freight connectivity perspective, it is an asset in these other categories. The advantages to the IPH study area of these geographic and historical components were discussed in the Trade Opportunities paper as part of this research.

Exhibit 26: Industry Concentration of the IPH Study Area and Duluth



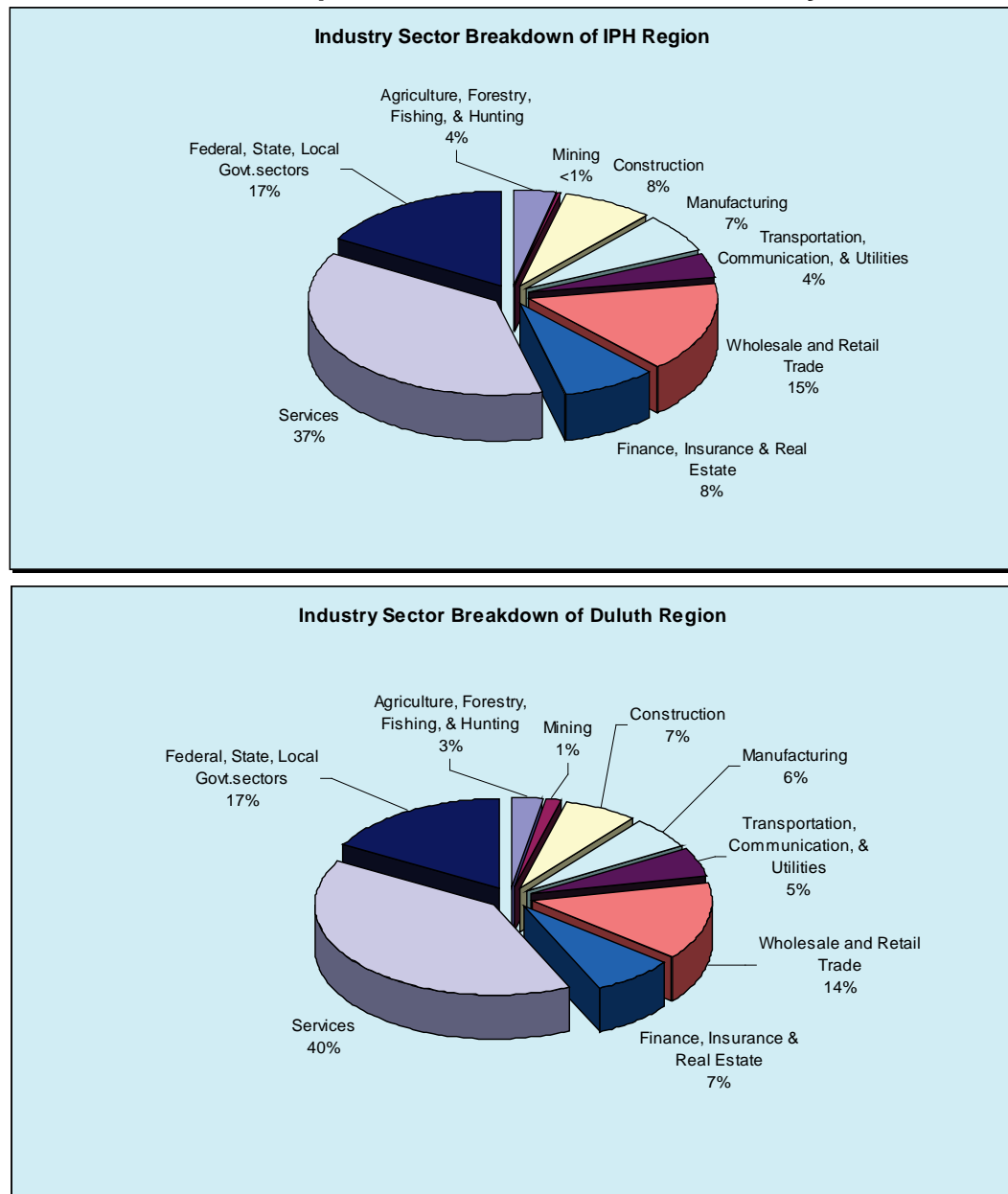
Source: Woods and Poole, 2008

The most notable difference in industry specialization is in Duluth's *Mining* and *Utility* industry sectors which are more concentrated than in the IPH study area and for that matter the nation. The differences in the *Mining* sector may well be cyclical and driven by different end product demands. Duluth's mining industry is based on iron ore mining and closely tied to industrial manufacturing such as the auto industry. With the recent recession, the auto industry has fallen on difficult times and demand for ore declined significantly in 2009. *Mining* in the IPH study area is of two types; non-metallic minerals which are closely tied to road construction, and metallic minerals such as gold and silver often driven by commodity prices. With recent declines in the value of the dollar, demand for gold and silver has soared. The Duluth area's concentration in the *Utility* industry sector is likely due to its location as the distribution point for coal across much of the great lakes. For instance Detroit Edison has facilities in the Duluth/Superior harbor for coal

distribution throughout the Great Lakes. In addition, the Twin Ports serve as an access and assembly point for wind energy components distributed throughout the Midwest.

According to Woods and Poole data (2008), the majority of employment in the IPH study area are in the *Trade, Services* and *Government* industry sectors; these three accounting for almost 70 percent of the total employment (**Exhibit 27**). The proportion of these industries in the Duluth area is very similar to that of the IPH study area.

Exhibit 27: Comparison of IPH and Duluth Industry Sectors



Source: 2008 Woods and Poole, Complete Economic and Demographic Data Source (CEDDS)

According to the Transportation Satellite Accounts (TSA), manufacturing was the heaviest user of transportation services with 102 billion in 1992, followed by wholesale and retail trade, and services. Most of these industries relied primarily on in-house (i.e., private carriage) transportation.⁶ The TSA also indicates that the construction industry and wholesale and retail trade are the most dependent on transportation services, even though they are not the heaviest user of the system.

The IPH study area has a larger base number and proportional share of employment in the transportation dependant industries (*Manufacturing, Wholesale and retail trade*) and services than Duluth, indicating a potential for increased transportation industry growth (**Exhibit 28**) when these corresponding businesses grow.

Exhibit 28: IPH Study Area and Duluth Industry Sectors

Industry Sector	IPH Study Area		Duluth	
	Employment (thousands)	Share	Employment (thousands)	Share
Agriculture, Forestry, Fishing & Hunting	19.24	4%	5.94	3%
Mining	1.75	0%	3.04	1%
Construction	40.80	8%	13.79	7%
Manufacturing	36.92	7%	12.24	6%
Transportation, Communication & Utilities	22.14	4%	10.66	5%
Wholesale & Retail Trade	82.72	15%	29.86	14%
Finance, Insurance & Real Estate	43.13	8%	15.11	7%
Services	198.92	37%	84.16	40%
Federal, State & Local Gov't Sectors	89.10	17%	35.49	17%
Total	534.72	100%	210.29	100%

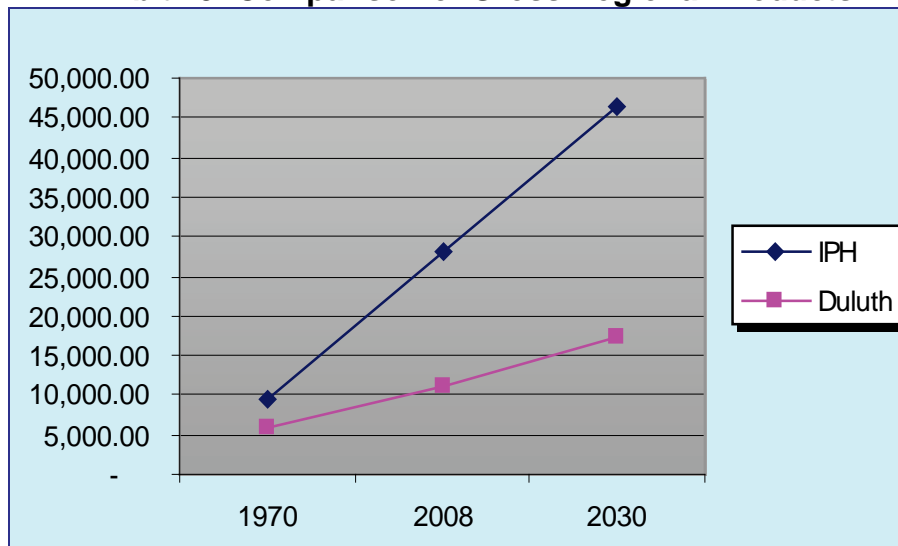
Source: Woods and Poole, 2008 CEDDS

Even with a major shipping port and a high degree of specialization in a transportation dependant industry, Duluth's total share of the transportation sector when compared to the regional economy is approximately the same as the IPH study area.

Past and future trends related to the Gross Regional Product for both regions indicates the IPH study area has been growing at a greater rate than the Duluth area (**Exhibit 29**). The Gross Regional Product for the IPH study area is expected to see a fivefold increase from the base year of 1970 to 2030 compared to only a threefold increase in the Duluth region over the same period of time.

⁶ U.S. Department of Transportation. Bureau of Transportation Statistics. *Transportation Satellite Accounts. A New Way of Measuring Transportation Services in America*. February 1999.

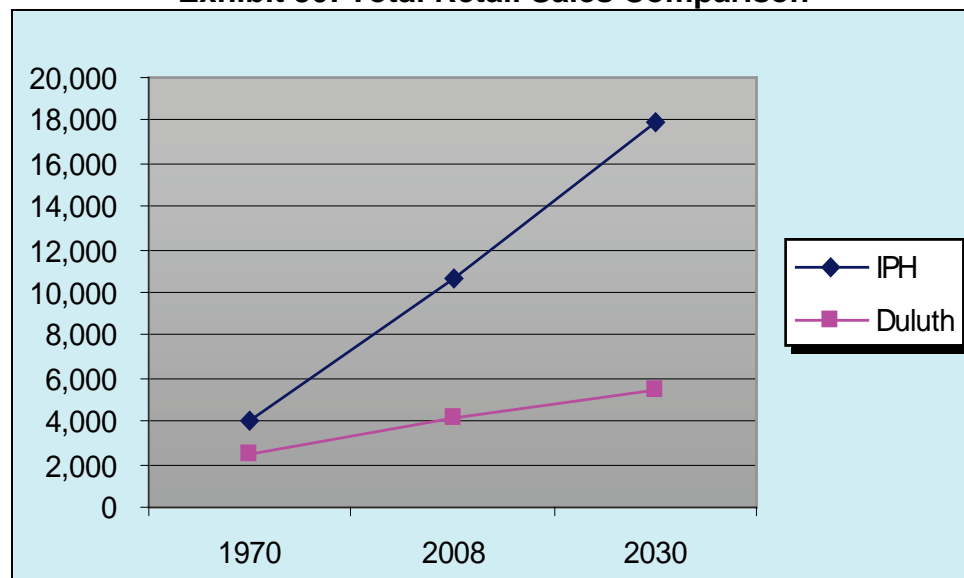
Exhibit 29: Comparison of Gross Regional Products



Source: 2008 Woods and Poole, CEDDS

Total retail sales indicate a similar trend (**Exhibit 30**). Retail sales by value are expected to increase four times from the base year of 1970 to 2030, compared to a doubling of the value in Duluth.

Exhibit 30: Total Retail Sales Comparison



Source: 2008 Woods and Poole, CEDDS

Tucson and Spokane/Coeur d'Alene

Exhibit 31 illustrates the Tucson, Arizona metropolitan statistical area (MSA). The Spokane and Coeur d'Alene MSA is similar to Tucson in several ways:

- Population size and mix
- Livestock as a component of their agriculture industries
- Location near an international border crossing: Spokane and Coeur d'Alene are approximately 80 miles south of the U.S.-Canada border and Tucson is situated 60 miles north of the U.S.-Mexico border
- Proximity to coastal ports connecting to international trade: IPH study area is 280 miles from Seattle and Tucson is 480 miles from Los Angeles

Exhibit 31: Tucson Metropolitan Statistical Area

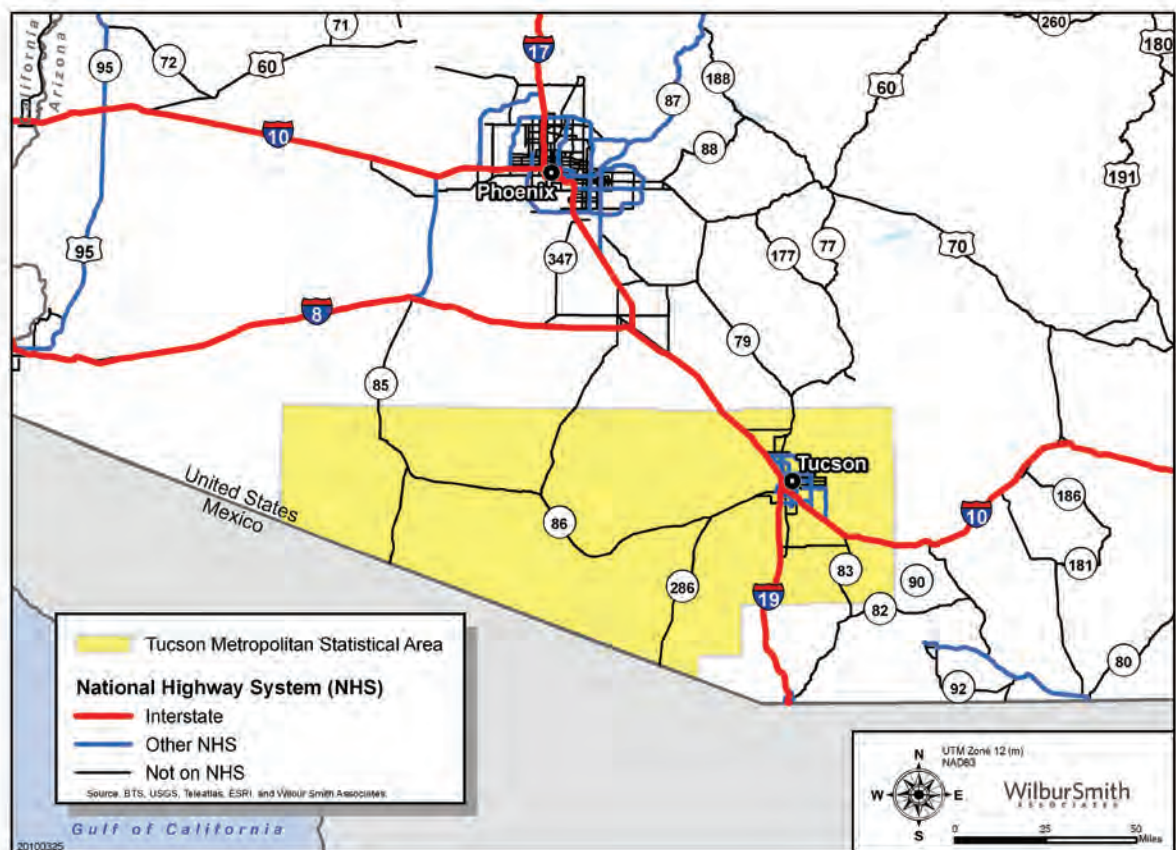


Exhibit 32 provides a comparison between IPH and Tucson. Spokane/Coeur d'Alene and Tucson have similar populations, with 922,000 in IPH and 986,000 in Tucson, but significantly different land areas. The Tucson MSA is about one-third the size of the IPH study area, indicating a higher population density in Tucson. The denser population can be expected to place a higher burden on the transportation infrastructure in Tucson from traffic volume. The challenges from weather and the heavy commodities from mining, timber, and agriculture are somewhat different. The size of the population puts added emphasis on the need for long-term transportation forecasting to plan for future utilization of transportation services. While the IPH study area covers 19 counties, Tucson MSA is

comprised of Tucson City and its surrounding area. Tucson also has a higher number of employed individuals and employment is a greater percentage of the base.

Exhibit 32: Comparisons between the IPH Study Area and Tucson

	IPH Study Area	Tucson
Land Area (square miles)	28,875	9,189
Population	922,000	986,000
Total Employment	534,000	840,000
Number of Counties	17	1
Water Passages	Snake River	none
Railroad (miles)	1621	177
Interstates	I-90	I-10, I-19
Airport	yes	yes

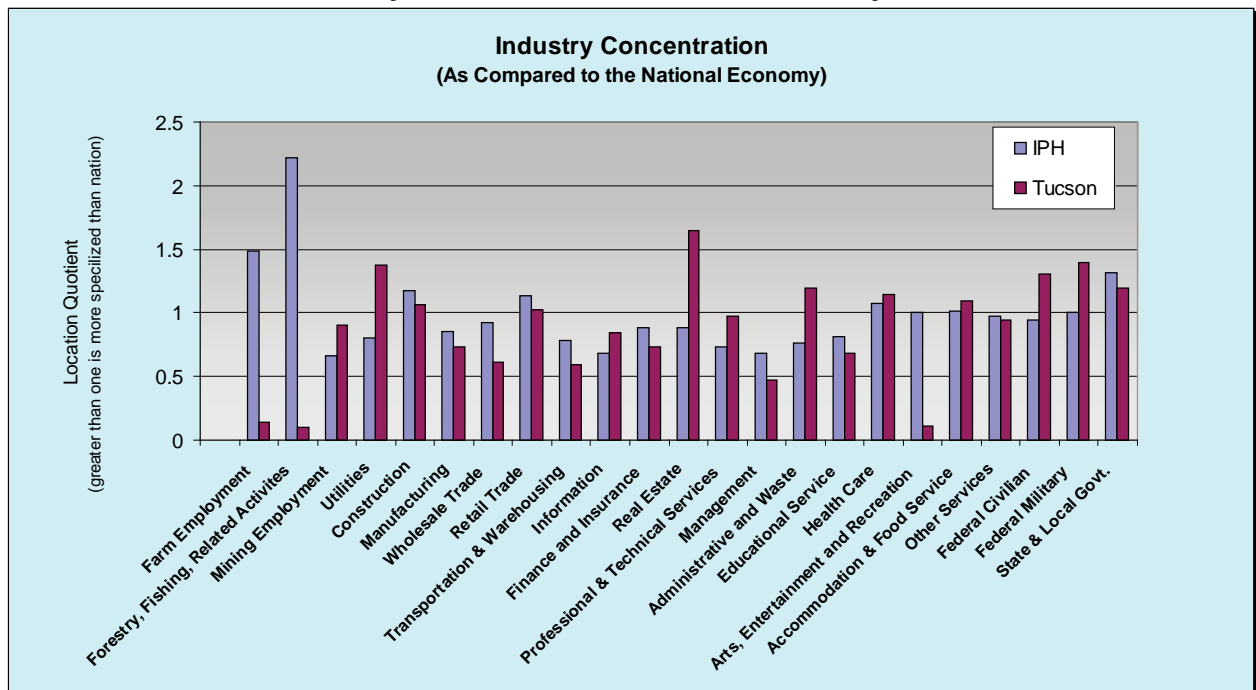
Source: 2008 Woods and Poole CEDDS

The Columbia/Snake River system connects the IPH study area to the Pacific Ocean and Portland while Tucson has no water passages connecting it to a coastal port. Additionally, 1621 miles of railroad run in the IPH study area; only 177 run in Tucson. The Snake River and the extensive railroad system in the IPH support the prominent forestry and agriculture industries. Tucson has a major Interstate, I-10, and a smaller intrastate I-19.

Key Economic Comparisons

A location quotient analysis of the two areas finds that the IPH study area and Tucson have similar levels of specialization in the following industries: construction, manufacturing, retail trade, information, finance and insurance, educational service, health care, accommodation and food service, state and local government, and other services (**Exhibit 33**). Of those, both regions are as specialized or more specialized than the nation in construction, retail trade, health care, accommodation and food services, and state and local government.

Exhibit 33: Industry Concentration of the IPH Study Area and Tucson

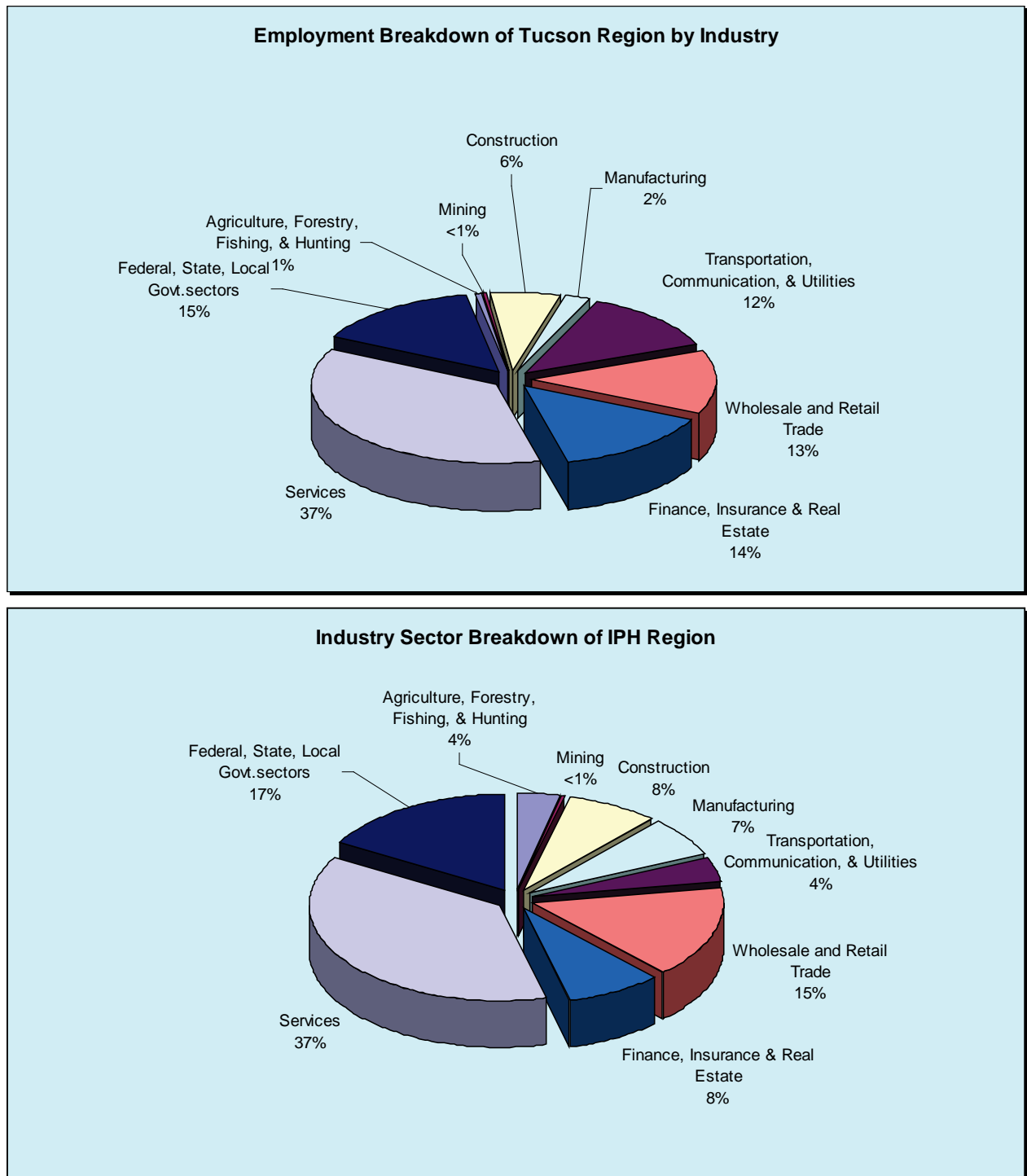


Source: 2008 Woods and Poole, CEDDS

The IPH study area is considerably more specialized in farm employment along with forestry, fishing, and related industries than Tucson and the nation. The IPH study area has the highest specialization in those two fields. This result is consistent with the area's emphasis on agricultural and forestry services. The greatest level of specialization in Tucson is the real estate industry. Between 1990 and 2008, Tucson's population grew at a rate of 34.8 percent, while the population of Spokane County and Kootenai County grew 28.1 percent. An important real estate industry has emerged to meet the growing demands of population growth. In the current economic downturn, Arizona has seen one of the largest drops in home value in the nation and so the growth in the real estate industry has dwindled.

The employment make up of the Tucson area, like Duluth is similar to the employment composition of the IPH study area (**Exhibit 34**). The top four industries are the same for both: *Federal, state, and local government; Services; Finance, Insurance, and Real Estate (FIRE); and Wholesale and Retail Trade*. For the IPH and Tucson, these four industries employ 77 percent and 79 percent of all employees, respectively. The transportation, communication, and utilities industries employ a larger share of the population in Tucson (12 percent) than in the IPH (4 percent). Agriculture, forestry, fishing, and hunting employ 4 percent of the IPH study area's total employment population, while that figure is only 1 percent in Tucson. In the IPH, the manufacturing industry employs 7 percent while in Tucson, it is only 2 percent. These transportation dependent industries employ a greater share of employees in the IPH study area.

Exhibit 34: Tucson MSA and IPH Study Area Industry Sector Comparisons



Source: 2008 Woods and Poole, CEDDS

Implications of the Two Comparisons for the Inland Pacific Hub Study Area

The major economic driver of the Duluth area is its port. Most industries in the area have grown by utilizing the transportation access at the port which was developed through investments in the transportation systems around the port. The Duluth/Superior region has taken its major transportation feature and focused investment to expand its advantages. For example, Duluth recently submitted a TIGER Discretionary Grant application for a project to improve truck access to the port, which would remove obstacles for highway movements of over-dimensional cargoes such as wind turbines.

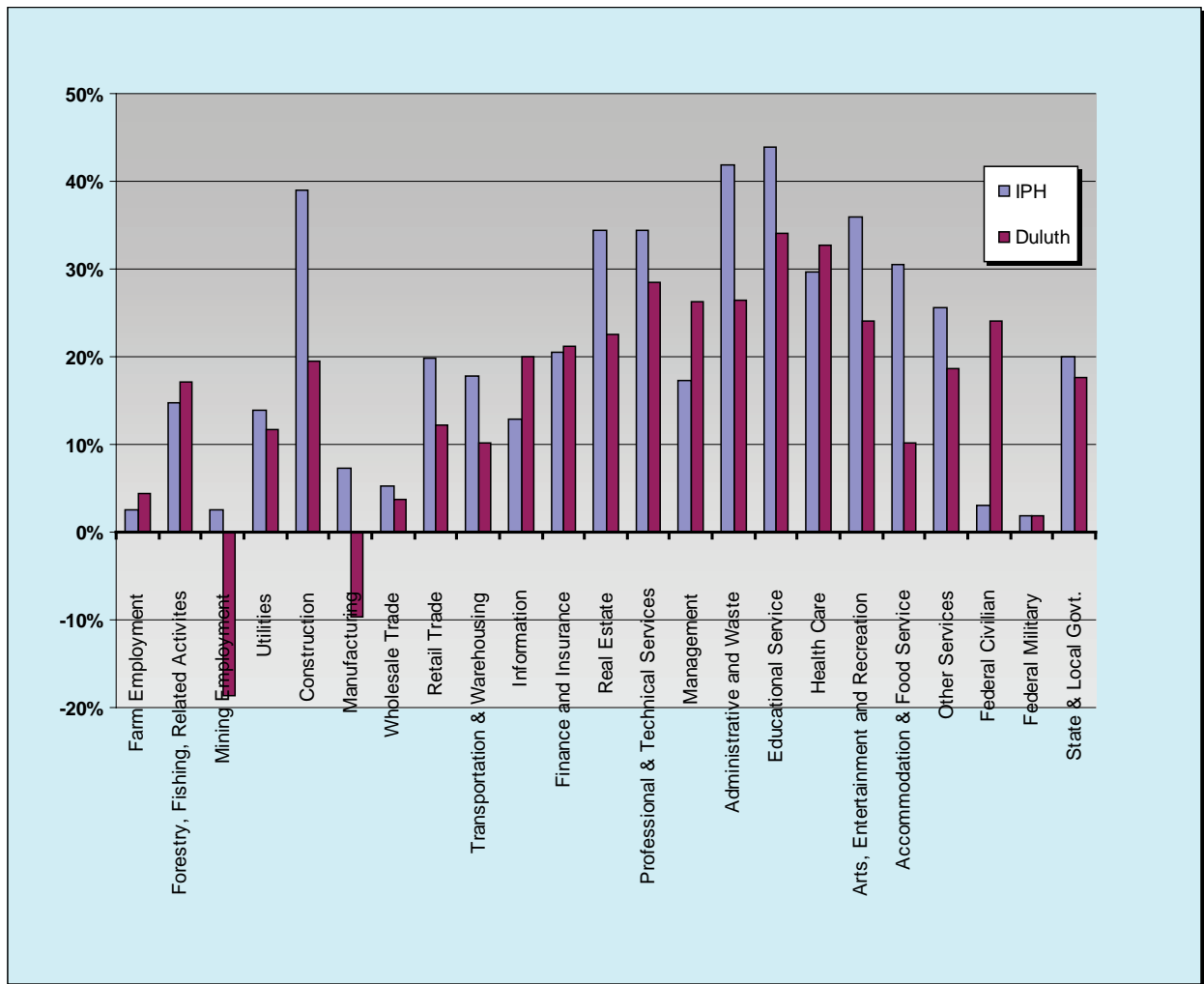
The IPH study area suffers from a lack of interstate level connectivity to markets such as western Canada and California which can be better developed through investment. Similarly the IPH area has a large regional base of economic impact which relies to a great extent on local and regional roadways. The IPH study area is expected to have a faster rate of growth in terms of population and hence demand for goods and services than the Duluth region, and therefore would be well served by additional investment in the transportation infrastructure within the region, crossing state borders and municipalities.

The projected growth in all of the industry areas suggests that the IPH study area will be experiencing higher utilization of the transportation system in the coming years. With the growth of industries such as construction, manufacturing, and the services (**Exhibit 35**), infrastructure investment which yields decreased travel times and consistent service will have a positive impact on the industries and regional economy.

Like the IPH study area, Duluth/Superior lacks access to an Interstate Highway in a particular direction. In Duluth's case it is east/west. To help address this deficiency, US Highway 2 has over the years been expanded to a four lane divided facility from Duluth east to Grand Rapids, MN. In recent years the Minnesota Legislature declared the facility between Grand Rapids and Duluth a special commerce corridor, which now allows tractor semitrailer truck configurations to operate at weights up to 92,000 lbs. under special permit. A paper mill in Grand Rapids routinely uses this provision to move paper rolls to the Canadian National Railway yard in Duluth and create more competition for the BNSF.

In several of the study papers for this research the issue of the investment in the north south corridor has been discussed as a primary need for the Inland Pacific study area.

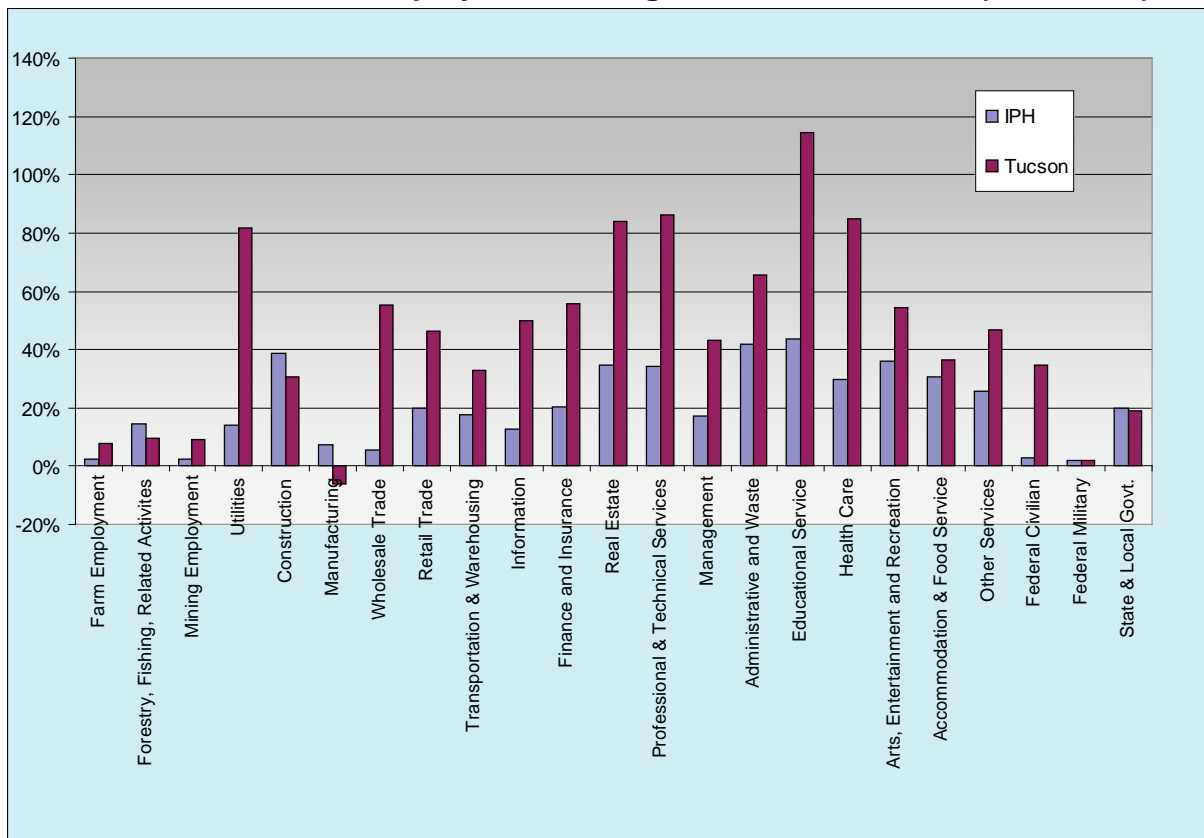
Exhibit 35: Percent Employment Change in IPH and Duluth (2008-2030)



Source: 2008 Woods and Poole, CEDDS

Like the IPH study area, Tucson will see a growth in transportation dependent industries (**Exhibit 36**) and will need to respond with a transportation plan that will meet those new needs. However, the growth in Tucson is expected to be greater and so may require a larger investment. The Duluth region will also need to plan for change in its transportation needs as mining and manufacturing sectors decrease and there is growth in other business segments which have reduced or differing requirements.

Exhibit 36: Percent Employment Change in IPH and Tucson (2008-2030)



Source: 2008 Woods and Poole, CEDDS

Ideas from the Comparative Regions Analysis

Just as in the Inland Pacific Hub study area, the city of Tucson faced a significant challenge in fostering a “freight friendly” environment through the community and its agencies. Tucson offers an excellent example of an educational cooperation effort to benefit the development of freight and logistics businesses with the formation of the Southern Arizona Logistics and Education Organization (SALEO). The purpose is to raise awareness and highlight the importance of transportation and logistics to the region. This is a good idea, similar to the Inland Pacific Hub Advisory Board, which has already recognized the importance of education and is taking action through community forums and other aspects of this research.

The Duluth-Superior Metropolitan Interstate Council (MIC) is the designated bi-state Metropolitan Planning Organization (MPO) for the Duluth-Superior metropolitan planning area. Combined MPOs such as the MIC is a forum for discussion and resolution of inter-jurisdictional transportation issues. The MIC receives transportation planning funds made available through the SAFETEA-LU federal transportation legislation. The concept of the bi-state Metropolitan Planning Organization similar to the MIC in the Duluth/Superior region is very important to the IPH study area. Limited resources require regional solutions and this organization in particular offers a road map that can be followed to move this initiative forward.

CONCLUSIONS

The research points to several challenges that the IPH study area must overcome in order to support and grow its industrial base.

Volume and lane density are critical elements to important factors in transportation, particularly over long distances. They have a strong effect on:

- Capacity Access
- Pricing
- Service Reliability
- Service Quality

In addition to north/south corridor transportation limitations, volume and density also affect the attractiveness of the IPH study area as a distribution point for shippers. The IPH study area is a producer region and hence many freight trips generated in the region return empty. Expanding trade with population center north of the study area in Canada could potentially help address this issue to some extent. Some private carriers we interviewed in the region that routinely cross the border often find backhauls. However we also spoke to many shippers that avoid trade with Canada due to the time and hassle.

The lack of a good intermodal option that avoids circuitry and provides competitive pricing is a detriment to attracting shippers and receivers that require intermodal service to support their supply chain cost structure. Addressing the circuitry issue with regard to the most efficient intermodal services (double stack unit trains) is highly improbable given the existing business model of the west coast Class I railroads in the U.S. However, other options like Railex and Port of Quincy are presenting themselves. Once again the ability to consolidate load volumes around these options will likely determine the long term viability of these and future intermodal rail options in the region.

The issues that arise from truck lane balances in the study area will likely be exacerbated when the recovery begins due to the shortage of trucking capacity that will exist. Capacity will regenerate as the economic conditions improve but not necessarily to pre-recession levels. This means that truckers will be even more selective in their market choice and careful with respect to their utilization, a direct determinant on pricing. Rising fuel costs have a stronger affect on longer lengths of haul and push the shift to intermodal service down to shorter and shorter lengths of haul as the price point shifts to favor the rail service.

The needs for infrastructure development have been discussed throughout the study. In the area of competitiveness this is important, particularly where specific commodity groups place a high demand on the system. Not only must the infrastructure be physically sound, it must also be resilient in the face of interruption and secure.

Overcoming the Odds

The competitive challenges present some hurdles to economic development in the IPH study area but they can be addressed with strategic focus. Generally, the IPH study area should investigate opportunities to consolidating freight densities around a limited number of high quality, modal and intermodal service options; consider economic development marketing efforts that can make empty inbound truck movements a positive; and engage in regional master planning to link key points of modal service offerings, and links to key markets. In the near term, some specific actions could include:

1. Select target industries and commodities that don't depend on long haul trucking or intermodal service unless they are at a price point to support the expense.
2. Focus on markets that offer volume and density at a shorter length of haul. As discussed in the Trade Opportunities paper, this would indicate California, Phoenix, Western Canada, and possibly Salt Lake City as directional targets.
3. Seek better short term intermodal container rail options by expanding on existing services that operate near the region. This issue concerns the ability of shippers in the IPH study area to ship containerized freight to export markets in Europe. Existing access to premium intermodal services is limited, and the published schedules for Class I carriers suggest that shipping a container from Seattle/Tacoma to an East Coast port takes 7-10 days. To reach the east coast via U.S. railroads requires transloading containers between carriers in Chicago, which adds time and cost. Railex is currently operating dedicated trains of refrigerated cars from Walla Walla to Albany, NY. The service operates twice weekly and the transit time is five days. The BNSF has also proposed to begin similar service to the East Coast from the Port of Quincy.
4. Intermodal service opportunities in the region could potentially be supported and enhanced by reconciling differences in cross-border truck size and weight limitations to promote efficient highway commerce corridors to support the consolidation of loads to rail facilities. For instance there are a large number of small communities just north of the U.S./Canadian border, whose businesses may benefit from better transport options in the IPH study area. Harmonizing truck size and weight across borders has been a long sought after, but difficult hurdle due to state and federal regulations. However, recently Congress has been willing to entertain pilot projects to determine the impacts of larger trucks. For instance in December 2009, Maine and Vermont were granted an exemption from federal weight limits on Interstate highways in those two states to conduct pilot studies.
5. Strategies to attract service industries, light manufacturing, and high value commodities must consider the transportation requirements of these industries. The existing system has also been adequate in serving traditional manufacturing and raw material industries like timber, mining and agriculture. However, high technology manufacturing, medical services, and other services industries such as transportation and warehousing require more agile service more dependent on

efficient road and air cargo networks. Many of these businesses generate or depend on transportation service frequency where “just in time” is measured in hours or minutes. The required transportation systems also must consider policy issues such as commercial parking zones, access management, and building codes should insure modern efficient dock facilities.

6. Take steps to improve the infrastructure issues in a way that addresses the highest needs in a prioritized, regional manner including not only highway improvements but also planning for greater resiliency and recovery. As previously discussed the region faces a basic challenge from an economic area (the 19 county study area) that is artificially divided between two states, three urbanized areas and multiple smaller communities, along with an international border. The need to best utilize resources and promote development requires cooperation, planning, and a desire for change across a wide spectrum of agencies. One of the primary tenets of “freight planning” is that freight knows no boundaries. Freight moves in lanes, corridors and multimodal systems that frequently cross our legacy geo-political boundaries.
7. Promote the “softer” sides of the region’s attractiveness (recreation, culture, the arts, the universities, etc.) to improve the image of the region. The area has the features that help draw new industry, but they may need to be better marketed to the outside world and there may be a need for improved public relations regarding tourism.

If these actions are successful and promote the growth of industry and expand markets for the Inland Pacific Hub study area, the increased volume and density could help overcome some of the study areas most challenging shortfalls that have been discussed in this analysis: Imbalanced traffic lanes and lack of freight density at some modal interchange points. The study area has many good modal assets for moving freight. While there is a role for public agencies in advocating that the region have reasonable access to freight services in various modes, creating service options that are not viable are likely to dilute existing services in the market. A variety of options serve to help keep transportation pricing competitive, but too many options dilute freight volumes at key service points. Most transport service pricing is based on volume discounts at both the company and market level. In addition, some of the existing modal assets in the study area are widely dispersed, and currently there is little agreement on both the means for linking these assets together, and the best corridors for linking the study area to trade markets.

The Inland Pacific Hub study area is challenged by size and location. The strategy should be to take the existing capabilities and advantages and build on them to target new industries and markets, promoting a sound base for future expansion. Addressing some of the hurdles discussed in this working paper could bring the area closer to the realization of a focused hub, something that will be attractive to other types of business and thus foster additional growth. To some extent the “if you build it, they will come” condition may apply. The initial challenge is to create the conditions such that the “building” happens in a way that is supported by efficient and cost effective systems that provide the base level of volume and density that are required.

APPENDIX A: RANKINGS

Exhibit A-1: 2009 Spokane Rankings: Forbes Best Places

Best Places Rankings	
Category	Rank
Colleges¹	79
Cost of Doing Business²	35
Cost of Living ³	92
Crime Rate ⁴	111
Culture and Leisure ⁵	165
Educational Attainment ⁶	85
Income Growth*	51
Job Growth	47
Job Growth Projected ⁷	62
Net Migration*	57
Subprime Mortgages ⁸	71
Education	
College Attainment ⁶	25.4%
High School Attainment	89.1%
Income	
Median Household Income	\$48,812
Income Growth	3.8%
Employment	
Job Growth*	1.9%
Job Growth Projected ⁷	0.3%
Unemployment (2008)	6.0%
Notes: 1 Measure of 4-year colleges in area with extra credit for highly rated schools 2 Index based on cost of labor, energy, taxes and office space 3 Index based on cost of housing, utilities, transportation and other expenditures 4 Crimes per 100,000 residents 5 Index based on museums, theaters, golf course, sports team, and other activities 6 Share of Population over age 25 with a bachelor's degree or higher 7 3-year annualized figure 8 As a percent of total originations between 2005 and 2007 * 5-year annualized figures Data Sources: Moody's Economy.com: Sperling's BestPlaces	

Source: Forbes Magazine Best Places for Business and Careers March 25, 2009

Exhibit A-2: Forbes Best Places – Similarly Ranked Cities to Spokane

Rank	Metro Area	Cost of Doing Business Rank	Projected Job Growth Rank	Educational Attainment Rank	Metro Population (thousands)
28	Houston, TX	121	20	69	5,748
29	Spokane, WA	35	47	85	460
30	Fort-Worth-Arlington, TX	95	28	85	2,076

Source: Forbes Magazine Best Places Cities Surrounding Spokane

Exhibit A-3: 2007 5-Star Logistics Rankings

<div style="text-align: center;"> ★ ★ ★ ★ ★ 5-Star Logistics Metros </div>												
All ratings below are percentiles, with 99 being highest & 1 being lowest. MSAs are listed in alphabetical order.												
Metropolitan Statistical Area (MSA)	2007 Overall Percentile	T&W Industry Pct.	T&W Work Force Pct.	Road Infra- structure Pct.	Road Congestion Pct.	Road & Bridge Condition Pct.	Interstate Highway Pct.	State Taxes & Fees Pct.	Railroad Service Pct.	Water- borne Commerce Pct.	Air Cargo Pct.	2006 Overall Percentile
Albany-Schenectady-Troy, N.Y.	88	84	93	59	24	27	96	9	91	86	81	86
Atlanta-Sandy Springs-Marietta, Ga.	99	99	98	6	43	92	97	99	91	74	98	96
Baltimore-Towson, Md.	88	94	57	48	1	7	99	34	91	96	91	96
Baton Rouge, La.	83	79	48	8	73	19	85	83	72	99	67	82
Birmingham-Hoover, Ala.	96	86	85	32	50	35	93	87	93	88	82	94
Boston-Cambridge-Quincy, Mass.-N.H.	92	97	60	36	18	23	93	57	91	94	95	98
Buffalo-Cheektowaga-Tonawanda, N.Y.	87	86	96	68	24	27	78	9	98	83	83	90
Champaign-Urbana, Ill.	85	49	93	79	77	86	89	18	93	67	62	83
Charleston-North Charleston, S.C.	86	82	75	22	61	32	68	95	83	91	66	82
Charlotte-Gastonia-Concord, N.C.-S.C.	83	93	65	16	28	41	85	34	91	69	93	81
Chattanooga, Tenn.-Ga.	94	78	91	43	43	89	93	87	83	83	69	89
Chicago-Naperville-Joliet, Ill.-Ind.-Wis.	98	99	53	6	68	78	99	29	99	98	99	98
Cincinnati-Middletown, Ohio-Ky.-Ind.	98	94	77	43	64	56	96	47	91	93	95	96
Cleveland-Elyria-Mentor, Ohio	98	92	62	52	50	78	99	26	95	90	89	98
Columbia, S.C.	84	76	72	61	61	32	96	95	38	70	87	81
Columbus, Ohio	93	93	77	27	50	78	89	26	91	85	92	92
Dallas-Fort Worth-Arlington, Texas	99	99	84	21	58	48	99	81	98	74	98	99
Davenport-Moline-Rock Island, Iowa-Ill.	90	72	64	80	78	72	93	29	83	85	68	86
Denver-Aurora, Colo.	93	95	73	20	67	84	96	28	83	71	96	91
Des Moines, Iowa	87	82	59	25	91	38	85	49	72	82	90	82
Detroit-Warren-Livonia, Mich.	96	96	45	3	33	82	97	61	98	95	95	91
Fargo, N.D.-Minn.	81	63	86	81	85	54	78	56	58	60	69	72
Grand Rapids-Wyoming, Mich.	85	78	60	45	33	82	78	61	83	80	79	79
Greensboro-High Point, N.C.	84	85	80	75	99	72	78	55	58	37	85	74
Greenville, S.C.	81	75	31	31	61	32	93	95	72	70	75	75
Harrisburg-Carlisle, Pa.	80	83	68	66	28	4	93	3	91	70	83	86
Houston-Baytown-Sugar Land, Texas	99	98	83	13	58	48	85	81	95	99	97	99
Indianapolis, Ind.	95	94	69	11	43	68	98	72	91	75	95	92
Jackson, Miss.	83	77	96	34	86	30	85	74	38	87	77	76
Jacksonville, Fla.	91	90	71	20	17	99	85	67	83	93	87	95
Kansas City, Mo.-Kan.	99	95	91	74	78	21	98	57	95	87	93	99
Knoxville, Tenn.	89	82	98	9	43	89	89	68	72	81	80	85
Little Rock-North Little Rock, Ark.	97	85	81	77	85	30	93	39	91	86	80	95
Los Angeles-Long Beach-Santa Ana, Calif.	88	99	55	24	9	15	98	46	72	97	99	93
Louisville, Ky.-Ind.	98	91	95	44	50	38	96	47	97	90	97	96
Madison, Wis.	82	75	91	56	82	64	78	6	58	85	72	77
Memphis, Tenn.-Miss.-Ark.	95	94	52	17	74	49	85	57	91	93	99	94
Miami-Fort Lauderdale-Miami Beach, Fla.	90	98	65	1	17	99	93	67	58	92	99	95
Milwaukee-Waukesha-West Allis, Wis.	89	91	86	9	82	64	89	6	83	83	91	88
Minneapolis-St. Paul-Bloomington, Minn.-Wis.	95	97	46	24	64	40	97	50	98	84	96	99
Mobile, Ala.	86	72	35	28	50	35	85	87	93	97	75	90
Nashville-Davidson-Murfreesboro, Tenn.	97	92	94	35	43	89	93	68	72	88	90	93
New Orleans-Metairie-Kenner, La.	98	90	49	29	73	19	93	83	95	99	86	93
New York-Newark-Edison, N.Y.-N.J.-Pa.	96	99	61	36	10	16	99	48	99	99	99	100
Oklahoma City, Okla.	92	87	65	38	88	20	96	93	83	66	85	88
Omaha-Council Bluffs, Neb.-Iowa	88	87	53	10	88	56	89	33	96	71	86	85
Peoria, Ill.	90	72	70	57	77	86	78	18	97	86	77	88
Philadelphia-Camden-Wilmington, Pa.-N.J.-Del.-Md.	93	98	90	20	11	8	96	35	99	99	98	97
Phoenix-Mesa-Scottsdale, Ariz.	80	96	59	8	33	94	78	36	93	37	96	83
Pittsburgh, Pa.	94	92	97	65	28	4	97	3	99	98	91	94
Portland-South Portland, Maine	81	71	63	72	77	22	68	12	83	92	71	73
Portland-Vancouver-Beaverton, Ore.-Wash.	94	93	60	22	68	69	89	11	97	94	95	91
Richmond, Va.	89	88	79	69	20	52	96	90	38	92	86	87
Rochester, N.Y.	83	81	92	51	24	27	85	9	97	75	85	85
Sacramento-Arden-Arcade-Roseville, Calif.	81	89	70	38	9	15	78	46	91	76	86	88
Salt Lake City, Utah	87	89	65	15	83	60	93	33	72	69	91	90
San Antonio, Texas	92	88	77	50	58	48	93	81	72	69	92	93
San Diego-Carlsbad-San Marcos, Calif.	86	91	86	51	9	15	93	46	72	78	93	89
San Francisco-Oakland-Fremont, Calif.	91	98	52	43	9	15	97	46	91	95	98	97
Savannah, Ga.	93	77	88	35	43	92	85	99	83	91	62	86
Seattle-Tacoma-Bellevue, Wash.	94	97	46	36	64	60	85	15	96	98	96	97
Sioux Falls, S.D.	86	68	77	97	96	49	85	48	58	65	78	78
St. Louis, Mo.-Ill.	99	95	91	42	69	39	99	56	99	97	92	99
Syracuse, N.Y.	82	79	89	82	24	27	89	9	72	77	82	84
Tampa-St. Petersburg-Clearwater, Fla.	82	90	96	0	17	99	93	67	14	96	90	87
Toledo, Ohio	90	83	75	26	50	78	89	26	91	86	85	91
Tulsa, Okla.	96	85	62	67	88	20	78	93	91	82	84	90
Virginia Beach-Norfolk-Newport News, Va.-N.C.	91	90	54	33	20	49	89	84	91	95	83	92
Washington-Arlington-Alexandria, D.C.-Md.-Va.-W.Va.	91	97	63	21	17	39	98	74	83	89	94	94
Wichita, Kan.	85	76	48	92	91	55	78	30	83	58	81	87
Winston-Salem, N.C.	84	71	81	67	99	72	78	55	72	64	60	71
Worcester, Mass.	85	80	92	70	17	17	85	55	83	88	69	89

Source: Expansion Management's 2007 Logistics Quotient™

INLAND PACIFIC HUB

Transportation Study



Working Paper 3.4

Trade Opportunities

Final

April, 2010

WilburSmith
ASSOCIATES

In Association with

Halcrow

and

HNTB

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GLOSSARY OF TERMS

Term	Definition
Class 1 Railroad	The largest rail carriers in the U.S., classified by operating revenue. In 2008 Class I carriers have operating revenue exceeding \$401.4 million. Currently seven railroads operating in the U.S. are classified as Class I, including BNSF and Union Pacific in the Western U.S.
COFC/TOFC	These acronyms mean "Container on Flat Car" and "Trailer on Flat Car" respectively. These are the two common types of intermodal freight.
Container	A typical container is 40 or 48 feet long, 8 feet tall and 8 feet wide. These steel boxes are used internationally to transport freight by sea, rail and highway. Container traffic is measured in twenty-foot equivalent units (TEUs).
Container provider	For international shipments, containers are typically provided by the ocean carrier from its available empty inventory within proximity of the shipper.
Containerization	The technique of using a boxlike device in which a number of packages are stored, protected, and handled as a single unit in transit.
Distribution center	Warehousing facilities, where typically like commodities in containers or truck-load lots are resorted into mixed truck loads for distribution to retail outlets or customers.
Genetically Modified Organisms (GMO)	Genetic modification is a special set of technologies that alter the genetic makeup of organisms such as animals, plants, or bacteria. Crops are commonly modified to enhanced taste and quality, reduced maturation time. Increased nutrients, yields, and stress tolerance, Improve resistance to disease, pests, and herbicides, or for new products and growing techniques. Consumers in some countries have protested the use of genetic modification in food products.
Inbound Freight Flows	The freight that originates outside a particular state or region and terminates in that state or region
Inland Port	The term inland port is used in two different but related ways to mean either a port on an inland waterway or an inland site carrying out some functions of a seaport. An inland port in the wide sense, as used in common speech, is simply a port on an inland waterway such as a river, lake or canal. The term inland port is also used in a narrow sense in the field of transportation systems to mean a rather more specialized facility that has come about with the advent of the intermodal container (standardized shipping container) in international transport. Rather than goods being loaded and unloaded in such ports, shipping containers can just be transferred between ship and road vehicle or ship and train. The container may be transferred again between road and rail elsewhere and the goods are only loaded or unloaded at their point of origin or final destination.
Intermodal	Freight that travels from origin to destination on more than one mode of transportation such as a container that arrives from Asia by sea and is transferred to rail for the remainder of its journey

Term	Definition
Ocean port intermodal terminal	<p>There are three general types of intermodal terminals serving container traffic at ports:</p> <ul style="list-style-type: none"> • On-dock: a rail to ship transfer facility at the marine terminal eliminating the need to transfer containers by truck on city streets. • Near-dock: typically located within a few miles of port terminals; transfer between rail and ship requires a truck move and additional container lifts. This type of terminal has the advantage of serving multiple ocean carriers. • Inland port/satellite: Located away from the port - most advantageous if shuttle trains operate between the inland terminal and port facilities to avoid port traffic congestion.
Outbound Freight Flows	The freight that originates in particular state or region and terminates outside of that state or region.
Panamax ships	"Panamax ships" are the largest ships able to pass through the lock chambers of the Panama Canal. The current lock dimensions are 1,000 feet long and 106 feet wide. Many ships ocean going cargo ships are built to the Panamax limit to carry the maximum amount of cargo through the canal. Current containers ships are limited to approximately 5,000 TEU. When the larger locks currently under construction are completed in 2014, the Panama Canal will be able to handle container ships of up to approximately 13,000 TEU - this class of ships is typically referred to as "Post- Panamax" ships.
Supply Chain	A group of physical entities such as manufacturing plants, distribution centers, conveyances, retail outlets, people and information which are linked together through processes (such as procurement or logistics) in an integrated fashion, to supply goods or services from source through consumption.
TEU	Twenty-foot Equivalent Unit - the standard of measurement for intermodal containers. Early containers used for cargo were 20 feet long, 8 feet wide and 8.5 feet high. Today containers come in a variety of sizes including 40 foot, 45 and 53 foot domestic containers.
Transload	The practice of transferring product between truck and rail transportation. In most instances, a transload facility operator, third-party logistics company, or broker facilitates transloading for both the shipper and the consignee. These companies coordinate truck and rail connections and frequently offer warehousing and other services to facilitate storage and delivery.
Transloading	The practice of transferring product between truck and rail transportation. It allows shippers and their customers to enjoy much of the cost benefits of rail transportation without having a rail siding at their door-at the least an expensive proposition, and for many companies, a physical impossibility. In most instances, a transload facility operator, third-party logistics company, or transportation broker facilitates transloading for both the shipper and the consignee. These companies coordinate truck and rail connections and frequently offer warehousing and inventory management services to facilitate storage and delivery.

Term	Definition
Transshipment	The shipment of merchandise to the point of destination in another country on more than one vessel or vehicle. The liability may pass from one carrier to the next, or may be covered by "Thorough Bills of Lading" issued by the first carrier.
World Trade Organization	An organization established on January 1, 1995 replacing the previous General Agreement on Tariffs and Trade GATT that forms the cornerstone of the world trading system.

INTRODUCTION

The Inland Pacific Hub (IPH) study area is comprised of nineteen counties located in eastern Washington and northern Idaho. The economic interests of this region are represented in part by the IPH Advisory Board, a public-private partnership established by and consisting of representatives from both states. The Board's objective is to establish the IPH study area as a multimodal global gateway to increase international commerce.

The IPH Advisory Board has partnered with the Washington State Department of Transportation and the Idaho Transportation Department to study the region's capacity for economic development. The IPH Transportation Study has two objectives: 1) To identify the IPH study area's capacity as a globally-connected, multimodal transportation gateway; and 2) To identify the critical infrastructure requirements needed to drive the IPH study area's future economic growth.

Report Organization and Composition of Task 3

To accomplish the objectives established by the IPH Advisory Board, Wilbur Smith Associates, in association with HNTB and Halcrow, proposed a work plan based on six tasks:

- Task 1: Analyze Existing Transportation Market
- Task 2: Profile Existing Multimodal Transportation Infrastructure (Tech Memo 1)
- Task 3: Profile Regional Economic Assets (Tech Memo 2)
- Task 4: Profile Commercial and Technology Assets (Tech Memo 3)
- Task 5: Identify Public Education and Stakeholder Involvement
- Task 6: Compile Final Report and Phase II Recommendations

Several tasks (2, 3 and 4) have Technical Memoranda as final task deliverables. Technical Memoranda 2 and 3 are each made up of several internal working papers that break the analysis associated with these tasks into discrete work elements, to allow study team members to work concurrently on sub-tasks.

Trade Opportunities Working Paper

This working paper (3.4), *Trade Opportunities* is associated with Work Element 3.4. Work element 3.4 - *Trade Opportunities*; it examines ways that the transportation infrastructure and logistics capabilities in the area currently enhance certain types of trade and also identifies unmet needs with regards to building future trade capacity. This working paper also examines alternative models for developing inland ports. It first summarizes recent trends in international trade, including key trading partners and potential opportunities and threats to the Pacific Northwest and the IPH study area. The task then outlines a number of inland port models applicable for evaluation relative to the IPH study area, as well as geographic and market opportunities.

EXECUTIVE SUMMARY

An objective of the Trade Opportunities Working Paper is to examine the competitiveness of the IPH study area in supporting trade for goods and services. The intended outcome of this examination is to draw conclusions about the position of the IPH study area in the marketplace and determine what additional infrastructure and/or other transportation policy actions could strengthen or transform that position. For instance can the region build capacity that more populous areas cannot, and would it uncover and satisfy an unmet demand? Can new routes to gateways or key markets make a long term difference in the competitiveness for trade? Can trade act as a catalyst to new clusters of industry and help them to thrive?

As described in the scope of work, the trade opportunities work element was intended to rely heavily on the analysis of a purchased data source: World Trade Service. However, due to concerns raised by the IPH Advisory Board over the cost of additional data purchases (beyond the purchase of TRANSEARCH™ data), the World Trade Service was not obtained for the study. As a result, the analysis conducted in support of the work element objective uses a wide variety of data sources to compare the IPH study area and make inferences about its position in global trade markets. Without a broad single source of data in a common format, the analysis is somewhat less quantitative than originally stated in the work scope. However, taken together the combined findings of the work elements under task 3, especially work element 3.3 (*Regional Competitiveness*), and 3.4 (*Trade Opportunities*) do allow conclusions to be drawn about the IPH study area and its position in a global trade environment. Some of these key conclusions are:

- Spokane and Coeur d'Alene are viewed in the national rankings as good places to live ranking high in annual “best places to live” rankings. Similar published polls that rank cities by their transportation attributes rated the study area high in terms of high-level arterial highways, rail, airport and port facility access. The same rating service ranked the IPH study area low with respect to local road systems and business activity taxes.
- The IPH study area is a “producer region” as a result outbound trade movements far exceed inbound movements. As a result, the imbalance of trade on key lanes, especially for highway movements results in higher costs and service and equipment availability issues for some business sectors.
- The trade imbalance that exists in the IPH study area can be quantified for the highway mode from the estimate supplied by Global Insight that 321,400 trucks traveled to the IPH study area empty during 2007. The estimate suggests that these empty truck movements logged an estimated 76 million empty miles. By 2020 the number of empty inbound trucks is forecast to grow to more than 364,000 and more than 86 million empty miles.
- As a producer region – shippers in the study area are looking to expand volumes to existing markets and enter new markets.

- The IPH study area is in an excellent geographic location to take advantage of West Coast gateways to Asian markets.
- The IPH study area is at a significant disadvantage for exporting to European markets. The length of haul to the east coast suggests moving shipments to gateways via rail, but the long-haul business model and sub-national networks of major U.S. rail carriers makes shipping across country challenging from a cost, time and reliability perspective. This situation is unlikely to change significantly in the short term, but new services from the study area such as Railex and the proposed new BNSF service from Port of Quincy are successes that should be fostered.
- From a transportation perspective the IPH study area is “isolated” from domestic markets to the south and from international trade with Canadian population centers to the north. The study found that no other economic region the size of the IPH study area is more distant from a north-south Interstate highway facility.
- Based on the critical needs required for successful inland port developments; 1) Modal capability, 2) Existing Demand, 3) Locational advantage, 4) International trade facilitation, and 5) Management plan, the IPH study area will be challenged by “existing demand” and “locational advantage” requirements. Presumably if the IPH study area developed an inland port it would be based on distributing goods coming into the study area by rail river port or air. Outbound distribution would likely occur by truck, making existing lane imbalance issues worse. Many inland ports have developed on the west coast a short distance inland from the San Pedro Ports (Los Angeles and Long Beach), primarily due to the congestion in these ports, but also because a significant portion of the goods imported through the San Pedro ports are consumed by the Southern California market. Inland port facilities in this case allow the contents of containers to be resorted for local versus mid-America consumption. In the case of the IPH study area there are no significant population centers in close proximity to the study area.
- While an inland port development concept in the IPH likely has significant hurdles, using the concept of the Economic Development Zone, the area can build upon initiatives and efforts already underway to develop value-added production activities. By blending in pieces of a crossroads model focused on Canada, California, and other metropolitan areas to the south, the IPH study area can develop marketing targets with geography and commodities that best suit the capabilities that currently exist.
- The concept of trade development centers on taking the best of what exists and building upon the base to expand potential markets. Expanded development is likely to lead to the higher volumes of freight and goods movement in more concentrated lanes. It is this volume and density increase that will improve the opportunity for the region to develop more logistics related service entities and move toward the goal of becoming a hub.

OVERVIEW OF CURRENT INTERNATIONAL TRADE STATUS

The study area which surrounds Spokane, Washington and Coeur d'Alene, Idaho possesses a rich history in its natural resources. Historically, key industries in the study area have drawn from these natural resources to sustain the regional economy. The mines and forests remain major contributors to trade. The agricultural heritage of the region is strong and continues to evolve.

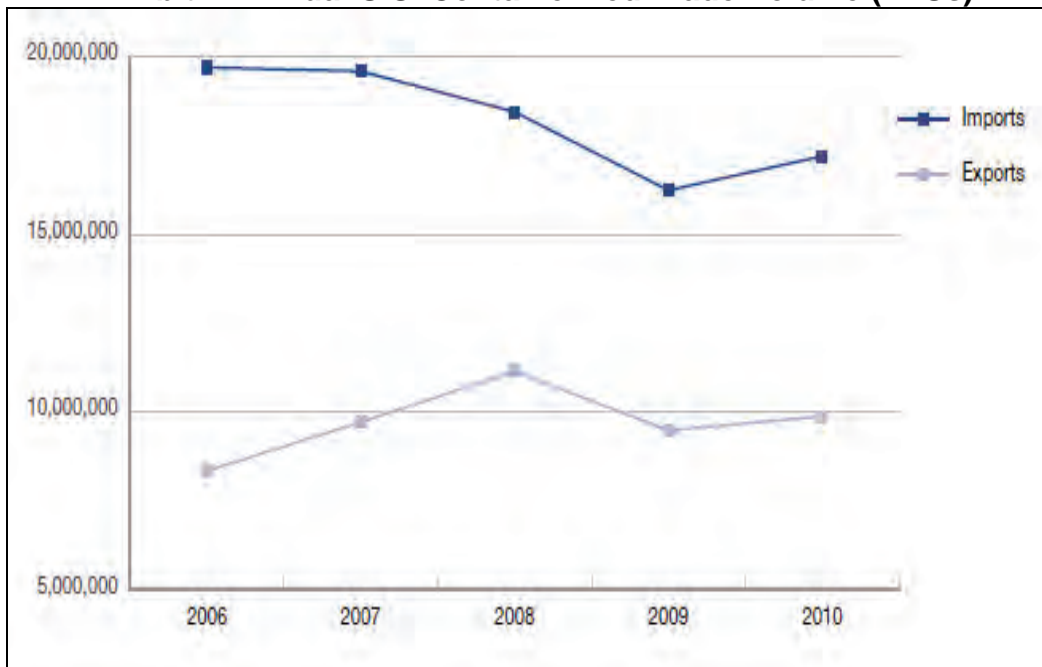
The expansive land areas and abundant resources that yield products for economic benefit also provide wonderful opportunities for recreational activities. The recreational experiences are enhanced by the blend of cultures and traditions in the region.

While the historical elements are strong here, there are also exciting new developments in the technology industries, pharmacology and new manufacturing surrounding environmental issues and sustainability products. The trends in both pharmacology and sustainability products are particularly interesting in that they tie directly back to the land and the resources and so are built from and enhanced by the history and tradition.

In the framework of the original scope of work for this study, the concept of trade had an international focus. While this focus remains, a further emphasis on developing regional and domestic trade strategies that take advantage of the existing natural resource base and respond to changes in consumer behavior, particularly given the near-term economic situation, may serve the IPH in creating the necessary base-level demand from which to grow larger infrastructure connections and logistics centers in the future.

Globally, international trade volumes have fallen as the U.S. financial crisis has unwound, leading to a global economic downturn, which in turn has resulted in a collapse of demand for goods. The linkages between the United States (U.S.) financial and consumer markets and global supply-chains have meant that European, Asian and South American economies have also suffered and contracted. In the U.S., import volumes have fallen from peak levels in 2006. Weakening of the U.S. Dollar had actually resulted in U.S. export growth through 2008. However, the subsequent rise in currency strength, making U.S. goods more expensive, compounded with the economic slowdown and lessening foreign consumption, led to a reversal, and exports volumes have fallen as well, as demonstrated in **Exhibit 1**, in twenty-foot equivalent unit volumes (TEU). (One 20-foot container equals one TEU, and one 40-foot container equals two TEUs.)

Exhibit 1: Annual U.S. Containerized Trade Volume (TEUs)



Source: IHS Global Insight Trade Forecast 2009 (Retrieved June 2009)

There are indications that the recession may be nearing an end, as some optimistic figures are being reported, indicating a potential recovery. However, a majority of economists and industry experts concur that it will take some time for the market to return to historic levels of growth. The latest economic forecasts from IHS Global Insight (GI) call for world gross domestic product to continue the dramatic decline begun in fourth-quarter 2008, with a decline of 6 percent for first-quarter 2009 and a 3.4 percent decline in the second quarter before returning to moderate positive growth in 2010 and 2011. As a result, GI expects global trade volume to decrease by 4 percent in 2009. Some of the largest shipping lines, including Maersk, believe global container volumes may fall as much as 10 percent or more in 2009 before beginning to slowly recover throughout 2010 and into 2011.

Exhibit 1 shows forecasted export volumes for the U.S. The graphic suggests continued declines in export volumes throughout 2009, recovering slightly in 2010. The overall slow recovery of export volumes is due to weak foreign demand by major U.S. trading partners, including China, Japan, Taiwan, South Korea and Brazil.

The Panama Canal expansion program, still on target for a test vessel in 2014 and full operation in 2015, will position the waterway to handle containerships up to 12,600 TEUs. Perhaps with this in mind, many shippers have established distribution centers on the East Coast of the US to serve the large and still-growing markets in the east via all-water service. The shift in share to the East Coast from the West Coast is slow but apparent. With the ocean shipping cost per twenty foot equivalent (TEU) container coming down when the new post-Panamax ships are in operation, shippers have more options for delivery of containers to the East Coast, including direct calls and

transshipment in the Caribbean. Recent thinking on the possible routing of Asian cargo to the East Coast centers around the idea of using well-developed, efficient transshipment hubs in the Caribbean from which the cargo can be distributed widely to many final market locations using smaller feeder vessels. Such a transshipment scenario would allow Asian cargo to reach, for example, Houston, Tampa, Miami, Jacksonville, Savannah (Atlanta), Norfolk (and many inland markets through the Heartland Corridor), Philadelphia (refrigerated cargos), and New York, not to mention other markets to the south such as Colombia and Venezuela, and Central America.

The objective of the ocean carrier operator is to fill the new, large vessels at the highest possible level and to minimize the number of port calls. At \$75,000 per day in operating cost, these operators must make every day count, and therefore, we do not foresee such vessels making multiple port calls along the East Coast. When the operating cost considerations are combined with the flexibility of serving multiple markets with one ship load, not to mention the increased likelihood of reaching higher utilization levels on the backhaul, the transshipment idea starts to make good economic sense.*

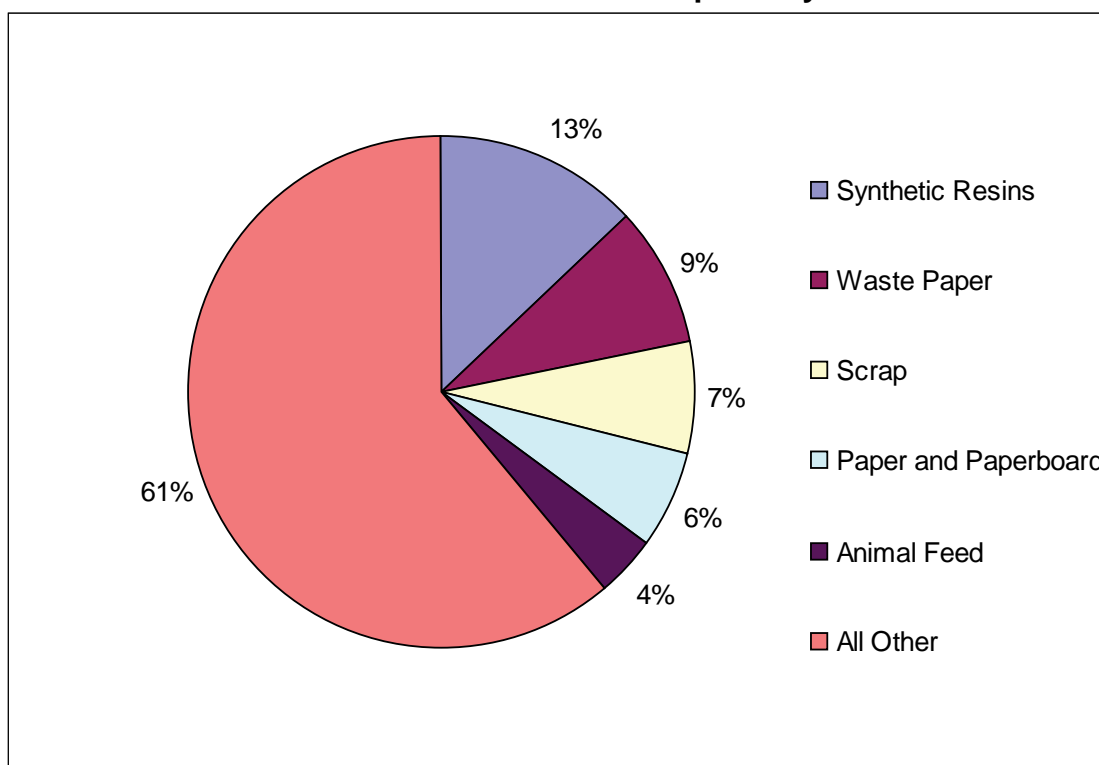
The issue of rail congestion on the lines from the West Coast to eastern markets does not appear to be an issue after all, especially given the huge investments being made by the railroads. While the rail land bridge had some time advantages over the all-water services, its higher cost will likely be overcome by the longer but cheaper all-water route through the Canal, and with the distribution centers being built along the East Coast it is unlikely that this pendulum will swing back quickly or easily.

Highlights of U.S. Exports and Imports

When measured by value, the U.S. is the third-largest exporting nation in the world behind China and Germany. Synthetic resins, wastepaper, scrap, paper and paperboard products, and animal feeds account for nearly 40 percent of U.S. containerized exports (**Exhibit 2**).

* *Trans-shipment in this context suggests offloading cargo from a large Post-Panamax vessel on to several smaller vessels that would continue on to various ports of call.*

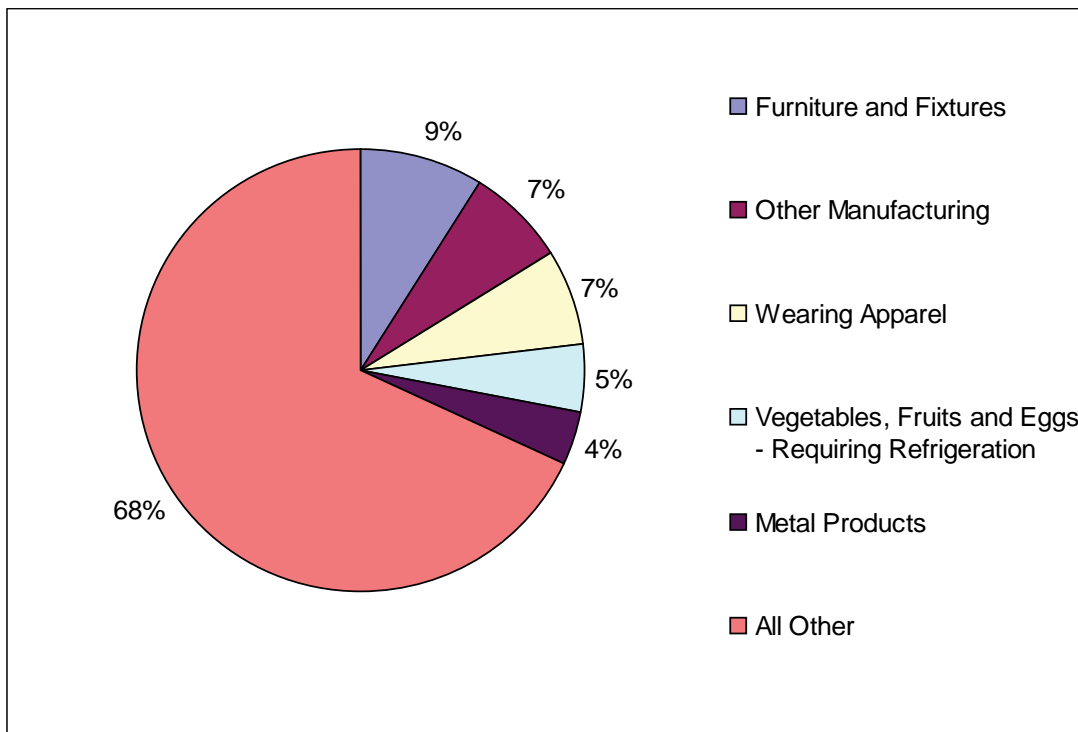
Exhibit 2: U.S. Containerized Exports by Value



Source: IHS Global Insight Trade Forecast 2009

As discussed more extensively in Working Paper 3.1 – *Economic Base Analysis*, U.S. domestic manufacturing has declined significantly over the last three decades. Today, many U.S. consumer goods are imported, as the service economic has eclipsed manufacturing in the U.S. Furniture and fixtures, “other manufacturing”, and apparel accounted for 23 percent of containerized imports in 2009 (**Exhibit 3**). Despite the recessionary impact on demand, and lower rates of U.S. consumer spending, imports in these categories continue to make up a significant share of U.S. import volumes. Historically, major U.S. import trading partners have been Canada, China, Japan, Germany, Brazil and Taiwan. While import trade is expected to recover and return to historic trend levels, there is a belief from Global Insight and other economic forecasting consultants that U.S. trade will continue to shift away from Europe and other higher-cost markets towards Southeast Asia and India. China is predicted to continue its growth as a major market for international trade. International trade for the Inland Pacific study area is Asia centered and so the area has a vested interest in maintaining, and growing imports. The balance of flow of equipment and trade volumes is important and a firm level of imports helps improve the opportunity for export demand and growth.

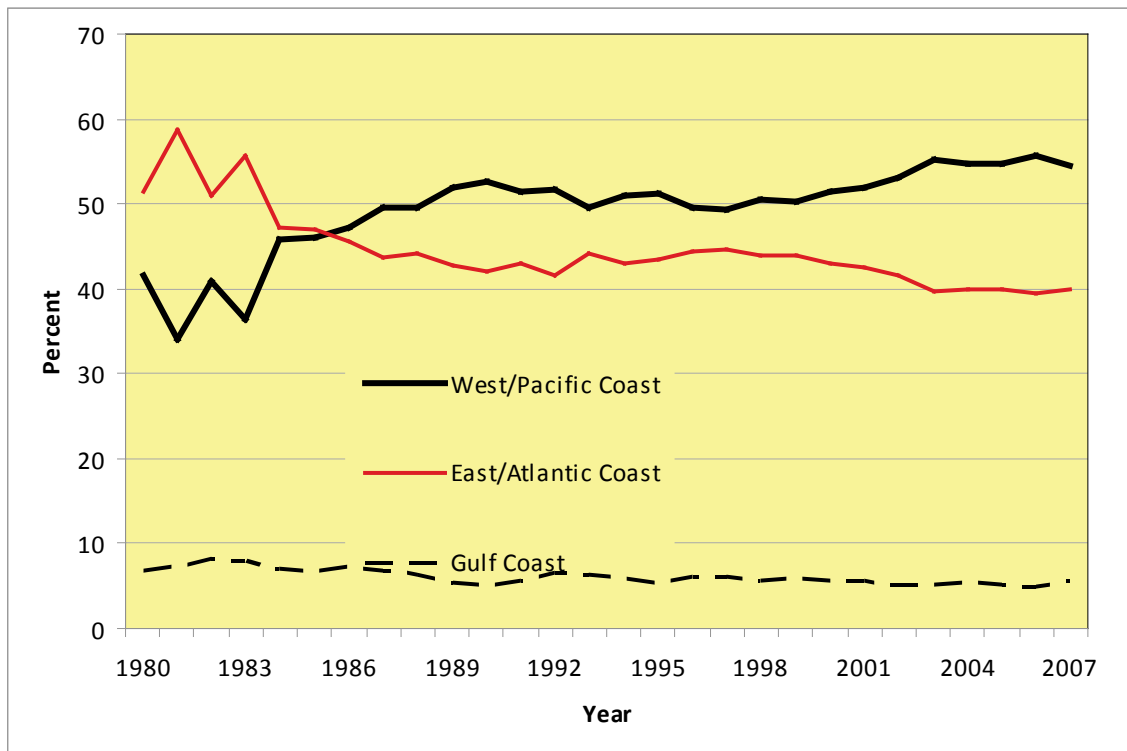
Exhibit 3: U.S. Containerized Imports by Value



Source: IHS Global Insight Trade Forecast 2009

Cargo to and from Asian markets has historically favored U.S. West Coast Ports. The ports in the Pacific Northwest have the shortest distance from Asia by sea and are less congested than the California ports and thus have the opportunity for increasing volumes. More volume to these regional ports can open opportunities for the IPH study area to develop and expand new markets and services.

**Exhibit 4: Regional Market Share of U.S. Containerized Trade
(As measured in twenty foot equivalent container units – TEU)**



Notes: Totals are for all container ports in all 50 states and Puerto Rico. The data in this figure include both loaded and unloaded containers in U.S. international maritime activity and cover U.S. imports, exports, and transshipments.

Source: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, based on data from the American Association of Port Authorities, available at www.aapa.org, as of March 20, 2009.

Exhibit 5: Market Share of U.S. Containerized Trade (TEUs) 1997 - 2007

Coastal Port Region's Market Share of U.S. Containerized TEUs: 1997–2007							
Year	Base data				Percents		
	West/Pacific Coast	East/Atlantic Coast	Gulf Coast	Total	West/Pacific Coast	East/Atlantic Coast	Gulf Coast
1997	12,087	10,946	1,492	24,524	49.3	44.6	6.1
1998	13,209	11,487	1,470	26,166	50.5	43.9	5.6
1999	14,085	12,304	1,619	28,007	50.3	43.9	5.8
2000	15,666	13,042	1,688	30,396	51.5	42.9	5.6
2001	15,951	13,009	1,703	30,664	52.0	42.4	5.6
2002	17,363	13,621	1,718	32,703	53.1	41.7	5.3
2003	20,060	14,402	1,838	36,300	55.3	39.7	5.1
2004	21,180	15,406	2,069	38,655	54.8	39.9	5.4
2005	23,011	16,791	2,162	41,964	54.8	40.0	5.2
2006	24,683	17,491	2,239	44,413	55.6	39.4	5.0
2007	24,538	17,921	2,534	44,993	54.5	39.8	5.6

Source: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, based on data from the American Association of Port Authorities, available at www.aapa.org, as of March 20, 2009.

Key Trading Partners for the IPH Study Area

With the spread of globalization and the relocation of manufacturing activities to less expensive markets, China has become the largest U.S. containerized trade partner, and the primary source of U.S. imports. Heavily reliant on the export market, and strongly linked to the U.S. and European consumer markets, the global economic downturn has affected China's economy. Economic forecasts called for Chinese GDP growth to slow by 50 percent in 2009 as compared with recent year-on-year gains in excess of 10 percent. Similarly, U.S.–China trade volumes continued to fall in 2009, with GI forecasting U.S. exports to China falling 8.3 percent and U.S. imports from China falling 13.4 percent before recovering to 7.9 percent and 7 percent growth, respectively, in 2010.

Japan has also historically been a strong export market and, similar to China, has suffered more from the global recession than have other developed countries. Weakening U.S. consumer demand has significantly impacted Japanese exports, both finished product direct to the U.S., as well as intermediary component pieces to Chinese and other manufacturers. Current outlooks call for U.S.-Japan trade to continue to remain virtually flat in 2010.

The IPH study area benefits from its shared border with Canada, the largest U.S. trade partner. The volume of goods moving across the U.S.-Canada border is estimated at \$1.5 billion per day with the largest share traveling by truck and rail. While the total overland trade volumes are expected to be down in 2009, a gradual recovery is expected to begin in 2010.

The major U.S. trading partners, China, Japan and Canada, are especially important to the IPH study area, given total volumes, the shared border with Canada, and the advantage of the port proximity for the Asian markets. According to the U.S. Census Department's Foreign Trade Division figures, Washington State's primary market for total merchandise export trade is Canada, followed by China, Japan, South Korea, the United Arab Emirates, Taiwan and Singapore. For Idaho, the primary markets are Singapore, Canada, China, Taiwan, and Japan. In 2007, total international import and export trade volumes (exclusive of Canadian and Mexican North American Free Trade Act (NAFTA) Trade) originating from or destined for the study area was approximately 4.3 million tons of cargo with an estimated value of \$5 billion. NAFTA trade added another 2.4 million tons valued at \$1.8 billion. Within the IPH study area the freight moving to and from the ports on the west coast is moving largely via truck. The same is true for the NAFTA trade, particularly from the near regions of Canada.

The relative importance of the region's trading partners is also reflected in the direction of import and export trade which is nearly all to the West and Canada (**Exhibit 6**). The West Coast accounts for nearly 75 percent of total export volume and 60 percent of total export value, while Canada accounts for nearly all other export trade. For import trade, Canada represents 60 percent of total volume but only around 23 percent of total value, while imports through the West Coast reflect inverse proportions with nearly 75 percent of total import value but only 35 percent of import volume. This difference between Canada and other international import trade reflects the types of commodities being imported, as Canada is providing more lumber, clay, stone, and lower-value items, whereas the international trade has a higher concentration of higher-value products, including electronics, primary metal, and other goods.

**Exhibit 6: Total IPH International Import and Export Trade Direction by Volume and Value
(inclusive of NAFTA)†**

Exports : International Trade Direction inclusive NAFTA (Canada and Mexico)												
EXPORT DIRECTION	TRADE VOLUME (TONS)			% by VOLUME (TONS)			TRADE VALUE (\$USD)			% by VALUE (\$US)		
	2007	2017	2027	2007	2017	2027	2007	2017	2027	2007	2017	2027
West	3,436,054	2,711,867	2,179,740	77%	69%	58%	\$ 1,140,686,606	\$ 1,417,291,501	\$ 1,465,558,901	61%	59%	49%
Canada	955,337	1,142,227	1,460,848	21%	29%	39%	\$ 620,531,787	\$ 840,280,079	\$ 1,249,239,753	33%	35%	42%
Mexico	33,974	45,059	62,048	1%	1%	2%	\$ 31,237,797	\$ 43,048,150	\$ 61,671,674	2%	2%	2%
Gulf	21,682	12,578	41,488	0%	0%	1%	\$ 39,596,366	\$ 42,053,990	\$ 99,421,464	2%	2%	3%
East	4,023	6,835	10,322	0%	0%	0%	\$ 35,632,425	\$ 60,532,833	\$ 104,625,420	2%	3%	4%
TOTAL	4,451,070	3,918,566	3,754,447				\$ 1,867,684,981.68	\$ 2,403,206,553.27	\$ 2,980,517,212.38			
Imports : International Trade Direction inclusive NAFTA (Canada and Mexico)												
IMPORT DIRECTION	TRADE VOLUME (TONS)			% by VOLUME (TONS)			TRADE VALUE (\$USD)			% by VALUE (\$US)		
	2007	2017	2027	2007	2017	2027	2007	2017	2027	2007	2017	2027
Canada	1,414,399	1,594,838	2,008,308	61%	61%	59%	\$ 1,174,477,733	\$ 1,389,737,471	\$ 1,879,545,244	23%	22%	19%
West	805,855	925,928	1,280,577	35%	35%	38%	\$ 3,685,849,183	\$ 4,655,454,242	\$ 7,782,564,793	74%	74%	79%
Gulf	43,800	39,047	46,172	2%	1%	1%	\$ 43,107,376	\$ 38,625,010	\$ 43,967,321	1%	1%	0%
East	38,225	40,791	41,469	2%	2%	1%	\$ 98,367,566	\$ 150,097,816	\$ 169,961,193	2%	2%	2%
Mexico	5,515	7,808	12,139	0%	0%	0%	\$ 11,366,754	\$ 16,132,743	\$ 25,762,285	0%	0%	0%
Total	2,307,794	2,608,412	3,388,665				\$ 5,013,168,612.57	\$ 6,250,047,281.68	\$ 9,901,800,835.50			

Notes: Specific country detail was not acquired as part of the Global Insight data acquisition. Categorization of international freight movements was accomplished through identifying the imports and exports bound for a foreign market, at the city level, by destination state. The direction category 'West' denotes an international import arriving or export departing from a Western-state domestic seaport. 'East' denotes an international import arriving or export departing from an Eastern-state domestic seaport. 'Gulf' denotes an international import arriving or export departing from a Gulf-state domestic seaport. NAFTA data were specified by Canadian province or Mexican state.

Source: Global Insight TRANSEARCH 2008 (Retrieved/Analyzed June 2009).

^{††} IPH trade statistics presented in this document on trade are limited to volumes originating or terminating in the region, and exclude traffic that passes through the territory, unless stated otherwise. Immaterial volumes handled over Great Lake ports have also been excluded from some tables.

Pacific Northwest Ports

Mirroring overall recent U.S. international trade trends, containerized traffic at the Pacific Northwest ports of Tacoma, Seattle and Portland has also been down, although the latest figures suggest an upturn. According to the *Journal of Commerce*, container volumes in March 2009 at Seattle were down 22 percent compared with March 2008, although better than the 45 percent decrease realized one month prior. Similarly, Tacoma's March container traffic was down 11 percent from 2008, although its exports were up. Although total container figures for the Port of Tacoma were still lower than for the first five months of 2008, month-on-month volumes increased between April and May 2009 with exports and imports growing 6 percent and 10 percent, respectively. In addition, figures for international traffic were worse than those for domestic, with volumes down approximately 20 percent and 9 percent, respectively, although the total U.S. international traffic is double the volume of the domestic traffic.

One potential bright spot in the Pacific Northwest ports' performance has been refrigerated containerized food exports, for which volumes grew modestly between 2007 and 2008. The Pacific Northwest, including Washington, Oregon and Idaho, has strong agricultural industries and, in turn, food products are an important component of port traffic. More generally, the *Journal of Commerce* (JOC) reported June 9, 2009 that westbound agricultural exports are outperforming other merchandise categories and volumes were up 18 percent over 2008 levels as compared to the 29 percent drop in volume for non-agricultural cargo. Although not necessarily the largest crops from the study area, the JOC indicates that corn, soybeans and wheat are the main U.S. export commodities, with containers destined to China, Taiwan, and Indonesia accounting for nearly 80 percent of total U.S. containerized grain exports.

While grain has been the primary commodity for export, an increasing standard of living in some developing countries has introduced demand for other agricultural products which are important in the IPH study area as evidenced by this photo from Ahmadabad, India in January of 2009.



It is particularly of interest, given the rich agricultural history in the IPH study area, that the refrigerated foods category is an area of continued growth despite the economic downturn. As shown in **Exhibit 7 and Exhibit 8**, in 2007, farm products accounted for the largest share of international exports from the IPH study area by volume and value, with food and kindred products third. This finding is based on data developed by IHS Global Insight for TRANSEARCH.

Exhibit 7: IPH International Export Trade Volume (excludes NAFTA)

Exports : Volume for International Trade exclusive NAFTA (Canada and Mexico)						
TRADE VOLUME (TONS)		Exports			Export Growth	
Rank	EXPORTS ONLY	2007	2017	2027	2007-17 CAGR	2007-27CAGR
1	Farm products	2,764,994	1,878,159	1,211,488	-3.8%	-4.0%
2	Lumber or wood products, excluding furniture	314,230	357,705	407,614	1.3%	1.3%
3	Food and kindred products	138,489	186,893	233,125	3.0%	2.6%
4	Waste or scrap materials not identified by producing industry	114,180	146,215	177,014	2.5%	2.2%
5	Pulp, paper, or allied products	69,882	80,682	80,877	1.4%	0.7%
6	Chemicals or allied products	17,925	8,235	35,239	-7.5%	3.4%
7	Machinery, excluding electrical	17,831	32,064	32,166	6.0%	3.0%
8	Fresh fish	8,036	12,641	6,631	4.6%	-1.0%
9	Clay, concrete, glass, or stone products	3,282	1,599	1,732	-6.9%	-3.1%
10	Electrical machinery, equipment, or supplies	3,232	6,412	10,512	7.1%	6.1%
11	Petroleum or coal products	2,515	3,280	4,320	2.7%	2.7%
12	fabricated metal prod	2,343	4,569	5,841	6.9%	4.7%
13	Transportation equipment	1,837	5,947	7,863	12.5%	7.5%
14	Primary Metal prod	1,586	3,246	3,650	7.4%	4.3%
15	Nonmetallic ores, minerals, excluding fuels	1,209	1,086	1,095	-1.1%	-0.5%
16	Instruments, photographic goods, optical goods, watches, or	968	1,489	3,164	4.4%	6.1%
17	Rubber or miscellaneous plastics products	881	2,446	8,420	10.7%	11.9%
18	Miscellaneous products of manufacturing	858	1,469	2,666	5.5%	5.8%
19	Furniture or fixtures	688	851	2,603	2.1%	6.9%
20	Printed matter	257	124	134	-7.0%	-3.2%
21	Leather or leather products	208	170	112	-2.0%	-3.0%
22	Apparel or other finished textile products or knit apparel	101	43	78	-8.2%	-1.3%
23	Textile mill products	35	25	26	-3.5%	-1.6%
	Sub-Total	3,465,568	2,735,350	2,236,369	-2.3%	-2.2%

Note: CAGR = compound annual growth rate.

Source: Global Insight TRANSEARCH 2008 (Retrieved/Analyzed June 2009)

Exhibit 8: IPH International Export Trade Value (excludes NAFTA)

Exports : Value for International Trade exclusive NAFTA (Canada and Mexico)						
TRADE VALUE (\$US)		EXPORTS			Export Growth	
Rank	EXPORTS ONLY	2007	2017	2027	2007-17 CAGR	2007-27CAGR
1	Farm products	\$ 505,993,363	\$ 353,511,768	\$ 231,058,514	-3.5%	-3.8%
2	Machinery, excluding electrical	\$ 178,424,264	\$ 378,280,079	\$ 347,477,831	7.8%	3.4%
3	Pulp, paper, or allied products	\$ 122,826,038	\$ 142,944,438	\$ 144,004,305	1.5%	0.8%
4	Food and kindred products	\$ 78,269,915	\$ 101,468,888	\$ 120,900,582	2.6%	2.2%
5	Instruments, photographic goods, optical goods, watches, or clock:	\$ 73,855,460	\$ 84,945,080	\$ 184,192,956	1.4%	4.7%
6	Electrical machinery, equipment, or supplies	\$ 71,884,530	\$ 152,276,316	\$ 203,996,457	7.8%	5.4%
7	Lumber or wood products, excluding furniture	\$ 38,232,994	\$ 64,162,443	\$ 99,864,498	5.3%	4.9%
8	Fresh fish	\$ 27,623,735	\$ 44,925,475	\$ 21,654,121	5.0%	-1.2%
9	Waste or scrap materials not identified by producing industry	\$ 26,157,220	\$ 34,980,990	\$ 42,068,318	2.9%	2.4%
10	Transportation equipment	\$ 24,095,009	\$ 79,332,548	\$ 105,594,506	12.7%	7.7%
11	Chemicals or allied products	\$ 21,222,251	\$ 15,750,286	\$ 46,878,770	-2.9%	4.0%
12	Miscellaneous products of manufacturing	\$ 19,499,440	\$ 33,979,764	\$ 61,562,352	5.7%	5.9%
13	fabricated metal prod	\$ 9,707,645	\$ 19,608,774	\$ 23,853,322	7.3%	4.6%
14	Primary Metal prod	\$ 4,625,441	\$ 9,702,623	\$ 11,516,520	7.7%	4.7%
15	Printed matter	\$ 4,591,139	\$ 1,970,782	\$ 1,934,978	-8.1%	-4.2%
16	Rubber or miscellaneous plastics products	\$ 4,240,873	\$ 11,153,066	\$ 37,484,548	10.2%	11.5%
17	Furniture or fixtures	\$ 3,343,399	\$ 4,801,514	\$ 12,689,183	3.7%	6.9%
18	Leather or leather products	\$ 2,956,922	\$ 2,413,573	\$ 1,596,710	-2.0%	-3.0%
19	Clay, concrete, glass, or stone products	\$ 1,791,389	\$ 901,734	\$ 892,250	-6.6%	-3.4%
20	Petroleum or coal products	\$ 1,554,201	\$ 2,106,912	\$ 2,810,083	3.1%	3.0%
21	Apparel or other finished textile products or knit apparel	\$ 827,268	\$ 274,334	\$ 795,194	-10.5%	-0.2%
22	Textile mill products	\$ 192,725	\$ 136,800	\$ 144,561	-3.4%	-1.4%
23	Nonmetallic ores, minerals, excluding fuels	\$ 7,064	\$ 6,343	\$ 6,395	-1.1%	-0.5%
	Sub-Total	1,221,922,286	1,539,634,528	1,702,976,954	2.3%	1.7%

Note: CAGR = compound annual growth rate.

Source: Global Insight TRANSEARCH 2008 (Retrieved/Analyzed June 2009)

Trade Barriers

Trade barrier is a general term that describes any government policy or regulation that restricts international trade. The barriers can take many forms, including the following terms that include many restrictions in international trade within multiple countries that import and export any items of trade:³

- Tariffs
- Import licenses
- Export licenses
- Import quotas
- Subsidies
- Non-tariff barriers to trade
- Voluntary Export Restraints
- Local Content Requirements
- Embargo

The discussion of trade barriers in this working paper is focused on traditional trade barriers such as tariffs, quotas and product restrictions. Other types of regulatory barriers, such as truck size and weight differences and restrictions at border crossings between the IPH study area and Canada are discussed at length in Working Paper 3.5; *Modal Issues*. Comment's received during interviews conducted for this study with companies that operated commercial trucks across the Canadian border, also noted that paperwork and security barriers have increased since the terrorist attacks of September 11, 2001. For instance truck company managers indicated that their drivers were now required to carry passports, and were often subjected to "harassment" by officers, especially when coming from Canada back into the U.S. A number of companies also indicated that they avoid making cross border shipments due to the increased levels of paperwork now required.

As discussed in other sections of IPH study area reports, global trade has been a major trend shaping both the national and regional economies of the U.S. A major force behind the globalization trend has been the implementation of bilateral and regional trade agreements. "A free trade agreement is a pact between two or more countries to eliminate tariff and nontariff barriers affecting trade among themselves."⁴ Over the past two decades the negotiation of bilateral and regional trade arrangements has lead to a substantial reduction in global tariffs. For instance, most tariffs on agricultural goods being traded between the U.S. and Canada were eliminated in 1989 with the signing of the U.S. – Canada Free Trade Agreement (CFTA). The agriculture provisions of CFTA were later

³ Wikipedia online encyclopedia: http://en.wikipedia.org/wiki/Trade_barrier

⁴ US Department of Agriculture Web page, accessed on 12/18/09:
http://www.usda.gov/wps/portal/!ut/p/_s.7_0_A/7_0_1OB?contentidonly=true&contentid=fta_projects.html

incorporated into the North American Free Trade Agreement (NAFTA) that included Mexico.

The final provisions of NAFTA were fully implemented on January 1, 2008, removing the final tariff barriers that remained on a handful of agricultural exports from the U.S. to Mexico. *“However, many non-tariff barriers to trade remain among NAFTA partners such as unscientifically based phytosanitary restrictions on fresh potatoes, anti-dumping duties on apples, and others.”*⁵

The United States is party to many bi-lateral and multi-lateral trade agreements. Countries with which the U.S. has active trade agreements include:

Bi-lateral Trade Agreements with U.S.

- Australia
- Bahrain
- Chile
- Israel
- Jordan
- Morocco
- Peru
- Oman
- Singapore

Multi-lateral Trade Agreements involving the U.S.

- North America Free Trade Agreement (US, Canada and Mexico)
- Central America-Dominican Republic Free Trade Agreement (US, Dominican Republic, Guatemala, El Salvador, Nicaragua, Honduras and Costa Rica)
- General Agreement on Tariffs and Trade (GATT)

Many countries still impose tariffs on product imports, or subsidize the production of certain commodities in the host country, creating the same competitive disadvantage as a tariff. In addition, most trade agreements also contain clauses that allow for parties to impose or increase a tariff on some commodities when imports of that commodity would harm or cause serious injury to domestic producers. Further, trade agreements such as NAFTA also allow countries to impose measures to protect consumers from unsafe products, or protect domestic livestock or crops from imported pests and diseases. As successive rounds of trade agreements between the U.S. and other countries has significantly cut tariff barriers, more attention is now being given to technical trade barriers, including technical regulations and standards. While most technical regulations and standards are designed to achieve non-trade related objectives, they can also have unintended consequences of distorting or restricting trade.

With respect to the regulatory issues in international trade the study area of the IPH study area faces many of the same trade challenges as do other states that export a similar mix of commodities as those produced in the IPH study area.

⁵ Idaho State Department of Agriculture, *Idaho Agriculture Trade Issues Report*, September, 2008 pg. 3. Accessed at: <http://www.agri.idaho.gov/>

Some of the more prominent trade barriers affecting the IPH study area imports and exports include:

Softwood Timber

U.S. timber and lumber producers have long contended that Canadian timber and lumber producers enjoy government provided subsidies that make it difficult for U.S. producers to compete. The timber dispute between U.S. and Canadian lumber producers dates back to 1982, when a group of U.S. producers filed a countervailing duty petition with the International Trade Commission. U.S. producers argued that the Canadian government allows lumber producers to harvest timber on government lands at far less than the market value. The trade dispute centers primarily around two issues:

- Stumpage fees – stumpage is the fee charged by a land owner for the right to harvest standing timber. Most of the timber harvested in Canada comes from government owned land, and U.S. producers argue that the stumpage fees charged to Canadian producers are artificially low, especially for wood coming from old growth forests.
- Export quotas – another area of contention related to timber is related to export quotas placed on Canadian producers. Both the federal and provincial governments of Canada severely restrict the export of softwood logs, particularly logs of sufficiently high quality to make softwood lumber. When Canadian logs cannot be sold abroad, over-supply allows Canadian sawmills to exploit the market by paying suppressed prices for the logs. The log export ban protects the timber-price subsidies and adds to existing subsidies by artificially depressing Canadian log and timber prices.

In 2006 the World Trade Organization (WTO) ruled that the U.S. violated international free trade laws by imposing "anti-dumping" duties on Canadian lumber imports. Between 2002 and 2006 the U.S. collected about \$5 billion in duties on softwood lumber imports from Canada. However, in 2006 the U.S. and Canada reached an agreement designed to end the dispute. The *Softwood Lumber Agreement 2006* which remains in effect today, terminated the U.S. collection of countervailing duties, and Canada imposed taxes and quantitative restrictions on lumber exports to the U.S.

Most recently Canada lost a lengthy legal fight over a 10 percent U.S. tax on softwood lumber imports from four Canadian provinces. In September 2009, the London Court for International Arbitration ruled that a surtax on lumber imported from Ontario, Quebec, Manitoba and Saskatchewan can remain in place until the United States has collected \$54.8 million, which the court determined is owed by Canada. The dispute stems from an earlier finding that Canada violated the 2006 agreement, which limits how much lumber it can export to the United States. The court ruled that the tax must be paid by Canadian lumber producers, not the

government. The duty does not affect lumber from British Columbia, which produces about half of Canada's softwood exports to the United States.⁶

U.S. timber operations are also subject to federal, state, and local laws related to forest management, the environment, endangered species, health, safety, pollutants, waste generation, water quality and product liability.

Fruit and other Agriculture Products

A large number of foreign countries impose high tariffs on fruit imports, including the European Union, Argentina, Brazil, India and others. Research conducted in 2003 by a team from the University of Washington and University of Idaho found that in some countries tariffs on apples result in consumers paying 1.5 times more than the market price, not accounting for transportation costs.⁷ The research team modeled the impact of apple exports from the U.S. if tariffs on apples were eliminated and found significant increases in export trade volumes of apples. Key potential markets identified by the researchers included India, Mexico, North Central America, developing nations of Africa and the rest of Asia.

Because of its size, the IPH study area can have only limited influence in changing trade policies and regulations involving the entire U.S. and other countries around the world. However, organized activities to identify and address trade barriers are important. The International Trade Administration in the U.S. Department of Commerce provides a web-based complaint form that companies can complete if they believe they have experienced barriers adversely affecting trade of their products. Both Washington and Idaho also have active programs to address trade barriers.

- The Washington State Department of Agriculture maintains an International Marketing Program that includes trade representatives (including one in Yakima), promotional programs and makes annual grant awards to trade promotion and activities to address trade barriers.
- The Idaho State Department of Agriculture (IDA) produces the *Trade Issues Report* that resulted from a Trade Issues Working Group that was formed in 1999. The report which is produced annually identifies: “*sanitary and phytosanitary procedures, tariffs, quotas, animal health requirements and other trade barriers that face Idaho agriculture.*”⁸ A summary of some of the barriers identified by IDA in the 2009 report is shown in **Exhibit 9**.

⁶ Report on Business.com:

http://v1.theglobeandmail.com/servlet/story/LAC.20090929.RTICKERA29ART1855_1/TPStory/TPBusiness/

⁷ Prasanna Sreedharan, Stephen Devodoss, Leroy Stodick, and Thomas Wahl; *Effects of Trade Barriers on U.S. Apple Exports*, 2003. Paper presented to the Annual Meeting of American Agricultural Economics. Pg. 1.

⁸ Idaho State Department of Agriculture; *Idaho Agriculture Trade Issues Report*, September 2008. Pg. ii.

Exhibit 9: Trade Barriers Identified by Idaho Department Agriculture

Partial Listing of Regulatory Trade Barriers by Product		
Product Type	Location	Trade Barrier
All Products	CHINA	Undervalued currency
All Products	THAILAND	Customs Valuation
All Products	VENEZUELA	Import Permits
Animal Health	CANADA	Animal Identification
Barley	KOREA	Tariff Rate Quotas
Beans	MEXICO	Import Permit Auctions
Beef	CHINA, E.U., JAPAN, KOREA	Tariffs and/or Phytosanitary Ban
Beef & Cattle	MEXICO	Anti-dumping duties, Restrictive protocols on live cattle
Cherries	CHILE	Phytosanitary Restrictions
Dairy	BRAZIL, CANADA, JAPAN, KOREA	Tariffs or Tariff Rate Quotas
Dairy	MEXICO	Milk Powder-Tariff Rate Quotas
Fruit	ARGENTINA	Tariffs, Export Rebates, Phytosanitary Ban
Fruit (Apples & Pears)	Australia	Phytosanitary Ban
Fruit	BRAZIL	Tariffs & Miscellaneous Charges
Fruit (Apples & Pears)	CHINA	Phytosanitary Restrictions
Fruit (Apples & Pears)	CUBA	Phytosanitary Restrictions
Fruit	E.U., INDIA, ISRAEL	Tariffs, Rate Quotas or Entry Pricing System
Fruit (Apples & Cherries)	JAPAN	Phytosanitary Restrictions, Phytosanitary Ban, Tariffs
Fruit	KOREA	Phytosanitary Ban, Tariffs
Fruit	MEXICO	Safeguard Duty/Min. Reference Price, Onsite Inspection
Fruit & Vegetable	TAIWAN	Pesticide Tolerances, Phytosanitary Restrictions, Tariffs
Fruit	THAILAND	Tariffs, Plant Quarantine Regulations
Fruit	VENEZUELA	Tariffs
Fruit	VIETNAM	Tariffs
GMOs	E.U.	Excessive Regulations
Oats	E.U.	Export Subsidies, Domestic Support
Onions	KOREA	Tariff Rate Quotas
Peas	CHINA	Phytosanitary Restrictions
Peas, Lentils, Chickpeas	CHILE, INDIA	Fumigation or Phytosanitary Requirements
Potatoes (Fresh)	CANADA	Anti-Dumping Penalties, Prohibition on Bulk Shipments
Potatoes (Fresh)	CHINA, JAPAN, KOREA, TAIWAN	Phytosanitary Ban/Restrictions, Tariff Rate Quota and/or Potato Cyst Nematode
Potatoes (Processed)	INDIA, KOREA, TAIWAN, THAILAND, VIETNAM	Tariffs or Tariff Rate Quotas
Potatoes (Seed)	MEXICO	Phytosanitary Protocol Procedures
Processed Foods	JAPAN	Ingredient Restrictions
Processed Fruits & Veg	CHINA	Certificate Requirement
Seed	AUSTRALIA	Alfalfa & Sweet Corn – Phytosanitary Restrictions
Seed	CHINA	Protection of Proprietary Varieties, Phytosanitary Req.
Seed	E.U.	Alfalfa – Unreasonable Recordkeeping Requirements
Seed	ISRAEL	Import Permits for warm season species
Seed	JAPAN	Phytosanitary Restrictions
Seed	PHILIPPINES	Grass -- Pests & Diseases
Wheat	AUSTRALIA	State Trading Enterprise - Australian Wheat Board
Wheat	CANADA	Canadian Wheat Board

Due to the diversity of agricultural products produced within the IPH study area it is likely that many of the barriers and restrictions noted in the previous discussion, impact growers in the region more profoundly than regions with more homogeneous crop production. In order to increase international trade opportunities in the IPH study area, the region may wish to form a trade alliance, leverage existing industry organizations or form alliances with other regions with similar export trade objectives.

One of the comments heard repeatedly during stakeholder interviews included: *"I avoid making shipments across the border, because I don't want to deal with the paperwork requirements."* In some cases, especially with regard to agriculture export requirements there may be opportunities for producers to meet foreign requirements and extract value-added pricing in doing so. For instance, the table in Exhibit 9 cites *"Excessive Regulations"* in the European Union on genetically modified organisms (GMOs). However, much of the GMO regulations in Europe have been driven by consumer demands. As a result, these regulations are unlikely to change in the face of public opposition in the host country.

A number of farm activities and groups across the nation are focusing on how to help local growers meet foreign buyer demands, and overcome regulatory demands by applying technology and techniques to meet specific country requirements. Public and private examples of these activities include:

- **Northern Great Plains (NGP) Rural Development Authority:** ^{***} In 1994, the U.S. Congress established the Northern Great Plains Rural Development Commission to prepare a rural development strategy for the NGP region of Iowa, Minnesota, Nebraska, North Dakota, and South Dakota. The Commission focuses on common issue areas including transportation infrastructure, international trade, value-added agriculture, telecommunications, and healthcare.

Under the Farm Security and Rural Investment Act of 2002 (the farm bill), Congress established the Northern Great Plains Regional Authority "to provide assistance in (A) implementing the recommendations of the Northern Great Plains Rural Development Commission; (B) acquiring and developing land; (C) constructing or equipping a highway, road, bridge or facility; (D) carrying out other economic development activities; or (E) conducting research activities described in (A) through (D)." Northern Great Plains, Inc. (NGPI) which carries out the work of the authority has conducted research into foreign buyer preferences for agriculture products, assisted farmers in keeping abreast of changing protocols and requirements. Other areas of agriculture and natural resource activities include:

^{***} Information assembled from the *Northern Great Plains, Inc.* Website: <http://www.ngplains.org/>

- Development of a diversified processing sector
- Diversification of the agricultural production base
- Research and education on traceability in agricultural products
- Research and development of multi-functional land use strategies
- Research on the potential market for products developed from native flora and fauna - (Native Species project)
- Support for Producer Alliances
- Strategic analysis of global market opportunities

Of particular note with respect to IPH study area objectives, the board of directors for the NGPI includes representation from Manitoba, and some previous research efforts have included funding and representation from Manitoba and Saskatchewan.

- **Midwest Shippers Association (MSA):**^{†††} MSA is a regional trade association cooperative that serves to promote marketing, and facilitate shipping and delivery of specialty grains to consumers and the food industry worldwide. Originally established through a grant from the Minnesota Legislature, the Midwest Shippers Association now serves the region of the U.S. made up of the states of Minnesota, North Dakota, South Dakota, Iowa and Wisconsin. Services of the cooperative include:
 - *International Marketing Services* - Trade leads service, matchmaking of IP specialty and conventional grains buyers and sellers, international Midwest Specialty Grains Trade Show, facilitating direct trade
 - *Services for Growers and Processors* - Grower contracts available service; network to processors, traders, purchasers of premium value specialty grains; network to seed and input suppliers, certification services, technical expertise
 - *Shipping Services* - Network facilitation of transportation and logistics services for worldwide delivery, logistics education
 - *Member Information Services* - News and education, including weekly E-News Digest. Internationally focused web portal linking industry partners. Promotion of Upper Midwest Agriculture and opportunities in high value specialty grains.

Trade Barrier Implications for the IPH Study Area

The economic downturn has had a definite near-term effect on potential trade for the U.S., as well as the region. However, a recovery will occur and with

^{†††} Information assembled from the *Midwest Shippers Association* website:
<http://midwestshippers.com/>

marketing focused on particular products and services, the area stands to gain in both imports and exports. Target markets are discussed further in more detail in the section titled Market Opportunities which appears later in this document. The descriptions include both geographic opportunities such as California and Canada along with business/commodity types such as food processing equipment, pharmaceuticals, and tourism.

In the near term, the region needs to focus on developing markets for its existing base of business, maintaining current market positions and building on opportunities of similar types, for example expanding in the area of energy related product manufacturing. Strengthening the current base and building volume and density will help build the necessary structure to expand in other markets as the economic recovery continues. The importance of building volume and density is critical to expansion. This is discussed in the report on Regional Competitiveness.

A critical aspect of improving infrastructure and expanding markets is to truly develop the “regional” thinking and sharing of strategic interests in a way that takes advantage of individual capabilities and applies funding resources to those projects which have the most benefit for the most people, giving attention to the needs of the rural and indigenous populations as well as the urban areas.

According to the Detroit Regional Chamber’s Border Crossing Policy, the U.S. and Canada share the largest trading relationship in the world. An estimated U.S. \$1.2 billion in trade crosses the U.S.-Canada border daily, with trade between the two countries climbing at nearly double-digit rates each year since NAFTA implementation in 1994. The western provinces of Canada offer tremendous near and long term trade opportunities for the IPH study area. To leverage this opportunity there is a greater need, and therefore incentive to make every effort toward a seamless and effective flow of goods and services.

Economic development and related improvements to better accommodate and access border crossings within the IPH study area can create competitive advantages for business shipping. Increased daily crossings can also have positive impacts on tourism, recreation, and possibly cross-border employment. As highlighted in Technical Memorandum 1, the Eastport, Idaho border crossing on US-95 consistently ranks among the top 20 U.S./Canada commercial ports of entry by dollar volume. In 2009 Eastport ranked as the 7th highest land crossing with Canada, by value. For Washington, Oregon, and California destinations from Alberta and points east, it provides a shorter, more efficient route compared to the I-15 crossing at Sweetgrass, Montana. While U.S. freight gateways typically handle both exports and imports, some serve primarily as gateways for imports into the U.S. and others serve more as gateways for exports from the U.S. to markets around the world. According to the USDOT 2009 Top 125 U.S. Freight Gateways Handling International Merchandise, Eastport has 7,171 million of its 9,363 total value coming from imports versus 2,192 million classified as exports.

As noted in the U.S. Bureau of Transportation Statistics November 2009, *America's Freight Transportation Gateways*, many factors determine the size and direction of freight shipments handled by the gateways, including changes in commodities traded internationally between the U.S. and its trading partners, changes in major U.S. trading partners, changes in the global economy, and geographic shifts in centers of production worldwide. Albeit, the IPH study area functions as a crossroads to British Columbia and Alberta (as well as to southwestern U.S.). It is important to develop the transportation linkages between these economic centers, to expand markets for regional specialty industries and products, and to develop regional economic links. Trade within the cross border region is also an area for opportunity.

While trade policies exist that affect some commodity groups in ways that limit growth on both sides of the U.S./Canadian border, cooperative planning and research efforts under a model such as the NGPI could lead to cooperative solutions. However, other transportation barriers that may also inhibit the potential for growing trade with British Columbia and Alberta include:

- Road and Rail Network Limitations
- Port of Entry Limitation (hours of operation, inadequate infrastructure)
- The lack of coordination in determining the primary crossing point
- Differing truck size and weight regulations
- Paperwork inefficiencies and variations in border procedures
- Lack of a regional perspective toward strategic development within the defined IPH study area.

Supply Chain Effects in the IPH Area of Influence

Beyond the economic downturn, the region faces additional challenges in overseas trade coming from the logistics decisions of major shippers and service providers. In recent years there has been a steady shift of the supply chain to move cargo away from the U.S. West Coast ports as a way to reduce the risk of interruption in services following contentious labor conflicts, higher costs, and congestion at Southern California ports.

The U.S. West Coast has been handling more than 50 percent of total U.S. container traffic, with the Ports of Los Angeles and Long Beach combined handling 44 percent of U.S. import loads and 25 percent of U.S. export loads. However, increased community resistance to continued expansion and the associated health and environmental impacts, intermodal and truck congestion, relatively high tariff rates, and labor issues have created a perfect storm leaving shippers searching for alternative options by which to move goods from source markets to the U.S. East Coast and hinterland markets.

The Panama Canal expansion project, expected to be completed by 2015, will offer one option allowing larger vessels to travel an all-water route more cost

efficiently directly to the East and Gulf Coasts where much of the traffic is ultimately destined. At the same time, some shipping lines are looking at the Pacific Northwest, which is closer by sea to Asia than are the ports of Southern California. In the spring of 2009, China Shipping Container Line came to Seattle for the first time, and shipping lines CMA-CGM and Maersk started a weekly joint service which brings 6,500 TEU vessels to the port. At the same time, the Port of Tacoma has been developing a terminal for Nippon Yusen Kaisha (NYK Line).

To the north, the Port of Prince Rupert has started to receive containers from Asia for direct rail shipment by the Canadian National Railroad (CN) to Chicago. This new service, which commenced operations in October 2007, now handles about 250,000 TEUs per year and is expected to grow to over 2.5 million TEUs per year. Closer to Asia, the Port of Prince Rupert service reduces water travel time by two days compared to Seattle/Tacoma and the CN's expedited intermodal service additionally reduces the travel time by approximately one day as compared to Seattle/Tacoma port services, thus eliminating between 2 to 3 days out of the freight's supply chain cycle time. This new service is a direct competitive challenge for containerized traffic to the ports in Los Angeles, Oakland, Portland and Seattle/Tacoma. However, the Port Prince Rupert will not necessarily impact the IPH study area as containers going to or from the region to Asia will most likely continue to use the closer ports in Seattle/Tacoma. The most likely impact may be a slight reduction in the number of intermodal trains passing through.

The U.S. Waterborne Foreign Container data from U.S. Customs Ports shows an overall loss in market share for the Pacific Northwest between 1997 and 2008. The Port of Tacoma saw its volume increase from around 550,000 TEUs in 1997 to 1,100,000 in 2008, at a compounded annual growth rate of 6.6 percent, faster than the total U.S. traffic growth rate of 6 percent. However, the Ports of Seattle and Portland did not fare as strongly, with growth rates of 1.1 percent and -0.6 percent, respectively. Overall, the Pacific Northwest's share of the U.S. containerized trade market decreased from 12 percent in 1997 to 8 percent in 2008. The Prince Rupert Port may have a further influence on the amount of decline.

On balance, there is potential for the U.S. Pacific Northwest to gain market from Southern California, but this ability is influenced by many factors, including the necessity for the region to actively position itself as a strategic, efficient, and cost-effective gateway.

Supply Chain Implications for the IPH Study Area

There will definitely be changes in the supply chain as the price of fuel begins to climb. Near-sourcing, purchasing goods from vendors closer to the point of use, and network adjustments will create challenges and opportunities around the globe. Products which are currently shipped off the U.S. shore to Asia for assembly or valued-added processing, then returned to the U.S., are certainly candidates for change. Where the price of fuel causes the transportation costs to outrun the cost of the production labor, then supply chain shifts are likely. Lumber products are a significant piece of this type of supply chain. The IPH study area may see the return of some of its traditional businesses, like wood products and paper, which have been taken off shore. Efforts can be made to facilitate that through marketing and investment in infrastructure.

INLAND PORT MODELS

Strategies for including distribution as a focus of future economic development efforts are important due to the projected growth in distribution services. The table in **Exhibit 10** shows projected employment shifts by business sector from 2005 to 2035. Regardless, the table probably refers to national employment projections by industry sector. The “*Percent of U.S. 5-sector Value*” refers to the industry sector employment, per a 5-sector industry scheme, relative to total employment in 2005 and 2035, respectively, expressed as a percentage (cumulating the industries = 100%).

The “Mix Shift” column identifies how those relative percentages of industry sector employment change from 2005 to 2035 (i.e., subtract column “2005” from “2035”). “Value CAGR” means the value of the Compound Annual Growth Rate, (i.e., the average annual change in industry sector employment between 2005 and 2035).

Wholesale Distribution shows a significant increase while other sectors are predicted to decline.

Exhibit 10: Forecasted Growth of Selected Sectors of the U.S. Economy

Sector	Percent of U.S. - 5 Sector Value		Mix Shift	Value CAGR
	2005	2035		
Agriculture	2%	1%	-1%	1.1%
Mining & Extraction	2%	1%	-1%	1.9%
Wholesale Distribution	29%	41%	12%	5.2%
Retail Trade	29%	25%	-4%	3.4%
Manufacturing	38%	32%	-6%	3.4%
All U.S.				3.9%

Source: Data from Woods and Poole, compiled by WSA October 2008

In order to have success in developing this employment sector, the IPH study area will need to expand on logistics and transportation capabilities, which of course is a primary objective of this study. The concept of an “inland hub” includes the exploration of; inland ports, logistics hubs and logistics park concepts.

Inland Ports: A Brief History

Inland ports are a relatively new phenomenon in the lexicon of transportation logistics. Prior to the 1990's an inland port was a typical reference to a port located on an inland waterway. Today the term means something quite different:

“The new definition of inland ports-as-clusters of distribution and logistics centers located on a transportation corridor – indicated a completely difference type of operation, mode, and commodity mix, all carrying

*profound implications for transportation planners, particularly those in state highway departments...Combinations of modes at inland ports potentially provide 'a shared location for partners' that want to increase efficiency of their supply chains"*¹¹

The inland port concept as it exists today has been driven by the growing containerization of freight. Inland ports are largely thought of in the context of international trade as a site located away from the traditional land, air, and coastal gateways that provide opportunities to reduce inefficiencies and provide value-added services. However, inland ports can also support domestic logistics activities. A primary function of an inland port has been to quickly move containerized freight out of congested gateways such as ports where it can be consolidated and/or resorted for domestic distribution. Another function of inland ports is to provide value-added services such as the assembly of subcomponents from various sources into final products ready for delivery.

Inland ports are multi-modal and are typically based on one pre-eminent mode. These facilities are generally developed around specifically designated tracts of land, where the zoning, utilities, transportation connectivity and other support service are provided specifically with the intention of attracting freight related businesses. Some of the more well known inland ports have been developed on sites where base closures have taken place: San Antonio Texas (Kelly Air Force Base [AFB]), Columbus, OH (Rickenbacker AFB), Kansas City (Richards-Gebaur AFB), and Riverside, CA (March AFB). As the inland port concept has evolved, researchers have examined those that have been successful and those that have not. The current research suggests that there are five critical needs for successful inland port developments:¹²

- **Modal capabilities** – an inherent requirement is a variety of transportation assets.
- **Existing demand** – in terms of existing cargo shipments and the availability of motor carriers, logistics firms, or freight forwarders
- **Locational advantage** – the greatest location advantage is a large population base in close proximity – to provide a ready market, and to provide workers.
- **International trade facilitation** – requirements and procedures related to the flow of information needed for the international movement of goods.
- **Management plan** – successful inland ports have access to funding, marketing and public/private cooperation.

¹¹ Harrison, Robert, Center for Transportation Research, University of Texas at Austin; *International Trade, Transportation Corridors, and Inland Ports: Opportunities for Canada*. May 2007. Found at: http://www.gateway-corridor.com/roundconfpapers/documents/Harrison_Robert_Winnipeg.pdf

¹² *Ibid.* pg.5

A feasibility study completed for the Southern California Association of Governments (SCAG) in June of 2006 has suggested six defined forms that an inland port or hub can adopt. Each depends on a set of circumstances -- the infrastructure and markets -- to be present. There exists a strong need for public and private relationships and regional consolidation for these facilities to succeed. Private entities must be successful in order to produce the economic benefit necessary to meet the public needs. Transportation providers must cooperate in the development of such facilities, as they play a key role in delivering goods to and from a set location. The geographic location and the market catchment area also need to fit the design concept. Land use planning is a key element – providing locations that are suitable for purpose and have ready access to infrastructure minus congestion. Another critical, but not physical, requirement is the idea of a “freight friendly” attitude fostered through policy, regulation and public awareness of the contribution of freight to the community.

The SCAG study suggests these potential models:

- Satellite Marine Terminal;
- Trade Processing Center;
- Crossroads;
- Logistics Airport;
- Logistics Park; and
- Economic Development Zone.

These models are directly applicable for evaluation relative to the IPH study area. The evaluation of the suitability for each form involves developing an understanding of which functions are desirable, feasible, and have a practical cost benefit relationship. Nearly all functions could be deemed to be desirable but the feasibility is ultimately defined by the infrastructure and services access and the catchment area. Some facilities might be developed but the practicality from the cost side may be limiting.

Satellite Marine Terminal

A satellite marine terminal employs the idea that there is a benefit from moving the sorting functions of inbound cargo off the port location to an inland center where the sorting can be completed and the freight moved on to its destination. This concept has some distinct advantages. The traffic moves away from the marine terminal more quickly, improving the throughput and reducing port congestion. The sorting and re-distribution of the traffic can potentially occur at a lower cost. The effectiveness of this methodology relies on good access to suitable and low cost transportation into and out of the satellite terminal. In general, this implies good access to truck and rail intermodal along with willing partners to supply and maintain reliable service over time. One example of this type of facility would be the Virginia Inland Port (VIP) which receives material directly from Norfolk and operates in close alliance with the Norfolk Southern. The Virginia Port Authority operates the facility, which is located 220 miles inland,

outside of Washington, D.C. Containers arriving to or departing from the Port at Norfolk are serviced by intermodal shuttles running five days a week and also by regional truck service. In the west the primary inland hub example would be the Inland Empire which is in close proximity to the ports at Los Angeles with dockside rail service and access to major intermodal facilities.

The IPH study area has good access via truck and carload rail to the Seattle/Tacoma ports. Unfortunately, the existing rail intermodal service in Spokane that is important to providing timely and cost effective shipments to and from the IPH study area over long distances is inadequate and lacks strong support from the Class I railroads. According to the intermodal schedules on the BNSF website the railroad currently offers a trailer on flat car service from Spokane to Cicero, Illinois and to Minneapolis daily except Sunday with a travel time goal of 65 to 75 hours depending on the day of week and location. There is no service schedule offered on the website for either international or domestic containers.

For full truckload or container shipments over 600 miles, rail intermodal can offer comparative travel time usually at a lower cost. Lack of adequate intermodal service creates some disadvantage for shipments that would go a long distance to the east or southeast. For example, some shippers in the region are sending product by truck west to Seattle, then north to Vancouver, BC to connect to the CN intermodal service for shipment to eastern markets. To remedy this type of circuitous intermodal service, the region will need to secure a commitment from the railroads to support an intermodal terminal with adequate rail service, which in turn will require a reciprocal commitment from the IPH study area to build sufficient manufacturing and distribution volume to increase intermodal traffic to satisfy the railroads' requirements for economies of scale.

In the east the satellite terminals, such as the Virginia Inland Port have better traction because the east coast railroads will support a shorter length of haul in their intermodal service. For the western railroads the average intermodal length of haul is over 1,000 miles and is quite profitable for them to create disincentive to make additional stops along the way.

The IPH study area is constrained by its access to strong intermodal service and the geographic location relative to metropolitan areas with strong demand for regional distribution, consolidation, and deconsolidation opportunities.

Satellite Marine Terminal Requirements:

- Designated development area
- Reasonable distance and good connectivity to Port
- Intermodal shuttle service to and from the port which can include on dock rail
- Good connectivity to markets via rail intermodal and truck

- Located to service a metropolitan area of regional markets as well as those more distant
- Ability to attract supply chain business to the location

Identified IPH Study Area Gaps:

- Targeted land use
- Intermodal Service
- Geographic location with respect to population density. There is good access to dense California markets but not in competition for goods which flow through the California ports.

Crossroads

A crossroads hub is as the name indicates – a facility that takes advantage of a geographic location that is a crossroads between primary market lanes. A good example of a crossroads hub is San Antonio, Texas. The city has the benefit of location along a primary NAFTA trade route and employs a general purpose Foreign Trade Zone as a primary feature. The 1,880 acre (760 hectares) industrial hub is master-planned, platted and zoned for commercial and business development.

The crossroads hub in this example is closely related to the idea of a Trade Processing Center as described in the next section. While San Antonio includes foreign trade, it isn't a requirement for a Crossroads facility. The primary feature is the location at a point on this primary route. A Trade Processing Center is different in that it strives to draw traffic from all over, not just from the intersecting routes it is sited on.

Foreign Trade Zones (FTZ) are considered outside the territory of the U.S. for customs purposes. Therefore, goods admitted in a designated Foreign Trade Zone are not subject to formal U.S. Customs entries or payment of duties while in the zone.

There are financial advantages provided by the use of a Foreign Trade Zone which include:

- Improved cash flow through deferral of charges
- Reduction of duties and taxes
- Lower inventory costs

A Foreign Trade Zone can include activities such as:

- Assembly
- Warehouse
- Testing

- Repair
- Manufacturing
- Packaging and Labeling
- Salvage

Example of a Foreign Trade Zone: A company that develops products by assembling components from different countries benefits financially by allowing all of the components to arrive in the FTZ and then assembling the product inside the zone when all of the pieces have become available. Cash flow is improved as duties are deferred until the completed assembly leaves the FTZ. Product can remain inside the FTZ indefinitely, a flexible way to respond to market demand.

Currently there are three FTZ's within the IPH study area; FTZ 203 in Moses Lake, WA; FTZ 224 at Spokane International Airport; and, FTZ 242 in Eastport, ID. The FTZ 242 in Eastport has also created a subzone specifically for Hoku Materials which manufactures polysilicon for solar modules:

- *"FTZ procedures would exempt Hoku from customs duty payments on foreign materials used in export production (some 95% of plant shipments). On its domestic shipments, Hoku could defer duty until the product is entered for consumption, and choose the duty-free rate that applies to the finished polysilicon for the foreign inputs used in production. The company may also realize certain logistical/procedural savings related to weekly entry and direct delivery procedures, as well as savings on materials that become scrap/waste during manufacturing. The application indicates that FTZ procedures would help improve the plant's international competitiveness."*¹³

In the cross-roads example, San Antonio has also utilized their airport as a maintenance, repair, and overhaul location for major aerospace industries including Boeing and Lockheed-Martin. The development also includes a technical school specifically dedicated to the needs of the industries in and around the logistics park.

To a large extent, the IPH study area has the capabilities of a Crossroads, providing overnight and same day truck access to primary cities in western Canada down into population centers in Utah and California and across the farm belt. The airport is also a supporting feature to the crossroads development. Because the IPH study area is well placed in terms of highway and air transport it makes sense that the crossroads efforts focus on commodities of a higher value such as electronics, environmental energy products, pharmaceuticals, etc. These commodities are of a sufficient value to support the more expensive transportation by truck and air. (The relationship of product value and

¹³ *Federal register: October 9, 2008, Volume 73, Number 197.*

transportation cost is discussed in the Regional Competitiveness paper.) Commodities of this type exist in the area and have the opportunity for expansion. A focus on higher value products enhances the assets of the region and minimizes the effect of the reduced availability of rail intermodal service. The current effort to review and improve the north-south highways through the IPH study area is in direct support of the development of a Crossroads facility as is continuing development in air cargo service.

The expansion of Canadian trade and considerations for leveraging existing Foreign Trade Zones are positive steps that the IPH study area can take for the future. As discussed there are some issues regarding trade barriers but there are strong reasons to work to overcome them. The development of the north-south connection with a consistent plan from both states within the study area is important to this initiative.

Crossroads Need:

- Designated Development Area
- Markets and Infrastructure to support a bi-directional flow of goods along a corridor or corridors
- Value-added capabilities which create a need/opportunity to attract goods into the center

Identified IPH Study Area Gaps:

- Fully developed north-south trade highway corridor
- Targeted land use
- Developed strategy for the border crossing
- Directed economic and infrastructure development efforts toward value added services described above
- The IPH study area access to double stack intermodal service requires truck drayage to the coast, which may be limiting for certain commodities. In addition the region is not well positioned to move freight to the eastern or southeastern population markets or gateways in a timely, cost effective manner.
- Spokane International Airport is not the origin or terminating airport for any direct international passenger flights, and therefore international air cargo.

Trade Processing Center

The idea of a Trade Processing Center is similar to the Crossroads but goes beyond a regional emphasis and expands the market to products from around the country and the world. The Crossroads is directed toward a specific geographic match represented by a point of intersection, but the Trade Processing Center is intended to attract products globally and thus has a slightly different and broader focus. In general a Trade Processing Center supports

export and import opportunities through consolidation of trade related services such as licensing, bonding, freight forwarding, etc. Provision of international trade expertise through consulting services can also be an element.

Trade Processing Centers are still in early development. Currently a center at Robstown, Texas is receiving media attention due to recent funding awards from the Federal Government for economic and infrastructure development. The city of Robstown lies on the new I-69 corridor and is served by the east-west railroads, the UP and the BNSF, and the KCS which runs north-south into Mexico. The site is nine miles from the Corpus Christi airport and near the primary petroleum industry locations along the Gulf Coast. The facility is intended to support NAFTA trade and is well placed relative to infrastructure, population base, and existing industry. The intention is to promote expansion through additional trade related industries and services. This facility is quite similar to a Crossroads with a slightly wider focus.

In the IPH study area similar opportunities exist with the proximity to the Canadian border. The north-south infrastructure development mentioned in other working papers is a requirement. The east-west corridor in the IPH study area, Interstate 90, with opportunity for certain improvement needs, as identified in other sections of the IPH Transportation Study, provide good connectivity southwest into major markets in California. The quantity and capability of the rail service in the area is a shortfall, in so far as the most efficient form of rail container movements – double stack unit trains are loaded at terminals located in coastal ports. In addition, for eastbound movements all U.S. the high-volume Class 1 western railroads terminate in Chicago. Containers must then be lifted off western trains, drayed across town and loaded on to eastern trains (CSX or Norfolk Southern), costing time and money. To avoid these delays, some IPH companies truck shipments to Vancouver where Canadian Class 1 railroads can move shipments directly to Eastern ports such as Montreal.

The capabilities within the study area are such that a trade processing center would be best developed around truck and air cargo which implies higher value and time sensitive products such as electronics, food products, environmental products, and others. For cargo of less value the area has a broad market reach in some directions moving outbound but the connection to the eastern and southeastern U.S. population centers is limited with respect to ready access to rail intermodal, the preferred price point mode for the travel distance.

Trade Processing Center Requirements:

- Designated development area
- Markets and Infrastructure to support a bi-directional flow of goods along a corridor or corridors
- Value-added capabilities which create a need/opportunity to attract goods into the center

- Emphasis on international trade capabilities through specialized businesses – freight forwarders, customs consultants, etc.

Identified IPH Study Area Gaps:

- Targeted land use
- Fully developed north-south trade highway corridor
- Developed strategy for the border crossing
- Directed efforts toward value-added services described above
- The IPH study area access to double stack intermodal service requires truck drayage to the coast, which may be limiting for certain commodities. In addition the region is not well positioned to move freight to the eastern or southeastern population markets or gateways in a timely, cost effective manner.
- Spokane International Airport is not the origin or terminating airport for any direct international passenger flights, and therefore international air cargo.

Logistics Airport

A Logistics Airport is a facility that is focused completely on air cargo. It can exist on a stand-alone basis or in combination with a larger development with other modes of transport. Businesses located at and around a logistics airport typically deal with packing and redistribution of goods that are brought in and shipped back out. An example would be electronics companies that repair or refurbish equipment that is brought into the site, reworked, and returned to customers or remarketers.

The mega logistics complex at Alliance, Texas contains an airport facility that is completely dedicated to freight. Huntsville, Alabama is developing an air cargo hub more on an independent basis. The cooperation of a major air cargo provider is important, although it doesn't have to be at the level of a major hub center. At Alliance there is incorporation of aircraft maintenance as a service that is auxiliary to the freight functions.

The Jetplex Industrial Park in Huntsville, Alabama which opened in 1974 currently has more than 60 tenants, 24-hour U.S. Customs services, USDA inspectors, freight forwarders and a Foreign Trade Zone. The IIC, Jetplex and airport occupy more than 6,000 acres of the 10,000-acre master plan. This facility was developed around the European company Panalpina which imports and marries component parts for large scale computer systems which ship out from the facility on a JIT basis for installation. IBM uses the services of Panalpina to assemble and ship product. The airport logistics have grown up around this concept. Huntsville markets to Asian airfreight carriers and specialized smaller U.S. air cargo companies such as Atlas Air. Huntsville has also taken advantage of its military history to attract defense contractors to the area. A number of communities around the U.S. have conducted feasibility studies in an attempt to duplicate the Jetplex development. However, these studies have concluded that

without a major air cargo carrier like Panalpina, developing a major independent air cargo industrial part is not feasible.

The Global TransPark in eastern North Carolina was one such effort intended to transition the region from an agricultural base to one of skilled labor and industrial manufacturing. Development of the Global TransPark came about through studies by researchers at the University of North Carolina and the North Carolina Department of Transportation. In November 1990, Dr. John Kasarda presented a conceptual outline for a new infrastructure concept that focused on supporting globalization, innovations in manufacturing, and the need to utilize air cargo. From the studies, the North Carolina legislature and governor approved a \$7.5 million appropriation in addition to \$5 million to be raised from an annual license plate fee levied against 13 counties in the region. The Master Plan for the development was completed in January 1994 and called for 15,700 acres at full development with two parallel runways both exceeding 11,000 feet. A Carolina Journal article from 2008 summarizes the feelings of many state residents toward the project as the greatest boondoggle in state history:

Over the past two decades, two of the worst tastes in North Carolina government have been the Global TransPark and the Golden LEAF Foundation. Both were products of a political class that had more power than sense. The TransPark was the 1980s brainchild of a UNC-Chapel Hill sociologist, John Kasarda, who thought that North Carolina could create a just-in-time manufacturing hub around an elongated rural airstrip. He was wrong. Unfortunately, he convinced former governors Jim Martin and Jim Hunt to pursue the idea, and they convinced state and federal lawmakers to plow nearly \$90 million into the Kinston jetport.

Taxpayers ended up with a long, little-used runway and a few small, heavily subsidized tenants relocated from elsewhere in the state. Having promised that between 50,000 and 60,000 net new jobs would be created by the end of the 1990s – the real number being, actually, zero – state politicians ducked and covered, while quietly “loaning” the project an additional \$32 million out of the state’s Escheats Fund.¹⁴

The Spokane International Airport (SIA) offers the physical facility for expanded air cargo services. However, successfully developing such a facility requires successful marketing to attract “best fit” companies to accomplish the development of a logistics airport on a scale necessary for success. As identified in other IPH Transportation study papers, the passenger volume is not sufficient for the Spokane airport to become a cargo “hub” for the airlines who will continue to consolidate their cargo at major centers such as Seattle. But the existing business community does manage to effectively meet its air cargo needs through both the package carriers and through cargo services offered by the airlines which “hub” in other locations. Additional volume will improve service. Market

¹⁴ Carolina Journal Online, *The Global TransParks new LEAF*;
http://www.carolinajournal.com/exclusives/display_exclusive.html?id=4782

development and targeted efforts open an opportunity to become a “specialized” provider in a way similar to the park at Huntsville, Alabama.

Logistics Airport Requirements:

- Physical structures and support processes
- Surrounding development area
- Developed markets for sufficient volume
- Connectivity by highway and/or rail

Identified IPH Study Area Gaps:

- Expanded markets for both products and air service
- Targeted land use with services for business development

Logistics Park

Traditionally, a Logistics Park is built around a geographic center that creates an intersection of multiple modes of transportation in conjunction with population centers that offer a freight catchment area sufficient to promote consolidation opportunities. The largest and most successful parks have access to truck, air, and either rail intermodal or marine transport or sometimes both. Within the United States, the facility at Alliance, Texas is one of the largest examples of this type of development. Many logistics parks, on a smaller scale than Alliance, exist throughout the country. These facilities are usually located in or near a population center within an area viewed by shippers as a primary market for the distribution or end use of their products.

There are many large coastal logistics parks that are located close to the major ports. The primary inland facilities in the U.S. are at Dallas, Memphis, Atlanta, Chicago, and the Harrisburg/New Jersey area. Facilities exist in and around smaller cities but they have a more regional focus. Large logistics zones require the volume to support consolidation and also the full access to multiple modes of transportation. The ability to consolidate traffic is very important to efficient and cost effective transportation. A volume threshold is necessary to secure frequent and reliable service, particularly with the rail. Consistency and reliability are highly important to shippers. Additionally, the ability to balance equipment, drayage moves, trailers, containers, etc., is very much improved when the volume is higher. Effective balance creates transportation and logistics services that are more efficient and lower cost. Achieving this level of volume and balance requires a large and/or very focused market area. This market requirement for volume and balance is a limitation in the study area, however, efforts to increase the size and scope of the industrial base will help move the region toward a sufficient threshold where the idea of a logistics park becomes more viable. These issues are discussed in more detail in the Regional Competitiveness paper as part of the IPH Transportation Study.

Logistics Park Requirements:

- Favorable geographic placement

- Proximity to population and industrial centers
- Modal connectivity
- Designated development area
- Volume and balance of equipment flow

Identified IPH Study Area Gaps:

- Targeted land use
- More centralized geography
- Volume and balance of flow
- Intermodal service

Economic Development Zone

An Economic Development Zone defines an area that focuses on attracting business for creation of jobs and providing conditions that support the sustainability of existing jobs as a means toward economic stability and growth. The transportation infrastructure, capacity, and service reliability are major components of the development. Land use designated and appropriate for various ranges of industry - light to heavy - is important along with the policies and awareness to promote the value of freight.

The needs and the goals of the IPH study area seem to best fit this category. A strategic element is that this foundation helps build volume and economic strength, leading to the potential for the other types of inland hub models to evolve. Successful economic development efforts, supported by improvements to transportation and freight service capabilities, are the way forward to more defined logistics facilities.

There are in fact a number of economic zones already established within the region. The Five Star Enterprise Community to the north of Spokane, led by the Tri-County Economic District, is a USDA rural zone. Components for investment and development included in the strategic plan include telecommunications, transportation, micro-enterprise, tourism, industry recruitment, small business development, and recreation. Other similar examples in Washington State are the Innovation Partnership Zones (IPZs) that have been created. In Spokane, the Spokane University District Innovation Partnership Zone has a focus on biomedical research including computational biology, bioinformatics, systems biology, epigenetics, genomics, genomic hybridization, chromosomal biology, drug discovery, proteomics, assay miniaturization while the Pullman Innovation Partnership Zone to the south in Whitman County has a focus on clean IT and datacenter technologies including energy efficient technologies, computer hardware, software and network architectures, power and cooling infrastructure, and building controls. More recently, in October 2009, the Central Washington Regional Energy Consortium (CWREC) in Kittitas County was also designated an Innovation Partnership Zone (IPZ).

Economic Development Zone Requirements:

- Designated development area
- Tax incentives
- Cost of doing business
- Freight Transportation Infrastructure (truck, rail, air, water)
- Transportation costs

Identified IPH Study Area Gaps:

- Targeted land use
- High business costs (Washington)
- Transportation costs due to volume and balance of flow

Inland Port Model Implications for the Inland Pacific Study Area

Based on the description of the five critical needs required for successful inland port developments, the IPH study area will be challenged by the needs related to “Existing demand” and “Locational advantage.”

From the standpoint of existing demand; the IPH study area’s position as a producer region and the associated lane imbalance issues have been thoroughly discussed. Presumably if the IPH study area developed an inland port it would be based on distributing goods coming through a coastal gateway and into the study area by rail, river port or air. Outbound distribution would likely occur by truck, making existing lane imbalance issues worse.

Many inland ports have developed on the west coast a short distance inland from the San Pedro Ports (Los Angeles and Long Beach), primarily due to the congestion in the port facilities, but also because a significant portion of the goods imported through the San Pedro ports are consumed by the Southern California market. Inland port facilities in this case allow the contents of containers to be resorted for local versus mid-America consumption. In the case of the IPH study area, there are no other significant population center is close proximity.

While an inland port development concept in the IPH likely has significant hurdles, using the concept of the Economic Development Zone, the area can build upon initiatives and efforts already underway to develop value-added production activities. By blending in pieces of a crossroads model focused on Canada, California, and other metropolitan areas to the south, the IPH study area can develop marketing targets with geography and commodities that best suit the capabilities that currently exist. Industry and distribution can develop from this expanding base. With successful marketing, the region can draw the industries necessary to move toward the broader definitions of the Logistics Airport and Logistics Park. Reaching the volume threshold is a step-wise process. Each business expansion or new addition benefits the future, moving closer to the goal of having distribution as a major component of area business. Specific examples

of geographic and commodity opportunities are presented in the next section. Specific actions to promote this development include, but are not limited to:

- Designated land use planning
- Integration of the economic development initiatives with the freight plan
- Creating a regional focus on particular commodities such as energy products, pharmaceuticals, etc. as an offshoot of the economic development zones
- Develop existing Foreign Trade Zone status through value-added services
- Combined regional focus on infrastructure development particularly in the area of the north-south corridor and the border crossing
- Cross border initiatives for trade development

GEOGRAPHIC OPPORTUNITIES

The geographic position of the study area provides unique marketing opportunities in three specific areas – domestic, NAFTA, and Asian. The region has good connectivity to the population centers directly west and to port locations with direct reach to Asian markets. The population centers to the southwest in California create a natural market for the region's products, and to the north and east is Alberta, one of the fastest developing provinces of Canada.

To reach the east or southeast of the U.S. and the east coast ports, products from the IPH study area must move by truck or make a long, circuitous drayage move to an intermodal connection. Some products are actually going west to Seattle and Vancouver to make eastbound connections on the Canadian railroad services. The BNSF intermodal schedule currently offers a trailer-based service to Chicago, Illinois and Minneapolis, Minnesota. Currently, there is not a container product service offered on the schedule to and from Spokane. A consistent and reliable container intermodal service is needed to reach the east and southeast areas of the United States. Thus, those parts of the country are less viable markets for the study area for lower value commodities.

In proximity to the IPH study area, there are other existing rail intermodal services, such as RailEx and a new service being proposed by BNSF originating in the Port of Quincy. Attention to the drayage and consolidation requirements might promote increased use and therefore flexible solutions. A direct intermodal connection to the Canadian rail system and expanded U.S. intermodal services could open new market opportunities to the region for those products requiring a lower priced transportation service over a longer length of haul. The issues of transportation cost and commodity value is discussed in more detail through the Regional Competitiveness area of this study.

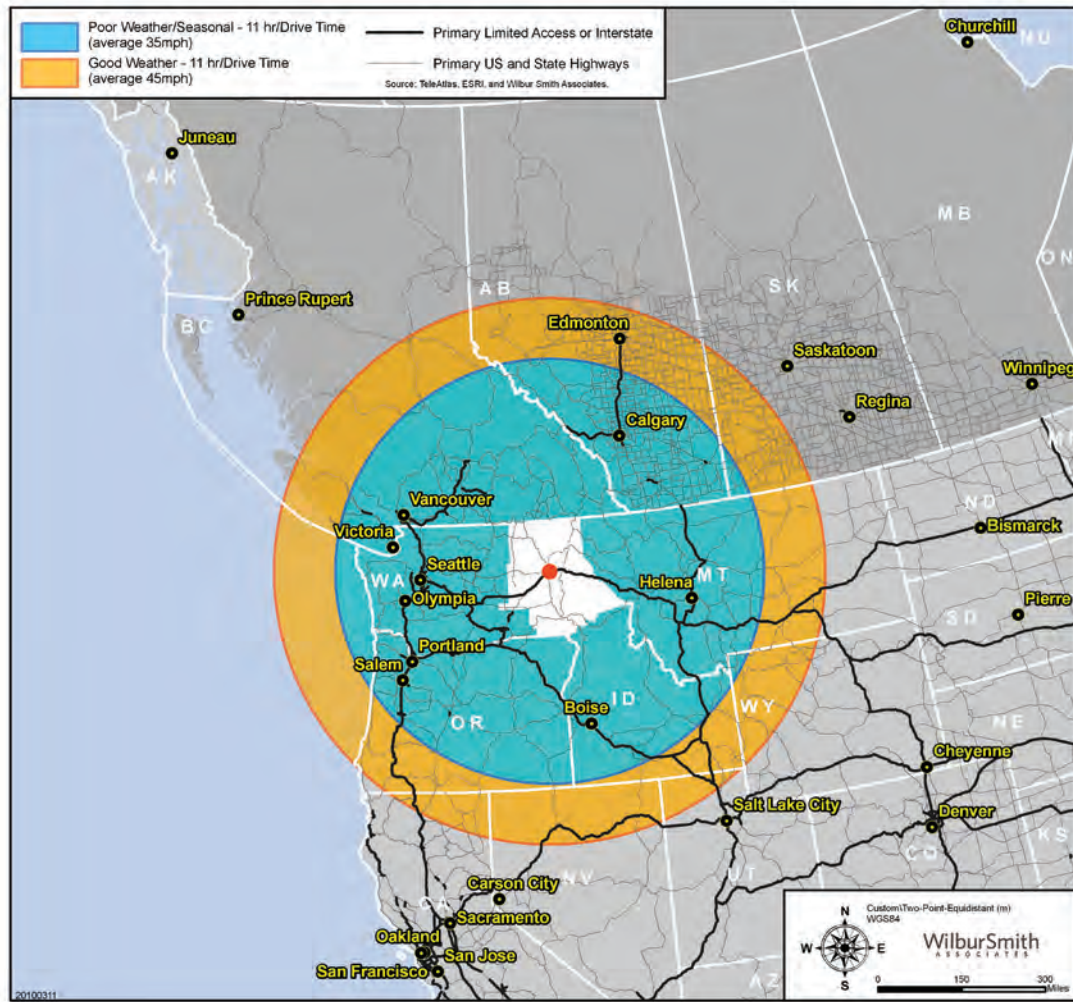
Local Industries, International Markets

Products from the IPH study area are already reaching international markets. Many of the regional industries are sending and receiving materials and finished goods to Asia, Europe, and other parts of the world. For example, one IPH study area company imports raw materials from Dubai and sends finished products to Europe and other locations via the east coast ports. This company sends some of their finished products out of the region by truck but some move by rail intermodal by draying the products west to Seattle where some are containerized and then moved north to the Canadian railways to reach the east coast ports.

Canadian Markets

The IPH study area shares a border with Canadian Provinces where approximately 5 million Canadians live within a 1,200 mile radius of the IPH (Exhibit 11).

Exhibit 11: Geographic Region Accessible from the IPH Study Area



More than 3 million residents of the Western Canadian Provinces live within a distance that can be reached by truck within one day. **Exhibit 12** presents in tabular form the Canadian cities that are within one and two days driving distance from Spokane.

Exhibit 12: Canadian Cities One-Day Truck Drive from IPH Study Area

Metro Area	Drive Distance from Spokane (miles)	Population
Kelowna	255	106,707
Lethbridge	377	74,637
Abbotsford	388	123,864
Saanich	391	108,265
Langley	394	117,332
Surrey	400	394,976
Coquitlam	405	114,565
Burnaby	405	202,799
Richmond	408	174,461
Vancouver Metro Area	413	2,186,965
Calgary	438	988,193
Airdrie	457	28,927
Medicine Hat	480	56,997
Red Deer	526	82,772
Total Population within one-day drive time =4,761,460		
Edmonton	620	730,372
Strathcona	632	82,511
St. Albert	632	57,719
Grande Prairie	746	47,076
Wood Buffalo	908	51,496
Swift Current	992	14,946
Moose Jaw	1166	32,132
Total Population within two-days drive time = 5,777,712		

As noted in the freight profile for the IPH study area, nearly all of the NAFTA imports and 95 percent of the exports originating from or coming to the IPH involve trade with British Columbia and Alberta. Furthermore, Canadian Government trade statistics estimate that Canada accounted for nearly 12 percent of Washington's foreign export trade and 13 percent of Idaho's, and it was estimated that in 2008, 153,000 jobs in the State of Washington and 33,500 jobs in the State of Idaho were supported by U.S.-Canada trade.

Products for Canadian Trade

Major export items include seafood, coffee and fresh fruit, dairy, eggs, honey, metals, transportation equipment and parts including aircraft and trucks, home furnishings, and sporting and recreational equipment. As indicated in **Exhibit 13 and Exhibit 14**, these goods represent many of the IPH study area's major export items destined for Canada, with farm products, lumber, food and kindred products, and transportation and machinery leading in volume and value. All are expected to realize growth in future years.

One example of a specific opportunity is in the area of off-highway equipment. Much of the agricultural and construction equipment in certain size ranges is manufactured in Asia and imported to the U.S. through the west coast ports for marketing under known brands. The western Canadian provinces import this equipment from other areas of the United States where assembly work is completed on the imported goods. This final assembly and transshipment could be an opportunity for the IPH study area. Additional benefits from development of a Free Trade Zone could be explored.

Agricultural products represent another opportunity, including some fresh market products like dairy, fruits, and vegetables that are delivered to border cities. Current trade restrictions also prohibit the sale of school milk from the U.S. to Canadian communities near the border. This is an example where initiatives that address current trade barriers could directly benefit the region.

Exhibit 13: Outbound NAFTA Trade Volume for IPH Study Area Counties

OUTBOUND NAFTA : Volume for NAFTA Trade (Canada and Mexico)						
TRADE VOLUME (TONS)		NAFTA Exports			Export Growth	
Rank	NAFTA Outbound Component	2007	2017	2027	2007-17 CAGR	2007-27CAGR
1	Farm products	211,247	243,474	298,856	1.4%	1.7%
2	Nonmetallic ores, minerals, excluding fuels	156,814	181,108	202,776	1.5%	1.3%
3	Lumber or wood products, excluding furniture	146,967	146,634	170,190	0.0%	0.7%
4	Food and kindred products	63,320	77,707	101,730	2.1%	2.4%
5	Transportation equipment	58,785	92,794	136,669	4.7%	4.3%
6	Machinery, excluding electrical	56,682	78,702	112,368	3.3%	3.5%
7	Clay, concrete, glass, or stone products	55,089	72,896	97,687	2.8%	2.9%
8	Chemicals or allied products	53,777	60,159	70,042	1.1%	1.3%
9	Pulp, paper, or allied products	50,202	65,331	88,180	2.7%	2.9%
10	Waste or scrap materials not identified by producing inc	33,650	44,163	67,751	2.8%	3.6%
11	Petroleum or coal products	23,060	23,481	24,320	0.2%	0.3%
12	Electrical machinery, equipment, or supplies	20,926	33,303	59,699	4.8%	5.4%
13	Primary Metal prod	16,215	21,109	27,764	2.7%	2.7%
14	Metallic ores	12,745	7,012	6,861	-5.8%	-3.0%
15	Miscellaneous products of manufacturing	8,443	12,967	20,400	4.4%	4.5%
16	Rubber or miscellaneous plastics products	7,485	9,809	14,482	2.7%	3.4%
17	fabricated metal prod	7,365	10,592	15,183	3.7%	3.7%
18	Fresh fish	5,078	5,787	7,358	1.3%	1.9%
19	Furniture or fixtures	1,761	2,982	5,339	5.4%	5.7%
20	Printed matter	610	632	737	0.4%	1.0%
21	Instruments, photographic goods, optical goods, watche	549	939	1,755	5.5%	6.0%
22	Textile mill products	327	304	341	-0.7%	0.2%
23	Ordnance or accessories	216	337	535	4.5%	4.6%
24	Forest products	208	252	327	1.9%	2.3%
25	Apparel or other finished textile products or knit apparel	124	108	110	-1.4%	-0.6%
26	Leather or leather products	79	122	192	4.4%	4.5%
27	Miscellaneous freight shipments	9	12	17	2.2%	3.1%
28	Crude petroleum, natural gas or gasoline	1	1	1	1.0%	0.3%
	Sub-Total	991,737	1,192,714	1,531,672	1.9%	2.2%

Exhibit 14: Outbound NAFTA Trade Value for IPH Study Area Counties

OUTBOUND NAFTA : Value for NAFTA Trade (Canada and Mexico)						
TRADE VALUE (\$US)		NAFTA Exports			Export Growth	
Rank	NAFTA Outbound Component	2007	2017	2027	2007-17 CAGR	2007-27CAGR
1	Machinery, excluding electrical	\$ 95,203,136	\$ 137,114,684	\$ 207,216,244	3.7%	4.0%
2	Electrical machinery, equipment, or supplies	\$ 80,911,706	\$ 125,886,011	\$ 225,127,466	4.5%	5.2%
3	Transportation equipment	\$ 77,349,130	\$ 119,639,806	\$ 178,610,534	4.5%	4.3%
4	Food and kindred products	\$ 54,901,115	\$ 69,090,750	\$ 91,029,268	2.3%	2.6%
5	Lumber or wood products, excluding furniture	\$ 43,260,858	\$ 51,376,552	\$ 65,241,499	1.7%	2.1%
6	Primary Metal prod	\$ 41,512,490	\$ 54,960,425	\$ 78,338,821	2.8%	3.2%
7	Rubber or miscellaneous plastics products	\$ 33,738,534	\$ 44,515,494	\$ 65,815,272	2.8%	3.4%
8	Fresh fish	\$ 29,637,851	\$ 33,774,238	\$ 42,942,038	1.3%	1.9%
9	Farm products	\$ 27,951,637	\$ 37,629,512	\$ 51,822,906	3.0%	3.1%
10	fabricated metal prod	\$ 24,611,998	\$ 35,322,889	\$ 50,637,320	3.7%	3.7%
11	Metallic ores	\$ 21,950,487	\$ 12,108,555	\$ 11,865,865	-5.8%	-3.0%
12	Chemicals or allied products	\$ 21,417,682	\$ 24,712,333	\$ 33,753,996	1.4%	2.3%
13	Pulp, paper, or allied products	\$ 20,420,122	\$ 26,275,064	\$ 35,958,385	2.6%	2.9%
14	Instruments, photographic goods, optical goods, watches, or	\$ 19,239,351	\$ 31,909,474	\$ 58,021,105	5.2%	5.7%
15	Miscellaneous products of manufacturing	\$ 17,245,126	\$ 26,051,440	\$ 40,509,456	4.2%	4.4%
16	Clay, concrete, glass, or stone products	\$ 11,220,112	\$ 15,034,302	\$ 19,926,165	3.0%	2.9%
17	Petroleum or coal products	\$ 9,511,400	\$ 9,492,013	\$ 9,625,809	0.0%	0.1%
18	Furniture or fixtures	\$ 8,769,134	\$ 14,959,288	\$ 27,071,956	5.5%	5.8%
19	Waste or scrap materials not identified by producing industry	\$ 6,199,908	\$ 8,537,692	\$ 13,786,043	3.3%	4.1%
20	Nonmetallic ores, minerals, excluding fuels	\$ 3,682,801	\$ 4,272,643	\$ 4,773,171	1.5%	1.3%
21	Printed matter	\$ 3,645,957	\$ 3,775,013	\$ 4,398,517	0.3%	0.9%
22	Ordnance or accessories	\$ 1,563,178	\$ 2,436,894	\$ 3,873,313	4.5%	4.6%
23	Apparel or other finished textile products or knit apparel	\$ 1,438,359	\$ 1,254,184	\$ 1,208,903	-1.4%	-0.9%
24	Textile mill products	\$ 794,282	\$ 702,208	\$ 749,872	-1.2%	-0.3%
25	Leather or leather products	\$ 480,920	\$ 744,171	\$ 1,176,332	4.5%	4.6%
26	Forest products	\$ 279,256	\$ 352,927	\$ 482,955	2.4%	2.8%
27	Miscellaneous freight shipments	\$ 26,213	\$ 32,699	\$ 48,185	2.2%	3.1%
28	Crude petroleum, natural gas or gasoline	\$ 1,208	\$ 1,339	\$ 1,294	1.0%	0.3%
	Sub-Total	656,963,949	891,962,598	1,324,012,691	3.1%	3.6%

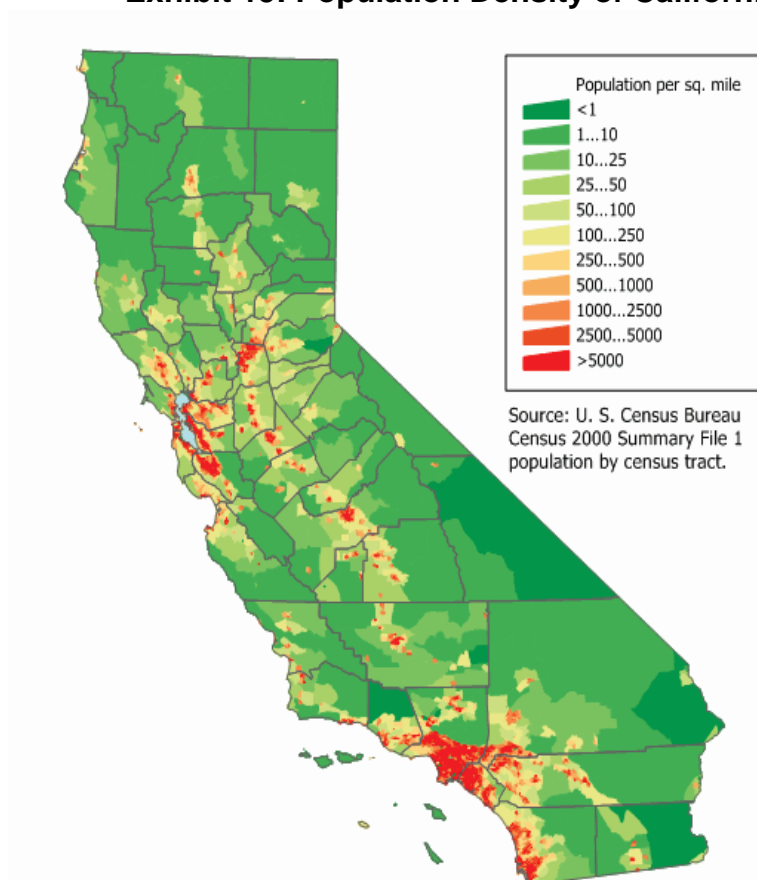
A key factor for growth can come from building upon the demand for the commodities that have traction in these markets, and developing related suppliers. Every avenue should be explored to open this market for IPH products. This includes cross border initiatives to limit trade barriers and encourage exchange of products. Public agencies from across the border should become part of a coalition for regional development that includes both sides. Cross border trade is important for both the U.S. and Canada and it should be expanded beyond national and provincial/state trade to the border communities.

The importance of opening an efficient north-south connection and actively engaging the cities and cross border regions on issues of policy and trade should be a clear priority for expanding trade interests of the IPH study area.

Regional Markets

Within the United States, the IPH's regional domestic market extends east towards Denver and south to Phoenix, capturing some of the fastest-growing population centers. California's population of 37 million people is clustered along the I-5 and US 101 corridors (**Exhibit 15**). The IPH has good access to the corridor by highway and can access rail intermodal service that is available from Seattle and Portland. (The California markets have better intermodal access from the region than the east coast markets because the drayage moves in the same direction as the flow of goods. To go east from the study area the products have to move opposite the direction of flow, adding excessive cost.)

Exhibit 15: Population Density of California



The primary agricultural products grown and processed by volume in the IPH study area differ from those of California to some degree. For example apples, pears, and other fruits which may certainly grow in California are open markets due to volume demand. Similarly dairy and varietal wines produced in the IPH study area can be exported, whereas crops requiring warmer weather such as citrus and garden produce along with regional wines can be imported from California. Dairy products are currently exported to California and beyond. The dairy, fruits, and produce products of the IPH study area are not produced in the desert southwest and so demand exists in areas that best match the transportation capabilities of the IPH study area. Energy products are in high demand in California and to the extent that those businesses are promoted in the study area they represent additional market opportunities. California represents one of the largest population centers in the country and it is readily accessible to the region. Further development and marketing of local goods will increase bi-directional trade, and the transportation and shipping demands associated with goods distribution.

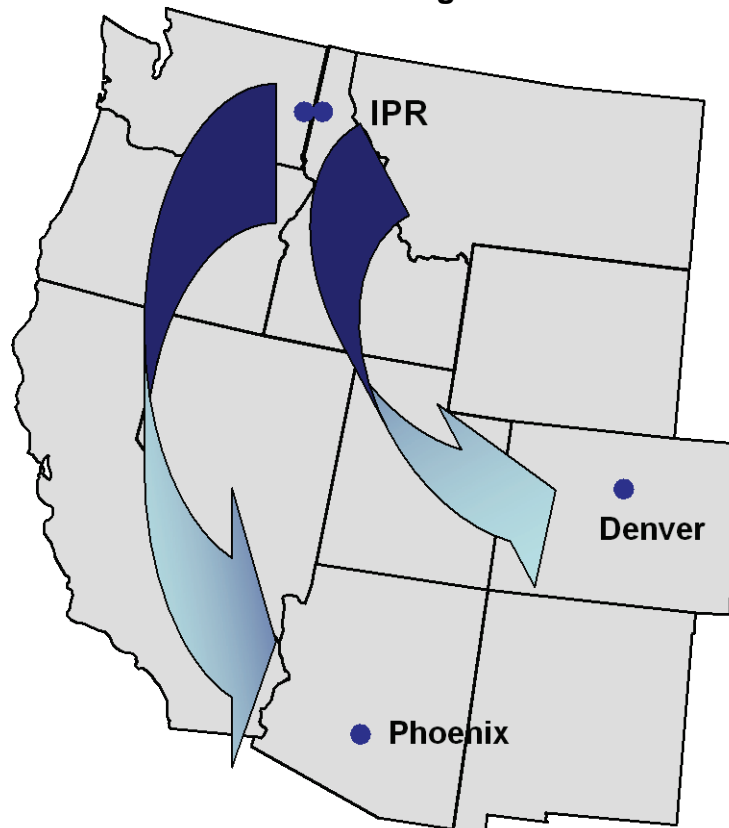
From Spokane, a directional route to the southeast through Montana and Idaho to the Salt Lake City metro area offers approximately a market of 1.1 million people that is relatively isolated. Salt Lake City is within a two-day's travel (via I-

90 and I-15) and is a city that is best served by truck, something that is an advantage to the IPH study area. Extending further south in this corridor is the Phoenix metropolitan area, another fast growing market accessible from the region (**Exhibit 16**).

Directly west are the population centers of Portland, Seattle, and Vancouver. These cities represent a sizeable market for products produced within the IPH study area. They are also the primary gateway for the import and export markets that may develop within the IPH.

Regional markets are an important aspect of developing volume and density, which are the components necessary to bring significant change to the modal options and opportunities for distribution center development. The regional component of trade is a beginning step in a broader scope and is also viable in the framework of the short term lag in international opportunities.

Exhibit 16: Inland Pacific Regional Market Reach



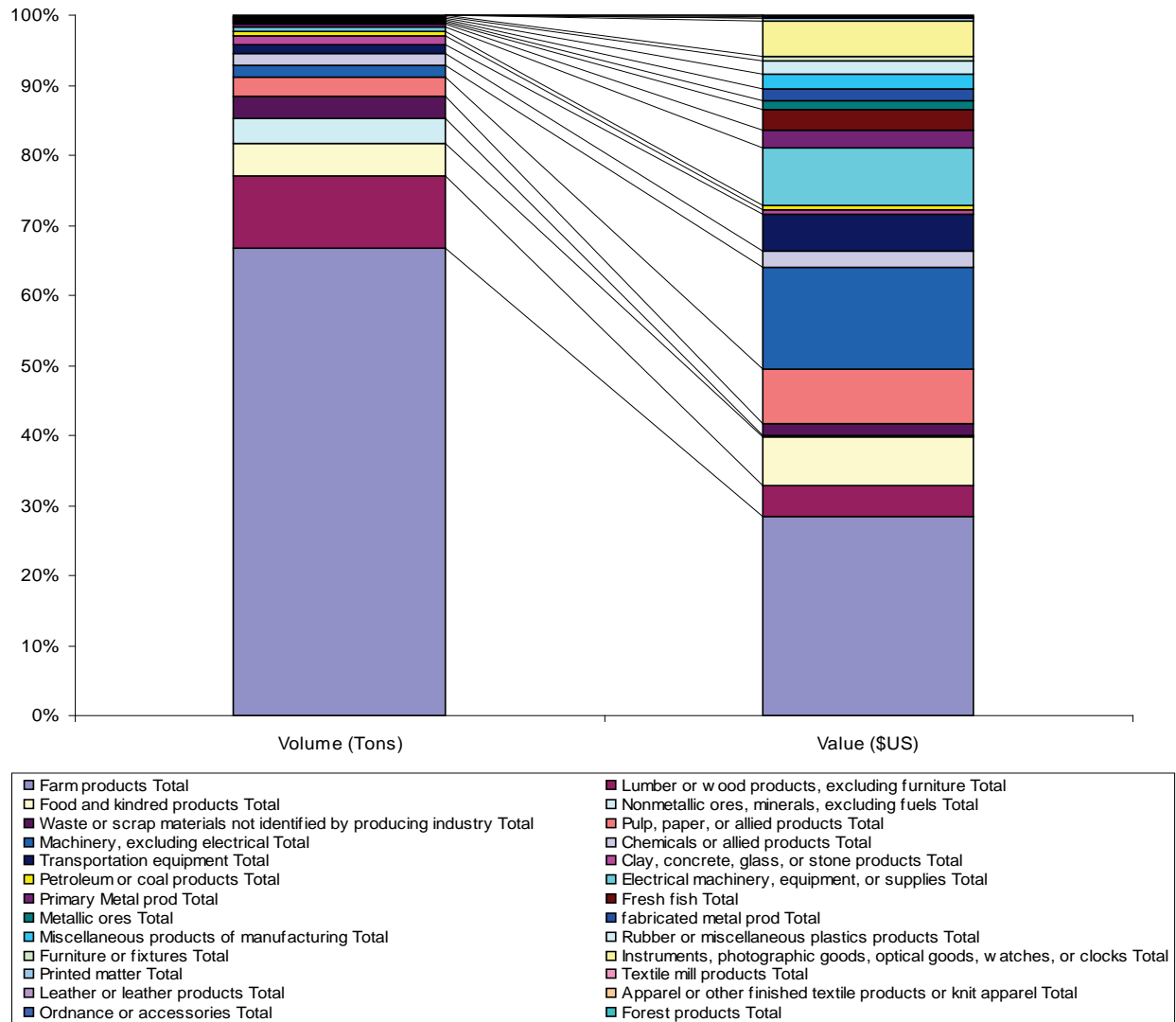
MARKET OPPORTUNITIES

While trade forecasts project continued decline in the farm products and forestry trade categories in absolute volume and percent of export share, there may be opportunity to slow or reverse this trend as part of efforts to develop and market the region. These include agricultural heritage, tourism, food processing, clean technology, and energy. In addition, the region's skilled labor force and proximity to existing technology clusters may offer opportunities to further develop the high-tech industry within the study area.

Developing these market opportunities will entail not only continuing to maintain the agricultural and natural resource base, but to invest in and further develop higher value activities. As shown in **Exhibit 17**, while farm products and lumber and wood products account for almost 80 percent of the region's total export trade by volume, they are only 30 percent by value. Within the chain of agricultural producers, there is an evident value added as production moves beyond traditional goods towards off-shoots including wine and enzymes. The chart indicates that other export goods, which are higher up the processing chain, and represent smaller volumes but higher values, include food and kindred products, machinery and transportation equipment. These products represent a combined total of only 8 percent of total exports by volume, but 35 percent by value.

Exhibit 17: Comparison of Total 2007 IPH Outbound Trade

Comparison of Total 2007 IPR Outbound Trade: Volume and Value by Commodity



Source: Global Insight TRANSEARCH 2008 (Retrieved/Analyzed, June 2009)

Area businesses are already moving toward the idea of higher value products, examples of which will be presented in more detail below. Some industrial opportunities that exist in agriculture and related industries include:

- Seed varieties;
- Farm technology – crop data, product tracking, etc.;
- Organic and heirloom products;
- Extending shelf life;
- Private labeling;
- Products directed toward health awareness; and
- High-end products – specialty ice creams, cheeses, etc.

Even the lumber industry is developing specialized products with more sophisticated forest management, forest certification and environmentally friendly logging both to address public interest and support by major retailers of lumber products.

Agricultural Heritage and Tourism

The IPH study area has an established, well-known agricultural base, with wineries, apples, and potatoes as the leaders among the numerous products grown and sold. Grain and other agricultural products such as dairy, remain important to the regions health. According to posted statistics, the Washington State Department of Agriculture licenses around 3,000 food and milk processors, milk producers, food storage warehouses, and custom meat facilities. In addition to leading the U.S. in potatoes grown for processing, Washington State is the third largest wine producer in the U.S. with more than 600 wineries. Idaho's major crops are similar, with strong dairy, beef, potato and grain (hay and wheat) production.

Increased interest in “going green” and “buying local” has seen a rise in agricultural tourism and direct-to-consumer regional food expenditure. A 2002 *New York Times* article profiled the then-emerging trend, and reported that in California, which at the time was one of 20 states specifically promoting the developing industry of agricultural tourism and direct-to-market activities, reported direct marketing accounted for \$75 million of the State's total \$20 billion agricultural industry. Such activities included farm stands, farmers' markets and bed-and-breakfasts on farms. More recently, research from Cornell University's Community and Rural Development Institute (CaRDI) found that between 1997 and 2002, the number of fruit and vegetable farms in northern New York State increased 6 percent, and that 11 percent of New York farms sold direct to customers with \$3 million in revenues, up 7 percent and \$1.3 million in 1997. Similarly, farmers' markets, often in nearby urban areas, reported a 21 percent increase in customers and 17 percent increase in sales, while stores promoting local products reported a 10 percent increase in customers and 11 percent increase in gross sales in 2007.

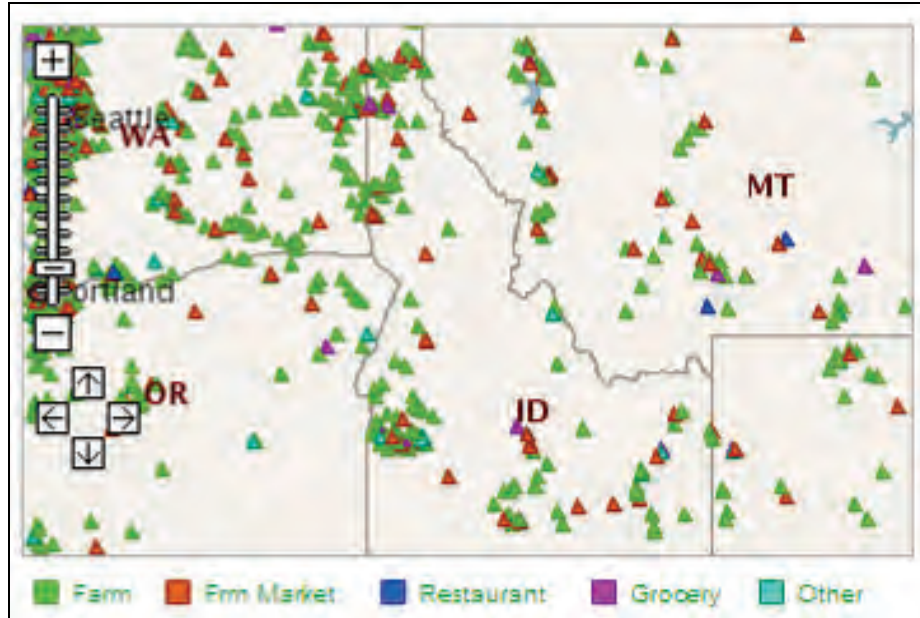
Similar trends have been observed in Washington State, where the number of farmers markets increased to nearly 100 in 2004 from 56 in 1997, according to publications from the Washington State Department of Agriculture. Sales figures are growing at 20 percent per annum and around 1,200 farms sell their products at farmers markets each week. Such direct-to-consumer marketing can capture a variety of business models and sales schemes, including farmers roadside stands, pick-it-yourself ventures, community supported agriculture (CSA's), in which individuals pay up-front shares for the seasonal harvest, farmer's markets, direct relationships with restaurants or stores, and various other activities that bring consumers and farmers directly in contact without a wholesaler or middleman. The success of California's Napa Valley embodies the interest and attraction of local production. In addition to the wineries, restaurants linked with

nearby organic farms and gardens and serving seasonal dishes, such as Thomas Keller's French Laundry in Yountville, California, are commonplace.

CSA projects have also experienced increased interest, as urban residents seek out regional produce. A University of Arizona Cooperative Extension guidebook to direct marketing and agricultural tourism (1995) noted that there were an estimated 400 CSA projects in the U.S. in 1995, and that growth in the business model was expected to exceed 1,000 by 2000. While the government does not track CSAs, LocalHarvest, an online network and directory connecting organic and local growers and producers, reports more than 2,500 CSA farms listed, of which 557 joined the network in 2008 and another 300 in January and February 2009. According to the Washington State Department of Agriculture's Small Farm and Direct Marketing Program's 2006 "Green Book," there were approximately 90 programs in operation in Washington State as of 2004.

The direct marketing initiatives should focus on the specific promotion of the IPH study area's local growers. This includes marketing efforts to create recognition of regional brands (i.e., the "Happy California Cows"). The additional promotion from public and industry efforts reaches beyond what individual companies can achieve in expanding their industries. There are existing campaigns and resources, such as Idaho's "Idaho Preferred" campaign to market and connect consumers to local producers.

Exhibit 18: Farms, and Farm Operated Businesses in the Pacific Northwest



Source: www.localharvest.org (Date Retrieved ****)

In New York State, the Cornell University Community and Rural Development Institute (CaRDI) has been working with rural communities to promote and support economic development efforts aimed at preserving cultural heritage and offsetting job losses from the decline of manufacturing. Similar to the IPH study area, the region has a rich natural resource base and established rural communities whose production historically centered on dairy farming, but which has diversified into other higher-value markets, including a vibrant Finger Lakes wine region, and New York State cheeses. The demand for cheese in the U.S. has increased more than 180 percent since 1970. Cheese production requires 10 pounds of raw milk per pound of cheese making good use of excess milk supplies.

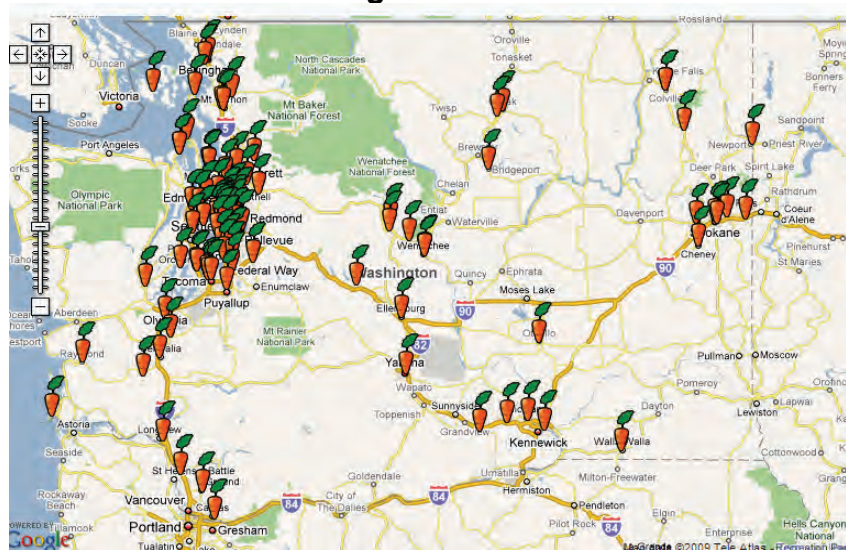
CaRDI provides research-based information and training, ranging from the nuances of land use and political involvement, to economic development enterprises that span multiple counties. In collaboration with the New York State Association of Counties, Cornell formed the Dennis A Pelletier County Government Institute which provides training to beginning and veteran lawmakers to help them understand financial management. CaRDI works with other regional organizations and partnerships to develop programs highlighting the northern and central New York region's cultural strengths and branding it as an attractive place to live and work, and a region to which visitors are attracted, in efforts to maintain and preserve the population and cultural heritage.

In terms of regional development and connectivity, the potential to support and expand local markets, especially at a time when international trade is low and the recovery horizon uncertain, can improve farm and agricultural profitability and

create employment opportunities related to production, processing and retailing, while preserving a working landscape and the natural resources that attract visitors. Investing in rural roads and development areas around these capabilities makes sense for the region and improves the flow of agricultural products into the markets. As a comparison, the 2007 Cornell University Survey Research Institute of New York State found that nearly 80 percent of residents buy local foods, and that nearly 40 percent will go out of their way to do so.

At present, a number of organizations, associations and government departments in the IPH study area are implementing similar initiatives as they look to promote the region's producers. Similar to the nationwide registry maintained by LocalHarvest, the Washington State Farmers Market Association maintains a searchable list of locations, and the Washington State Department of Agriculture maintains a searchable database of food and agricultural suppliers. In addition, marketing and grant programs are available. As mentioned before, Idaho's Department of Agriculture offers similar resources, including a published list of farmer's markets, and the "Idaho Preferred" marketing campaign to promote local consumption.

Exhibit 19: Washington State Farmers Markets



Source: <http://www.wafarmersmarkets.com/washingtonfarmersmarketdirectory.php>

Agricultural and Food Processing Equipment

A related and necessary product, which is important to the IPH study area's farmers and agricultural industries, is agricultural equipment. This includes farm field and farmstead machinery for crop and agricultural livestock production, tractors, planting and harvesting, fertilizing, tillage and irrigation equipment, as well as barnyard and milking machinery and construction equipment. As previously indicated, much of the U.S. demand for this equipment is satisfied via Asian imports to the west coast ports. Much of the equipment requires assembly activities post arrival, work that is done in many locations throughout the country. Full-line new products are one aspect of this market, and replacement parts offer

another. There is a large market for distribution of parts for agricultural and construction equipment, given the relatively long life and continuous wear and tear to equipment.

Farm income is a leading indicator of agricultural equipment sales. Increasing global demand for agricultural products since 2000, as evidenced by the recent spike for commodities in 2008, has benefited manufacturers in recent years.

According to the U.S. Department of Commerce, the United States is a net exporter of agricultural equipment, consistently exporting 25 to 30 percent of its production, although the ag-equipment market is an increasingly competitive arena as developing countries modernize their own agricultural industries and advance their manufacturing technology. Canada, Mexico, the European Union, Australia and Japan have been the largest export-destination countries thus far.

Following two decades of global consolidation, U.S.-based firms Deere & Company, Case-New Holland (CNH) Global, ACGO, and German-based Claas KG, are the leading manufacturers of high value-added, self-propelled field equipment. For low-to-medium horse-power tractors and other mid-market level equipment and component parts, there is increasing international competition from companies in Japan, Korea, China and India. By value of sales, Japan, China and Korea are 3 of the top-10 import source-markets for agricultural and construction machinery, but India is gaining ground.

In the case of China, as with manufacturing and export trade in other industries, policy and structural reforms, as well as joint venture initiatives with international firms, have led to advances in production. In the last few years, China has experienced increased amounts of production, with exports nearly equal to imports by value as of 2003 (**Exhibit 20**).

Exhibit 20: China Agricultural Equipment Imports & Exports 2003

Countries & regions	Exports				Imports			
	No.	Mil. US\$	Var. %	Accounted for %	No.	Mil. US\$	Var. %	Accounted for %
Total	185	2131	41.20	100	82	4219.0	44.80	100
Asia	40	994.0	28.14	46.63	22	1662.0	19.32	39.40
In which:								
Japan		148.04	29.61			1176.0	46.84	
Korea		36.49	21.95			285.0	115.66	
Africa	51	203.0	86.58	9.54	20	8.0	563.933	0.19
Europe	42	336.0	44.68	15.77	31	1914.0	46.47	45.36
In which:								
France		17.36	-6.08			181.0	200.42	
UK		53.90	108.02			186.0	0.12	
Germany		86.26	36.42			1066.0	58.31	
Italy		48.77	96.44			93.46	45.38	
S. America	36	58.0	49.45	2.73	5	123.0	46.02	2.91
N. America	3	469.0	51.07	22.0	2	497.0	25.22	11.77
In which:								
USA		434.63	49.55			444.0	20.66	
Pacific	13	43.0	50.35	2.01	2	2.0	30.48	0.05

Source: Yuan, JP. "The Status of China's Agricultural Machinery Industry and the Prospects for International Cooperation." 2005

In the case of Korea, agricultural equipment exports have moved up-market towards mid-range tractors and other items between 1990 and 2006 (**Exhibit 21**), as China has moved into the lower-market segment.

Exhibit 21: Korea Agricultural Equipment Exports

(Unit: US\$1,000)

Classification	2004	2005(B)	2006(A)	Ratio (A/B)%
USA	134,315	138,185	134,151	97.1
China	23,184	37,535	42,783	114.0
Japan	16,849	18,060	15,665	86.7
Australia	11,196	15,850	12,098	76.3
Indonesia	7,104	1,128	1,376	122.0
Thailand	1,793	3,217	4,667	145.1
Malaysia	3,819	1,952	994	50.9
India	2,409	2,136	2,129	99.7
Vietnam	3,953	1,881	1,337	71.1
New Zealand	1,835	2,371	1,239	52.3
UK	3,966	3,202	5,309	165.8
Spain	2,489	2,983	3,124	104.7
Germany	901	1,607	2,031	126.4
Others	59,945	110,833	123,966	111.8
Total	273,758	340,940	350,869	102.9

Source: Korea Agricultural Machinery Industry Cooperative, Lee, Y.H.
 "Trade of Agricultural Machinery in Korea (Accessed June 2009 at
http://www.unescap.org/tid/projects/protrade_lee.pdf)

The food processing and packaging equipment manufacturing industries are also related to the agricultural industries, and have experienced similar trends with increased international competition, especially from developing countries, particularly China and India, as food manufacturing companies push the competitive pressure to protect their margins onto the equipment manufacturers. These production categories include food processing machinery, machinery and components for sanitary operation and cleaning, canning, bagging, packing or unpacking, bottling and other forms of sealing.

Market Opportunity Implications for the Inland Pacific Study Area

These products can be an important trade market for the region in that there is ready access to the inbound products via the Pacific ports and an accompanying access to the points of sale through the western farm belt of the U.S. and a large agricultural base in western Canada. Transportation support for these products would improve with focus on the North-South corridor development along with better options farm to market.

Food processing is a vibrant part of the IPH economy, and having the ability to import and distribute the necessary equipment for the industry is both practical and possible.

There are infrastructure implications in developing all of these markets which are discussed in the Regional Competitiveness working paper 3.3 and the Modal Issues working paper 3.5.

Farm to Pharmacology and Beyond

Beyond farming and processing equipment, actual food processing and other processing of agricultural products is a heritage industry for the region. More generally, the U.S. food processing and manufacturing industry has faced increased competitive pressures associated with globalization and general trade patterns. At the same time, certain sub-sectors involved with higher-value and niche products, including locally-sourced and organic ingredients, are reporting modest growth and there are continued opportunities to serve this market. Innovation and improved efficiency remain key to companies' survival and ability to compete in global markets and protect product margins remain. A number of agencies and associations in the Pacific Northwest, including the Northwest Food Processors Association (NWFPA), are working with the industry to support and assist with knowledge and technology transfer and adoption.

The Northwest Food Processor Association's annual benchmark analysis (July 2008) on the state of the industry in Oregon, Washington and Idaho, highlighted some gains in employment, in addition to a number of achievements, as processors look to contain costs and consolidate operations. The value added in 2006 by the food processors was estimated to be \$5.1 billion in Washington State and \$1.6 billion in Idaho, while the total payroll was approximately \$1.1 and \$0.5 billion, respectively, for each State.¹⁵ In addition, payroll costs have been rising, indicating faster growth in pay rates than job loss. Finally, the report identified a number of shifts in processed production, including increased milk production and processing in Idaho as dairy producers migrate from other areas of the country, continued concentration of potato processing and significant gains in wine production in Washington, and declines in apple processing in both states. Recent employment data and reports of food processing industries in the Pacific Northwest suggest that companies may be stabilizing, following previous years of contraction, although little new capacity is being added by the larger fruit and vegetable processors. Despite overall job losses and the weak economy in 2008, food manufacturing in Oregon saw employment gains, as 1,800 jobs were added, according to Oregon Employment Department data. More discussion exists regarding the transportation needs and sustainability of the primary crops as presented in the IPH Transportation Study Regional Competitiveness working paper.

¹⁵ This estimate includes only the industrial sectors to which NWFPA members belong, and primarily includes only primary food manufacturing and excludes retail supermarket and downstream processors, and companies with a size threshold of 20 employees or \$1 million in sales. The figures therefore differ from figures reported elsewhere.

The IPH study area is home to several businesses that process agricultural products of the region for export. Many of the companies have regional, national, and international scope and have aggressive plans for growth. They are tied to the region through the resources, the farming tradition, and access to skilled labor. These companies are well vested in the region and offer stability in the economy. They are also high-tech and forward thinking, drawing the agricultural traditions into the future. While other examples abound, a few examples include:

- *ALK-Abello Group (ALK)* is a global pharmaceutical company focused on allergy treatment, prevention, and diagnosis. Through establishment of subsidiaries, as well as mergers and acquisitions in several countries, ALK has become the world leader within the field of allergy vaccines. The facility in Spokane receives packages of allergy producing elements – ragweed pollen, cat dander, and other assorted things. These packages are quite small but have a significant value with respect to their size. The products are evaluated in Spokane for quality and then sent on by package to manufacturing sites in the U.S. and Europe. The manufacturing sites process the material into allergy serum and the products are returned to a distribution facility in Texas where they are available for ordering by physicians. This is a complex international supply chain with the primary origin link within the IPH. While this is not a food related firm, the associations are similar in that the company takes in agricultural products and processes them for market. It is also an excellent example of the combination of technology, skilled labor, and the agricultural base.
- *Darigold*, which has its roots in the Puget Sound area, is built from one of the oldest traditional industries in the region, the dairy cooperative. The Darigold facility in Spokane has a wide distribution area for its product. The company is not only important regionally but also for the state. Darigold is an excellent example of an industry evolved from the farm, supporting the history, but reaching forward to the future with new products and methods. Darigold is a \$2.5 billion company with consistent growth in the 6 to 8 percent range. It is very high tech with high levels of capital investment. Darigold is one of the few ultra pasteurizers in the country manufacturing products to a high tolerance level. The company ships dried milk and other products internationally, including to Mexico, but they are prohibited from delivering their school milk and other products at the Canadian border, despite making daily deliveries on the U.S. side.
- *Litehouse Foods* began with salad dressings sold from a family-owned restaurant in Sandpoint, Idaho. The family owned business has grown from hard work, core values and mergers. Today, Litehouse Foods is listed in the top 100 privately held companies in the U.S. by *Entrepreneur* magazine. Their neighborhood sales have grown to the point where they are now suppliers to Wal-Mart, the world's largest retailer.

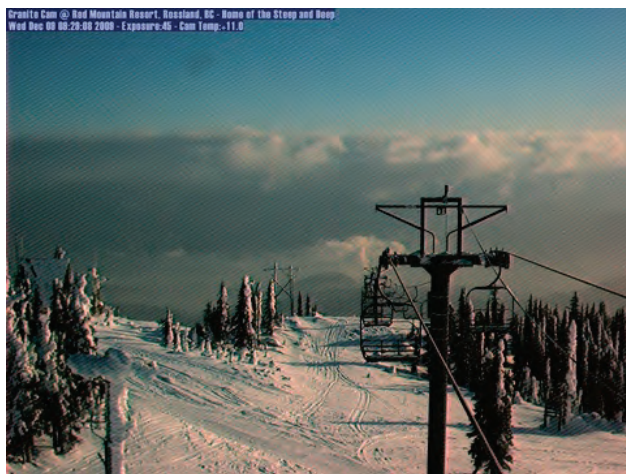
Both Darigold and Litehouse Foods represent companies that have taken the agricultural heritage and applied technology and skill to create a broad market. Expanding this concept is a definite trade potential for the region. Although not necessarily appropriate for the IPH study area at current production levels, as the region grows there may be additional opportunity within the food processing manufacturing and supply chain unique to wine-producing regions such as California, Washington, Oregon, and New York for cork and bottles. California's wine region and its ability to attract supporting activities illustrate this potential. While the majority of cork originates from Portugal, a number of companies have established operations in the Napa and Sonoma region catering to the local demand there. The Cork Quality Council, based in California, has a number of members, including Amorim Cork America, Cork Supply Inc., and Ganau America, many of which are U.S. subsidiaries of Portuguese companies.

Within western Washington State, where the wine industry is more developed, companies are already realizing such opportunities. In 2008, in Southwest Washington State, Cameron Family Glass opened the first new glass plant in more than 30 years in the U.S. exclusively serving the wine industry. This factory is in Kalama, Washington and is dedicated exclusively to wine bottle production. According to the owners, there is market demand, as existing suppliers are reportedly producing at capacity and able to meet only 80 percent of U.S. domestic demand, with the remainder imported from France and China. The 175,000 square foot facility is served by an 800-foot railroad spur, and has sections devoted to melting/forming, annealing, inspection/packaging and warehousing.

Tourism

Agricultural heritage has been described as a tourism opportunity. There are more features of the region that can be promoted. The access to natural resources in the entire region is perfect for all seasons with camping, outdoor competitions, fishing, hunting, and water sports all available within the region. This includes the Canadian side of the border as well. The directions for travel to Red Mountain Resort in Rossland, B.C.

list Spokane as the entry airport. Spokane is the gateway to the Columbia Basin wine country. Opportunities abound to package these travel features for appeal on both sides of the border and throughout the United States and Canada.



Clean Technology

Clean Technology is another targeted economic activity that the IPH study area and Washington State, in particular, are looking to develop. In addition to sensor and device manufacturers, a number of biodiesel and alternative energy production facilities have opened in the region including Inland Empire Oilseeds, which does oilseed crushing and biodiesel refining, and Columbia BioEnergy which has an 8 to 10 million gallon per annum biodiesel refinery using canola oil, restaurant grease, soy and other crops. Oil prices will fluctuate, but most economists agree they will continue to increase over the long term. Increased consumer demand will be a factor as the United States pursues policies promoting energy independence and green energy. To the extent that the region can further develop the biofuel industry, linking agricultural production to refinery and fuel distribution, there is the opportunity for economic gain. Infrastructure investment in support of fuel distribution will be important.

Problems are developing around the country relative to the transport of wind turbines related to the large size of the propellers. The problems are occurring with roadways, bridges, and other infrastructure elements that are in the route between the source and the final location. With the planned development of wind farms in the IPH study area there will be a need to consider the “logistics” of these shipments in moving them to the intended locations and how those logistics needs will be accommodated.

High-Tech Industries

As previously noted in the NAFTA trade tables, the transportation products industry is one of Washington State’s leading exports to Canada, with movement of parts and components across the border. Business of this type indicates the ability to develop a more high-tech cluster of industry, fostering the growth of skilled jobs and the associated additional economic opportunity.

As an example, Cascade Aerospace, a leading aviation product engineering firm, is one of North America's top 10 maintenance, overhaul, and repair organizations. The company specializes in the maintenance and modification of narrow body aircraft, servicing all models of Boeing 737 and 757 aircraft, operating from their primary facility in British Columbia. Cascade Aerospace USA Incorporated was formed in 2008 to expand Cascade's maintenance, repair, overhaul (MRO) and modification services offering to a broader customer base in the U.S. Cascade now has approximately 52,000 square feet of hangar, shop, and office space, along with 6 acres of ramp and aircraft storage space in Spokane, WA. Cascade Aerospace is a new entry into the regional market offering jobs and opportunities directly at its facility and indirectly through the opportunities for suppliers and service providers.

The IPH study area appears to have the skilled labor base and educational institutions to continue attracting high-tech industries in the future.

SUMMARY/CONCLUSIONS

Near-term, maritime trade is down, but resurgence is quite certain to come eventually. The rising price of fuel and carbon concerns will, over time, limit the growth in some markets. This trend is neither completely understood nor totally predictable. It is clear, however, that Asian trade historically has favored the West Coast ports, and that ports in the Northwest stand to remain strong and grow as trade volumes return and they look competitively favorable as compared to other West Coast ports.

The IPH study area is a “producer region” as a result outbound trade movements far exceed inbound movements. As a result, the imbalance of trade on key lanes, especially for highway movements results in higher costs and service and equipment availability issues for some business sectors. As a producer region – shippers in the study area are looking to expand volumes to existing markets and enter new markets. The IPH study area is in an excellent geographic location to take advantage of West Coast gateways to Asian markets.

The IPH study area is at a significant disadvantage for exporting to European markets. The length of haul to the east coast suggests moving shipments to gateways via rail, but the long-haul business model and sub-national networks of major U.S. rail carriers makes shipping across country challenging from a cost, time and reliability perspective. This situation is unlikely to change significantly in the short term, but new services from the study area such as Railex and the proposed new BNSF service from Port of Quincy are successes that should be fostered. From a transportation perspective the IPH study area is “isolated” from domestic markets to the south and from international trade with Canadian population centers to the north. The study found that no other economic region the size of the IPH study area is more distant from a north-south Interstate highway facility.

To expand the logistics horizon into the broader hub definitions, the density of traffic has to increase. In addition to recruiting new businesses, density is promoted by keeping facility development geographically concentrated. This requires that land use planning and policies be developed with the idea of creating facilities specific to freight and supply chain activities. Routes currently used for truck traffic as discussed in Technical Memorandum 1 will be reexamined in the Modal Issues working paper in this context.

The development of truck routes which avoid congestion and promote the safe and efficient flow of vehicles is important. Having these routes move between designated, consolidated freight facilities makes efficient flow easier to achieve.

The maintenance and cultivation of through-truck routes to the coast allows the higher weight limits to remain a competitive asset for some commodities. Allowing the higher weight trucks supports a volume density in the lane that

benefits all commodities through improved balance and pricing. The best maintained roads which support this high weight traffic and serve concentrated freight zones will support the other development efforts.

Any sales plan will indicate that it is easier to grow from an existing base rather than find new outlets. Certainly new outlets are possible and should be sought. However, careful consideration should be given to market opportunities that are created by an existing demand and are currently satisfied by businesses outside the region. Food processing equipment is one example of this.

Food processing equipment is only one example of something that is used by area business but imported from outside the study area. There are also large markets for food processing equipment in surrounding regions and states, a demand that would support the development of one or more food processing equipment businesses within the study area. If a successful initiative were applied to draw a manufacturer of this type it would enhance economic development, add jobs, and expand market potential.

Clean technology businesses are a developing interest in the area and are beginning to progress. The consolidation of facilities and initiatives directed toward clean technology in designated zones would offer another way to grow from an existing base.

There is a strong emphasis and need in the study area to build jobs requiring higher skill levels and the application of technology. This trade summary has focused attention on agriculture because it offers a strong existing base of business that can be expanded and modified to meet new market needs. It is critical to support the role of agriculture in the future and recognize the relationship between regional agricultural roots and the opportunity for higher technology processing that encourages trade development. The purpose of the study was certainly to extend beyond agricultural based business and this paper and others have discussed the importance of developing clean technology business, pharmaceuticals and other industries and services. Marketing efforts need to develop in these directions. However, those which build on an existing capability will be most easily accomplished.

Tourism may not be directly categorized as “trade” but it certainly promotes trade in many ways, both directly through supplies and services and indirectly through exposure of the area to new people who can bring ideas and market opportunities.

The concept of trade development really centers on taking the best of what exists and using it to expand potential. The expanded development is what will lead to the higher volume of freight and goods movement in more concentrated lanes. It is this volume and density increase that will improve the opportunity for the

region to develop more logistics related service entities and move toward the goal of becoming a hub.

Steps for implementing such a strategy include:

1. Nurture regional specialties such as specialized farm produce and clean technology products while seeking to develop new opportunities for existing business and expansion into new ones.
2. Become a crossroads for north-south trade with emphasis also on the west by developing a regional plan for the north-south corridor and border crossing and improving the conditions moving to the west coast and California.
3. Examine current import/export commodities for market expansion and diversification.
4. Seek improved intermodal connections to the east through options available outside the region.
5. Develop a unified approach to improving the border crossing and regional connections
6. Address road and rail network limitations with planning, investment, and cooperation inside and outside the study area where needed.
7. Address broader bi-national issues such as trade policies and tariffs.
8. Institutionalize arrangements for ongoing cooperation in planning and project development by integrating the strategies and plans for agencies within the study area, across state lines, and in Canada. Opportunities for growth in the IPH study area cannot be isolated to that defined county area alone. It must depend on and incorporate the surrounding areas to make the best use of possible funding resources.

The opportunity for growing Canadian trade is closely tied to having better access to population bases in Calgary and Edmonton. The regional government agencies and economic development groups should explore strategies to better include the near provinces, but particularly the border cities in a “regional” planning effort. The requirement for better north-south connections to Canada is imperative and it must be a regional solution to be effective.

The single most important idea is to apply regional cooperation toward a regional strategy for regional growth. Spokane and Coeur d’Alene are viewed in the national rankings as good places to live ranking high in annual “best places to live” rankings. Similar published polls that rank cities by their transportation attributes rated the study area high in terms of high-level arterial highways, rail, airport and port facility access. The same rating service ranked the IPH study area low with respect to local road systems and business activity taxes.

Based on the critical needs required for successful inland port developments; 1) Modal capability, 2) Existing Demand, 3) Locational advantage, 4) International trade facilitation, and 5) Management plan, the IPH study area will be challenged

by “existing demand” and “locational advantage” requirements. Presumably if the IPH study area developed an inland port it would be based on distributing goods coming into the study area by rail river port or air. Outbound distribution would likely occur by truck, making existing lane imbalance issues worse. Many inland ports have developed on the west coast a short distance inland from the San Pedro Ports (Los Angeles and Long Beach), primarily due to the congestion in these ports, but also because a significant portion of the goods imported through the San Pedro ports are consumed by the Southern California market. Inland port facilities in this case allow the contents of containers to be resorted for local versus mid-America consumption. In the case of the IPH study area there are no significant population centers in close proximity to the study area.

The IPH study area has geographic advantages in several primary markets and these advantages should be expanded upon. The region appears to have characteristics of the inland ports most consistent with models described as “crossroads” and “economic development.” The fit between the models and the geographic market opportunity between the study area and Canada, California, along with the areas reaching toward Phoenix, Salt Lake City, and Denver is strong. The strategic concept should be to develop the crossroads trade model creating market expansion, leading to growth and continuing progress in the region. The domestic regional market is a critical element in building volume thresholds necessary for broader growth. The long range development of density creates improved opportunities by lowering cost, not only for local shippers sending product out but also in terms of the price they pay for goods received. Density and volume build accumulating benefits from the supply chain perspective.

While an inland port development concept in the IPH likely has significant hurdles, using the concept of the Economic Development Zone, the area can build upon initiatives and efforts already underway to develop value-added production activities. By blending in pieces of a crossroads model focused on Canada, California, and other metropolitan areas to the south, the IPH study area can develop marketing targets with geography and commodities that best suit the capabilities that currently exist.

The concept of trade development centers on taking the best of what exists and building upon the base to expand potential markets. Expanded development is likely to lead to the higher volumes of freight and goods movement in more concentrated lanes. It is this volume and density increase that will improve the opportunity for the region to develop more logistics related service entities and move toward the goal of becoming a hub.

INLAND PACIFIC HUB

Transportation Study



Working Paper 3.5

Modal Issues (Work Element 3.5)

Final

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GLOSSARY OF TERMS

Term	Definition
Bulk / Specialized Carrier	Specialized motor carriers transport specific types of goods including construction and military materials, oversize/ overweight items, and hazardous materials. Many carriers have specialized commodities in addition to more traditional truckload goods. The specialized carrier market operates according to dedicated business segments and is often terminal specific according to which materials are being transported (e.g. liquid and dry chemicals). The specialized carrier market is characterized by closed loop operation and trucks often operate with 50 percent empty miles.
Class I Railroad	The largest rail carriers in the U.S., classified by operating revenue. In 2008 Class I carriers were defined as railroads having operating revenue exceeding \$401.4 million. Currently seven railroads operating in the U.S. are classified as Class I, including BNSF Railway and Union Pacific Railroad in the Western U.S.
COFC/TOFC	These acronyms mean "Container on Flat Car" and "Trailer on Flat Car" respectively. These are the two common types of intermodal freight.
Combination Truck	A power unit (truck or truck tractor) and one or more trailing units.
Container	A typical container is 40 or 48 feet long, 8 feet tall and 8 feet wide. These steel boxes are used internationally to transport freight by sea, rail and highway. Container traffic is measured in twenty-foot equivalent units (TEUs).
Container provider	For international shipments, containers are typically provided by the ocean carrier from its available empty inventory within proximity of the shipper.
Containerization	The technique of using a boxlike device in which a number of packages are stored, protected, and handled as a single unit in transit.
Deadhead	Trucking industry reference to one leg of a roundtrip that is traveled empty.
Distribution center	Warehousing facilities, where typically like commodities in containers or truck-load lots are resorted into mixed truck loads for distribution to retail outlets or customers.
Drayage Carrier	The service offered by a motor carrier for pick-up and delivery of ocean, rail or air cargo containers.
Inbound Freight Flows	The freight that originates outside a particular state or region and terminates in that state or region

Term	Definition
Inland Port	The term inland port is used in two different but related ways to mean either a port on an inland waterway or an inland site carrying out some functions of a seaport. An inland port in the wide sense, as used in common speech, is simply a port on an inland waterway such as a river, lake or canal. The term inland port is also used in a narrow sense in the field of transportation systems to mean a rather more specialized facility that has come about with the advent of the intermodal container (standardized shipping container) in international transport. Rather than goods being loaded and unloaded in such ports, shipping containers can just be transferred between ship and road vehicle or ship and train. The container may be transferred again between road and rail elsewhere and the goods are only loaded or unloaded at their point of origin or final destination.
Intermodal	Freight that travels from origin to destination on more than one mode of transportation such as a container that arrives from Asia by sea and is transferred to rail for the remainder of its journey.
Internal Flows	Freight that originates and terminates within a particular state or region.
Just-in-Time Inventory System	An inventory and inbound manufacturing strategy that smoothes material flows into assembly and manufacturing plants. The strategy seeks to minimize inventory investment by scheduling delivery of raw materials to the point where they are needed, at the precise time required.
Less Than Truckload (LTL) and Small Package Carriers	LTL carriers consolidate many smaller shipments from multiple shippers located in a common area or region, sort them at dock facilities according to common designation, and then line-haul trailers to a destination dock for delivery.
National Network (NN) Highways	The National Network of Highways includes: (1) the Interstate Highway System and (2) other designated highways, which on June 1, 1991, were part of the Federal-Aid Primary System in effect at that time. There are highways that have been certified by the states to FHWA as being capable of safely handling larger commercial motor vehicles. The total National Network system is about 200,000 miles, and a complete listing of the highways included in the NN can be found in 23 CFR Part 658, Appendix A
National Highway System (NHS)	Approximately 160,000 miles of roadway important to the nation's economy, defense, and mobility. The NHS includes Interstate, other Principal Arterials, Strategic Highway Network (STRAHNET), Major Strategic Highway Network Connectors, and Intermodal Connectors. The NHS was designated as a high priority system under the Clinton Administration.
Nonselself-propelled vessels (barges)	Includes dry cargo, tank barges, and railroad car floats that operate in U.S. ports and waterways.

Term	Definition
Ocean port intermodal terminal	<p>There are three general types of intermodal terminals serving container traffic at ports:</p> <ul style="list-style-type: none"> • On-dock: a rail to ship transfer facility at the marine terminal eliminating the need to transfer containers by truck on city streets. • Near-dock: typically located within a few miles of port terminals; transfer between rail and ship requires a truck move and additional container lifts. This type of terminal has the advantage of serving multiple ocean carriers. • Inland port/satellite: Located away from the port - most advantageous if shuttle trains operate between the inland terminal and port facilities to avoid port traffic congestion.
Outbound Freight Flows	The freight that originates in particular state or region and terminates outside of that state or region.
Panamax ships	"Panamax ships" are the largest ships able to pass through the lock chambers of the Panama Canal. The current lock dimensions are 1,000 feet long and 106 feet wide. Many ocean going cargo ships are built to the Panamax limit to carry the maximum amount of cargo through the canal. Current containers ships are limited to approximately 5,000 TEU. When the larger locks currently under construction are completed in 2014, the Panama Canal will be able to handle container ships of up to approximately 13,000 TEU - this class of ships is typically referred to as "Post- Panamax" ships.
Private Carriers	Unlike "for-hire" trucking services, private carrier fleets are operated by businesses whose primary business is something other than transportation. For instance, private carrier fleets may be operated by manufacturers, distributors, retailers, or other businesses operating trucks as an internal value-added function primarily to meet their own business shipping needs. While private truck fleets primarily serve a single company, private carriers are allowed to sell unused backhaul capacity on a for-hire basis. Wal-Mart is an example of a private carrier.
Self-propelled vessels	Includes dry cargo vessels, tankers, and offshore supply vessels, tugboats, pushboats, and passenger vessels, such as excursion/sightseeing boats, combination passenger and dry cargo vessels, and ferries.
Short-ton	A unit of weight equal to 2,000 lbs..
Single-unit Truck	A large truck on a single frame with at least 2 axles and 6 tires. Excludes "other 2-axle, 4-tire vehicles" noted above.
Supply Chain	A group of physical entities such as manufacturing plants, distribution centers, conveyances, retail outlets, people and information which are linked together through processes (such as procurement or logistics) in an integrated fashion, to supply goods or services from source through consumption.

Term	Definition
TEU	Twenty-foot Equivalent Unit - the standard of measurement for intermodal containers. Early containers used for cargo were 20 feet long, 8 feet wide and 8.5 feet high. Today containers come in a variety of sizes including 40 foot, 45 and 53 foot domestic containers.
Third party logistics (3PL)	A firm that specializes in logistics services that are provided to other companies.
Through-Freight Flows (Overhead flows)	Freight traffic volumes that originate and terminate beyond the borders of a state or region, but that use transportation infrastructure of the state or region during transit.
Transload	The practice of transferring product between truck and rail transportation. In most instances, a transload facility operator, third-party logistics company, or broker facilitates transloading for both the shipper and the consignee. These companies coordinate truck and rail connections and frequently offer warehousing and other services to facilitate storage and delivery.
Transloading	The practice of transferring product between truck and rail transportation. It allows shippers and their customers to enjoy much of the cost benefits of rail transportation without having a rail siding at their door-at the least an expensive proposition, and for many companies, a physical impossibility. In most instances, a transload facility operator, third-party logistics company, or transportation broker facilitates transloading for both the shipper and the consignee. These companies coordinate truck and rail connections and frequently offer warehousing and inventory management services to facilitate storage and delivery.
Truckload Carrier	The truckload (TL) motor carrier segment generally does not operate across a regular route, but rather delivers shipments directly to a recipient and try to pick up another truckload shipment at or near the first delivery point for a "backhaul" load. TL carriers generally have little need for extensive terminal or warehousing facilities.

INTRODUCTION

The Inland Pacific Hub (IPH) study area is comprised of nineteen counties located in eastern Washington and northern Idaho. The economic interests of this region are represented in part by the Inland Pacific Hub Advisory Board, a public-private partnership established by and consisting of representatives from both states. The Board's objective is to establish the Inland Pacific Hub study area as a multimodal global gateway to increase international commerce.

The IPH Board partnered with the Washington State Department of Transportation and the Idaho Transportation Department to study the region's capacity for economic development. The Inland Pacific Hub Transportation Study has two objectives: 1) To identify the Inland Pacific Hub study area's capacity as a globally-connected, multimodal transportation gateway; and, 2) To identify the critical infrastructure requirements needed to drive the IPH study area's future economic growth.

Report Organization and Composition of Task 3

To accomplish the objectives established by the IPH Advisory Board, Wilbur Smith Associates, in association with HNTB and Halcrow, proposed a work plan based on six tasks:

- Task 1: Analyze Existing Transportation Market
- Task 2: Profile Existing Multimodal Transportation Infrastructure (Tech Memo 1)
- Task 3: Profile Regional Economic Assets (Tech Memo 2)
- Task 4: Profile Commercial and Technology Assets (Tech Memo 3)
- Task 5: Identify Public Education and Stakeholder Involvement
- Task 6: Compile Final Report and Phase II Recommendations

Several tasks (2, 3 and 4) have Technical Memoranda as final task deliverables. Technical Memoranda 2 and 3 are each made up of several internal working papers that break the analysis associated with these tasks into discrete work elements, to allow study team members to work concurrently on sub-tasks.

This Working Paper

This Working Paper (3.5), *Modal Issues* examines the multimodal freight transportation systems in the IPH study area, including key gateways and intermodal connections for the purpose of identifying modal and intermodal constraints and opportunities. Border crossings are examined as an integral part of the region's transportation system. The working paper also serves as the conclusion to a series of analyses examining the regional economy, commodities, competitive factors and trade issues in four subsequent working papers:

Working Paper 3.1: Economic Base Analysis
Working Paper 3.2: Regional Freight Profile (Commodity Flow Analysis)
Working Paper 3.3: Regional Competitiveness
Working Paper 3.4: Trade Opportunities

These five working papers under Task 3 will be integrated into a comprehensive description of the IPH Study Area's Economic Assets (Technical Memorandum #2). A more in-depth examination of the study area economy, at the county level is presented in Technical Memorandum #3.

This working paper is organized as follows:

1. The Role of Freight Modes in the Global Economy
2. Stakeholder Views on IPH Modal Assets
3. Key Gateways and Corridors Serving the IPH Study Area
4. Truck Transport Issues and Opportunities
5. Rail Transport Issues and Opportunities
6. Air Cargo Issues and Opportunities
7. Water Transport Issues and Opportunities

THE ROLE OF FREIGHT MODES IN THE GLOBAL ECONOMY

The Role of Transportation Modes in the Global Economy

As discussed in associated IPH Transportation Study working papers, trade has become a significant component of the U.S. economy, and services such as transportation and warehousing have grown rapidly to support this trade economy. Freight transportation is also becoming more multimodal as many goods travel farther and sophisticated supply chain management systems seek to maximize inherent benefits offered by each mode.

This paper examines the role of freight transportation modes within the IPH study area. The paper also compares the modal roles in the IPH study area to roles the modes play in the broader national economy. The comparison is between two similar but different data sources.

- National level commodity and modal statistics are taken from the recently released, preliminary estimates from the 2007 Commodity Flow Survey (CFS). The commodity flow survey is conducted by the Bureau of Transportation Statistics every five years. A primary goal of the CFS is to estimate shipping volumes (value, tons, and ton-miles) by commodity and mode of transportation at varying levels of geographic detail, primarily the national and state level.
- Commodity data for the IPH study area is taken from the TRANSEARCH™ dataset purchased for the study that is specific to the nineteen county IPH study area. TRANSEARCH™ data uses the CFS for recalibration every five years, but is enhanced through other data sources and is produced annually and is available at a county level of detail.

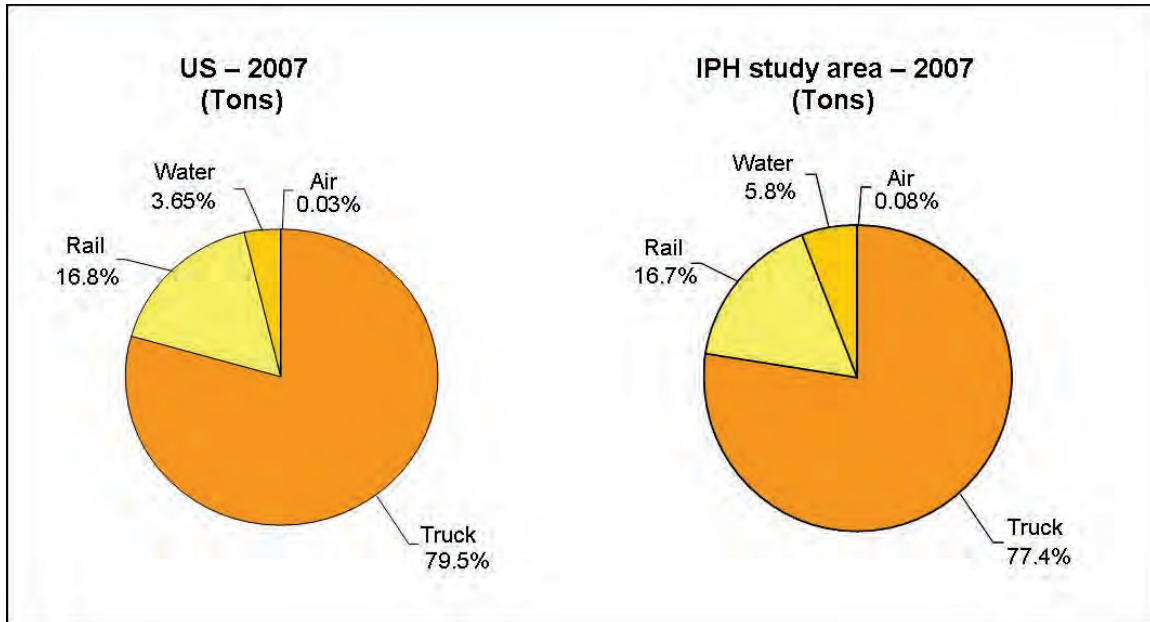
According to preliminary estimates from the 2007 CFS, more than 13 billion tons of freight, valued at \$11.8 trillion was transported nearly 3.5 trillion ton-miles in the United States during 2007. Freight shipments measured in weight (tonnage), value (US dollar), and distance (in terms of ton-miles), are all on the rise, compared to 2002 totals. Tonnage was up 12 percent, value (inflation adjusted) up 13 percent, and ton-miles up 11 percent. Yet, in terms of transport mode, nearly 93 percent of the total tonnage and 81 percent of the total value of freight were shipped by means of a single transportation mode, while the remainder was shipped using two or more modes.

The “Regional Freight Profile (Commodity Flow Analysis)” Working Paper 3.2 provided a detailed commodity profile for the IPH study area including a summary of commodity movements by direction and mode in both tons and value. In this paper, modal statistics, trends, and issues are examined and analyzed from a higher policy and strategic view point. The goal is to identify

meaningful modal-based freight transportation investments within the IPH study area transportation framework. The regional freight assets serving the IPH study area are examined in terms of the changing domestic and global economic climate and the inter-related freight transportation forces.

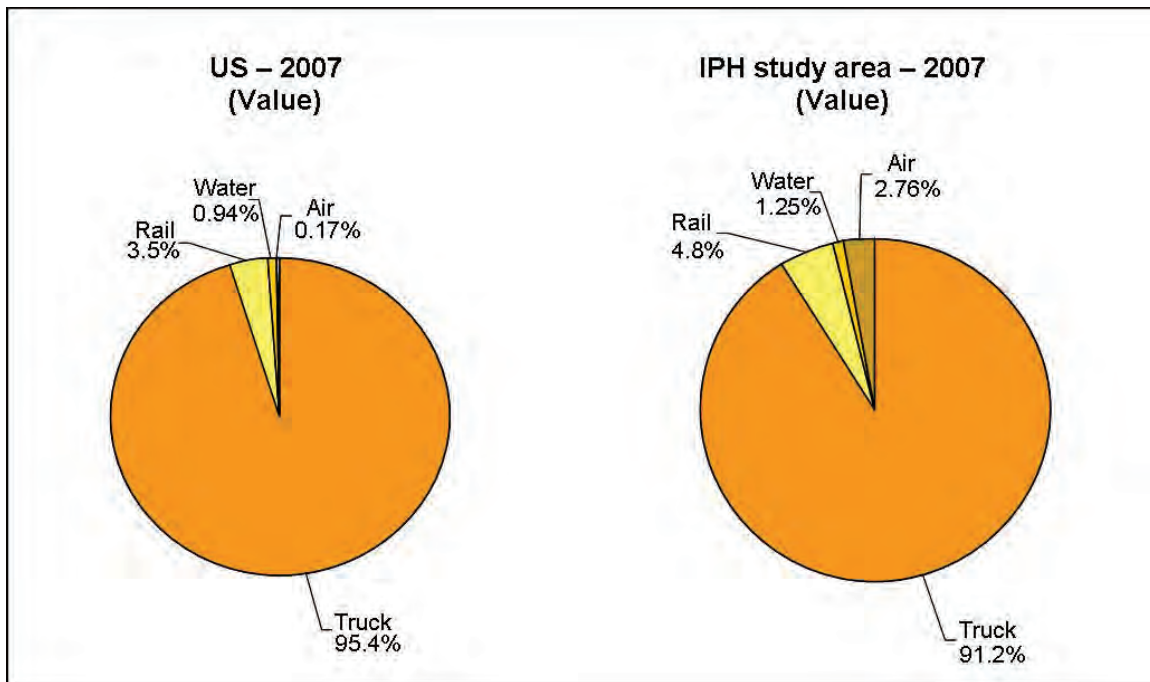
Exhibits 1 and 2 compare the modal distribution by tonnage and value for goods moved throughout the U.S. and for the IPH study area. Note the “through flows” are not included in the modal summary for the IPH study area.

Exhibit 1: Single Mode Distribution U.S. vs. IPH Study Area (Tonnage)



Sources: 2007 Commodity Flow Survey, BTS; and, 2007 TRANSEARCH™, Global Insight

Exhibit 2: IPH Study Area – Single Mode Distribution – by Value



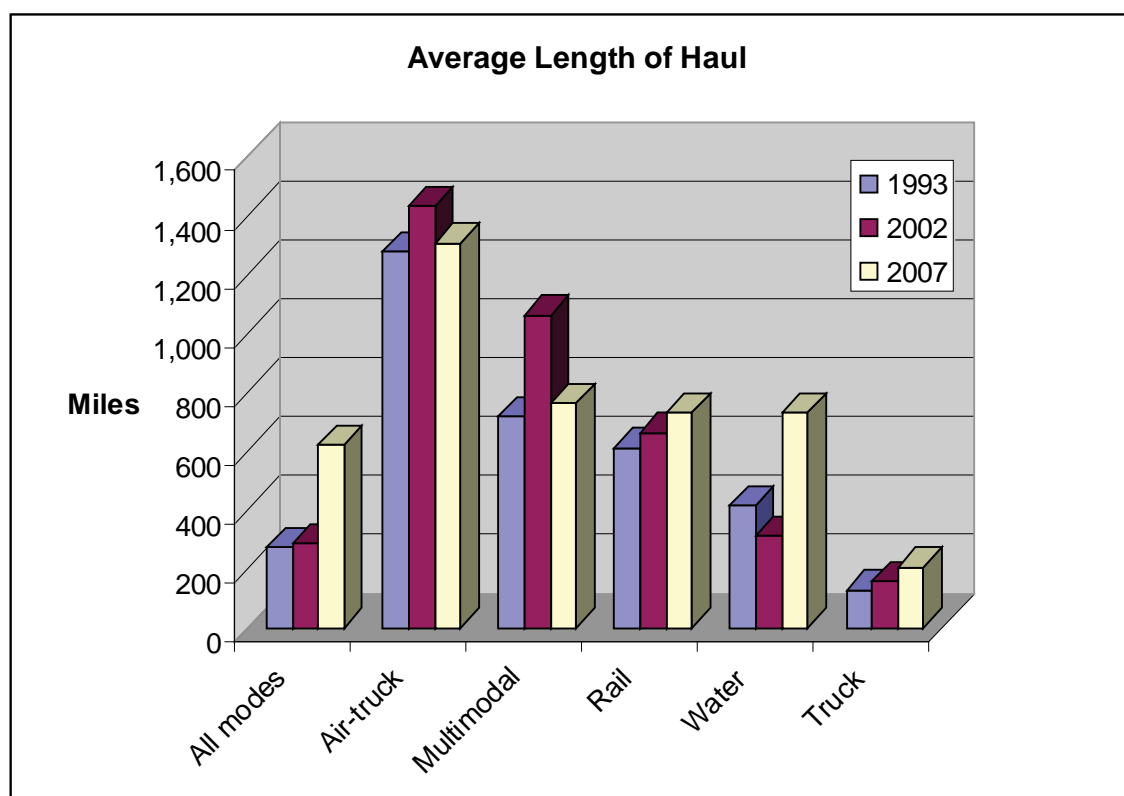
Sources: 2007 Commodity Flow Survey, BTS; and, 2007 TRANSEARCH™, Global Insight

As is shown in Exhibit 1 and Exhibit 2, the modal distribution of the IPH study area and the national as a whole are very similar. Not surprisingly trucking is the most heavily utilized mode of transportation both across the U.S. and in the IPH study area, due to its flexibility, high service quality and competitive nature. Rail shares for the IPH study area and the U.S. are nearly identical by volume and only slightly higher in the IPH study area by value. In terms of air cargo and water shipments, the IPH study area appears to utilize these modes at a far higher rate than the national average. This level of air cargo and water modes likely reflects the unique economic make-up of the IPH economy. For instance agriculture in the region is a heavy user of both modes: bulk grain shipments are carried to the coast on the Columbia/Snake River System, and perishable fruits such as cherries are flown directly to Asia from Moses Lake.

Exhibit 3 displays the trend in the average length of haul by mode from the past three CFS surveys. The overall trend is that more goods are traveling further distances. According to the 2007 CFS, the average length of haul in trucking has increased nearly 24 percent over 2002. Currently, the average truck shipment moves 206 miles. The average length of haul for rail increased nearly 10 percent during the same time frame, for an average distance of 728 miles. Interviews with rail personnel also suggest that intermodal rail service has even higher average lengths of haul; according to BNSF the average length of haul for intermodal shipments on western railroads is approximately 2,500 miles.¹

¹ Discussion with Vann Cunningham, BNSF Vice President of Economic Development.

Exhibit 3: Average Length of Haul for Select Modes



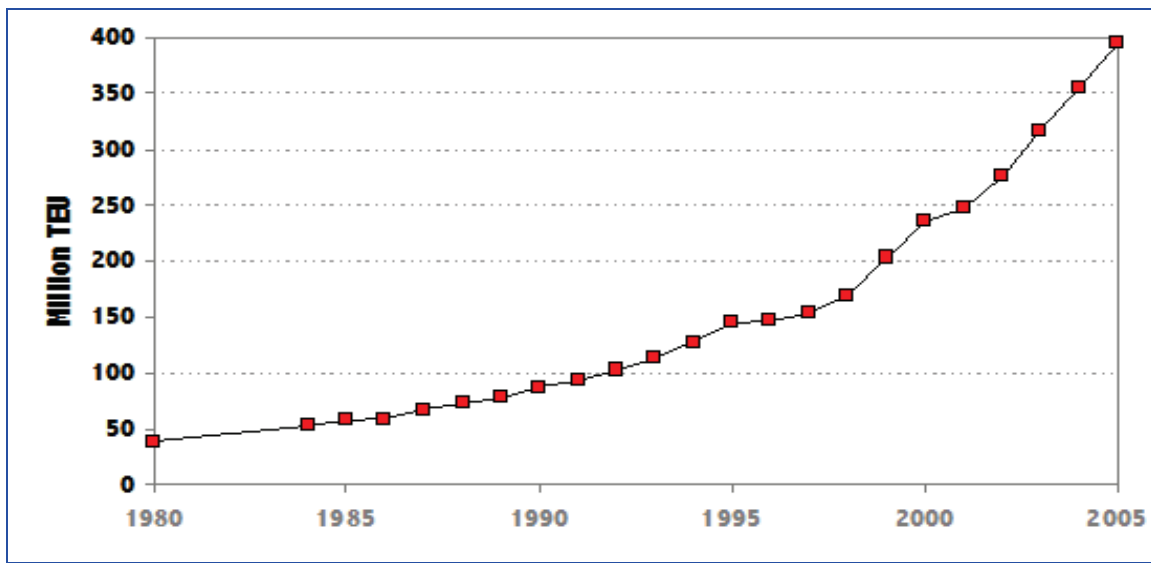
Source: USDOT, Research and Innovation Technology Administration (RITA), Bureau of Transportation Statistics (BTS). Notes: The Commodity Flow Survey (CFS) is a partnership between BTS and the U.S. Census Bureau. The Air-truck mode is defined as: *Air (includes truck and air) - Shipments that used air or a combination of truck and air.*

Containers, Intermodal Freight and Modal Productivity

The trend toward a trade-based economy has also helped shape national transportation policy toward intermodal freight transportation (i.e., the ability to smoothly transition freight shipments from one mode to another).² Intermodal transportation has become the center piece of U.S. transport policy since Congress passed the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991. *Containerization* is the common standard that enables intermodal freight transport. **Exhibit 4** shows that since 1980 intermodal container volumes have increased eight-fold. In 2006, railroad intermodal traffic in the U.S. exceeded 14.2 million units (containers and piggy-back trailers); containerized freight accounted for 11.8 million units. With the recession that began in 2008 container volumes dropped significantly, but long term container traffic is expected to grow.

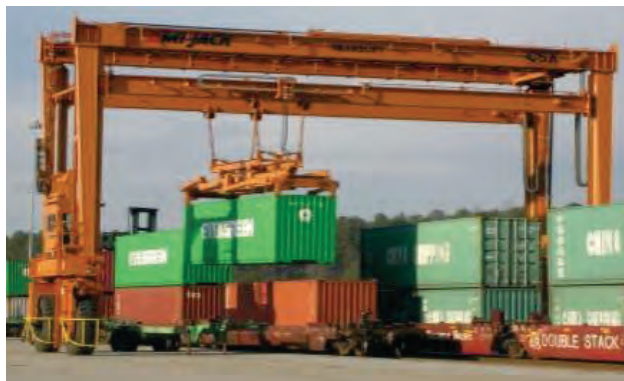
² The terms intermodal and multimodal are often used interchangeably. For discussion purposes multimodal will be used to describe any transfer of freight between two or more modes not involving containerized freight. Intermodal will be used to describe containerized freight movements.

Exhibit 4: World Container Traffic (millions of TEUs)



Source: Drewry Shipping Consultants
<http://people.hofstra.edu/geotrans/eng/ch3en/conc3en/ch3c5en.html>

The use of standard-sized containers was one innovation that transformed domestic U.S. intermodal transportation into a global multimodal transportation standard. During World War II the U.S. Department of Defense experimented with standard-sized steel modules that were 6.3-foot wide by 6.8-foot high and 8.5-foot long capable of carrying 9,000 lbs. to speed up shipping goods between the U.S. and foreign locations. In the 1950s the Department of Defense reset the nominal specifications to 8-foot wide by 8-foot 6-inches high and in 10-foot long increments with a maximum freight weight capacity set at approximately 45,000 lbs.. Eventually, 20-foot long and 40-foot long containers became the standard length increments. The 20-foot long containers are referred to as twenty-foot equivalent units (TEU) and the 40-foot long containers are referred to as forty-foot equivalent units (FEU). Vessel size and port handling capacities are measured in TEUs. Twistlocks located at the container corners enable cranes to safely and rapidly lift containers off-of or onto container ships, rail intermodal cars and container chassis.



Source: Mi-Jack Products, Inc., product web site

These standards were adopted by the International Standards Organization (ISO) in the 1960s. By the mid-1970s size, weight and loading practices were adopted worldwide and the modern era of multimodal transportation that integrated vessel, train and truck movements commenced.

From the 1970s through the 1990s several additional container size standards were introduced to increase the cubic capacity and loading efficiency of global freight shipments. High-cube containers measuring 9-foot 6-inches high were introduced, as well as 45-foot long 8-foot high or 9-foot 6-inch high-cube containers. Refrigerated containers in 20-foot and 40-foot lengths were introduced. A more recent innovation was the introduction of tanktainers. Tanktainers are tanks that can hold gas or liquids and have a surrounding steel structure fitting the standard 20-foot or 40-foot container sizes enabling them to be stacked with standard sized containers.

Container Weight Issues

In most foreign countries the weight limitation for freight loaded into a container is in the range of 52,000 to 55,000 lbs. (lbs), as the gross vehicle weight (GVW) limit on trucks in most foreign countries is 96,000 lbs or more. The gross vehicle limit on most of the federal highway system in the U.S. is 80,000 lbs. As a result, most payloads in the U.S. max out at between 45,000 lbs. and 50,000 lbs. depending on the tare weight (empty weight) of the truck. However, many states in the western U.S. are allowed to exceed the 80,000 federal limit because state regulations allowed higher GVW weight limits at the time federal limits were first imposed. This exemption is referred to as a “grandfather” provision. Overweight containers are typically not an issue in either Washington or Idaho, as both states readily allow a GVW limit of 105,500 pounds, provided legal axle weight limits are maintained. In Idaho, a permit is required to exceed the 80,000 lb. GVW limit on Interstate and National Network Highways.

Domestic Container Sizes

Domestic long-haul highway transportation within the U.S., Canada and Mexico typically uses truck trailers that are 48-foot or 53-foot in length. In the 1980s the U.S. railroads introduced similar size, domestic containers to compete with 48-foot and 53-foot truck trailers (although the shorter, less efficient 48-foot containers are now being phased out).

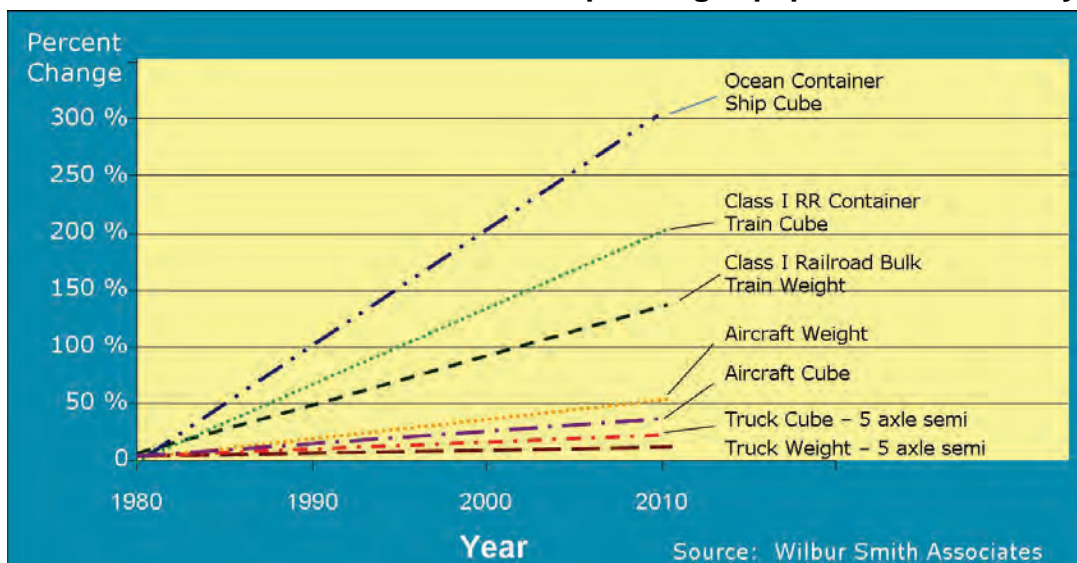
Long-haul rail intermodal service is typically less expensive than truck service because one train can move 200 containers whereas 200 trucks and drivers would be needed to move 200 highway truckloads. Depending on the freight corridor, equipment availability and the seasonal intermodal costs can be from 5 percent to 15 percent less than truckload service. However, due to the time consumed for terminal in-gating, loading and off-loading containers onto the trains, and interchanging trains and drayage delivery, intermodal transit usually takes longer to complete than the more simple door to door truck delivery.

Long-haul intermodal service is also more cost effective in 53-foot domestic containers compared to 40-foot international containers because a 53-foot domestic container typically can hold about 30 percent more volume than a 40-foot international container. The constraint for international trade is that 53-foot

long domestic containers do not fit into the standard 20-foot or 40-foot slots on containerhips so domestic containers cannot be loaded for export.

Although a 48-foot or 53-foot domestic container can be stacked on top of a 40-foot international container in an intermodal railcar, the railroads prefer not to mix the domestic and international containers on one railcar. To gain handling efficiencies, some railroads have designated select intermodal terminals to handle only international or domestic containers, but not both. There is a carbon impact reduction by moving 200 containers on a single train compared to moving 200 trucks pulling the same amount of freight. **Exhibit 5** shows a comparison among major service elements of the various modes in terms of their operating productivity over the past several decades. Shipping and rail elements of the intermodal freight system have significantly outpaced the other modes in productivity advances in terms of equipment and its utilization.

Exhibit 5: Relative Growth in Modal Operating Equipment Productivity

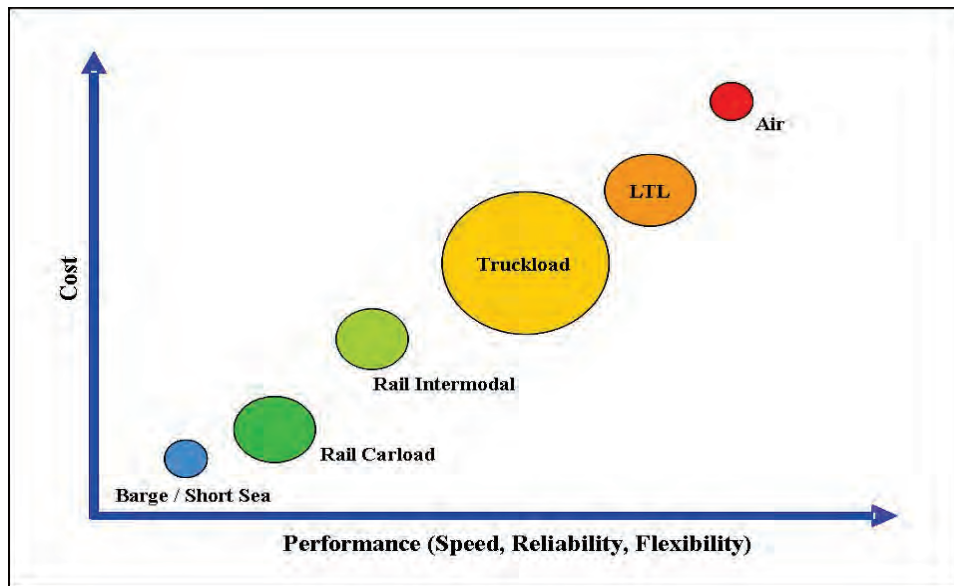


Modal Performance Examination

The success of intermodal freight transportation results from economic synergies gained by integrating the best attributes of each individual mode. Working together each mode performs most efficiently the task it does best. Typically, railroad line-haul costs are less than those for motor carriers, while motor carriers have greater flexibility and universal access to industrial and commercial locations. Joint services take advantage of these strengths but are much more complicated than single mode movements, due to the specialized equipment, terminals and coordination among firms. The additional cost and complexity creates important prerequisites for the success of rail intermodal such as the availability of willing firms skilled in providing intermodal services.

In order for intermodal rail services to produce a rate advantage, shipments typically must move a significant distance (500 miles or more) to allow rail line-haul economies to outweigh higher terminal and transaction costs. Other requirements usually include significant volume to operate daily trains with on-time reliability competitive with trucking. As a result, rail intermodal services are ordinarily provided only in high volume corridors between major population centers. **Exhibit 6** expands on the notion of cost and service levels associated with a variety of freight transport modes, with the bubbles representing the relative market share.

Exhibit 6: Modal Service versus Cost Continuum³



Speed to Market

Speed to market is one of the most important factors in supply chain design and execution and it influences modal selection by commodity type. Every supply chain differs in its need to economize on cost while at the same time arranging to consistently deliver the freight at the right time to the right destination in good condition.

Some commodities must get to the market very fast before the product's perishable life span expires. Usually, the higher the price and the fresher the product, the faster it must get to market. Fresh food must get to market while it is fresh and safe for consumption, usually only a few days. An expensive cell phone must get to market in a few weeks before the next competitive model with newer features and benefits attracts buyers' interest. A pharmaceutical must arrive in days before its potency date expires. Other commodities have wider windows for delivery because of their lower cost and more flexible consumption period.

³ Adapted from: Lanigan, Jack Sr.; Zumerchik, John; and: Rodrigue, Jean-Paul. *Automated Transfer Management Systems to Improve Intermodal Efficiency of Rail Freight Distribution*. Undated. pg. 3

Presents for the holiday season should arrive in November or December but not in the summer. Lawn fertilizers should arrive in April or May for summer application, but if shipped in October the product would sit on the shelf all winter. Still, other commodities have a wider window of utilization and are typically lower cost bulk products such as grain, manufacturing materials such as raw lumber, wood or metal products, or products that are heavy and relatively low cost such as car batteries. Because bulkier products are in storage for longer time periods before transformation into finished products, there is less need for rush to storage facilities. They can utilize slower more cost efficient transportation. **Exhibit 7** shows several examples of the speed to market concept. The table displays the relative importance (required vs. optional) of velocity to market for a variety of industry sectors.

Exhibit 7: Commodity Speed to Market Requirements

Commodity Classification	Relative Transportation Speed		
Sample Commodities	Fast	Medium	Slow
High Priced Commodities			
Electronics	●		
High Fashion	●	○	
Just In Time Manufacturing Components	●	○	
Pharmaceuticals	●	○	
Medium Priced Commodities			
Fresh Food, Flowers	●		
Processed Food		●	
Seasonal Apparel		●	○
Consumer Goods		●	○
Lower Priced Commodities			●
Manufacturing Materials		○	●
Wood Products			●
Agricultural Products			●
Bulk Products			●
	● = Required, ○ = Optional		

Different modes of transportation have various speed capabilities to deliver freight. **Exhibit 8** shows the relative speeds for different modes. A basic comparison of transit times for the main market-to-market lane of Seattle to Chicago depicts how fast freight can move by various modes. Airfreight is the fastest while boxcar is the slowest. A plane can fly from Seattle to Chicago (approximately 2,100 miles) in just over 3 hours. After truck pick-up and delivery time is factored into the journey, a parcel can be delivered in less than 24 hours (same day service) depending on flight schedules. Team truck is the fastest surface transportation because two drivers share the non-stop driving

responsibilities and can transit the distance from Seattle to Chicago in less than 38 hours (second day service) at an average speed of 55 miles per hour. Standard single driver truck service (in which hours of service apply) limits driving time to 11 hours per day or an average of 550 miles per day, and can transit the distance in a little less than 4 days.

Exhibit 8: Relative Modal Speed

Transportation Mode	Relative Transportation Speed		
	Fast	Medium	Slow
Air Freight	●		
Truck - Team Drivers	●		
Truck - Regular		●	
Express Intermodal Unit Train		●	
Domestic Intermodal		●	
Boxcar			●
Liner Vessel Service		●	
Slow Steaming Vessel Service			●
Barge			●
● - Indicates typical speed performance of mode/service			

Intermodal rail has various service options that are basically divided into unit train service and domestic intermodal service. Unit trains are long trains that are completely loaded with containers at the origin point such as a port and are typically moved non-stop from origin to destination (stopping only for train crew changes). Domestic intermodal trains are either fully or partially loaded at the origin point and make one or several intermittent terminal stops along its scheduled journey to drop-off or pick-up additional containers. Each stop can involve several hours as intermodal cars are separated from the train or added to the train. The duration of the stop also depends on the operating hours of an individual terminal. Hours accumulated for intermittent terminal stops and operating constraints can add days to the actual journey time compared to scheduled time. For this reason, railroads design their intermodal operating schedules for long mainline transits with minimal stops in areas where only a few containers could be dropped off or picked up, raising idling and terminal costs while reducing profitability.

As discussed earlier containerization and double stack intermodal service has evolved to accommodate the trade economy of the U.S. As a result, population has become the primary driver of intermodal facility location. The IPH study area does not have a large dedicated intermodal terminal. The surrounding population base is not large enough to attract a large amount of inbound or outbound

container moves which makes stopping a train more costly per container handled.

Carload Rail Service

Boxcar is the traditional mode of rail service. It is slower than intermodal service. A boxcar can hold the cubic capacity of three or more intermodal containers. However, many times a boxcar will reach its practical weight limitation before it exceeds its cubic capacity. This is termed weighting-out. If it reaches its cubic capacity before exceeding its weight limitation, this is termed cubing-out. Boxcars are typically loaded at a shipper's facility or at a transload center. Small locomotives shuttle the boxcars at slow speeds between the loading/unloading site and the rail yards. This is a typical role performed by short line railroads. At the rail yards the boxcars are sorted into blocks of boxcars all heading in the same general direction. This sorting area is termed a manifest yard or "hump yard". In the hump yard the shuttle locomotives push the boxcar to a highpoint, where it is uncoupled and allowed to slowly roll downhill by the force of gravity. Along the descent, the rail tracks are switched left or right to direct the boxcar to the separated group of boxcars that are all heading to a common destination. After enough boxcars bound to a common destination accumulate to an appropriate level, they are connected to a locomotive for mainline transportation. This manifesting operation consumes hours or days until enough cars are joined. This sorting occurs not only at the originating rail yard, but it can occur at intermittent terminals along the way. The manifest sorting is one of the reasons why boxcar transportation is slower than intermodal transportation. The second reason is that the manifest trains typically do not have priority access on the main rail lines.

Exhibit 9: Typical Boxcar Dimensions

General Description	50' boxcar	50' boxcar	60' boxcar	60' boxcar
	70 ton	100 ton Hi-roof	90 ton	100 ton Hi-roof
Inside length	50'-7"	50'-6"	60'-9"	60'-9"
Inside width	9'-6"	9'-6"	9'-4"	9'-6"
Inside height	10'-11"	13'-0"	10'-10"	13'-0"
Door type	slide/plug	plug	plug	plug
Door width	10'-0"	10' or 12'	10'-0"	10'-6"
Door height	9'-10"	12'-4"	10'-2" or 10'-8"	12'-4"
Exterior length	55'-5"	58'-2"	67'-11"	67'-7"
Exterior width	10'-7"	10'-8"	10'-6"	10'-8"
Cubic capacity	5,238 ft ³	6,269 ft ³	6,085 ft ³	6,646 ft ³
Freight capacity (lbs.)	158,000	200,000	186,900	204,800

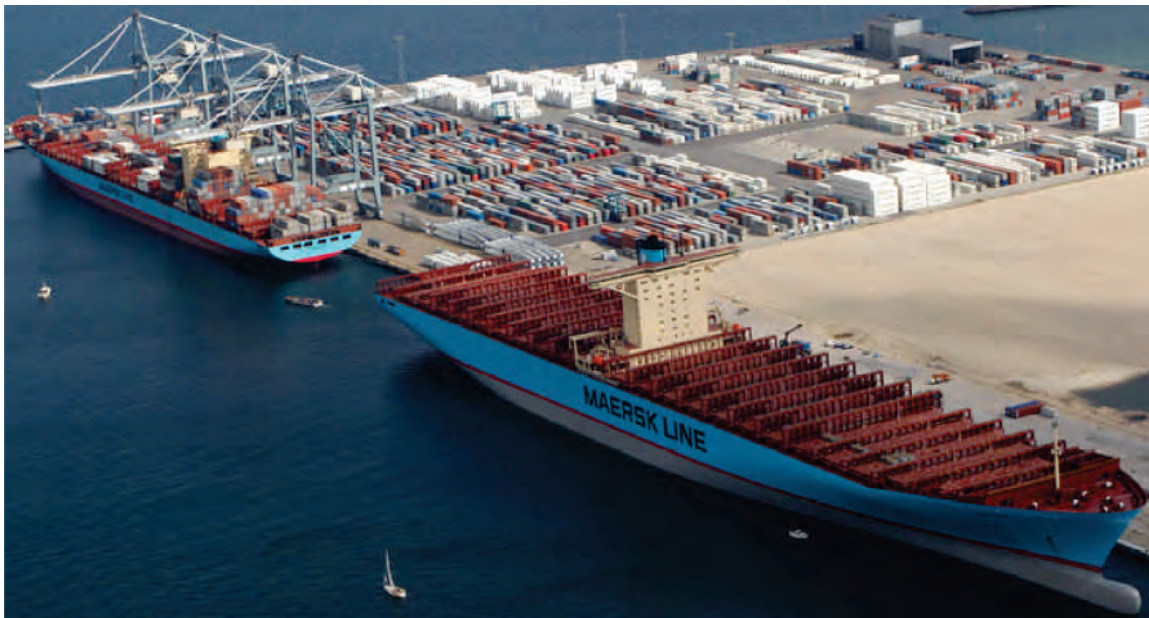
Source: CSX Railroad website

For international freight, supply chain managers must combine ocean transport of international containers with overland transport by either truck or train.

Containerships

The introduction of ocean vessels specially designed to carry the International Standards Organization (ISO) containers was a major innovation that helped to grow global multimodal transportation. In 1956 Malcolm McLean retrofitted an existing tanker vessel named “Ideal X” to exclusively carry containers between Newark, NJ and Houston, TX. It was the first containership. The Ideal X class vessels could handle 1,700 TEUs. Containerships increased in number and eventually carried trade not only between U.S. ports, but also between Asia, Europe and eventually all countries. By the late 1980s, containerships reached a configuration of approximately 5,000 TEUs. The largest vessels that can pass through the locks at either end of the Panama Canal can carry only 5,000 TEUs. Vessels that carry more than 5,000 TEUs and are too wide to pass through the Panama Canal are labeled post-Panamax vessels. Since 2000, many post-Panamax vessels have been built that are capable of carrying approximately 8,000 TEUs. After 2004, very large vessels labeled “super post-Panamax” vessels were introduced that are capable of carrying more than 8,000 TEUs (**Exhibit 10**). Super post-Panamax vessels are designed to carry 10,000 to 12,000 TEUs. The super post-Panamax vessels ply the transit lanes between ports in Asia, Asia and Europe, and Asia and some North American ports. In 2009, several vessels capable of carrying 16,000 to 18,000 TEUs were in the design and sales cycle.

Exhibit 10: A Post-Panamax Vessel Compared to a Panamax Vessel



Source: Maersk Lines

The Panama Canal is undergoing an expansion program which will lengthen, widen and deepen the locks at the Atlantic and Pacific canal terminals to enable the super post-Panamax vessels up to 12,000 TEUs to transit the isthmus.

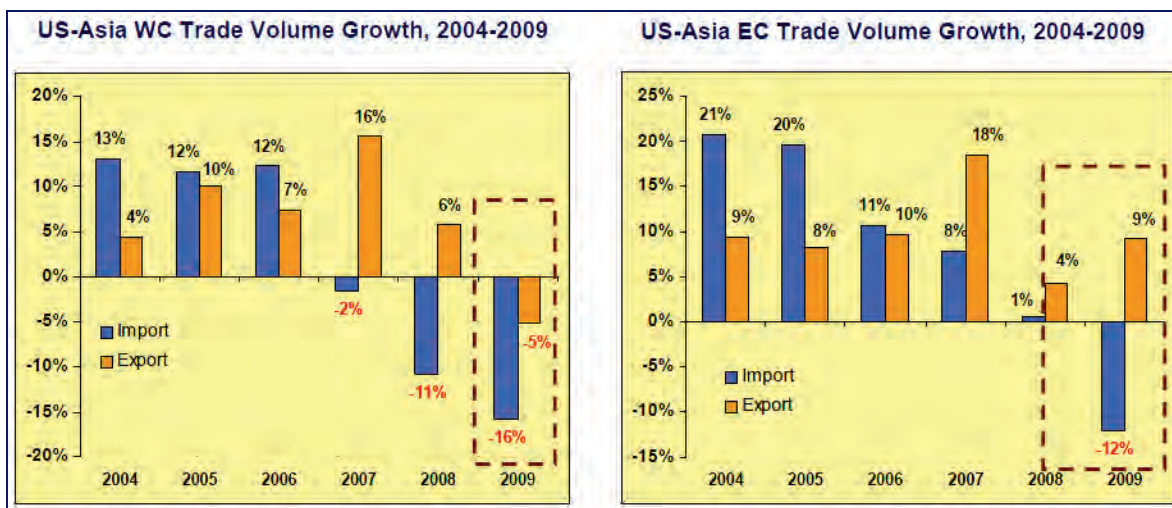
Impact of 2009 Recession on International Containerized Traffic

The 2009 recession had a severe impact on U.S.-Asian containerized freight flows. At the 2010 TransPacific Maritime Conference vessel operators explained how the recent economic slowdown had caused reductions in both imports and exports for container volumes at both the West and East Coasts in the U.S. **(Exhibit 11)**. The West Coast experienced a 16 percent import reduction and the East Coast had a 12 percent reduction. U.S. exports off of the West Coast decreased 5 percent and East Coast exports declined slightly as well. Overall world trade experienced a 9 percent decline during the recession and the decline in exports resulted in 1.2 million available empty slots on container ships, causing international vessel operators to idle portions of their fleets.

Slow Steaming

The vessel operators responded not only with idling vessels, they also slowed the speed of vessels to reduce fuel consumption. The new approach is termed “slow steaming”. Reducing average vessel speed from 23 knots down to 16 knots decreased fuel consumption by more than 50 percent. Slow steaming increased the transit times between Asia and the U.S. but this was compensated by adding two extra vessels to the trade strings to maintain the same scheduled stops in the ports (e.g., the extra vessels were in transit on the water). But the slow steaming was only utilized for vessels transiting through the Panama Canal from Asia to the U.S. East Coast because that freight is normally less time sensitive and the shippers are accustomed to longer supply chain durations. Slow steaming was not utilized for U.S. West Coast freight because shippers expect faster service through the West Coast ports coupled with fast intermodal inland rail service to the Midwest markets.

Exhibit 11: U.S.-Asia West Coast and East Coast Trade Volume



Source: 2010 TransPacific Maritime Conference, APL presentation, Piers data

Not utilizing slow steaming to the West Coast (even during a recessionary period to benefit from fuel savings) supports the concept that speed to market is

considered imperative for a portion of the freight transited from Asia to the large central markets in the U.S. Shippers have optimized their supply chains sending time sensitive freight through the West Coast gateways coupled with fast double stack intermodal unit train service and less time sensitive freight via the Panama Canal to the East Coast for truck delivery to points there. The underlying impact is that the western railroads must rapidly transit their intermodal trains from the West Coast to the central markets. **Driven by the need to improve schedule reliability and reduce the transit time of double stack intermodal unit trains, railroads have a tendency to design dedicated intermodal service schedules to run their trains through intermittent locations such as the IPH study area without stopping.** The Class I railroads often refer to double stack unit trains (110 to 120 well cars) as premium or tier one service, due to speed and cost. Second tier or third tier intermodal services like those available in Spokane are often provided by transloading containers or trailers on to flat-cars.

Transit Routes and Durations

The following maps depict the main trade routes and transit durations exports can follow between Asia and Southeast Asia from the U.S. For both inbound and outbound there are many potential combinations of Asian and U.S. ports. Examples for trade lanes depicting U.S. origins to Asian destinations were examined because they represent outbound trade, which generates jobs and income for U.S. markets. For this review of transit durations, the export origin will be Memphis because it is a major center of export activity in the U.S. with trade using the U.S. intermodal system to reach coastline ports for loading onto outbound vessels. The section explains the impacts of the Panama Canal expansion and the introduction of Prince Rupert.

Several routes to exit the U.S. were evaluated. Northern China and Singapore was one combination for the study. Rail transit durations were selected from an on-line web service: "Scheduled Distribution Services". Vessel transit duration was selected after observing several vessel operators' online schedules for averages. The study used Hanjin Shipping Company's maps and schedules. Container loading time at the ports was excluded due to numerous cut-off options for times/days, loading backlogs, and other issues which are unpredictable, but applicable to all shipments. The loading time in all ports was considered neutral for the trade routes analyzed and omitted from the total transit time. A day or two or more would actually be added to the total to account for container loading. In congested ports several days could be added.

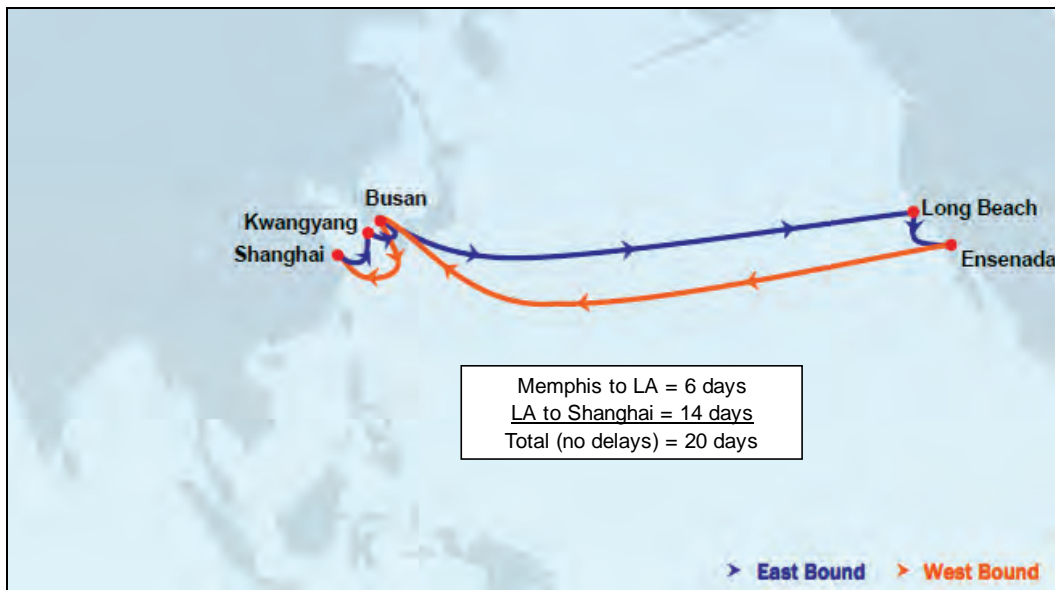
The schedules are fair estimates for best case service derived from routine ocean carrier and railroad performance but the overall duration could be slightly less or somewhat longer. There can be significant variability caused by:

- lack of truck drayage service from the consignee's location to the rail terminal
- congestion at the inland rail terminals

- lack of space for containers on the intermodal trains
- weather and congestion along the rail routes or trade lanes
- delays at the port during vessel loading

Currently the typical westbound move to Asia uses rail service from Memphis to Los Angeles where it would be loaded onto a containership (**Exhibit 12**). This journey requires six days for intermodal service from Memphis to Los Angeles and 14 days for the vessel service from Los Angeles to Shanghai.

Exhibit 12: U.S. West Coast to Shanghai



Source: Hanjin Shipping Company website schedules

There are three recent ocean transit developments that could influence shipments between Asia and U.S. ports.

Labor issues at the San Pedro Bay Ports in 2004-2005 and driver slowdowns at Oakland and Stockton, CA in 2008 prompted shippers and consignees to search for alternatives for their international trade flows. Shippers adopted a “four corners strategy” to diversify the risk of importing the majority of freight through the San Pedro Bay Ports. This strategy uses port access in the Pacific Northwest, the Atlantic East Coast and the Gulf of Mexico to compliment flows through San Pedro Bay Ports. A key example is Wal-Mart. As of 2009, Wal-Mart has diverted 85 percent of its Asian inbound freight away from the San Pedro Bay Ports to Pacific Northwest, East Coast and Gulf Port. Wal-Mart has built over two million square feet of warehouse distribution space in Houston, TX. Other large importers have followed Wal-Mart’s lead and have considered using the Panama Canal or the Suez Canal to bypass the San Pedro Bay Ports. Many have built warehouses clustered around the alternative ports along the east coast to receive their freight via all-water vessel service and avoid the west coast ports and possible inland rail delays.

Containers typically must exit the country through the same port of entry to maintain a balanced equipment flow on trains and vessels. The Panama Canal Expansion, the Suez Canal Express and the Port of Prince Rupert/CN intermodal service will increase the number of containers arriving in the U.S. Midwest, Northeast, Southeast and Mid-South via ports other than Los Angeles/Long Beach.

The net effect of the increased inbound container flows via Panama, Suez and Prince Rupert is that fewer containers will be railed between Los Angeles/Long Beach and the Pacific Northwest ports to the Asian markets. A negative impact will be fewer ISO containers available for exports for transit through the Los Angeles/Long Beach ports possibly driving up container cost. Another impact will be the increased number of empty containers for export in the Southeast and Mid-South that must exit the U.S. via Southeastern or Gulf ports, or Prince Rupert. This could possibly drive down the cost of international transportation through those ports.

A major alternative to the West Coast to Asia trade route is to use one of the U.S. East Coast ports with transit through the Panama Canal to Asia (**Exhibit 13**). This route typically requires containers to be shipped overland to Savannah or other East Coast port. Truck transit from Memphis to the East Coast ports can be accomplished in a day or two or three maximum. The vessel transit duration to Shanghai through the Panama Canal requires 28 days. Total transit duration would be in the range of 31 days, which is 10 days longer than service through Los Angeles but it would avoid the risk of delays for long-haul rail transit and congested port activities in San Pedro Bay Ports.

Exhibit 13: U.S. East Coast to Shanghai via Panama Canal



Source: Hanjin Shipping Company website schedules

Panama Canal Expansion

In 2001, the Panamanian Government commissioned a strategic assessment designed to keep the Panama Canal competitively positioned to capture increased international trade and maintain its long-term sustainability as a trade route between Asia and the U.S. east coast ports. A major reason that all-water containerized service between the U.S. east coast and Asia had not increased in prior decades was that the Panama Canal vessel transit capacity is limited to approximately 40 vessels per day in each direction (14,000 vessels per year). Canal Water Time (CWT), the duration it takes for the Atlantic-Pacific transit, averages from 15 to 30 hours – including wait time at the locks.

In 2006, the canal transit distribution by vessel type was:

- Containerships represented 35 percent of the vessels that transited the Canal
- Dry bulk ships represented 20 percent
- Vehicle carrier vessels represented 10 percent
- The remaining 35 percent was spread among liquid bulk, reefer, cruise ship, general cargo and miscellaneous (naval and research vessels, fishing vessels, barges, etc.)

Currently containerships that transit through the Panama Canal are classified as “Panamax”. Their size limitations are 965 feet in length, 106 feet in width, and have a draft limitation of 40 feet. Panamax containerships carry approximately 4,500 to 5,000 TEUs. Most freight shipped internationally is transported in FEUs. FEUs typically number in the range of 70 to 80 percent of containers on a containership. Of the eastbound containerships that transit the canal, approximately 50 percent of containerized freight was destined for the U.S. ports.

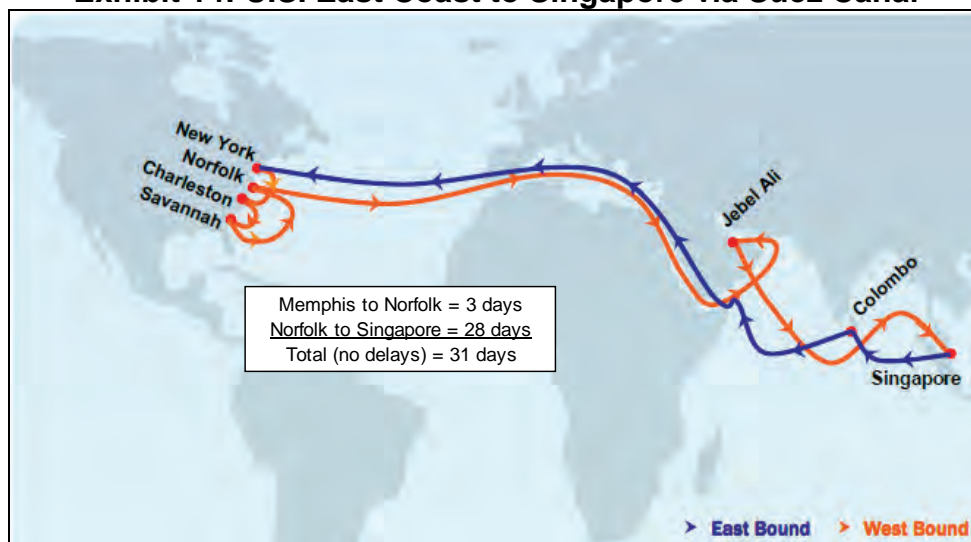
The Panama Canal Expansion project is estimated to cost \$5.2 billion. It calls for two new lock facilities – one on the Atlantic side and the other on the Pacific side. The plan is to increase the length, width and depth of the locks on both sides. Inland canal channels are to be widened to 740 feet and dredged to 51 feet deep to accommodate the next generation of larger “super post-Panamax” containerships. Super post-Panamax containerships are in the range of 1,200 feet long, 160 feet wide, and have a draft of 50 feet. The project is currently under construction and is scheduled for completion in 2015.

The Panama Canal Expansion project will not necessarily allow more vessels to transit the canal, but since much larger containerships will be able to transit the Canal the total number of containers passing through the canal each year will more than double. A super post-Panamax containership with 12,000 TEUs will carry approximately 2.5 times as many TEUs as a current generation Panamax containership. This increase in volume is projected to pull volume away from San Pedro Bay and other west coast ports.

All-water Suez Canal Service

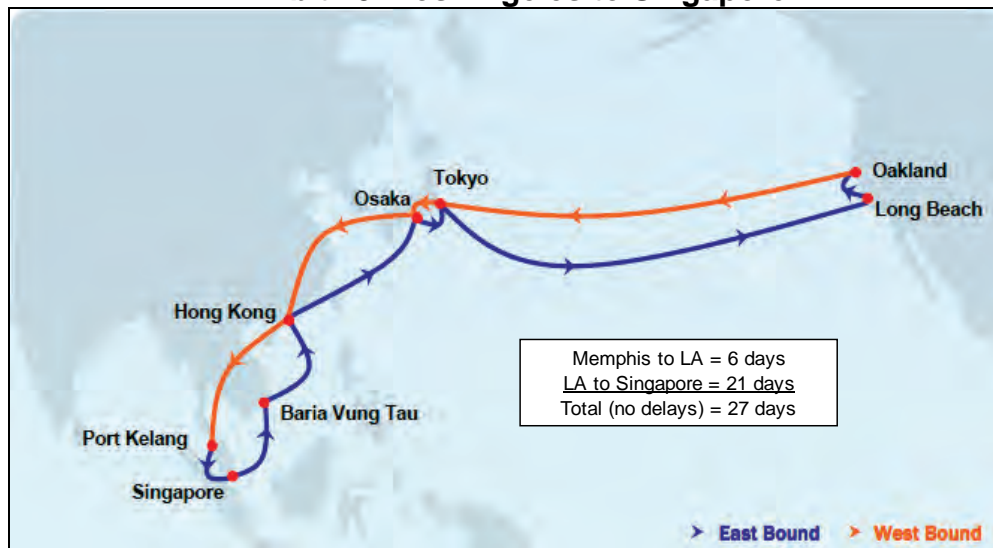
Containerships have been transiting the Suez Canal for service between Europe and Asia for decades. However, there has been only minimal service between the U.S. East Coast and Asia via the Suez Canal because the transit time was 32 days or longer. In 2007, The New World Alliance (TNWA) partners of Asian Pacific Lines (APL), Hyundai Merchant Marine (HMM) and Mitsui O.S.K. Lines (MOL) introduced an eastbound express all-water service between the U.S. East Coast and the Indian Sub Continent or Southeast Asia via the Suez Canal (**Exhibit 14**). Direct service in the Mediterranean ports reduces transit time. An eastbound transit schedule is 26 days from Savannah to India and 28 days from Savannah to Singapore. As imports from India increase over the coming years as is forecast, there will be more empty containers available for export back to the Indian Sub Continent and Southeast Asia. In comparison, a westbound shipment from the Los Angeles/Long Beach ports to Singapore (**Exhibit 15**) requires 27 days and 29 days or longer to the Indian Sub Continent. Thus, depending on a container's U.S. overland distance to either Savannah for eastbound transit to Singapore or to Los Angeles for westbound transit to Singapore, the transit duration will be similar in both directions.

Exhibit 14: U.S. East Coast to Singapore via Suez Canal



Source: Hanjin Shipping Company website schedules

Exhibit 15: Los Angeles to Singapore



Source: Hanjin Shipping Company website schedules

Port Access

The super post-Panamax vessels are limited by the number of ports on the East Coast and none on the Gulf Coast that can accommodate a 50-foot deep draft. Ports with adequate draft are New York/New Jersey, Norfolk and Savannah. The other major ports on the East Coast and Gulf Coast have channel drafts that range in depth from 35 feet to 45 feet in depth. These ports can accommodate most of the post-Panamax vessels but not the super post-Panamax vessels. New Orleans has a project in development called “Sea Point” that would be an off-shore container transfer platform enabling super post-Panamax containerships to dock against it to transfer containers to smaller vessels or to barges that can carry containers up the Mississippi River to New Orleans or further.

Although the super post-Panamax and many post-Panamax containerships may not be able to call at the ports with drafts less than 40 feet, the freight they carry can still reach the shallow draft ports by transferring containers from the large vessels to smaller vessels at container transfer terminals in the Caribbean. The top three container ports in the Caribbean are: Kingston Container Terminal (KCT) in Jamaica, rated at 2.8 million TEU, annual capacity; Free Port in Bahamas, rated at 2.4 million TEUs; and Port of Spain in Trinidad and Tobago with more than one million TEUs.

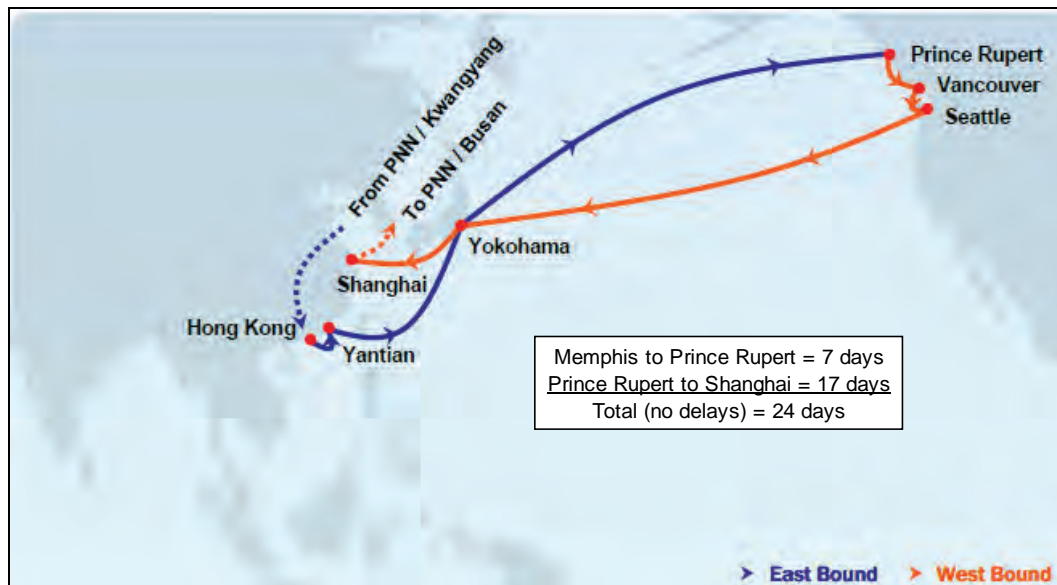
Port of Prince Rupert and CN Rail Service for the Midwest

A recent improvement in containerized service between northern Asia and the U.S. rounds out the four corners strategy. It was the introduction of vessel service calling at the Port of Prince Rupert in British Columbia combined with express double-stack intermodal rail service to Chicago provided by Canadian National (CN) Railroad. The service commenced in late 2007. In 2008 it handled more than 180,000 TEUs and in 2009 it handled 260,000 TEUs. Prince Rupert was the only port in North America to experience growth during the current

recession, a testimony to its Shanghai/Chicago express business model. The port's start-up phase was designed to handle 500,000 TEUs annually. In Phase II, the port will be expanded to enable the handling of two million TEUs per year. The inbound service was designed with an emphasis on speed to expedite consumer freight from China to Prince Rupert in 11 days on COSCO and Hanjin containerships and from Prince Rupert to Chicago on CN's express intermodal trains in four days (103 hours with over 95 percent consistent performance) for a total of 15 days. Further service on to Memphis requires an additional two days.

The return journey from Memphis to Prince Rupert (or Seattle) requires seven days and the vessel journey to China (**Exhibit 16**) requires 17 days for a total of 24 days. This is four days longer than transit through the ports in Los Angeles; however, port processing time in Prince Rupert could require less time because the CN has an on-dock rail terminal. Hanjin is exploring a variation on the string which would provide a last port of call back in Prince Rupert on the return journey, enabling a quicker line-haul from the Port of Prince Rupert to Asia. Whereas all inbound international containers are loaded with freight, only about 30 percent of the containers return to Prince Rupert loaded with exports such as paper and forest products, dry grains, chemicals, processed food, and aluminum. The other 70 percent are returned empty to Asia.

Exhibit 16: Prince Rupert to Shanghai



Source: Hanjin Shipping Company website schedules

The net effect of shifting more containers to the East Coast via the Panama Canal is that the two western Class 1 railroads (UP and BNSF) may seek new business opportunities into and out-of the Pacific Northwest. To maintain high utilization of existing assets it is possible they could explore expanded services at intermittent (second or third tier) locations such as the IPH study area. However, the impact of the change in container flows may not become evident until years after the Panama Canal Expansion project is complete.

STAKEHOLDER VIEWS ON IPH MODAL ASSETS

As part of the study effort the consultant team conducted nearly 50 interviews with a wide array of private sector freight interests including shippers, service providers and public sector stakeholders. In addition, three regional forums were held during December of 2009. These half-day forums in Pullman, WA, Sandpoint, ID and Spokane Valley, WA were attended by interested citizens, business representatives, local governments and elected officials.

In general most businesses that the consultant team spoke to were satisfied with the access to and level of services available across the modal spectrum within the IPH study area. Comments about levels of service were concentrated primarily around the availability and cost of trucking services, which was sometimes seasonal. Because the IPH study area is a producer region with more outbound than inbound freight, shippers often have to pay premium rates because carriers must “deadhead” or travel empty to pick up loads. Public officials interviewed by the consultant team seemed to express more concerns with access to rail services, than most private sector shippers that were interviewed.

Strengths, Weaknesses, Opportunities and Threats

Ultimately the consultant team visited in-person or by phone 48 public and private sector entities. The list of businesses and public sector entities interviewed included:

- Major businesses (shippers/receivers) in key industries that rely on the region’s transportation system
- Service / utility providers
- Major carriers from trucking and rail modes
- Air freight forwarders and integrated air cargo companies
- Operators of major intermodal / freight facilities (e.g., rail yards, airports)
- Warehouse and distribution facilities
- Logistics service providers
- Metropolitan Planning Organizations (MPOs) and local governments
- State and provincial governments

Participants were asked to identify the greatest strengths and the greatest weakness of the regional transportation system. The responses as presented by those who were interviewed are summarized below as Strengths, Weaknesses, Opportunities and Threats.

Strengths:

- Geographically close to the border with Canada
- Less Than Truckload (LTL) services in the region and the level of competition among trucking companies serving the regional hub of Spokane
- The greatest region transportation asset is I-90, we also have a great airport and good rail service
- The size of the community and its people
- The proximity of the Inland Pacific Region to the Port of Seattle is one of the major transportation strengths
- The ability to use trucks at the 105,500 lb. weight limit was one of the biggest strengths of the region, as many other regions of the U.S. are limited to 80,000 lbs.
- Two Class I railroads provide service and The Park (Spokane Business & Industrial Park) in Spokane Valley is unique in that not many industrial parks are served by two Class I railroads
- Trucking service in the region is relatively good and convenient
- Overall rail service is good
- Rail service from the east has improved a lot over the past eight years

Weaknesses

- Lack of backhauls / lane balance in the region results in higher trucking costs; one of the region's biggest challenges is the lack of backhauls – "only 10-15 percent of our outbound trucks return loaded." "The constant search for backhauls to balance shipping lanes is challenging and costly."
- Containers coming into Spokane from the coast go back empty
- The north/south corridor is the biggest issue – need a better connection to Canada. The region needs a north-south freeway. The north-south freeway started in the 1960's and its still not finished, it is a stretch that should take 6 minutes to drive 6 miles, instead it takes 45 to 50 minutes
- The most challenging transportation issue is carrier availability; the backhaul issue makes it difficult to attract carriers to remote areas
- Seasonality of agriculture steals drivers and equipment from the available pool
- Overall conditions of the regional road network (near Spokane) and winter maintenance
- Bigelow Gulch: truck drivers avoid the road in the winter due to safety concerns

- Market Street is one example of a local street that is difficult to negotiate due to intersection design
- Rail rates are poor and getting worse
- The lack of a double stack intermodal facility is the greatest weakness as currently rail containers are transloaded from flatbeds
- A longer runway that would enable direct international flights from Asia to land at Spokane International Airport
- Trucking shipments from Seattle over the mountain passes in winter often causes delays and introduces variability in the supply chain
- Getting drivers to and from the plant, congestion and lack of access management on routes between major loading points and I-90
- Low track weight on UP from Spokane to Plummer (18 miles at 263,000 lbs.)
- Container supply & adequate facilities
- Better cell phone coverage in market area would be really good: drivers rely on them, and communications are key
- Load limits on federal system. Ability to carry more freight per truck (CA limit is 80K lbs) / various states have various limits
- Eastern connections for inbound products are costly (from Michigan, Connecticut, South Carolina, and Chicago)

Opportunities

- Increase regional freight mobility among national/international trade corridors, urban by-passes, and other freight dependent networks (Note: *the discussion comment focused on the highway network*).
- Develop a north/south corridor to equalize trade/lane balance with Canadian trade partners in British Columbia and elsewhere in Canada
- Create interoperability between major regional truck routes (consistency in regulations, geometric design, etc.)
- Continue to improve and develop communications and technology applications for fostering efficient freight transportation in the region
- Preservation of existing short line and regional railroads to facilitate economic development and improved Class I rail efficiency
- Preserving the Spokane airport as a regional airfreight hub for the IPH study area
- Creation of a regional comprehensive master plan for the entire IPH influence area

- Transporting over-dimension loads of oil rig and other heavy equipment through the region
- Establishing a regional freight shippers group
- Develop inbound market for goods coming into the Ports of Lewiston, Whitman County and Clarkston. Currently many barges and containers arrive empty

Threats

- Truck parking issues along I-90
- Access and design issues (Dover Bridge height and weight restrictions, Trent Avenue, Bigelow Gulch, Market Street in Francis, Airway Heights connections on Highway 2, and others) at freight generating facilities
- Border crossing constraints (hours of operation, planning for future needs, etc.)
- Project funding streams and project prioritization schemes within the region
- The seasonality of safely moving freight within the IPH study area
- Local airport easements
- Railroad grade crossings impact on general traffic stream safety
- Utility, broadband, and other general services constraints in rural areas

Shippers and carriers all had some comments or concerns about the modes they used or provide. Their concerns will be discussed in more detail throughout the remainder of this working paper. In addition, modal issues discovered during the course of data analysis and research conducted for the study will also be addressed. **Appendix A** provides an extensive summary of the stakeholders contacted and their comments regarding the freight transportation systems in the IPH study area.

GATEWAYS SERVING THE IPH STUDY AREA

During stakeholder outreach activities the issue of border crossings was raised by a variety of shippers and carriers, most often in connection with the need for an improved north-south highway corridor. A number of shippers and carriers also indicated that they avoided having to ship goods or send drivers across the border into Canada due to increasing levels of paperwork and delays that can be encountered when the required paperwork is not in order. At least one carrier noted that while improvements in capacity were underway at the Eastport/Kings Gate crossing at Eastport, Idaho, currently there are only eight parking spots for trucks at this crossing.

During interviews a number of stakeholders in Washington expressed their desire for an improved 24-hour crossing at Laurier. During the Spokane Valley Stakeholders Forum on December 3, 2009 a delegation from Trail, B.C. also presented a coordinated interest in the development of a north-south corridor that would follow US-395 north to the crossings near Northport, WA. The proposal that US-395/SR-22 be the corridor of choice was based on a variety of claims:

- The Canadian government is investing millions of dollars to improve the corridor near the North Port crossing in Canada as part of its Asian-Pacific Gateway Corridor initiative.
- With nine miles of additional track and a cooperative agreement between the Canadian Pacific Railway and BNSF, this could eventually become a rail corridor linking U.S. railroads to the port at Prince Rupert Sound.
- The proposed route is the shortest distance to a number of large aquifers that are the source of hydro-electric power generation. These aquifers could eventually be diverted to provide potable water to the Southwestern U.S. becoming a major energy corridor to the Pacific Northwest.
- This route would save millions of dollars over the proposed “black-fiber” routing of sensitive defense and intelligence fiber optic networks from the U.S. lower mainland to Alaska.

The Wilbur Smith Associates research team looked into the validity of these claims and found little substantive evidence to support these statements. For instance:

- Discussions with provincial transportation officials indicated that they were keenly aware that the West Kootenay–Northeast Washington Joint Highway Corridor Study had resulted in a negative cost/benefit ratio for improvements on the Washington side of the border and that as a result no improvements in Washington were currently planned. British Columbia officials noted that with no improvements being made on the U.S. side of the border in Washington, improvements in support of the Pacific Gateway

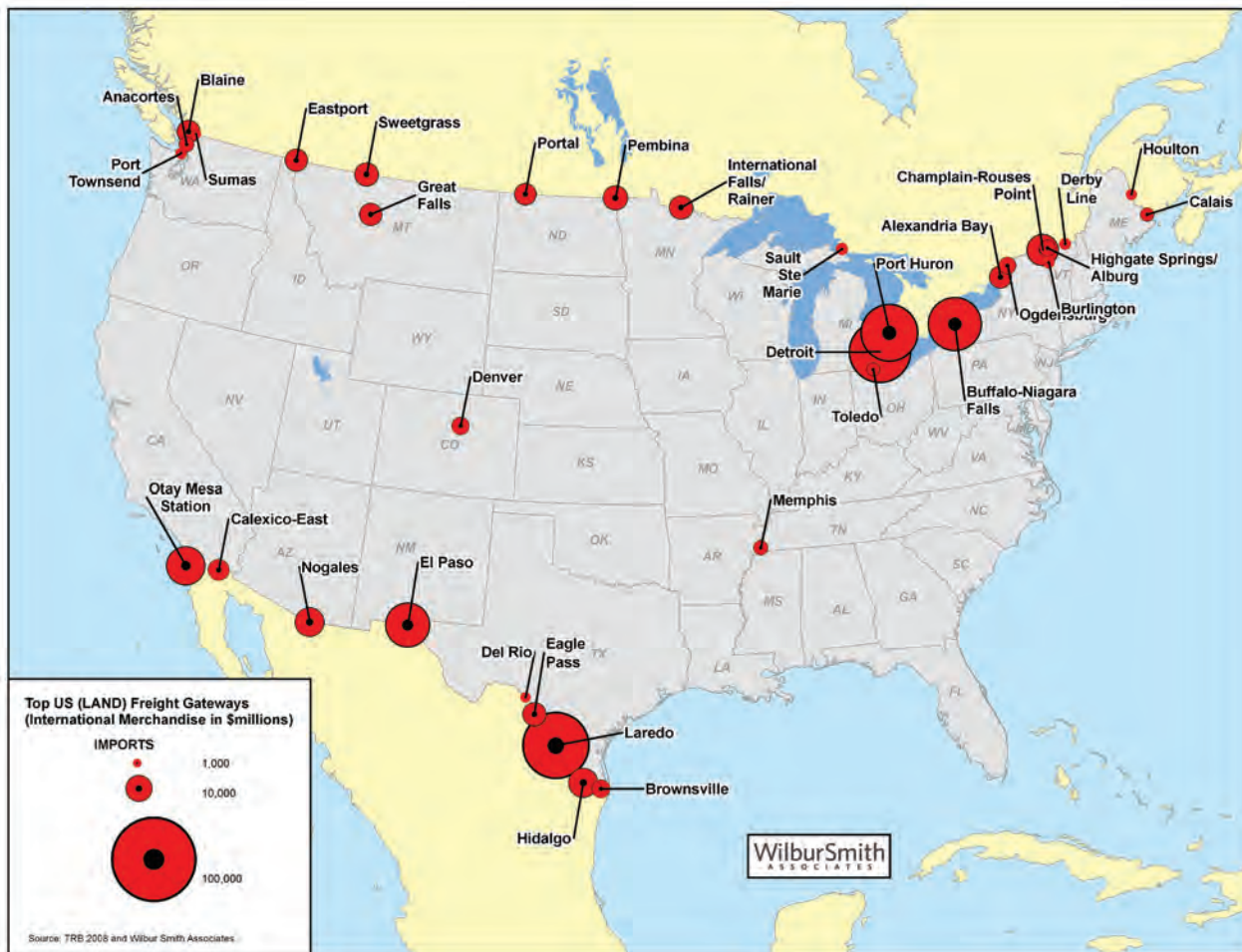
Corridor strategy were being directed to Kingsgate and Provincial Highway 3 in the border region.

- Discussions with Canadian Pacific Railway officials indicated that there was no hope that their railroad would ever access the port at Prince Rupert Sound. Their closest rail line is currently hundreds of miles to the south. BNSF also indicated that they were not aware of any connections that could provide them access to Prince Rupert.

Previous working papers discussed the importance of the North American Free Trade Agreement and in particular trade with Canada for both the U.S. and the IPH study area. **Exhibits 17** and **18** show the largest land-based border crossings in terms for both import and export value. The Eastport, ID border crossing currently is the only crossing in the IPH study area that ranks among the top 125 international gateways in the U.S. (nearly one-half of the total value flowing through Eastport is derived from petroleum products transported by pipeline).⁴ The value of imports flowing through the Eastport crossing is comparable to a number of other northern border crossings in the U.S., such as Blaine, WA; Sweetgrass, MT; Pembina, ND; and, International Falls, MN. However, the value of exported merchandise flowing through Eastport is considerably less than the import values, and less than most other northern border crossings.

⁴ Bureau of Transportation Statistics, North American Transborder Freight Data:
http://www.bts.gov/programs/international/transborder/TBDR_FastFactsTGMPC.html

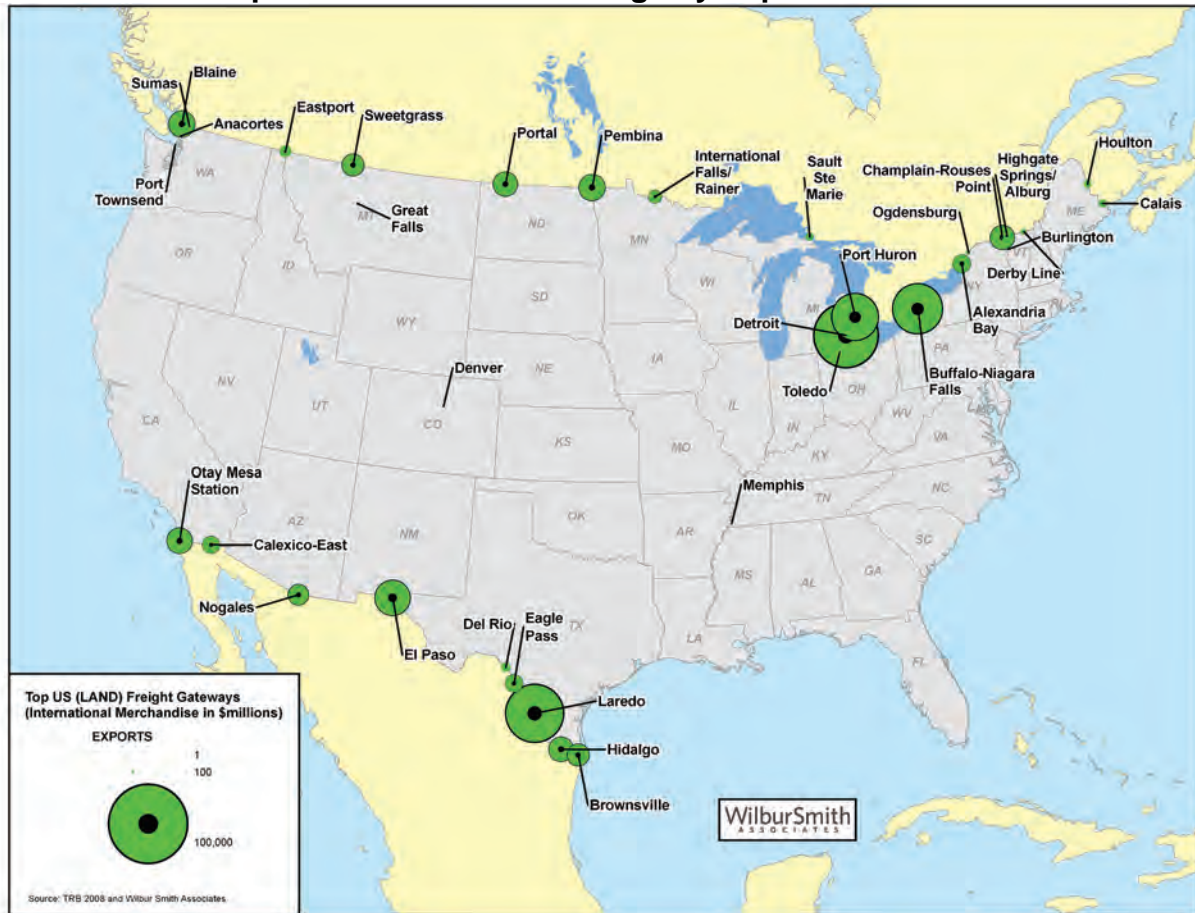
Exhibit 17: Top NAFTA Border Crossings by Import Merchandise Value



Notes: All data—Trade levels reflect the mode of transportation as a shipment enters or exits a U.S. Customs port. Flows through individual ports are based on reported data collected from U.S. trade documents. Low-value shipments (imports less than \$1,250 and exports less than \$2,500) and intransit shipments are not included in trade data.

Source: BTS Transborder Freight Data, as of April 2009.

Exhibit 18: Top NAFTA Border Crossings by Export Merchandise Value

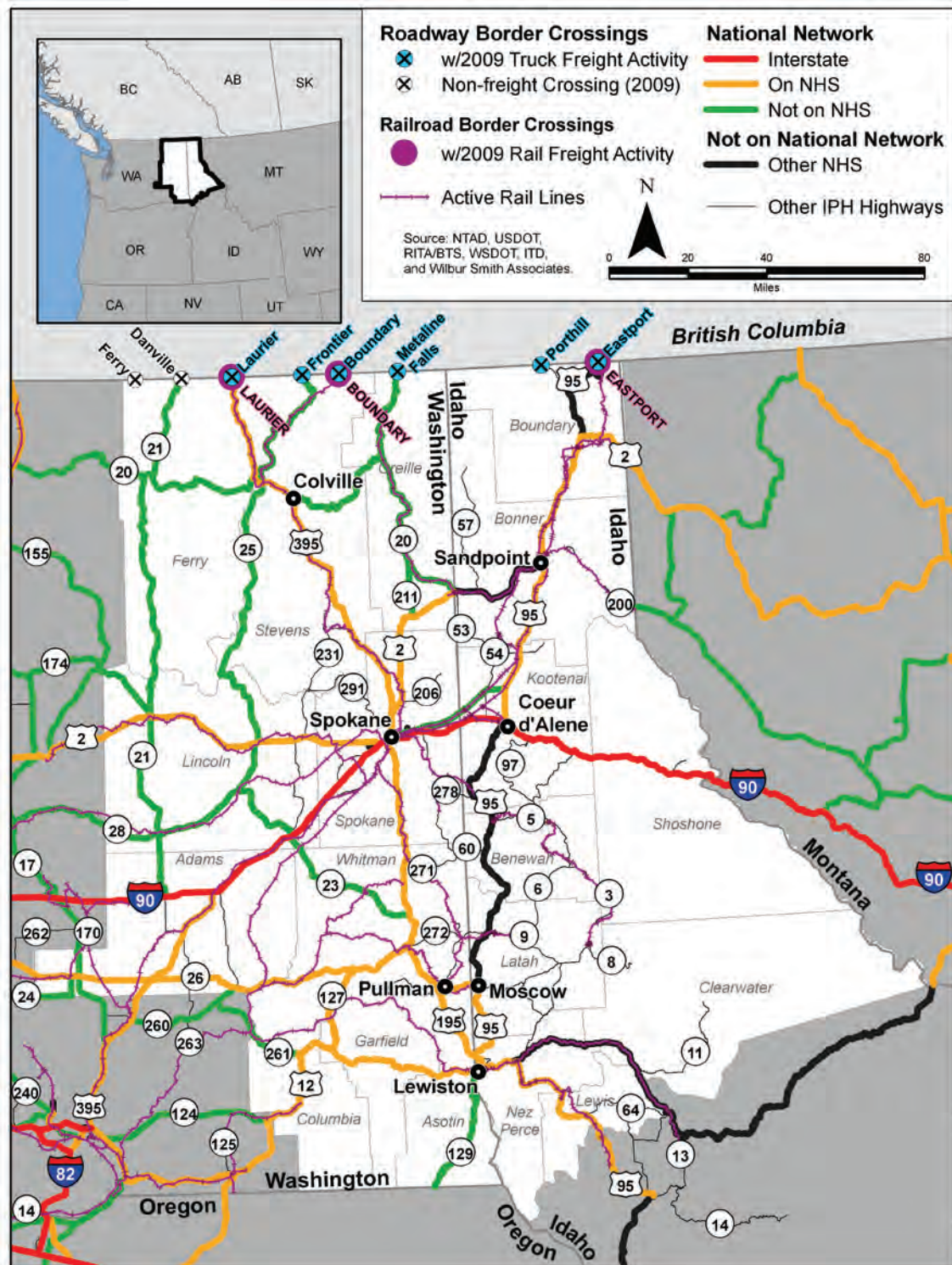


Notes: All data—Trade levels reflect the mode of transportation as a shipment enters or exits a U.S. Customs port. Flows through individual ports are based on reported data collected from U.S. trade documents. Low-value shipments (imports less than \$1,250 and exports less than \$2,500) and intransit shipments are not included in trade data. Source: BTS Transborder Freight Data, as of April 2009.

Border Crossing Activity and Constraints

Along the study area border with Canada there are a total of six international border crossings showing recent truck container activity in 2009. Washington maintains four of the six border crossings and Idaho maintains the remaining two. Three of the four Washington crossings are served by highways: US-395 at Laurier/Cascade, British Columbia (BC); SH-25 at Frontier/Paterson, BC; and, SH-31 above Metaline Falls at Nelway, BC. An additional crossing using local roads is located at Boundary/Waneta, BC, northeast of Northport. There are two additional border crossings in Washington that show only vehicle, pedestrian and/or bus activity in 2009. These crossings include Danville/Grand Forks, BC serviced by SH-21 and Ferry/Midway, BC accessed via Customs Road/CR-501. Both of the Idaho border crossings in Idaho are served by highways: US-95 at Eastport/Kingsgate, BC and SH-1 at Porthill/Rykerts, BC. **Exhibit 19** shows the location of all the border crossings within the IPH study area with respect to the National Network and NHS.

Exhibit 19: IPH Study Area - Border Crossings



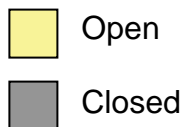
Source: National Transportation Atlas Database (NTAD) 2009, USDOT, WSDOT, ITD, RITA-BTS, and Wilbur Smith Associates.

In terms of 2009 train crossing activity, three international rail border crossings are located along the IPH study area boundary with Canada. The two Washington rail crossings served by Kettle Falls International Railway (KFR) are found at Laurier/Cascade, BC and Boundary/Waneta, BC. The one Idaho rail crossing is served by the Union Pacific Railroad (UP) at Eastport/Kingsgate, BC.

Among the border crossing sites, only the Frontier, WA/Paterson, BC (SH-25) and Eastport, ID/Kingsgate, BC (US-95) stations provide 24-hour service year round (**Exhibit 20**). Despite this, activity is highest at the Porthill and Eastport, ID locations. Average annual daily traffic (AADT) volume reaches about 670 vehicles per day at Eastport and 530 vehicles per day at Porthill. None of the Washington crossings serve daily volumes exceeding 350 vehicles per day.

Exhibit 20: Border Crossing Hours of Operation

Border Crossing Hours of Operation					AM											PM													
IPH Crossings (East to West)	Facility	Open	Close	Days	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	
ID-Eastport (Kingsgate, BC)	US-95	24 hours		7																									
ID-Porthill (Rykerts, BC)	SH-1	7:00 AM	11:00 PM	7																									
WA-Metaline Falls (Nelway, BC)	SH-31	8:00 AM	12:00 AM	7																									
WA-Boundary (Waneta, BC)	Northport- Boundary Rd	9:00 AM	5:00 PM	7																									
WA-Frontier (Paterson, BC)	SH-25	24 hours		7																									
WA-Laurier (Cascade, BC)	US-395	8:00 AM	12:00 AM	7																									
WA-Danville (Carson, BC)	SH-21	8:30 AM	12:00 AM	7																									
WA-Ferry (Midway, BC)	Customs Rd- CO-501	9:00 AM	5:00 PM	7																									

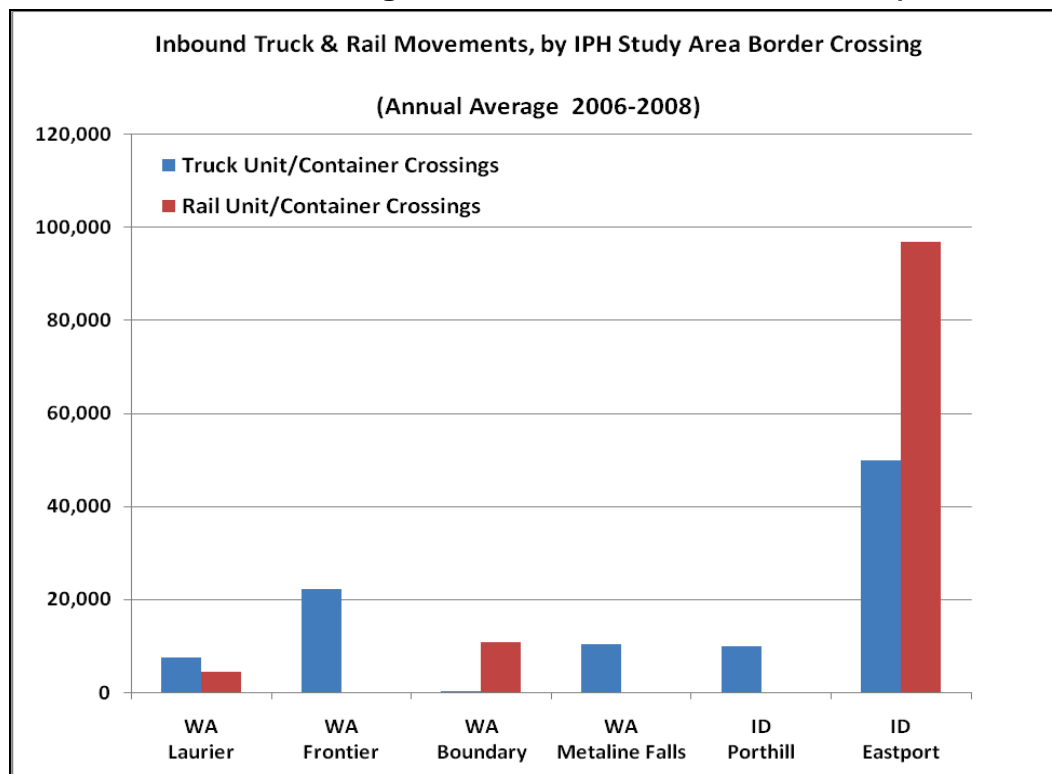


Source: U.S. Customs and Border Protection <http://apps.cbp.gov/bwt/>

The BTS Border Crossing/Entry Data also gives counts for Truck and Rail container crossings (**Note: Container Crossings is defined by BTS as any conveyance entering the U.S. used for commercial purposes, full or empty**). The classification of inbound “containers” includes: stakebed truck, truck with a car carrier, van, pickup truck/car, flatbed truck, piggyback truck with two linked trailers/containers (i.e. 2 containers), straight truck, bobtail truck, railcar, rail flatbed car stacked with containers (e.g. if there are multiple containers on a rail car each is counted as a unit), and tri-level boxcar with multiple containers inside (each is a container unit). The series only includes inbound shipments. Customs and Border Protection does not collect comparable data on outbound crossings.

The inbound BTS border crossing data for commercial container/units is shown in the bar chart of **Exhibit 21**. Among the study area ports of entry (POE's) annual commercial truck and rail crossings volumes are highest at the Eastport, ID (US-95). On an average basis, truck crossing volume at Eastport is approximately 50,000 container/units crossings per year, during the period 2006 to 2008. This volume represented 50 percent of the six ‘active’ study area crossings with documented inbound truck container activity in 2009. The next highest truck volume POE is Frontier, WA/Paterson, BC (SH-25) with an annualized volume of 22,287 crossings, representing 22 percent of all IPH study area inbound truck volume. Two crossings; Danville and Ferry recorded zero inbound truck container counts in the BTS data series.

Exhibit 21: Border Crossing Percent Share Inbound Volume (Truck & Rail)



Source: BTS Border Crossing/Entry Data, 03/23/2010
http://www.bts.gov/help/border_crossing_entry_data.html

Together the two Idaho POEs; Porthill, ID (SH-1) and Eastport (US-95) crossings represent 60 percent of all inbound truck container crossings in the IPH study area. The Washington POEs at Laurier, WA (US-395), Frontier, WA (SH-25) and Metaline Falls combined represent the remaining 40 percent of inbound truck container crossings in the study area.

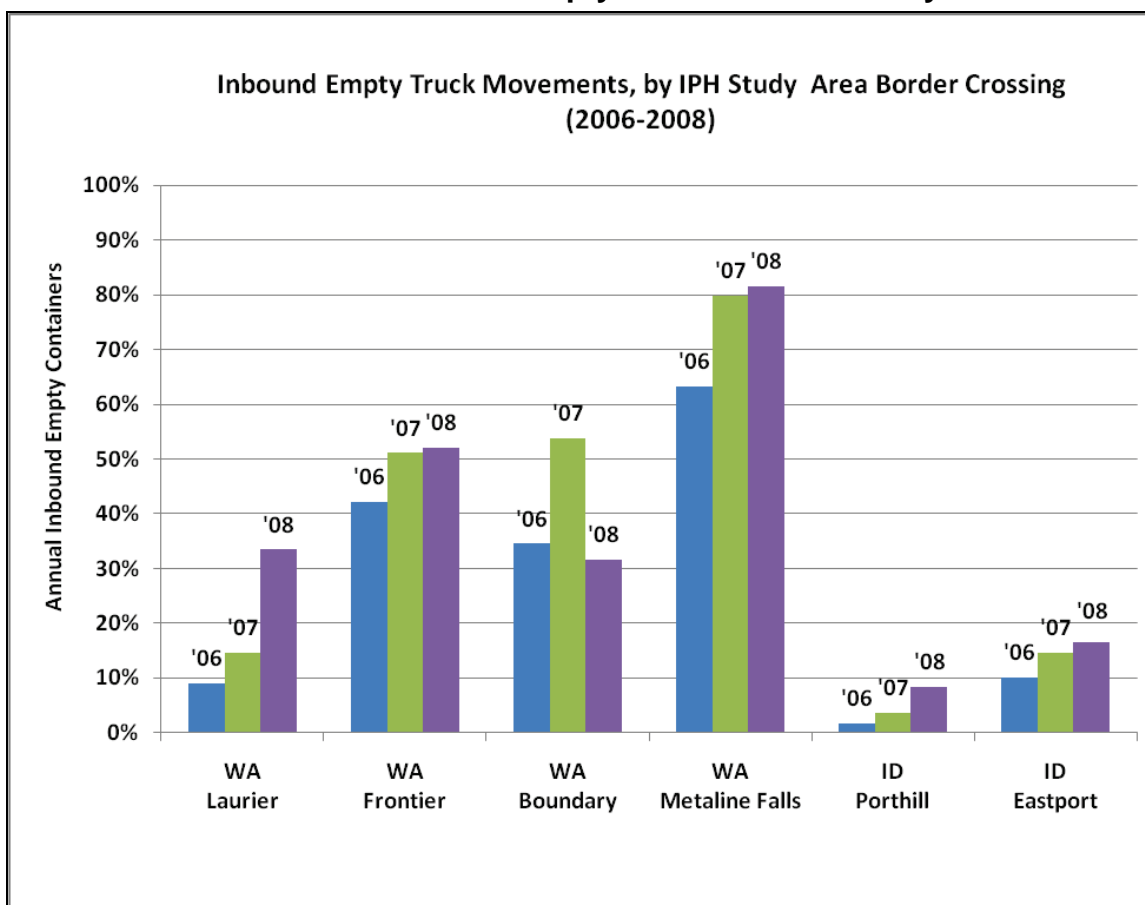
For rail container/unit crossings, the Eastport POE (Union Pacific) represents 86 percent of all inbound railroad volume. The remaining rail volumes are split between the Boundary WA POE (Kettle Falls Railroad) 10 percent, and Laurier (Kettle Falls Railroad), 4 percent.

Another aspect of border crossing selection efficiency is the amount of empty or “deadhead” traffic. All motor carrier operations perform with a certain degree of empty miles, where the carrier moves empty equipment with no related revenue to offset cost. The higher the imbalance of loaded units moving in one direction, compared to empty units moving in the opposite direction, the greater the possibility alternative routings will be sought. The idea being that alternative routes (via alternative POEs), while possibly generating more circuitous miles and cost, may create a more balanced flow. At POEs where the percentage of empty movements approach zero, traffic is more likely to continue utilizing the crossing.

Exhibit 22 identifies the percent of inbound empty truck units at each of the border crossings within the study area, for the available (full-year) counts 2006 to 2008. Eastport, ID and Porthill, ID consistently had the lowest percentage of empty truck movements over the three year time period.

The percentage of empty trucks moving inbound through Laurier, WA has more than doubled since the onset of the recession. All other crossings show a similar trending increase in empty truck movements with the exception of Boundary which shows a considerable spike in 2007. This is reflective of a relatively large increase in truck container crossing counts in 2007 (442) compared with 84 in 2006 and 38 in 2008. As a whole the Boundary crossing only constitutes 0.2 percent of all truck container crossing counts in the study area.

Exhibit 22: Percent Inbound Empty Truck Movements by IPH POE



Source: BTS Border Crossing/Entry Data, 03/23/2010
http://www.bts.gov/help/border_crossing_entry_data.html,

A summary of the commodities shipped through the Washington border crossings was conducted in 2007.⁵ It notes the highly variable nature of commodity flows, depending on shifting commodity prices and modal competition. The significant findings of the survey shown below while varied tend to be associated with raw materials, heavy manufacturing and chemicals:

- Lower level usage of the Laurier crossing on US-395 is partially due to the lower populations in close proximity and a lack of related consumable needs. Wood products are the predominant commodity at Laurier.
- The preference for the Frontier crossing may be related to the smelting and metals refining industries located in southern British Columbia in proximity to this crossing. Chemicals and wood products dominate at the Frontier crossing.
- The primary commodities observed at Metaline Falls include primary and fabricated metal products, and wood products.

⁵ *Projections of Washington-British Columbia Trade and Traffic by Commodity, Route, and Border Crossing*, H Galloway et al, Strategic Freight Transportation Analysis, WSU, May, 2007)

- Commodities moving across the border at Boundary are dominated by chemicals and machinery.

Based on BTS TransBorder Freight Data, the Eastport border crossing consistently ranks among the top 20 U.S./Canada commercial ports of entry by dollar volume, (however nearly one-half of the total value flowing through Eastport is derived from petroleum products transported by pipeline).⁶ Truck routing is heavily influenced by cost, as a function of total VMT. The shortest identified, truck friendly route selection incorporates this crossing and is identified with movements between the Edmonton and Calgary Alberta markets and the Oregon and California markets. The primary products crossing the border include lumber and wood products, livestock, and fertilizer.

The Union Pacific Railroad also crosses the international border at Eastport, ID. Daily train traffic averages three at this crossing. On an annual basis, over 68,000 containers enter at this crossing. Primary commodities shipped by rail include petroleum products, propane, potash, and lumber.

A former BNSF line, now operated by the Kettle Falls International Railroad (KFR) serves rail traffic between Washington and British Columbia, over both the Boundary and Laurier crossings (**Exhibit 23**). KFR owns and operates over 160 miles of former Burlington Northern Santa Fe trackage in Northeastern Washington State and Southeastern British Columbia. KFR operates from the BNSF interchange at Chewalah, WA to Columbia Gardens, BC. A second line operates from Kettle Falls, WA to Grand Forks, BC, before crossing the border again to reach San Poil, WA. KFR has a very diverse traffic base, including lumber, plywood, wood products, minerals, metals, fertilizer, industrial chemicals, and abrasives.⁷ Continuing service remains with the BNSF.

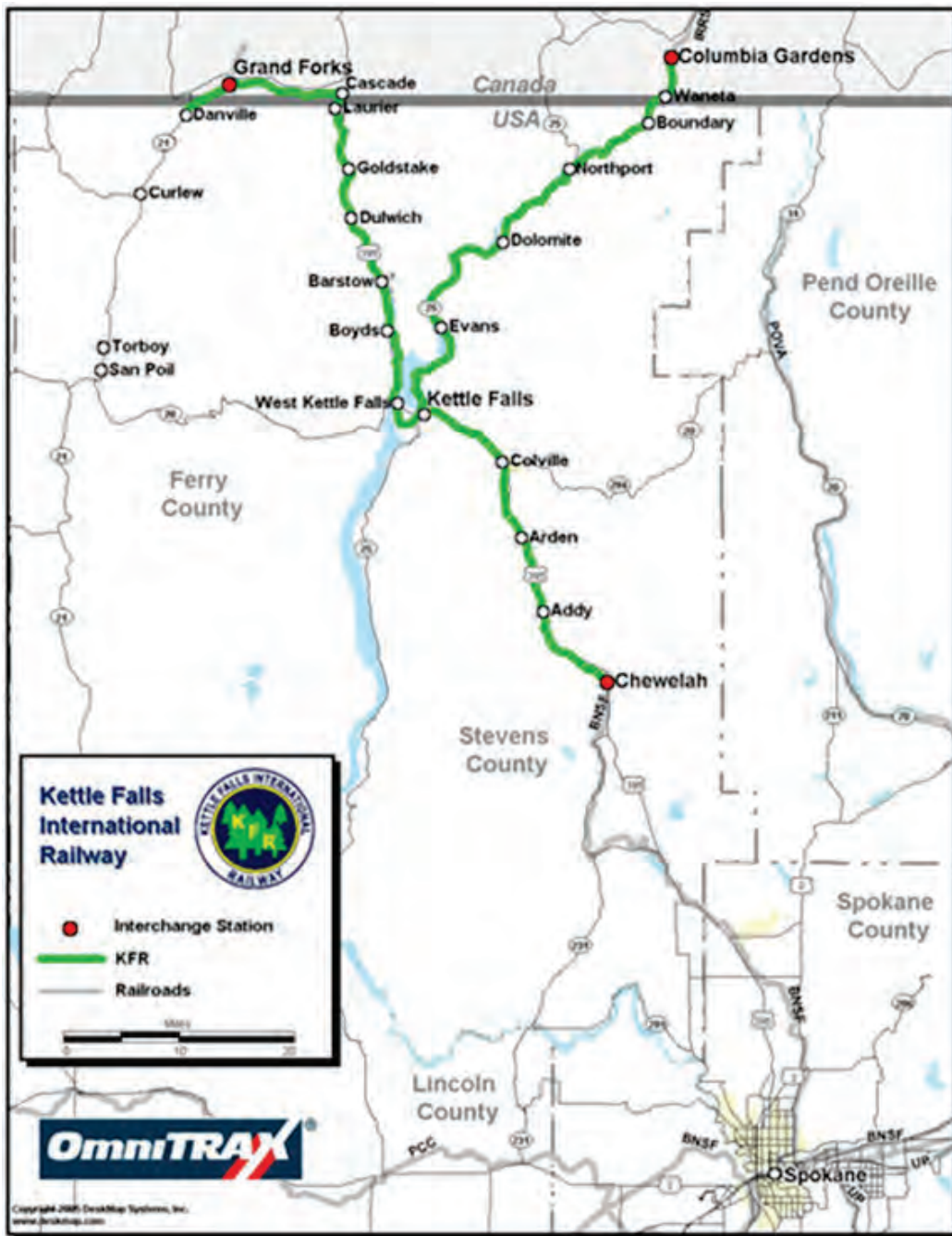
On October 31, 2008 the KFR submitted an intention to abandon the KFR rail line between mile post (MP) 34.3 near Laurier, WA and through Grand Forks, BC at MP 47 to and including MP 48.8 near Danville, WA, including all yard tracks, sidings and spur tracks. After the notice was filed, Pacific Abrasives and Supply, Inc. a Canadian firm in Grand Forks, BC commissioned a study of the impacts on the regional economy if the abandonment proceeds. The study estimated that if the KFR line is abandoned, current shippers on the rail line will experience an increase in shipping costs of \$2.7 million to \$7.3 million per year (Canadian \$), with a project loss in GDP to the regional economy of \$30 million over ten years.⁸

⁶ Bureau of Transportation Statistics, North American Transborder Freight Data: http://www.bts.gov/programs/international/transborder/TBDR_FastFactsTGMPC.html

⁷ http://www.omnitrac.com/rail_kfr.aspx#, 03/11/2010

⁸ *A Study of: The Economic Impacts of the Proposed Abandonment of the Kettle Falls International Railway Line (KFR) Between MP 34.3 to MP 48.8 (A Canadian Perspective) Final Report.* Lochaven Management Consultants, November 9, 2009.

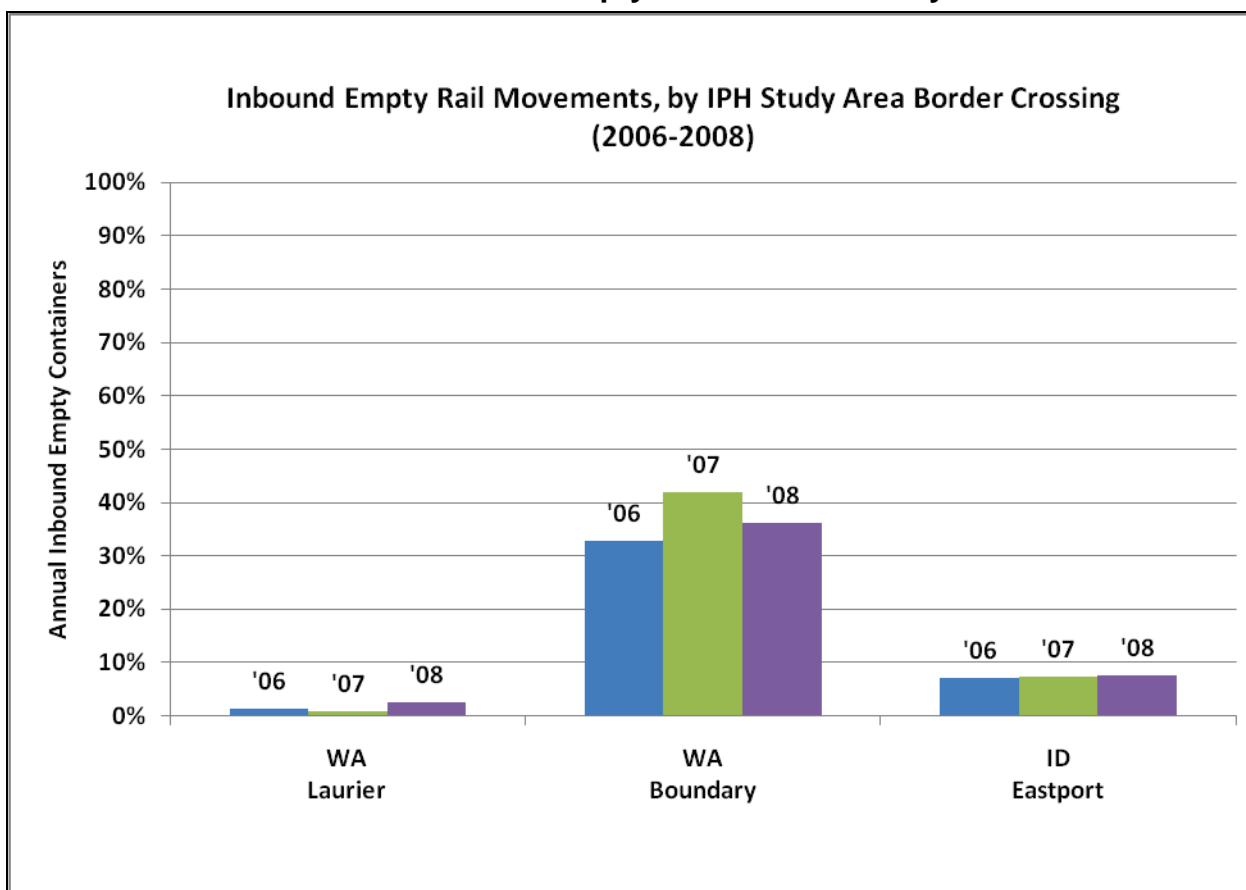
Exhibit 23: Kettle Falls International Railroad (KFR)



Source: OmniTRAX, Inc.

The rail crossing at Eastport continues to perform in a balanced environment, related to percent of empties (**Exhibit 24**). Boundary shows a spike in 2007 which is a more significant finding for this crossing with respect to rail. Boundary represents the second highest rail crossing in the study area with 10 percent of the activity during the period 2006 to 2008 (**Exhibit 21**). The Eastport crossing accounts for 86 percent while the Laurier crossing accounts for only 4 percent.

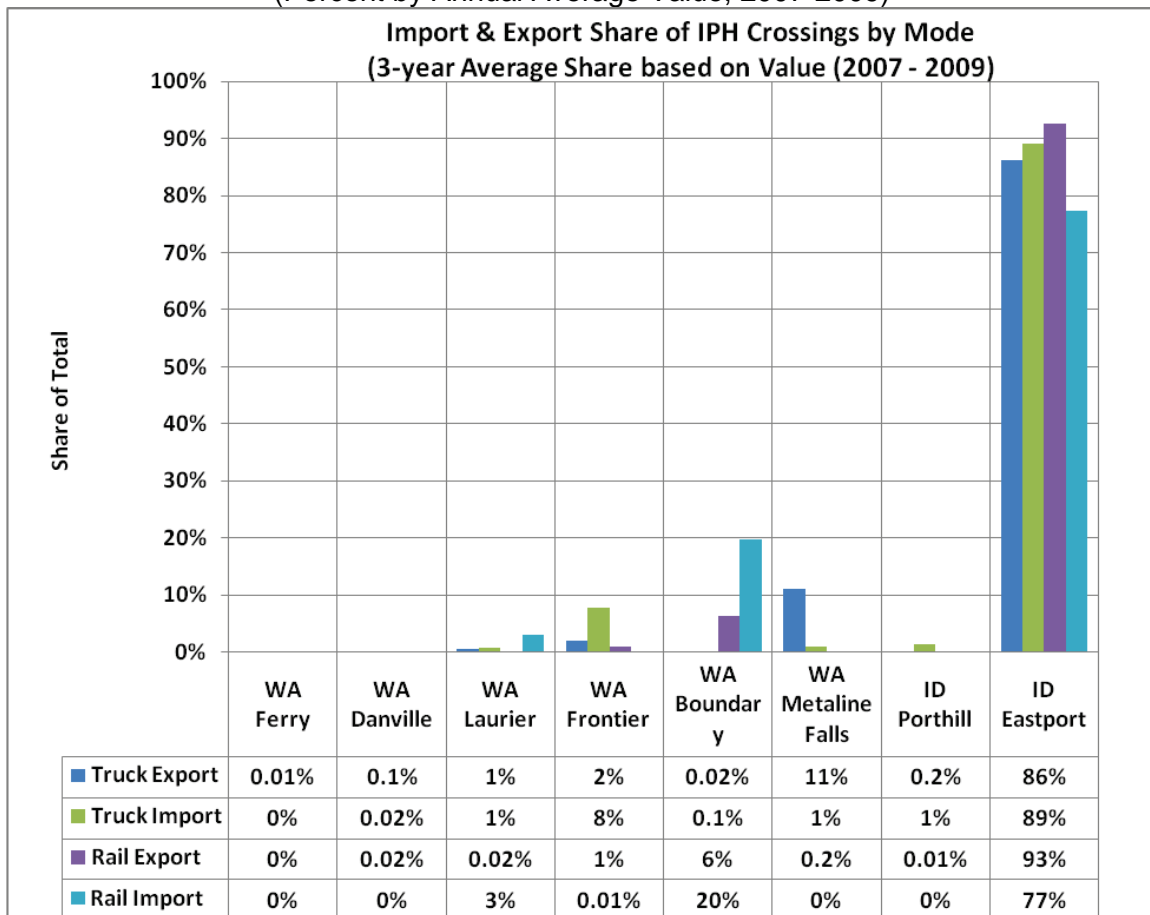
Exhibit 24: Percent of Inbound Empty Rail Movements by IPH POE



Source: BTS Border Crossing/Entry Data, 03/23/2010
http://www.bts.gov/help/border_crossing_entry_data.html,

As noted, the BTS Border Crossing/Entry data series does not provide outbound container truck or rail movement counts. However, the BTS Transborder Freight Data series does provide comparison data for border crossings with respect to import and export value. **Exhibit 25** shows the import and export percentage share of truck and rail values for each crossing relative to all IPH border crossings based on a 3-year average calculated for 2007 to 2009. From the 'value' perspective, it is quite evident that Eastport significantly outweighs all other IPH crossings. The 3-year average of rail and truck import value at Eastport equates to \$2.3 billion versus an export total of \$1.4 billion. In comparison to the findings presented in **Exhibit 17** and **Exhibit 18** the import versus export gap at this crossing closes only when considering movements by truck and rail. This is highly indicative of the \$4.4 billion of imported pipeline movements over this crossing which was included in the 2008 BTS Top 125 Gateways analysis.

Exhibit 25: Border Crossing Share of Import & Export Value; (Truck & Rail)
(Percent by Annual Average Value, 2007-2009)

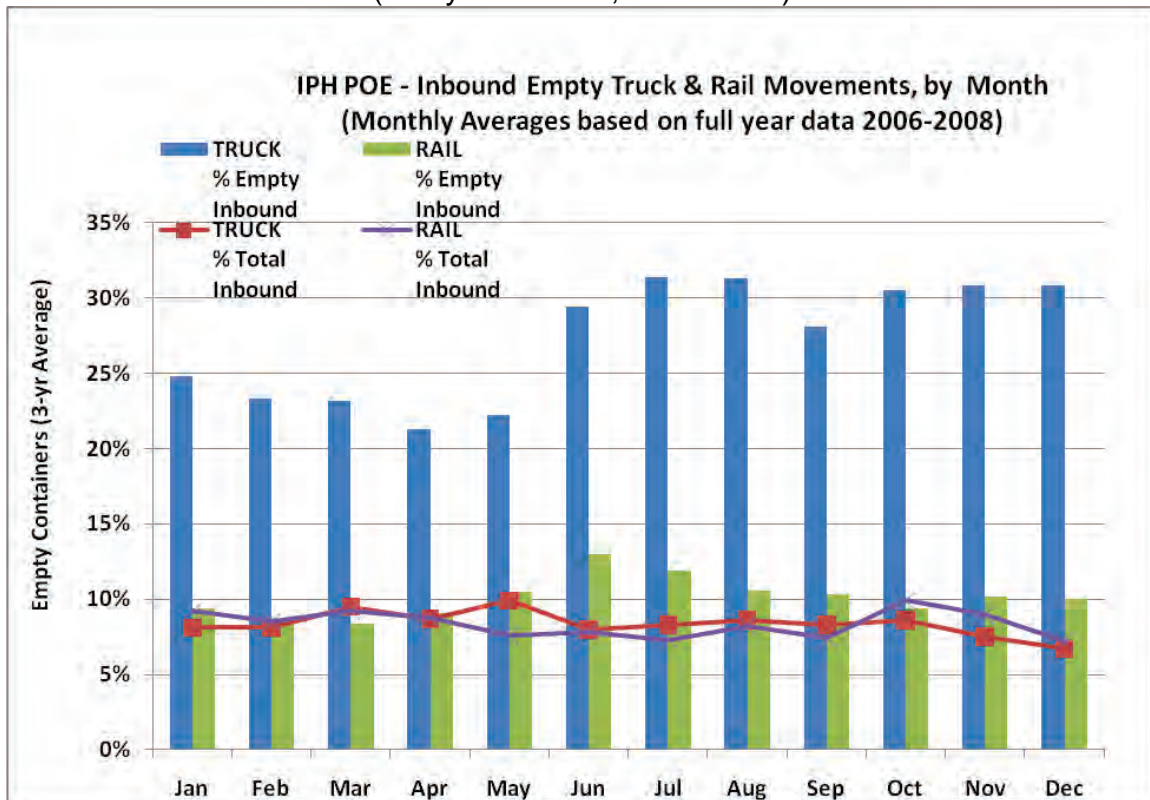


Source: BTS North American Transborder Freight Data, 03/22/2010
http://www.bts.gov/programs/international/transborder/TBDR_QA.html

Seasonal Border Crossing Activity

The industry interviews and freight forums conducted throughout the study area revealed a primary stakeholder issue pertaining to the variable (seasonal) accessibility to transport modes including an interrelated issue regarding the lack of backhauls during harvest time. While the border crossing/empty container counts are reflective of inbound traffic only, they do offer a good indication of empty truck and rail movements back to (i.e., through) the IPH study area border crossings. **Exhibit 26** gives a monthly profile of the empty inbound movements, based on a monthly 3-year average for both truck and rail.

Exhibit 26: Monthly Inbound Movements for IPH Border Crossings (Full-year counts, 2006-2008)



Source: BTS Border Crossing/Entry Data, 03/23/2010
http://www.bts.gov/help/border_crossing_entry_data.html,

The profile indicates some notable seasonal relationships within and between the modes as follows:

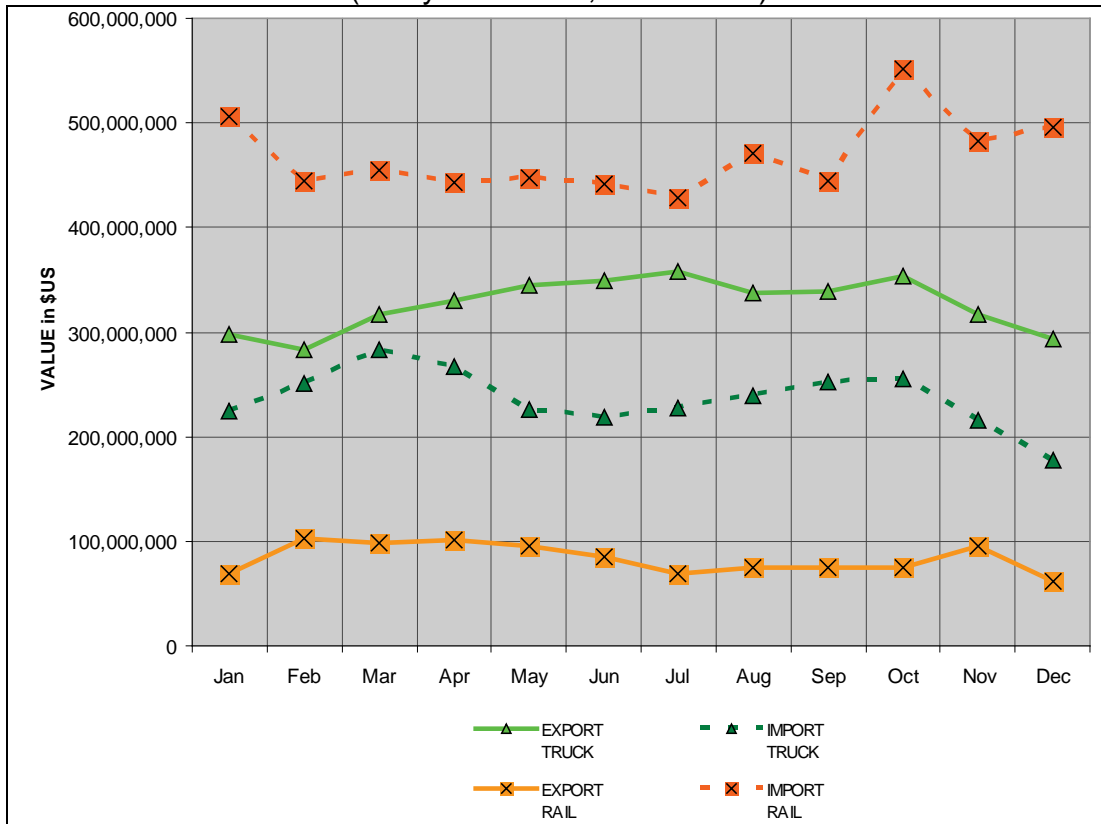
- Percent of inbound empty truck movements shows a sharp increase in June, peaking in July, with a relatively steady percent empty throughout the remainder of the year. There is a steady decline from December through April, until May shows the increasing empty trend toward the June spike and July peak.
- Percent of inbound empty rail movements, alternatively, begins to rise one month earlier in April and shows a steady increase until peaking in June, one month earlier than the truck movements. There is a steady decrease from the June peak to October and then seems to flatten out for the remainder of the year with further steady declines from December through March until beginning the increasing trend again in April.
- There seems to be a relationship where, as the monthly percentage of total inbound truck crossings lessen, the percentage of inbound empty truck containers are either steady or increase. Vice versa as the monthly percentage of total inbound truck crossings rise, the percentage of inbound empty containers decrease. This seems to point to the fact that

there is a consistent industry specific lane imbalance that is consistent throughout the year and not necessarily weighted to particular seasonal commodity shipments. However, as the monthly percentage of total inbound truck crossings steadily decline from October to December, the steady percentage of inbound empty movements through the same period seems to point to a drop off in specific commodity shipments with good backhauls.

- There also seems to be a similar relationship with rail where, as the monthly percentage of total inbound rail container crossings reduce, the percentage of inbound empty rail containers increase, and vice versa. Yet, the rail empties have a clearer reaction to increase performance and reduce the empty movements as the trend of total inbound movement steadies.
- Overall, the trends seem to highlight the lessened ability of truck versus rail to effectively respond to and improve performance of the empty movements through border crossings. In comparison, the rail transport mode shows an ability to adjust and improve PoE movements as total inbound traffic steadies; however, similar to trucks, rail shows the inability to improve PoE performance from October to December as total inbounds decline.

The North American TransBorder Freight Database was utilized again to profile seasonal import versus export border crossing freight flow data by rail and truck. The database includes two sets of tables; one is commodity based with state level detail only, while the other provides geographic detail in terms of Value and Tonnage. The geographic detail database is the best publicly available approximation for analyzing and comparing border crossing imports versus exports, and is provided in terms of value only. The geographic tonnage detail is available for Imports only. **Exhibit 27** shows the seasonality of import versus exports by rail and truck value for the IPH border crossings averaged by month over the 3-fullyear period 2007 to 2009.

Exhibit 27: Monthly Import and Export Values for IPH Border Crossings
(Full-year counts, 2007-2009)



Source: BTS North American Transborder Freight Data, 03/22/2010
http://www.bts.gov/programs/international/transborder/TBDR_QA.html

Some of the key seasonal findings relative to the monthly profile are as follows:

- Export value of truck movements begins to steadily increase from February through a July peak, then shows a decline in August until another peak in October (possibly indicating the end of the apple harvest), and then shows a continuing decline through February
- An obvious relationship is seen where import truck values show a diverging decline compared to truck exports beginning in April through June. This relationship seems to point to a profound seasonal lack of backhaul through June (i.e., identifies the impact of no value truck returns). The gap begins to close slightly in July with continuing improvements in August and September. Beginning in August and continuing through December, there is a non-diverging, comparative and consistent fluctuation between import and export value. With the exception of a noticeable diverging in January, this trend continues until beginning to significantly diverge in April. With the exception of January, this finding suggests a more consistent import and export value relationship for the IPH crossings from October and through the winter until March.

- Rail shows a sharp increase in October import values over a rather steady export value, and a moderate increase in August also over a steady export value.
- Rail does show comparatively large diverging values of increased import value over decreased export value in December and January.

Border Crossing Opportunities and Constraints

Free and Secure Trade (FAST) service is a joint venture between the U.S. Customs and Border Protection and the Canada Border Services Agency (CBSA). This service allows a pre-screened membership the ability to cross the border in a simpler manner and reduce the frequency of delays.

When a FAST-approved driver arrives at the border, he or she presents three bar-coded documents to the border services officer (one for each of the participating parties: the driver, the carrier and the importer). The officer can quickly scan the bar codes while all trade data declarations and verifications are done at a later time, away from the border. Under FAST, eligible goods arriving for approved companies and transported by approved carriers using registered drivers are cleared into Canada or the United States with greater speed and certainty, which reduces costs for FAST participants.⁹

This service is available at nineteen border crossings, none of which are in the IPH study area. The crossings at Oroville, WA and Sweetgrass, MT are the closest FAST processing centers. Introduction of this service at a crossing may serve as an attraction to traffic currently directed by this consideration.

Some of the border crossings serving the IPH study area are likely to be constrained by investments in efficiency improvements. In the current environment of fiscal constraints coupled with the need to increase the security and efficiency of U.S. border crossings, the US Customs and Border Protection Agency has tended to focus in investments on the highest volume crossing. Many low volume border crossings, especially across the U.S. border with Canada have struggled to maintain hours, staffing and technology improvements.

The I-90 Corridor to the Gateways of Seattle - Tacoma

I-90 Snoqualmie Pass Winter Closures

I-90 is the primary east-west corridor across Washington State, linking eastern Washington and northern Idaho to the Seattle/Puget Sound area. From Seattle, it extends eastward 3,111 miles to Boston, Massachusetts, making it the longest limited access highway in the world. I-90 crosses the Washington Cascade Range (or Cascades) in Washington at Snoqualmie Pass (elevation 3,022 feet), where it is subject to accidents, rock slides, avalanches, and extreme weather.

⁹ <http://www.cbsa-asfc.gc.ca/prog/fast-expres/menu-eng.html>, 03/11/2010

“Despite efforts and improvements made to this vital cross country interstate, accidents, avalanches, rock slides, and extreme weather have continued to close Snoqualmie Pass for an average of 120 hours per year.”¹⁰

Alternative east-west routes across the Cascades include US-2 at Stevens Pass and US 12 at White Pass. Both are two-lane State highways with pass elevations above 4,000 feet, and are also subject to winter closures. Travel on these routes is characterized by lower speeds, local access, and poorer alignments compared to I-90. I-90 across Snoqualmie Pass is a strategic freight corridor due to the international, domestic, and intrastate trade that it carries. Thirty-five million tons of freight cargo, or \$500 billion worth of goods, crosses I-90 Snoqualmie Pass each year. Average daily traffic (ADT) volume at the pass in 2007 was 28,000 vehicles per day, including about 6,000 trucks daily.

In 2008, the Washington State Department of Transportation (WSDOT) commissioned a study to estimate the economic losses associated with winter closures of I-90 at Snoqualmie Pass. The study identified total losses of \$28 million associated with the 89-hour closure of I-90. The losses included employment loss, reductions in sales tax revenue, and reductions in personal income.

The study also noted the role of truck parking areas during winter closures, noting that federal rules require a ten-hour rest period after 11 hours of driving. Trucks frequently park on ramps, shoulders, and weigh stations during these emergencies, compromising safety for all users.

More recently WSDOT announced a new Commercial Vehicle (CV) Pass System intended to support freight movement during major transportation disruptions, such those often encountered on I-90. The Commercial Vehicle Pass System will be activated when major freight highways are closed or severely restricted, and a limited-capacity detour is available nearby. CV passes will be issued online based on the highway detour's capacity and the priority of goods carried, as determined by the State Emergency Management Division. WSDOT conducted tests of the new system during January and February of 2010.

WSDOT has also identified a Preferred Alternative for improvements east of Snoqualmie Pass to address the avalanche and rock slide hazards and mitigate the road closures caused by such events. The I-90 Snoqualmie Pass East Project will provide an additional lane in each direction between Hyak and the Keechelus Dam for a distance of about five miles. The project will also improve safety by flattening sharp curves, expand the snowshed, stabilize rocky slopes, build new bridges, install avalanche fences, and provide wildlife crossings. Funding of the \$545 million project is provided by the State's Transportation Partnership Package, with completion scheduled for 2015. A second phase of the project would continue the widening of I-90 ten miles eastward to Easton. Funding for this phase has not yet been identified.

¹⁰ <http://www.wsdot.wa.gov/Projects/I90/SnoqualmiePassEast/HyaktoKeechelusDam/History>

The performance of I-90 within the IPH study area is discussed in detail in *Technical Memorandum #1: The IPH Multimodal Infrastructure Report*. Aside from some peak hour congestion in the metropolitan areas, I-90 in the study area performs well. Shipper and carriers interviewed in the region also see I-90 as a valuable regional asset. However, continued investments in intelligent transportation systems (ITS) to get information out to the carrier community faster and provide up to date closure and route alternative information will benefit the shipper community and increase the value of this important asset.

TRUCK TRANSPORT ISSUES AND OPPORTUNITIES

Highway and Truck Issues in the IPH Study Area

While truck transport represents one independent mode, it is also the primary integrator between the other modes in an intermodal/multimodal network. Highways were often the primary concern of shippers interviewed during the stakeholder outreach efforts. Many pointed to specific highway bottlenecks and deficient highway facilities such as Bigelow Gulch Road and the Huetter Bypass, but the need for an efficient north-south corridor extending from the Canadian border through the region was the most often cited highway deficiency.

Other frequently raised issues included the difficulty of getting competitive trucking rates to external markets when carriers must “deadhead” or travel empty into the region. A number of manufacturers also noted that regional season demands, due to agricultural harvests, often left them searching for equipment or carriers to serve their needs.

A number of shippers also noted the benefits they derive from being able to operate longer combination vehicles (LCVs) in the region. However, a number of shippers also noted the increased benefits that could come from greater uniformity in size and weight regulations across the Western U.S. One carrier operating LCV's in Idaho noted that they sometimes get warnings on “Blue Routes” in the study area due to off-tracking regulations. Blue Routes limit doubles configurations to 61 feet of trailers and 75 feet overall length without a permit. Configurations operating on these routes cannot exceed 5.5 feet of off-tracking.¹¹ Among the Blue Routes in the IPH study area: SH3, SH5, SH6, SH8, SH9, the eastern portion of SH200 and US-12.

Key Elements of the IPH Study Area Truck Network

Public sources of truck traffic volumes have been assembled and mapped to visualize the proportional distribution of freight traffic on the IPH network. Linear network GIS data for WSDOT and IDT were coalesced to be able to map the proportional distribution of AADT truck volumes on the entire IPH study area highway network. The proportional line thickness identifies various sections of roadways with relatively higher levels of truck volumes. While the information does not specifically indicate the level of commodity flow in terms of tonnage and/or value it does identify highway sections and connections maintaining proportionally larger volumes of truck traffic activity. This information offers additional best available data to review, compare, and prioritize route-based modal issues. **Exhibit 28** show average annual daily truck (AADT) volumes for the IPH regional highway network. **Exhibit 29** provides additional detail for Spokane and Coeur d'Alene.

¹¹ Routes Designated for Extra-Length Combinations: <http://itd.idaho.gov/dmv/poe/documents/extra.pdf>

It is important to note that in the case of this 'best available' public data there are several sources of potential error when applying truck traffic volumes to a linear network. The three primary sources of error include:

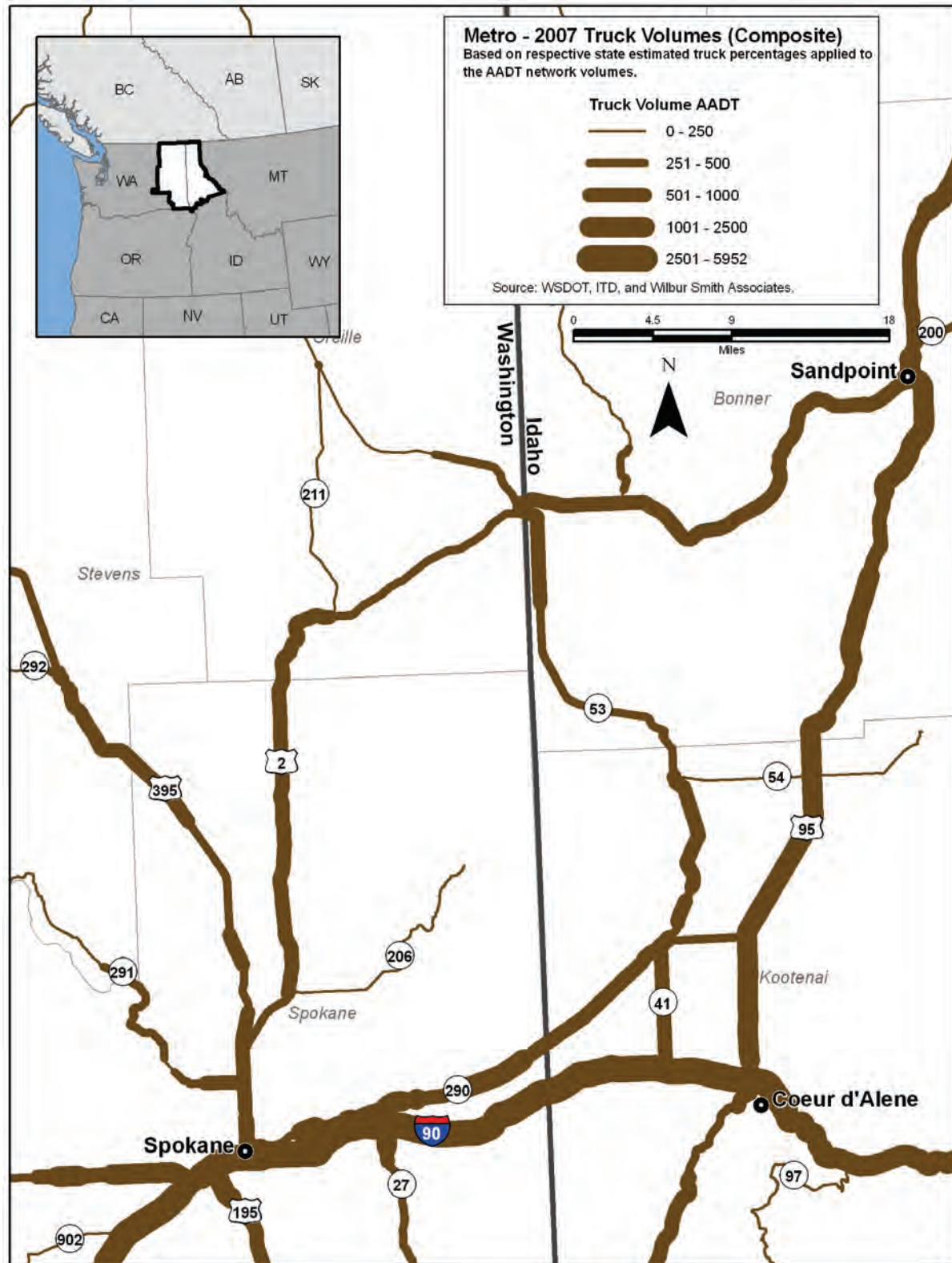
- Variability of Automatic Traffic Counters (3-day weekday counts vs. Annualized Traffic Counts) which present some impactful considerations when seasonal truck movements are noted within a study area.
- Use of an algorithm to assign the location specific (horizontal/positional) values systematically along the linear roadway system.
- Application of truck percentage calculation assignment

Despite this, there are locations of good annualized traffic counts which are typically presented in ATR reports. Some of these locations are identified in tabular format in **Exhibit 30**. For comparison purposes, the most complete annualized count locations can be reviewed and overlaid on the networks displayed in **Exhibit 28** and **Exhibit 29**.

[illegible]

Inland Pacific Hub Transportation Study

Exhibit 29: Spokane and Coeur d'Alene Truck Volumes (2007)



Source: WSDOT, ITD, and Wilbur Smith Associates

Exhibit 30: IPH Annual Average Daily Truck Traffic

Highway	State	Location	Data Station (Mile Post)	Strategic Freight Corridor	Percent of Trucks	Annual Average Daily Truck Traffic (ID – 2008) (WA – 2007)
I-90	WA	Idaho Border	P24	T-1	12%	5,880
I-90	WA	Fishtrap	R014	T-1	25%	4,250
I-90	ID	Post Falls East	-	-	7.45%*	3,576
I-90	WA	Ritzville West	P10	T-1	25%	2,500
I-90	ID	Montana Border	-	-	32.84%*	2,003
I-90	ID	Kellogg East	-	-	16.67%*	2,000
SH-200	ID	Clark Fork East	-	-	13.08%*	144
SH-53	ID	Rathdrum South	-	-	7.30%*	715
SR-290	WA	Idaho border	P33	T-2	19%	1,444
US-12	ID	Lewiston East	6	-	15%	1,950
US-12	ID	Lewiston West	-	-	5.24%*	1,048
US-12	ID	Orofino East	19	-	27%	756
US-12	WA	Dayton West	P05	No	26%	550
US-12	WA	Garfield Co./SR 127 W	R067	No	23%	480
US-12	ID	Lowell East	85	-	34%	167
US-12	ID	MT Border	84	-	26%	148
US-195	WA	Spokane	-95.6	T-2	12%	1,040
US-195	WA	Spokane South	P15	T-2	12%	1,030
US-195	WA	Colton South	P13	T-2	17%	820
US-195	WA	Pullman	P14	T-2	21%	650
US-2	WA	Chattaroy	P28	T-2	11%	1,980
US-2	ID	WA Border	-	-	9.09%*	1,000
US-2	ID	Priest River East	-	-	9.84%*	590
US-2	WA	Davenport	R064	T-2	15%	440
US-395	WA	Orient	P26	T-2	18%	-
US-395	WA	Ritzville South	P7C	T-1	30%	2,130
US-395	WA	Kettle Falls	R070	T-2	14%	1,110
US-395	WA	Loon Lake	R063	T-2	12%	1,030
US-395	WA	Orient	P26	T-2	18%	130
US-395	WA	Spokane	R102	T-2	4%	920
US-395	WA	Spokane North	-166.62	T-2	4%	510
US-395	WA	Colville North	-241.89	T-2	16%	350
US-395	WA	Canada Border	-270.6	T-3	22%	100
US-395 /I-90	WA	Spokane South	-279.2	T-1	14%	3,650

Highway	State	Location	Data Station (Mile Post)	Strategic Freight Corridor	Percent of Trucks	Annual Average Daily Truck Traffic (ID – 2008) (WA – 2007)
US-95	ID	Sandpoint South	310	-	9%	1,980
US-95	ID	Sandpoint North	119	-	13%	1,885
US-95	ID	Coeur d'Alene North	48	-	4%	1,320
US-95	ID	Bonnars Ferry	16	-	11%	825
US-95	ID	Potlatch South	15	-	20%	820
US-95	ID	Craigmont North	139	-	18%	576
US-95	ID	Genesee North	98	-	13%	546
US-95	ID	Canada Border	46	-	39%	390

Notes: *Percentages calculated using cross tabulation of provided 2007 counts, rounded to two decimals. Resulting percentage was applied to the provided 2008 AADT.

Source: WSDOT, 2007 Annual Traffic Report, 2008 Annual Traffic Report. ITD, 2007 Yearly Traffic Flow Maps, 2008 Yearly Traffic Flow Maps.

Regional North-South Connections

North-south freight movement serving the Inland Pacific Hub study area includes primary routes US-395 and US-2 in eastern Washington and US-95 in western Idaho.

US-395: In Spokane, US-395 travels concurrently with US-2 on Division Street and Ruby Street, in an urban/suburban environment characterized by low speeds, traffic signal control, and uncontrolled access. It is estimated that the US-395 corridor carries over 7 million tons of freight valued at \$13.5 billion annually through Spokane.¹² North of the “North Division Y” (divergence of North Division St. and the Newport Highway), US-2 extends into Idaho with a connection to US-95 in Sandpoint. North of the Spokane urban/suburban environment, US-395 continues north to the Canadian border at Laurier, WA.

Completion of the North Spokane Corridor (NSC) east of downtown Spokane will provide a multi-lane limited access facility for designation as US-395. The NSC project will construct a 60 mph limited access urban freeway along a new alignment starting at the I-90 Thor/Freya Street interchange, running northward 10.5 miles, interchanging with existing US-2 and rejoining the current US-395 route at Wandermere, approximately three miles north of the “North Division Y.” The project shifts the US-395 alignment from Division Street to Market Street, approximately two miles to the east. Other interchanges will be located at Trent Avenue (SR-290), Wellesley Avenue, Francis/Freya Street, Parksmith Drive, and Farwell.

¹² <http://www.wsdot.wa.gov/Projects/US395/NorthSpokaneCorridor/Facts.htm>

The Francis to Farwell segment between the Francis/Freya and Farwell Interchanges opened to traffic in August, 2009. It is anticipated that the Farwell to Wandermere segment will be open to traffic by late summer 2011. Upon completion of the north end of the NSC corridor, approximately 5.7 miles will then be operational. When completed, the corridor is expected to improve freight and commuter mobility through the metropolitan area. The rest of the freeway will be built as funding is made available. In order to provide an interim connection to I-90, Spokane County has completed an Environmental Impact Statement for the widening of Bigelow Gulch Road between Francis Avenue on the west and Wellesley Avenue on the east. The first phase of this project, between Francis Avenue and Argonne Road, will serve to connect the North-South Corridor to I-90 until funding for completion of the North-South Corridor is secured.

With respect to the NSCs freight specific modal implications, the vicinity around the Francis and Freya freeway interchange includes a collection of distribution and light industrial companies. This area is likely to attract additional industrial businesses through the gravitational pull of its existing agglomeration economies, improved immediate highway access, improved access options to long-distance distribution highway facilities, and overall traffic flow performance. Completed elements of the NSC now offer enhanced access for long-distance distribution to the northeast via US-2 and northwest via US-395. Following future funding and completion of the envisioned NSC I-90 connection, more efficient distribution options will also be realized to the south, east, and west. Ultimately, this node is well positioned for comprehensive directional distribution commodities.

Continuing north of Spokane, US-395 consists of two to three lanes, with intermittent climbing lanes and four-lane sections, continuing approximately 100 miles to the border crossing at Laurier. The northern portions of US-395 wind through sparsely populated mountainous terrain. The biggest challenge for US-395 becoming a significant international trade corridor is the lack of population centers north of Colville. In addition, in an environment of fiscal constraints and the need to increase security and efficiency of U.S. border crossings, as a low volume border,

South of Spokane, US-395 runs concurrent with I-90 west to Ritzville, and turns south towards the Tri-Cities. It consists of a limited access four-lane facility between Kennewick and I-90.

US-2: US-2 extends north of Spokane as a two-lane State Highway with intermittent four-lane divided segments, including left- and right-turn lanes and center two-way left-turn lanes. It connects to Newport, at the Idaho border, 47 miles north of Spokane. Crossings at the Canadian border are available at Eastport and Porthill, Idaho, 90 to 100 miles beyond Newport.

US-95: US-95 provides the only continuous north-south route in western Idaho, extending from the Oregon state line to the border with Canada, a distance of 538 miles. For most of its length, it is a rural two-lane State highway. Idaho may widen portions of the corridor to a four-lane divided highway as warranted by

traffic, safety and funding considerations. This widening has been completed in Coeur d'Alene north of I-90, portions west of Coeur d'Alene Lake, and south of Moscow to Lewiston.

Construction is underway on several segments of US-95 from north of Hayden to north of Sandpoint. Between Wyoming Avenue and the SH-53 junction, a two-lane section of US-95 is being widened to connect with four-lane segments on both ends. Widening the highway will create four continuous lanes from Coeur d'Alene to north of Garwood. A traffic signal at Lancaster Road will also be constructed to improve safety. In Sandpoint, the ITD is constructing an alternate alignment for US-95 entitled the 'Sand Creek Byway' project. It consists of 2.1 miles of new alignment connecting US-95, from the northern end of the Long Bridge, directly to SH-200 and US-95 north of Sandpoint. The project includes six bridges, 65 retaining walls, and a pedestrian/bike pathway. Construction will continue into 2012 and represents one of the largest single projects in Idaho Transportation history.

Other areas of US-95 are programmed for widening in the Capital Investment Program (2009-2013). These include the segment between the top of Lewiston Hill to Genesee, Thorn Creek Road to Moscow, and segments between Garwood and Sagle. Completion of the widening of additional segments is dependent on funding availability.

Opportunities and Constraints for North-South Connections

One potential opportunity that cuts across US-395, US-2 and US-95 is to view the connectivity between these three routes as a regional trade corridor. This potential corridor would take advantage of current and planned improvements to the US-395 (e.g. the North Spokane Corridor), US-95 (e.g., the Sandpoint bypass) and U.S. and Canadian upgrades to the Eastport/Kings Gate border crossings. Linking US-395 and US-95 via US-2 also offers the most direct route between Spokane to the Canadian population centers of Calgary and Edmonton.

Urban Bypass / Truck Routes

There are a number of urban projects in the study area have the potential to ease urban traffic congestion and serve regional truck circulation. The Bigelow Gulch/Forker Connector would be located in Spokane County along the existing Bigelow Gulch Road corridor. It would extend from Francis Avenue in Spokane to an intersection near Sullivan Road and Wellesley Avenue on the east. Parts would consist of widening Bigelow Gulch Road to an urban five-lane cross-section, and parts would be constructed as a rural four-lane section.

The corridor is heavily used today, with Argonne Road, as a circumferential route in the northeast quadrant of the Spokane metropolitan area. The new connector would be positioned to serve truck traffic for the numerous industries located in this portion of the Spokane River Valley. The route would be accessed from I-90 at the Sullivan Road or Argonne Road interchanges. With the completion of the

North Spokane Corridor, an interchange at Freya St would provide north-south connections.

The environmental clearance for the project was secured from the FHWA in April, 2008. The portion of the project west of Argonne Road is currently under design, and funding is committed in the County's 2009-2012 Transportation Improvement Plan.

Seventy miles north of Spokane improvements to US-395 in Colville began as a study to "bypass" the downtown area. However, a community led project projected that moving traffic off "main street" would lead to the demise of some local businesses. An alternative solution is taking a phased approach to making improvements that will protect the viability of downtown businesses while also providing alternative routes for truck traffic. A city street in Colville has been designated the preferred Colville Truck Route to keep large commercial vehicle out of the downtown area. The truck route features to roundabouts, a north and south constructed to accommodate very large vehicles. The roundabout projects were conceived to increase intersection capacity, provide ease of turning movements for trucks, and provide a "gateway" into the community.¹³



In Idaho, the Huetter Bypass has been proposed to relieve the portion of US-95 between Coeur d'Alene and Hayden. It would be developed as a controlled-access north-south route between I-90 and SH-53. It would occupy portions of Huetter Road and the Union Pacific Railroad right-of-way. The project would provide benefits to freight movement by avoiding the congested US-95 arterial route. The bypass would consist of four lanes initially, with provision for future widening to six lanes. Interchanges would be located at I-90 between Post Falls and Coeur d'Alene, at SH-53, and at one-mile intervals to serve local destinations.

The project will require an environmental review to identify a Preferred Alternative. Efforts are currently underway to preserve right-of-way for the corridor. The time frame for construction of the Huetter Bypass is expected to be 11 to 15 years in the future.

Strategic Freight Corridors

WSDOT's Freight and Goods Transportation System (FGTS) categorizes the state's roadways according to the annual truck tonnage carried. To do this, the FGTS uses five classifications:

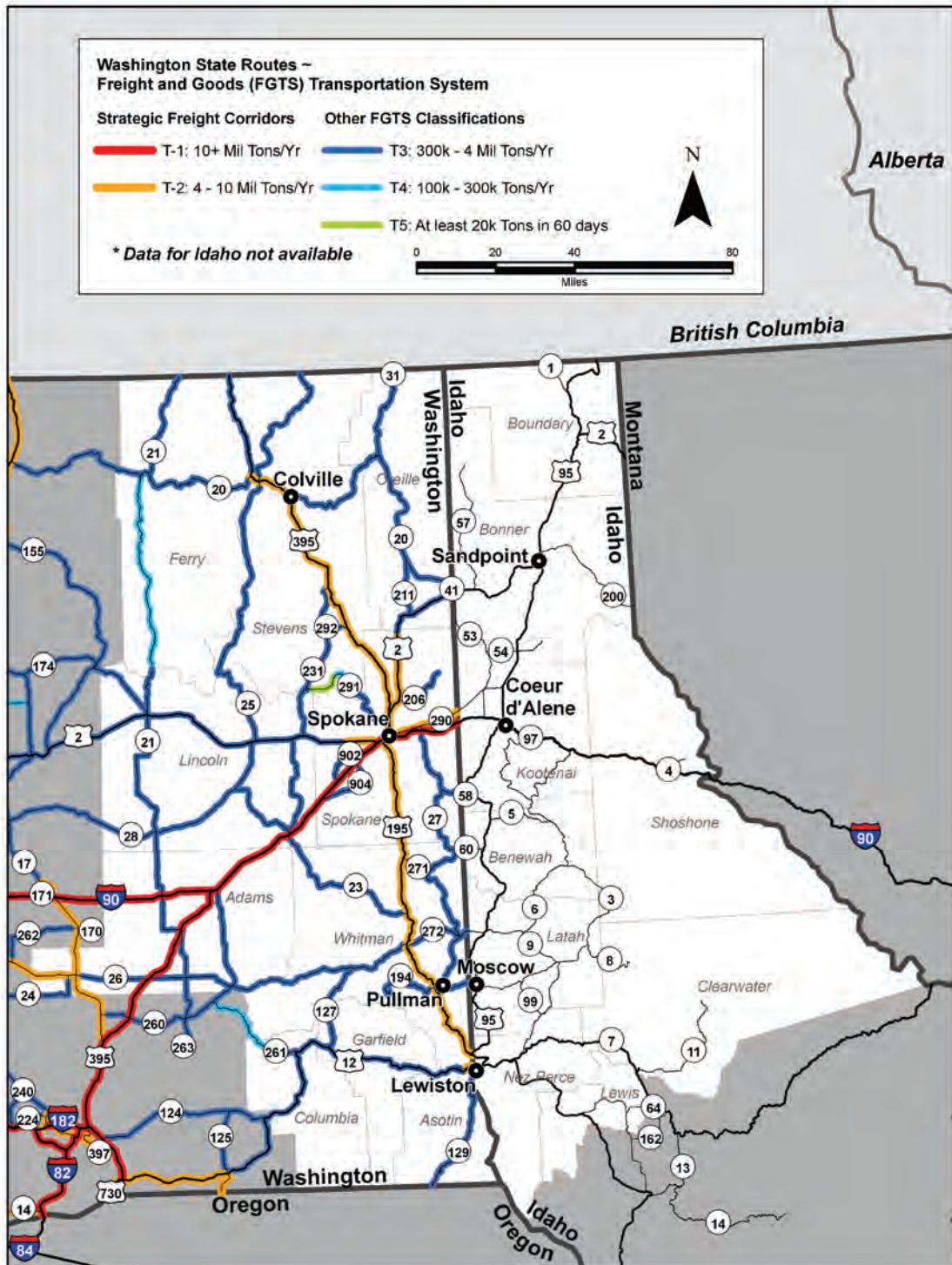
¹³ <http://www.wsdot.wa.gov/biz/csd/>

Photo credit: Welch-Comer Engineers and Surveys: <http://welchcomer.com/>

- T-1 routes: Greater than 10 million tons per year
- T-2 routes: Four million to 10 million tons per year
- T-3 routes: 300,000 to four million tons per year
- T-4 routes: 100,000 to 300,000 tons per year
- T-5 routes: At least 20,000 tons in 60 days

Routes that carry at least four million tons annually (T-1, T-2) are identified as “Strategic Freight Corridors”. In Washington, the Strategic Freight Corridors are I-90, US-2, US-195, US-395, WA 290, WA 17, WA 26, WA 128, Argonne Road and Sullivan Road - Bigelow Gulch Road in Spokane (**Exhibit 31**). The T-3, T-4, and T-5 routes serving local communities also are shown.

Exhibit 31: Washington State - Strategic Freight Corridors



Source: WSDOT Geodata Services, January 2010

Truck Transport Freight Flows by Direction

Knowledge of the truck oriented freight movement is important as it provides clues about key markets and sheds light on lane balance issues. The IPH Regional Freight Profile utilized Global Insight, Inc.'s 2007 TRANSEARCH™ database to understand the commodities that flow into, out-of, within and through the IPH study area. Understanding freight flows in the region is an initial step in understanding the economic activity of the area. A summary of regional truck flows is presented in **Exhibit 32**.

Exhibit 32: Principal Truck Freight Flows

2007 IPH Truck Freight Flows					
Principal Truck Freight Flows Inbound/Outbound Direction	Truck Tonnage	Truck Values	Total Tons (%)	Total Value (%)	Diff. in % Distribution (Value - Tons)
Internal In Study Area	13,729,929	\$15,528,157,528	15.1%	4.2%	-10.9%
Inbound					
From West	12,628,000	\$49,816,586,355	13.9%	13.4%	-0.5%
From East	2,412,529	\$9,234,071,885	2.6%	2.5%	-0.2%
From North	620,627	\$735,807,539	0.7%	0.2%	-0.5%
From South	3,007,499	\$19,168,430,874	3.3%	5.2%	1.9%
Inbound Subtotal	18,668,655	\$78,954,896,654	20.5%	21.2%	0.8%
Outbound					
To West	13,882,365	\$64,109,180,356	15.2%	17.3%	2.0%
To East	5,054,659	\$22,916,730,677	5.5%	6.2%	0.6%
To North	793,829	\$500,528,618	0.9%	0.1%	-0.7%
To South	9,280,323	\$23,319,455,177	10.2%	6.3%	-3.9%
Outbound Subtotal	29,011,176	\$110,845,894,829	31.8%	29.8%	-2.0%
Inbound + Outbound					
To West	26,510,365	\$113,925,766,711	29.1%	30.7%	1.6%
To East	7,467,188	\$32,150,802,562	8.2%	8.7%	0.5%
To North	1,414,456	\$1,236,336,157	1.6%	0.3%	-1.2%
To South	12,287,822	\$42,487,886,051	13.5%	11.4%	-2.1%
Inbound + Outbound Subtotal	47,679,831	\$189,800,791,481	52.3%	51.1%	-1.3%
Internal + Inbound + Outbound	61,409,760	\$205,328,949,011	67.4%	55.3%	-12.1%
Through Traffic	29,690,825	\$166,236,598,903	32.6%	44.7%	12.1%
Total For All Traffic	91,100,585	\$371,565,547,913	100.0%	100.0%	0.0%

Source: 2007 TRANSEARCH™, Global Insight.

Principal Truck Freight Flows & Network Implications

- Combined, inbound and outbound flows account for 52 percent and 51 percent of total truck freight flows by tonnage and value, respectively. Internal truck flow accounts for the remaining 15 percent of tonnage and 4 percent of value. These findings suggest that there is a significant difference in the distribution of value-to-weight for freight internally circulating the IPH study area (-10.9 percent) versus through truck traffic which shows a positive (+12.1 percent) account; i.e., internal movements tend to be high weight, low value while through movements tend to be high value, low weight.
- More commodity is destined outbound via truck (31.8 percent) versus inbound via truck (20.5 percent). This finding points to the likelihood of empty truck returns to the IPH study area.
- Through traffic accounts for 33 percent of tonnage and 45 percent of value.
- Combined, inbound and outbound truck flows show significance towards the **West** (29.1 percent, 30.7 percent) and **South** (13.5 percent, 11.4 percent), by tonnage and value, respectively.
- Of particular importance is flow to and from the **North** which represents only (1.6 percent and 0.3 percent) respectively, of all combined inbound and outbound flows. These findings suggest some possibly unrealized potential for increased export and import trade with northern markets.

Inbound/Outbound Directional Flows

The previous data table provides some implications about the principal truck flow directions; however, it is also important to understand inbound and outbound traffic flows and their relative significance to flow direction. This information helps to focus strategic and meaningful directional-based improvements to the truck transport network. **Exhibits 33 and 34** summarize key findings with respect to current truck transport network utilization including the distribution of actual freight flow direction.

Exhibit 33: Inbound Truck Flows to the IPH Study Area by Tons and Value

2007 IPH Truck Freight Flows					
Principal Truck Freight Flows Inbound/Outbound Direction	Truck Tonnage	Truck Values	% Subtotal Tonnage	% Subtotal Value	Diff. in % Distribution (Value - Tonnage)
Inbound					
From West	12,628,000	\$49,816,586,355	67.6%	63.1%	-4.5%
From East	2,412,529	\$9,234,071,885	12.9%	11.7%	-1.2%
From North	620,627	\$735,807,539	3.3%	0.9%	-2.4%
From South	3,007,499	\$19,168,430,874	16.1%	24.3%	8.2%
Inbound Subtotal	18,668,655	\$78,954,896,654	100.0%	100.0%	0.0%

Inbound Tonnage - by Direction

Direction	Percentage
from West	68%
from South	16%
from East	13%
from North	3%

Inbound Value - by Direction

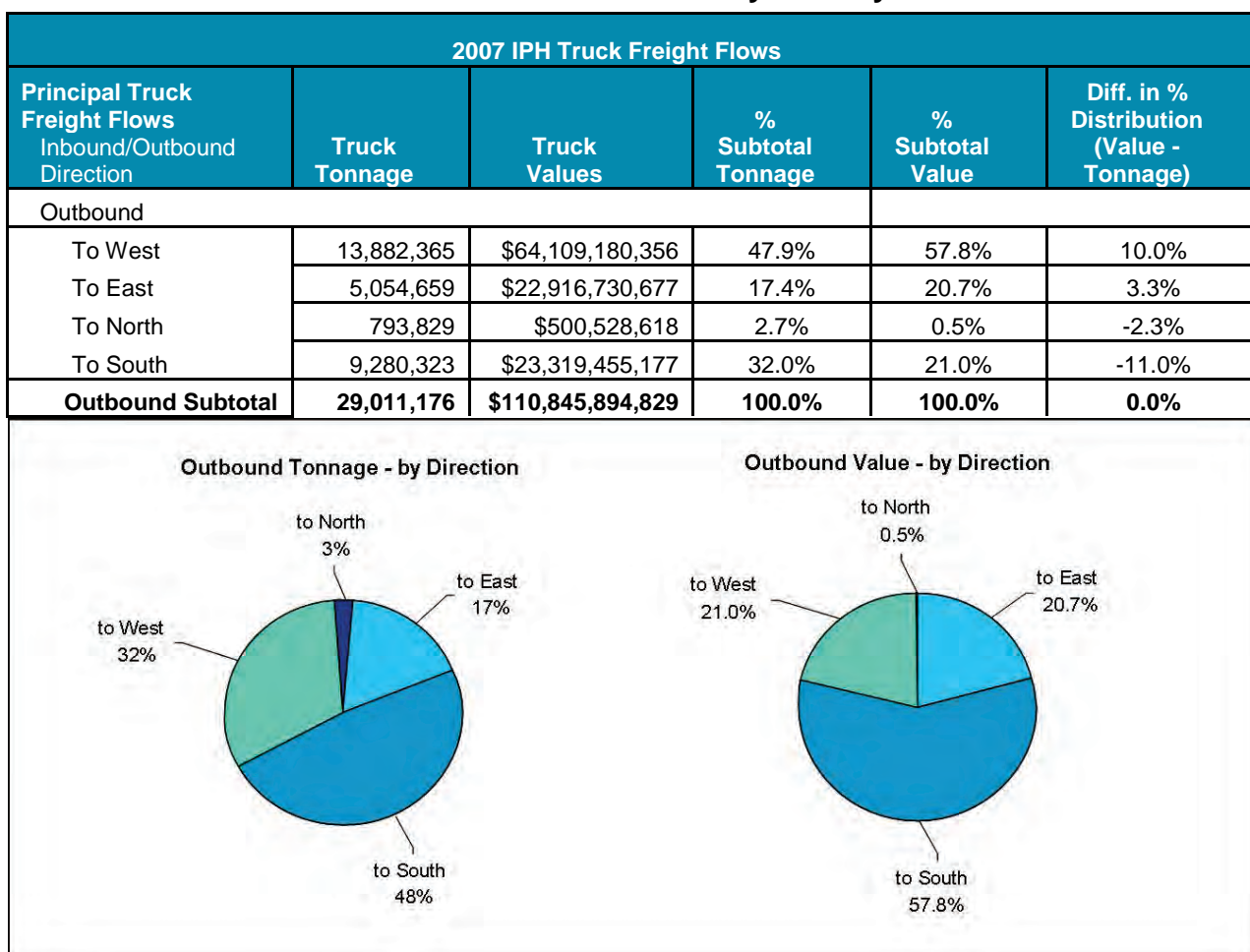
Direction	Percentage
from West	63%
from South	24%
from East	12%
from North	1%

Source: 2007 TRANSEARCH™, Global Insight

Key Findings from Inbound Truck Flows

- Inbound truck transport flows from the **West** are significantly higher than all other directions with respect to both tonnage (68 percent) and value (64 percent).
- Inbound trucks from the **South** represent the next highest values with 16 percent and 24 percent, respectively, followed by the **East** with 13 percent and 12 percent, respectively.
- The largest difference in value-to-weight comparison shows positive value over tonnage differences (+8.2 percent) from the **South** compared to a negative value to tonnage differences (-4.5 percent) from the **West**.

Exhibit 34: Outbound Truck Flows from IPH Study Area by Tons and Value



Source: 2007 TRANSEARCH™, Global Insight

Key Findings from Outbound Truck Flows

- Outbound truck transport tonnage and value flows to the **West** (47.9 percent, 57.8 percent, respectively) and the **South** (32.0 percent, 21.0 percent, respectively) are comparatively higher than all other directions, followed by the **East** with 17.4 percent and 20.7 percent, respectively.
- There is a significant difference between the value and tonnage (+10 percent) distributions for truck flows to the **West**.
- There is a large difference in outbound tonnage to the **South** (+14.6 percent) versus the **East** while the value of the two flows is nearly identical. This finding suggests that the truck transport of lower-value/high-weight commodities to the **South** versus the **East**.
- Comparing outbound truck flows to the **West** versus **South**, there is a 21 percent point spread in the difference between the value and tonnage distributions.

Inbound/Outbound – Lane Balance Findings and Implications

The ability to identify relative levels of directional distribution with regards to value and tonnage is useful to understand potential trade gaps and better assess the economic return of enhancements to transportation systems. Also, relative to inbound and outbound access and efficiency, directional flow analyses can be used to identify truck related lane balance issues. Lane balance has been identified as one of the more consistent and overarching modal issues throughout the interview and freight forum activities. The measures of lane balance discrepancy are calculated in **Exhibit 35**. The key findings for lane balance relative to the direction of inbound and outbound traffic are as follows:

- There is a lane balance discrepancy of 6,272,824 tons of IPH commodity trade with the South based on outbound tonnage of 9,280,323 versus inbound tonnage of 3,007,499. This represents the highest tonnage difference and also represents the highest magnitude of discrepancy.
- All tonnage discrepancies show increased outbound tonnages over inbound tonnage with magnitudes of discrepancies in lane balance followed by the East, North, and West.

Exhibit 35: IPH Truck Lane Balance Comparison

2007 IPH Truck Freight Flow Lane Balance						
Truck Freight Flow Direction	Tonnage			Value		
	Truck Tonnage	Inbound vs. Outbound Difference	Difference Relative %	Truck Values	Inbound vs. Outbound Difference	Difference Relative %
Inbound						
From West	12,628,000	-1,254,365	-9.9%	\$49,816,586,355	\$14,292,594,001	-28.7%
From East	2,412,529	-2,642,130	-109.5%	\$9,234,071,885	\$13,682,658,792	-148.2%
From North	620,627	-173,202	-27.9%	\$735,807,539	\$235,278,921	32.0%
From South	3,007,499	-6,272,824	-208.6%	\$19,168,430,874	-\$4,151,024,303	-21.7%
Inbound Subtotal	18,668,655	-10,342,521	-55.4%	\$78,954,896,654	\$31,890,998,175	-40.4%
Outbound						
To West	13,882,365	1,254,365	9.0%	\$64,109,180,356	\$14,292,594,001	22.3%
To East	5,054,659	2,642,130	52.3%	\$22,916,730,677	\$13,682,658,792	59.7%
To North	793,829	173,202	21.8%	\$500,528,618	-\$235,278,921	-47.0%
To South	9,280,323	6,272,824	67.6%	\$23,319,455,177	\$4,151,024,303	17.8%
Outbound Subtotal	29,011,176	10,342,521	35.7%	\$110,845,894,829	\$31,890,998,175	28.8%

Source: 2007 TRANSEARCH™, Global Insight

Lane Balance: Carrier Pricing of Loaded vs. Empty Miles

Origin-destination pairings or “lane” pricing for carriers is influenced by the available capacity in that lane. Where there is empty movement of equipment, there is a general lack of revenue to cover associated costs. As a result, carriers typically reduce the cost or price presented to a shipper to attract goods to the lane or to their company. Those goods may be moved along a path that appears circuitous to the shipper, but provides the greatest opportunity for freight volumes and the lowest number of empty miles as possible. To illustrate the positive attraction effect for the IPH study area, a simple illustration of goods movement between Calgary, AB and Seattle, WA is provided. An evaluation based only on miles traveled, would select the most direct routing, saving costs associated with 13 excess miles in each direction.

Whereas Calgary, AB may be a heavier outbound lane versus inbound to Seattle WA for a given carrier, that carrier may experience 703 empty miles to return the equipment to Calgary. If the carrier has the opportunity to travel on the longer path, over Spokane, these same goods would require 439 empty miles to return the driver and tractor to Calgary, but would have the opportunity to transport the freight, the remaining 280 miles in lieu of an empty transit, **Exhibit 36**.

Exhibit 36: Commodity Volume Movement by Direction

Truck Freight Flow Direction	Truck Tonnage	Inbound vs. Outbound Outbound vs. Inbound
Inbound		
From West	12,628,000	-1,254,365
From North	620,627	-173,202
From South	3,007,499	-6,272,824
Inbound Subtotal	16,256,126	-7,700,391
Outbound		
To West	13,882,365	1,254,365
To North	793,829	173,202
To South	9,280,323	6,272,824
Outbound Subtotal	23,956,517	7,700,391

Source: 2007 TRANSEARCH™, Global Insight

As the freight movement between the region and the west are significantly imbalanced, with more freight moving to Spokane than back to the west, the 280 miles of loaded transport reduced the carrier’s loss on the backhaul. The empty trailer is currently moving, and with placement of these goods in the “lane”, the trailer now has revenue to offset costs. This has the effect of reducing overall costs in the lane and influences carrier pricing needs to maintain acceptable profit margins. This illustration has been overly simplified, as this level of analysis is beyond the scope of this paper. Variables in pricing, commodity, individual carrier capacity, modal capacities, and transit times would influence the specific feasibility of this concept for a given cargo owner.

The freight flow data and comments from regional carriers and shippers suggest there are significant lane balance issues in the IPH study area that need to be assessed. Canada is an opportunity for export from the IPH study area, but should be balanced relative to the population growth forces and related markets of the Southern and Western U.S.

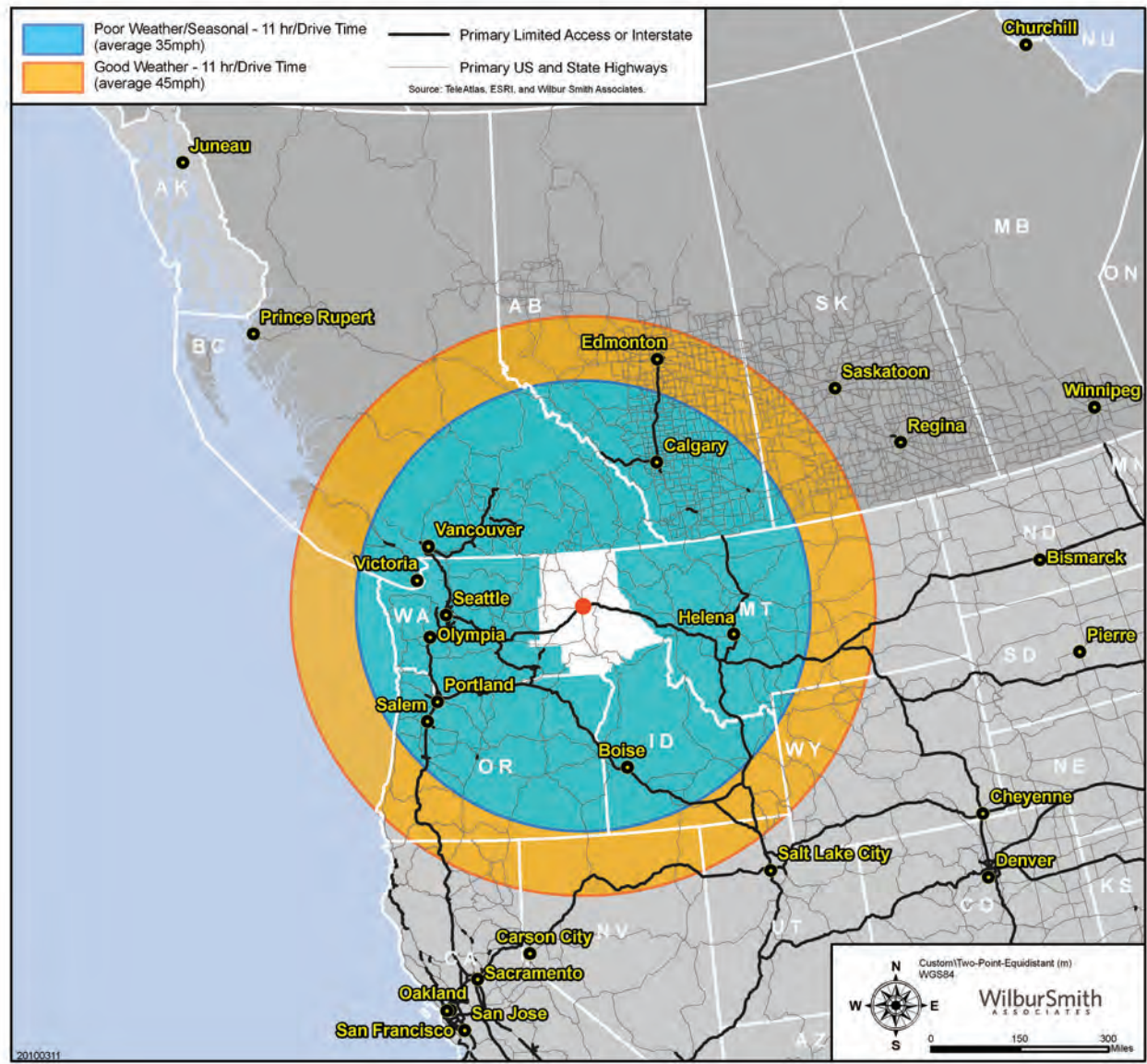
Lane Balancing Opportunities: Canadian Markets

The IPH study area shares a border with Canadian Provinces where approximately 5 million Canadians live within a 1,200 mile radius of the IPH study area. In review of current regulations, an 11 hour drive time was defined and measured geographically using a 45 mph good weather and 35 mph poor weather travel time adjustment for the regional terrain and transportation system (**Exhibit 37**). These measures equate to simplified travel time buffer rings of 495 and 385 miles, respectively. In effect, the travel time buffers capture the primary Canadian cities of Edmonton and Calgary which together comprise a population of over 1.7 million people. These cities, north/northeast of the IPH study area can be competitively served via truck transport and offer a significant market opportunity. **Exhibit 38** presents in tabular form Canadian city populations and their driving distance from Spokane.

Two of the three major markets within one day drive, Edmonton and Calgary, cite optimistic GDP growth percentages, assessed at the height of the recession from 2008 to 2009. Calgary's estimated GDP for 2008 was \$70.1 billion (Canadian). Projected over the next five years, this figure is estimated to increase to \$87.8 billion (Canadian). This marks a 25.2 percent rise.¹⁴ This growth is related to trade, manufacturing, and transportation and warehousing. These three comprise 28.4 percent of the projected GDP increase from 2008 to 2014, **Exhibit 39**. PricewaterhouseCoopers estimates, in comparison, that Seattle's 2008 GDP was \$235 billion dollars and Portland's was \$110 billion.

¹⁴ <http://calgaryebrochure.com/>, 03/12/2010, Calgary Corporate Economic, Calgary's Economic Outlook 2009-2019, 2nd quarter 2009

Exhibit 37: Truck Drive Time Reach



Source: Teleatlas, ESRI, and Wilbur Smith Associates.

Exhibit 38: Canadian Cities Drive Distance from IPH Study Area

Canadian Metro Area	Drive Distance from Spokane (miles)	Population
Kelowna	255	106,707
Lethbridge	377	74,637
Abbotsford	388	123,864
Saanich	391	108,265
Langley	394	117,332
Surrey	400	394,976
Coquitlam	405	114,565
Burnaby	405	202,799
Richmond	408	174,461
Metro Vancouver	413	2,100,000
Calgary	438	988,193
Airdrie	457	28,927
Medicine Hat	480	56,997
Red Deer	526	82,772
Edmonton	620	730,372
Strathcona	632	82,511
St. Albert	632	57,719
Grande Prairie	746	47,076
Wood Buffalo	908	51,496
Swift Current	992	14,946
Moose Jaw	1166	32,132

Exhibit 39: Forecast GDP by Industry, Calgary, Alberta

Forecast GDP By Industry			
Calgary Economic Region			
Source: Calgary Corporate Economics.			
Calgary's Economic Outlook: 2008-2019, 2nd Quarter 2009.			
Industry	2009 (\$ Billions)	2014 (\$ Billions)	Change
Agriculture	0.50	0.61	2.2%
Other Primary (Mainly Oil & Gas)	8.95	9.63	7.6%
Manufacturing	5.23	7.22	38.0%
Construction	8.30	11.31	36.3%
Information Culture and Recreation	3.13	4.09	30.7%
Utilities	2.00	3.39	69.5%
Transportation & Warehousing	2.62	3.13	19.5%
Trade	6.00	8.55	42.5%
Finance, Insurance, Real Estate And Leasing	15.36	20.12	31.0%
Professional, Technical & Management	6.95	9.50	36.7%
Accommodation And Food Services	1.52	1.98	30.3%
Education Services	2.31	2.71	17.3%
Health & Welfare Services	2.76	4.25	54.0%
Other Services	1.52	1.96	28.9%
Government Services	1.96	2.36	20.4%
All Industries	68.00	87.80	29.1%

As noted in the freight profile for the IPH study area, nearly all of the NAFTA imports and 95 percent of the exports originating from or coming to the IPH study area involve trade with British Columbia and Alberta. Furthermore, Canadian Government trade statistics estimate that Canada accounted for nearly 12 percent of Washington's foreign export trade and 13 percent of Idaho's, and it was estimated that in 2008, 153,000 jobs in the State of Washington and 33,500 jobs in the State of Idaho were supported by U.S.-Canada trade.

Miles Traveled Implications for Lane Balance

The most significant and common measure of cost for motor carriers is the aggregation of vehicle, maintenance, and personnel costs per mile. One attraction for a given corridor is the ability to reduce overall mileage without detrimental influence on transit times caused by delay and reliability concerns. Aside from length and weight policies, carriers will assess the savings in mileage with the movement of these goods.

Two provinces, Alberta (AB) and Saskatchewan (SK), are potential contributors to the IPH study area logistics hub concept. As compared to destinations in the Western U.S. markets, several key markets emerge as “shortest paths, when processed through the region, **Exhibit 40**.

Exhibit 40: Shortest Path, City to City, by miles

	Calgary, AB		Edmonton, AB		Regina, SK	
	Inclusive	Exclusive*	Inclusive	Exclusive*	Inclusive	Exclusive*
Seattle, WA	716	703	899	820	1,046	1,171
Portland, OR	789	876	972	993	1,119	1,344
Medford, OR	1,061	1,149	1,243	1,266	1,391	1,617
San Francisco	1,423	1,511	1,606	1,627	1,753	1,628
*Exclusive identifies the shortest route not passing through the region, using roadway with similar functional class						

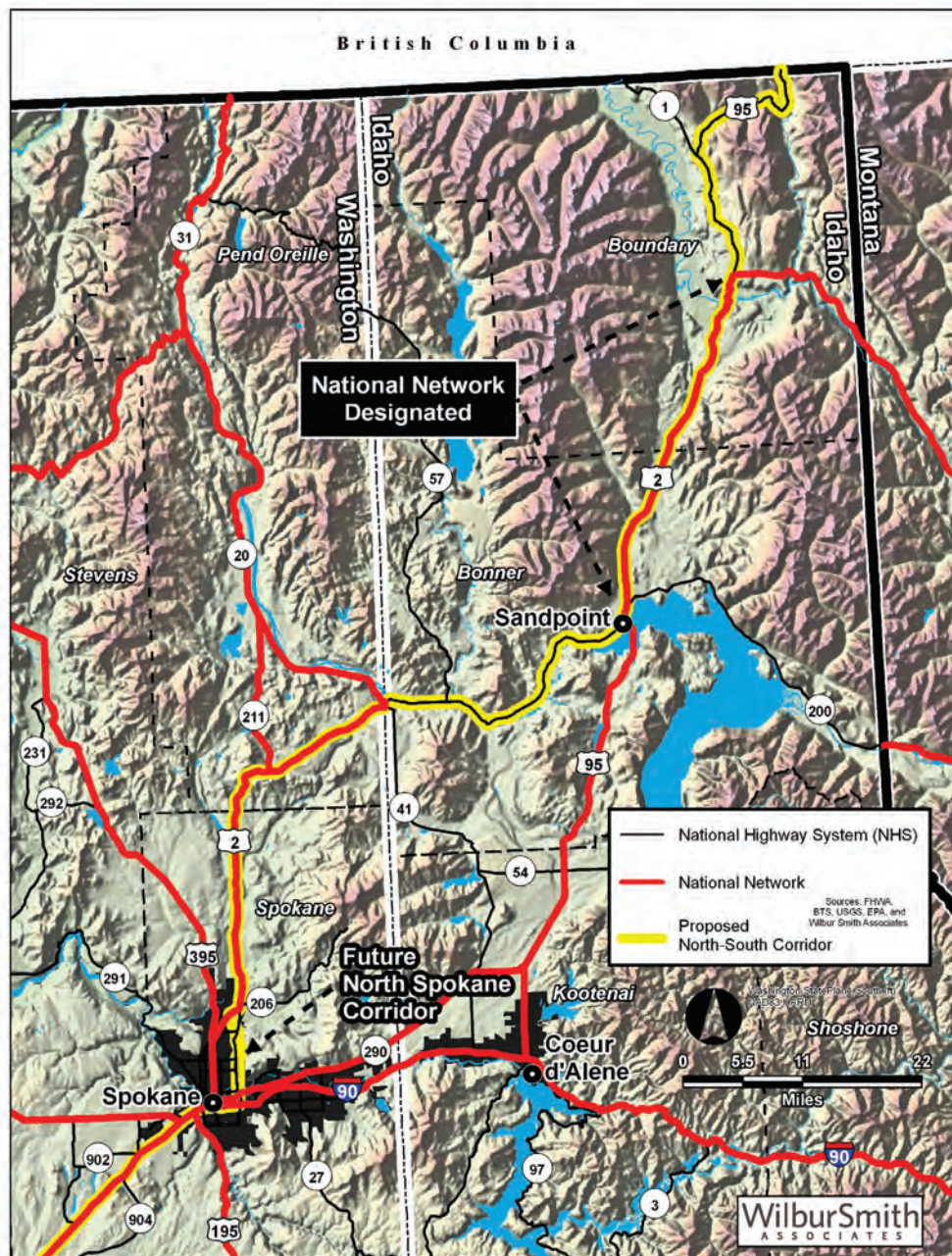
Attracting goods movement to a corridor may not solely be influenced by VMT, as cost advantages, or other operational advantages may also yield benefits to carriers. Other benefits that enhance the rate of travel between two locations, could be associated with eliminating extraneous activities associated with differences in regulatory compliance (e.g., different weight or size limits when crossing a border), and assigning regulatory compliance activities to more natural points of operational activity enhance the movement along a corridor. Changes that generate a lower cost structure to carriers translate to more reliable transit times and lower costs for shippers. A key enhancement to the development of the corridor is the expansion of increased lengths and weights between the Canadian markets and key freight nodes in the study area. The ability to provide continuous service, as governed by the most robust regulations in the corridor could address several operational advantages:

- Reduce the total number of trips: Increased length (volume) would permit additional amounts of freight which “cubes out” to move per trip. Increased weight limits would allow the same benefit for those commodities that “weigh out”.
- Continuous transit between the two locations without the need for equipment transfers at transload facilities at the border or warehouse staging to await appropriate equipment.

- The ability to provide continuing customs services related to in-bound transit, further inland, thus reducing the need to slow transit for the remainder of the cargo.

A corridor running between the border facility at Eastport, ID and the Spokane, WA area, associated with the “shortest” route is US-95/US-2 (**Exhibit 41**). The implications of the route segments that are designated as National Network Routes are discussed in the next section.

Exhibit 41: US-2, North-South Corridor Segment



Source: FWHA-ORNL, BTS, USGS, EPA, and Wilbur Smith Associates.

TRUCK SIZE AND WEIGHT

Commercial Motor Vehicles (CMV) are an important mode for moving high-value goods throughout the Northwest U.S., and use various regional roadway networks to transport their cargo. Throughout the Pacific Northwest (Washington, Oregon, Idaho, Montana, Alberta, and British Columbia) there are numerous size and weight regulations that greatly influence regional freight movement. The regulatory environment CMVs face is complicated because several truck configurations are allowed on designated roadways as they operate among several jurisdictions (state, national, local, etc.). Harmonizing regulations in IPH region with those of the surrounding states and provinces will have profound impacts on freight efficiency and could be helpful to encourage seamless interoperability between the road networks in the region's states and provinces.

Regional Roadway Networks Impacting Truck Size and Weight

The regional roadway network is comprised of federal, state, and local roadways that are designated differently according to their intended purpose. The most important of these networks with respect to truck size and weight is often the National Network (NN). The NN of Highways includes: (1) the Interstate Highway System; and, (2) other highways designated by the states in response to the Surface Transportation Assistance Act (STAA) of 1982. The National Network, sometimes referred to as the national truck network consists of highways submitted to FHWA as being capable of safely handling larger commercial motor vehicles. The criteria provided to states for guidance in designating NN routes is found in Chapter 23 of the Code of Federal Regulations (CRF), Section 658.9:

- (1) The route is a geometrically typical component of the Federal-Aid Primary System, serving to link principal cities and densely developed portions of the States.
- (2) The route is a high volume route utilized extensively by large vehicles for interstate commerce.
- (3) The route does not have any restrictions precluding use by conventional combination vehicles.
- (4) The route has adequate geometrics to support safe operations, considering sight distance, severity and length of grades, pavement width, horizontal curvature, shoulder width, bridge clearances and load limits, traffic volumes and vehicle mix, and intersection geometry.
- (5) The route consists of lanes designed to be a width of 12 feet or more or is otherwise consistent with highway safety.
- (6) The route does not have any unusual characteristics causing current or anticipated safety problems.

(7) For those states where State law provides that STAA authorized vehicles may use all or most of the Federal-Aid Primary system, the National Network is no more restrictive than such law. The appendix contains a narrative summary of the National Network in those States.

The federal vehicle size and weight standards listed in **Exhibit 42**, apply on NN Highways. Some exceptions to federal size and weight limits known as “grandfather rights” were granted to states that allowed higher limits prior to the imposition of the NN standards.

Exhibit 42: National Network Vehicle Size Standards

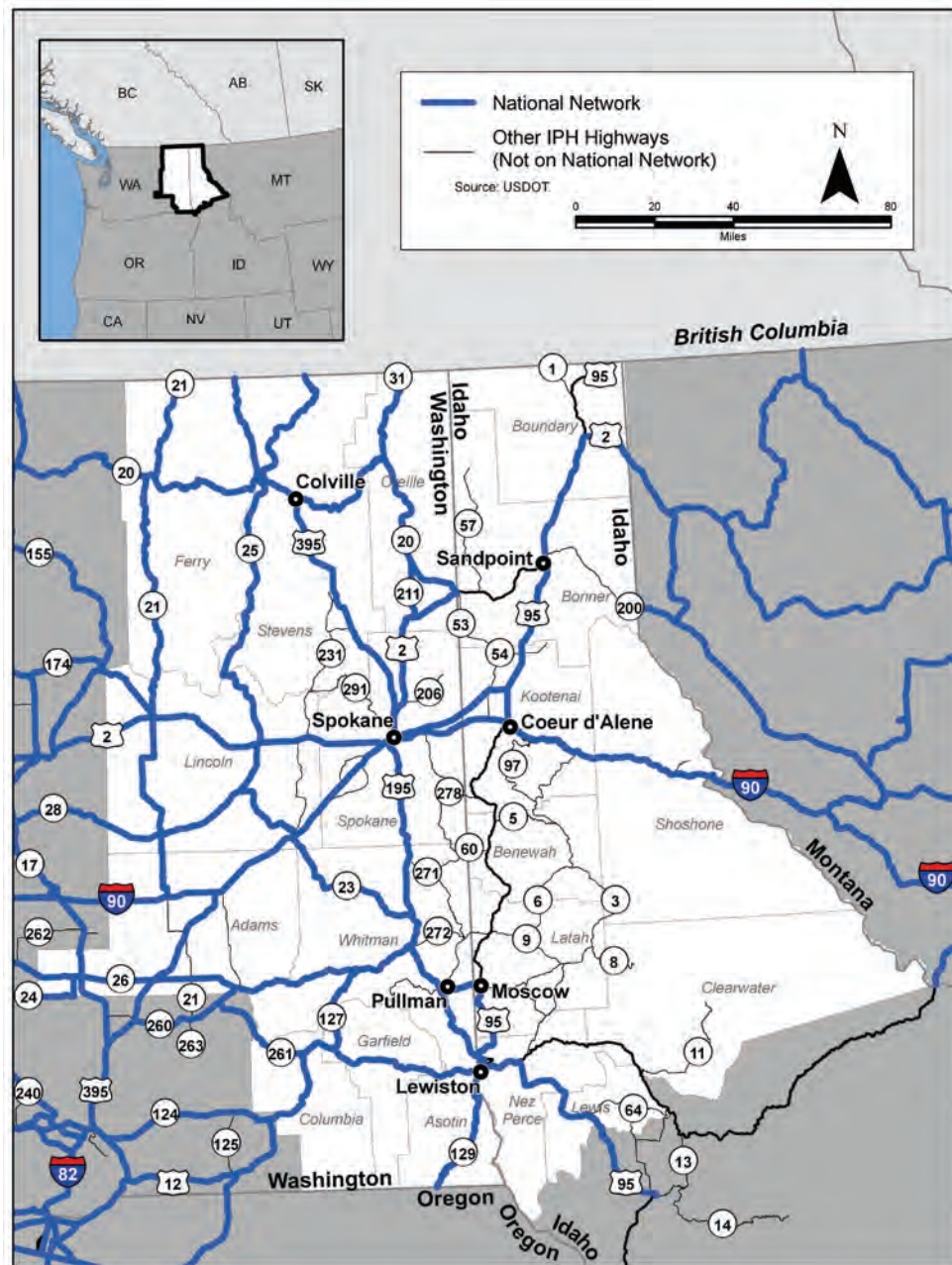
Overall Vehicle Length	<p>No federal length limit is imposed on most truck tractor-semitrailers operation on the National Network.</p> <p>Exception: On the National Network, combination vehicles (truck tractor plus semitrailer or trailer) designed and used specifically to carry automobiles or boats in specially designed racks may not exceed a maximum overall vehicle length of 65 feet, or 75 feet, depending on the type of connection between the tractor and trailer.</p>
Trailer Length	<p>Federal law provides that no state may impose a length limitation of less than 48 feet (or longer if provided for by grandfather rights) on a semitrailer operating in any truck tractor-semitrailer combination on the National Network. (Note: A state may permit longer trailers to operate on its National Network highways.)</p> <p>Similarly, federal law provides that no state may impose a length limitation of less than 28 feet on a semitrailer or trailer operating in a truck tractor-semitrailer-trailer (twin-trailer) combination on the National Network.</p>
Vehicle Width	<p>On the National Network, no state may impose a width limitation of <i>more or less</i> than 102 inches. Safety devices (e.g., mirrors, handholds) necessary for the safe and efficient operation of motor vehicles may not be included in the calculation of width.</p>
Vehicle Height	<p>No federal vehicle height limit is imposed. State standards range from 13.6 feet to 14.6 feet.</p>
Vehicle Weight	<p>National weight standards apply to commercial vehicle operations on the Interstate Highway System, approximately 40,000 miles of limited access, divided highways that span the nation. Off the Interstate Highway System, states may set their own commercial vehicle weight standards. Federal commercial vehicle maximum standards on the Interstate Highway System are: Single Axle - 20,000 lbs; Tandem Axle - 34,000 lbs; GVW - 80,000 lbs.</p> <p>The Federal Bridge Formula, introduced in 1975 to reduce the risk of damage to highway bridges by requiring more axles, or a longer wheelbase to compensate for increased vehicle weight, may require a lower GVW; depending on the number and spacing of the axles in the combination vehicle.</p>

It should be noted that the NN Highway system is different than the National Highway System (NHS). The NHS was developed by the USDOT in cooperation with states, municipalities and metropolitan planning organizations, as a high priority investment network. The NHS includes the Interstate Highway System, and the Strategic Highway Network (STRAHNET) which is the system of public

highways that provide defense access, continuity and emergency capabilities for defense purposes. Other principal arterials and connector routes are also part of the NHS.

The total National Network system is about 200,000 miles. The segments of the National Network in the IPH study area are shown in **Exhibit 43**.

Exhibit 43: NN Segments in the IPH Study Area



Source: FHWA-ORNL, March 2010.

The truck size and weight regulations applying to the NN and other highways in the IPH study area, as well as those applying to surrounding jurisdictions are summarized in **Exhibit 44**. Of note is the higher gross vehicle limit (GVW) of 105,500 allowed on Interstate and NN routes in Washington and Idaho due to grandfather exemption provisions in federal law. In Washington these higher limits are allowed without special permits, in Idaho special permits are required to travel NN and Interstate routes.

National Network Implications on Expanding Trade with Canada

A possible attraction for truck transit from the Canadian markets, specifically Alberta, utilizing the IPH study area as an entry point to western U.S. markets, would be the introduction of a more advantageous path for trucking productivity. Providing an opportunity for penetration beyond the border with larger truck configurations would in effect reduce trip counts to transport these goods into the U.S. In conjunction with the ability to produce continuing or realized reduced mileage, this promotes additional operating cost savings for the carriers through the reduction of empty miles.

Improved carrier productivity would also have a positive impact on shippers operating in an improved north-south corridor focused on trade. The lack of a high-level, north-south corridor was one of the most often repeated weaknesses of the IPH study area during interviews with shippers and carriers. Failing to pursue a common north-south corridor development for the study area will likely result in the current backhaul condition for shippers in the immediate area continuing or growing worse. Cargo owners for goods currently moving between the external regions would experience improved service and reliability as “freight moves freight”, or increased volumes drive carrier participation and investment in the corridor. New participants in the corridor may realize reduced pricing, over current lanes, based on carrier savings and advantage gained by placing goods into traditional backhaul lanes.

Many stakeholders in the IPH study area seem to be focused on debating which highway; US-395 or US-95, should be developed as the north-south trade with Canada. Trade and the freight movements that result are driven by population (consumption) and industry (production). Spokane is the largest production center in the study area, while Calgary and Edmonton offer two promising consumption markets. In combination US-395, US-2 and US-95 appears to offer the most direct route between the major population centers on either side of the border. This combination of routes would also offer better regional connectivity to the study area’s other modal assets. Overall, the entire IPH study area stands to gain with a more direct access between the Alberta and Saskatchewan provinces and the U.S. markets of Oregon and western Washington and significant populations of central and northern California.

The process to assign expanded length and weight regulation is compounded by the need to satisfy federal regulation on this segment, **see insert on Exhibit 44**.

Portions of the suggested trade corridor are designated as NN highway segments, such as US-2, north of Spokane to Dover, ID, and the US-95 segment from Sandpoint, ID to Bonners Ferry, ID. Under federal regulations LCV weight limits were “frozen” on the Interstate Highway System, and size limits were “frozen” on the NN by the Intermodal Surface Transportation Efficiency Act (ISTEA):

“ISTEA is an acronym for Intermodal Surface Transportation Efficiency Act of 1991. It imposed two separate freezes: (1) on the maximum weight of longer combination vehicles, which consist of any combination of a truck tractor and two or more trailers or semitrailers which operate on the Interstate System at a gross weight over 80,000 pounds; and (2) on the overall length of the cargo carrying units of combination vehicles with two or more such units where one or both exceed 28.5 feet in length on the National Network. The maximum weight of longer combination vehicles and the maximum length of the cargo carrying units of combination vehicles is the weight or length in actual and legal operation in a State on June 1, 1991, as documented in appendix C to 23 CFR 658. Also frozen were the routes and conditions in effect on June 1, 1991, for vehicle combinations subject to the freeze, as shown in appendix C to 23 CFR 658.”¹⁵

Since no portions of the suggested corridor would operation along interstate routes, it would appear that Washington and Idaho could consider adopting Canadian weight limits of 139,500 lbs. However, length limitations frozen by ISTEA include an overall limit of 68 feet in Washington State. In Idaho the limit is 95 feet. The current length limit for Canadian B-train double LCV configurations is 82 feet.

¹⁵ FHWA, Office of Freight Management and Operations:
<https://fhwaapps.fhwa.dot.gov/vswp/qa/qa.jsp?category=23%20CFR%20658.23#S0-149>

Exhibit 44: Regional Truck Size and Weight Regulations

	Width	Height	Length (Interstate & Designated Federal Routes)				Length (State/Provincial Routes)			Maximum Gross Vehicle Weight Interstate Highways	Maximum Gross Vehicle Weight Other Highways	Single Axle (lbs)	Tandem axle (lbs)
			Semi-trailer in TST	Full Trailer	Dbl Trailer	Overall Dbl LCV Length Limits	Semi-trailer in TST	Full Trailer	Dbl Trailer				
Federal			N/A							80,000		20,000	34,000
WA	102"	14'	53' (1)	53'	61' (2)	68'	53' (1)	53'	61' (2)	105,500 (3)	105,500 (3)	20,000	34,000
OR	102"	14'	53'	40'	NS (4)	68'	53'	40'	(5)	80000 (6)	80,000	20,000	34,000
ID	102"	14'	53'	53'	NS (7)	95'	48' (8)	53'	(9)	80000 (10)	105,500	20,000	37,800 (11)
MT	102"	14'	53'	28'6"	NS (12)	93'	53'	NS	65' (13)	80,000	80,000	20,000	34,000
AB	102"	13'6"	53'		75'5"		53'	41'	82' (14)	87,080 (15)	139,993	20,060	37,480
BC	102"	13'6"	53'		75'5"	82'	48'	41'	82' (14)	87,082	139,993 (16)	20,060	37,480

Abbreviations

TST = tractor semitrailer combination

Note: Table footnotes appear on the following page.

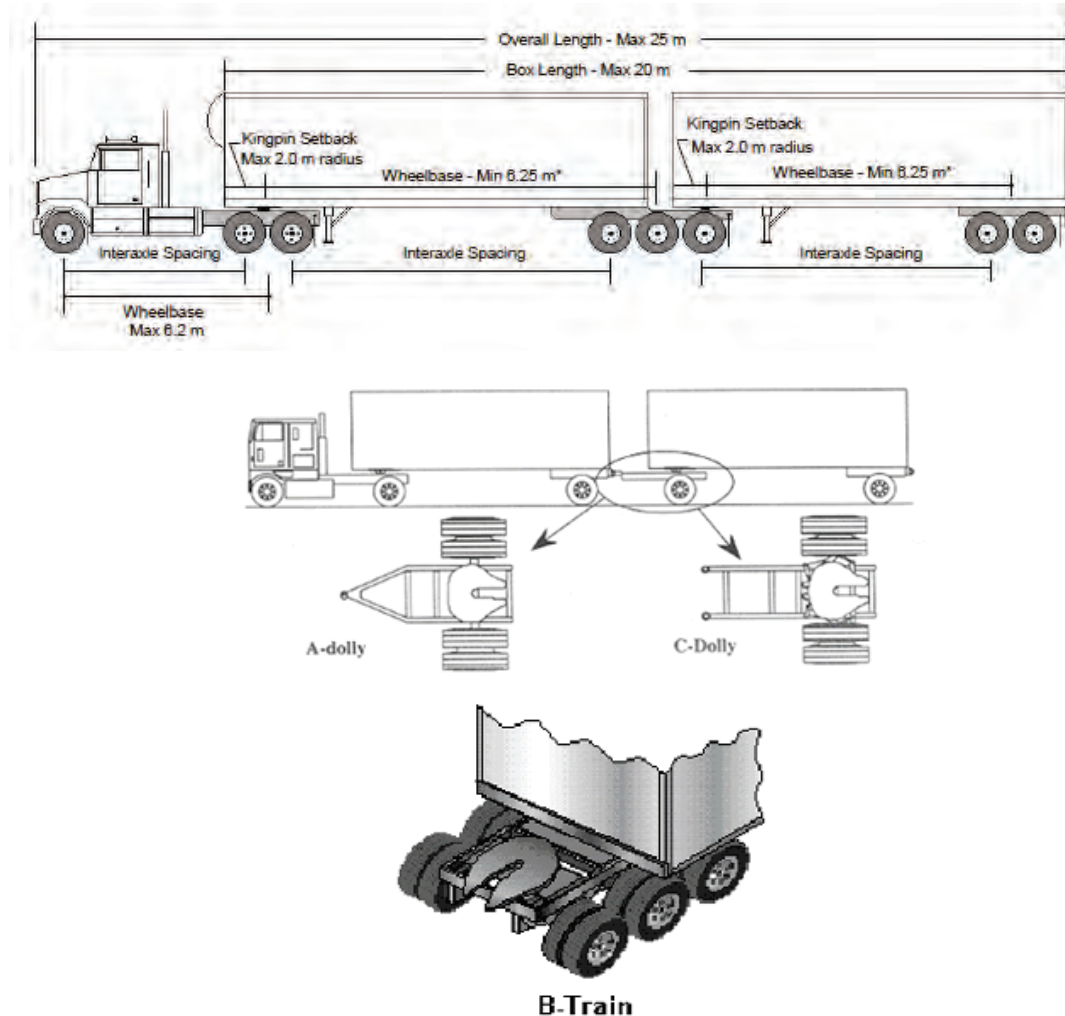
Footnotes for Exhibit 44

- (1) Trailers from 53' to 56' require a permit
- (2) Trailers from 61' to 68' require a permit
- (3) Provided vehicle complies with Federal bridge gross weight formula
- (4) Overall length not specified if trailing units, including space between, do not exceed 68' and first semitrailer does not exceed 40'
- (5) 75' overall on Group 1 highways; first trailer in combination not to exceed 40'. No overall length limit on Group 1 highways if the measurement from the front of the first trailer to the rear of the second trailer does not exceed 60' (including distance between trailers).
- (6) Two consecutive sets of tandem axles may carry a gross load of 34,000 lbs. each if the overall distance between the first and last axle is 36' or more
- (7) Overall length is 68' for the trailing unit including space between
- (8) 53' on some highways
- (9) 68' of trailers allowed on National Network roads. 61' of trailers, or 75' overall, allowed on non-National Network roads
- (10) Permit needed to exceed 80,000 lbs. up to 105,500 lbs.
- (11) When not over 80,000 lbs. GVW
- (12) Length of doubles not specified but trailers are limited to 28'6" each
- (13) Not specified when trailer length does not exceed 28' and operated within 10 miles of the interstate, designated, or primary highway; otherwise, 65' overall length
- (14) For A Train Doubles
- (15) For 5-axle tractor-semitrailer
- (16) For 7-axle unit
- (17) The GVW allowable by overweight permit is subject to the seasonal stability of the roadway and the capacity of the structures on the route of travel.
- (18) The State of Idaho has developed 7 overweight levels with varying single/tandem axle weight restrictions

One way that eastern Washington and northern Idaho could expand its trade opportunities, especially with Canada, would be to allow larger Canadian truck configurations to cross the border and then travel into some reasonable point within the region where loads could be deconsolidated. Idaho actually does this on a small segment of US-95. Heavier Canadian lumber trucks are allowed access to a lumber reload center in Eastport where they are loaded onto rail or smaller trucks. A potential opportunity to expand this concept could include a consolidation point near Sandpoint, or even as far south as Spokane. As discussed, for Canadian B-train configurations up to 82 feet in overall length to travel in Washington would require some route segments be removed from the NN designation.

Forming a framework that attract carriers to the Canadian-IPH node would include the identification of a currently utilized configuration to minimize the investment and time necessary to begin operations under the new length and weight regulations. Generally, the configuration utilized in the larger environment of Canada, is the “B-Train” double shown in **Exhibit 45**. Most doubles operating in the U.S. fleet currently utilize an “A-Train” or pintle hook coupling between the two trailers.

Exhibit 45: B-Train Configuration



The B-Train configuration has been demonstrated to be a safer coupling, because the fifth-wheel plate between the trailers increases the roll stiffness and the handling capabilities of the configuration. ‘B-Train’ and ‘C-Train’ configurations improve stability through “roll couplings.” These couplings take advantage of the fact that two adjacent units in a multi-trailer combination roll in different directions during a dynamic lane change maneuver. By making the coupling or hitch more rigid along the roll axis, each unit in the combination “helps” the other counteract excessive roll forces, and improving safety.

To initiate the process for expanding vehicle configurations in the IPH study area, the NN designations would need to be removed from some segments. A north-south corridor configuration could establish a road network that initiates a path for economic development. This development is not simply a benefit-value system for the region, but in collaboration with Canadian, Oregon, California, and private sector stakeholders can significantly impact the movement of freight in these corridors. While Congress has been opposed to broad changes to truck size and weight changes, members have expressed a willingness to consider controlled pilots in specific corridors. Both Maine and Vermont were granted a limited exemption from Interstate weight limits in 2009.

Further expansion of this concept could include the use of “triple” LCV configurations beyond current limits. Currently triple-trailer LCVs are allowed in Idaho, Oregon, Nevada and the province of Alberta, but are not allowed in Washington or British Columbia. Triples configuration is the attachment of three 28-foot trailers to a single tractor. This equipment is popular where it is allowed with carriers such as Yellow-Roadway Corporation, FedEx and UPS allowed with less than truckload and small package. A practical example is following the movement of 28-foot trailers from the California-Oregon border to the Canadian or Idaho borders (**Exhibit 46**). This corridor is one that has previously been identified as a logical selection for truck transport of goods, both domestically and internationally.

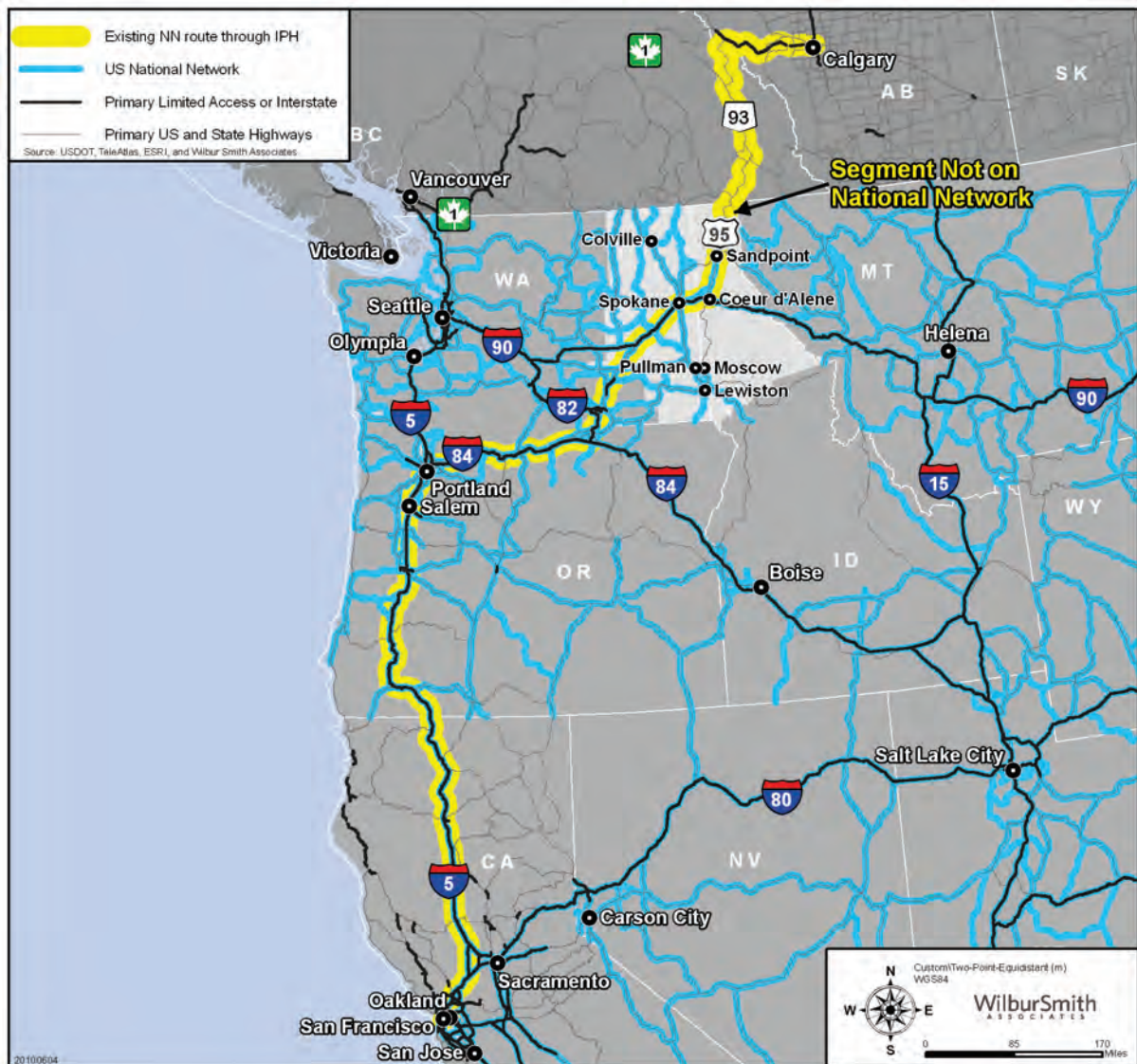
To transport six 28 foot trailers from California to the Canadian border or to Idaho (without consideration of Hours of Service requirements):

- Three twin trailer combinations (tractor-semitrailer, trailer, trailer) requiring three drivers, travel north from California on Interstate 5.
- Upon entering Oregon where triples are allowed, the drivers reconfigure the three units into two and one driver and tractor returns to California – since only two are required to carry the trailers through Oregon.
- Upon reaching the Washington border, a third driver and power unit would again be needed, so the two triple configurations would need to be broken down into three twin trailer configurations once again to access Canada.

As this simple example shows the differences in regulations between states add cost and complexity to carrier operations reducing the attraction of the route in this example.

In each alternative, total VMT for the same amount of goods movement is increased, adding to issues such as air quality concerns, increased road wear and maintenance, and additional compliance monitoring efforts to accommodate the additional trip counts.

Exhibit 46: Triples Route Example



*NOTE: Route is shortest NN route between points

As discussed with LCV double configurations, the exiting ISTE freeze would prohibit the expansion of triple configurations on designated portions of the NN. However, offering a continuous corridor from the Canadian border through the study area into Oregon where triple LCVs could operate could potentially provide a significant boost to transportation and warehousing activities in the region.

RAILROAD ISSUES AND OPPORTUNITIES

IPH Railroad Issues

Most shippers interviewed in the region expressed general satisfaction with their access to the variety of rail services in the region. A number of shippers who regularly shipped or received goods via container commented that having access to true double-stack intermodal service would be nice, but acknowledged the unlikelihood of the proposition given the proximity of the region to the coast. As discussed earlier, double-stack, container unit trains offer the best service and rates, but to maintain low transit times and high reliability, Class I railroads move these trains between the coast and Chicago with few or no stops. Several shippers interviewed indicated that intermodal services offered in the region had actually improved in recent years based on the length of shipping time and access to containers. Without significant changes in the current market dynamics, for instance a severe decline in Asian imports moving through PNW gateways, the IPH study area will likely continue as a third tier intermodal hub.

One of the biggest challenges noted by some rail shippers who were interviewed was the ability to move products by rail to the east coast. However, some non-traditional alternatives such as Railex and the BNSF container service beginning in Quincy offer good opportunities for shippers in the study region.

Bulk shippers also acknowledged overall satisfaction with access to rail services in the region, however several commented that they felt pricing could be better. However, a number of studies on rail rates have suggested that locations served by two Class I railroads experience better rates than shippers captive to a single railroad. A number of shippers also commented on a capacity constraint between Plummer and Spokane on the UP line. The constraint exists because this segment of rail line cannot accommodate the new weight standard of 286,000 gross lbs. for hi-cube box cars. This constraint limits what can be loaded into railcars that utilize this segment, and has the potential of making the rail a less competitive than other options, like truck.

Public officials interviewed for the study tended to be more vocal and focused on rail issues and pointed to a number of high profile projects underway to improve the rail network and spur economic development:

- Bridging the Valley (BTV) is a series of projects to address railroad/highway conflicts in the communities between Spokane, WA and Athol, ID. In this project, the existing Union Pacific (UP) operations would be relocated to the Burlington Northern Santa Fe (BNSF) mainline assuming BNSF and UP can negotiate mutually-accepted trackage rights agreements. Additional track would be constructed on the BNSF corridor, which today consists of both single and double track mainline. The Bridging the Valley project when fully funded and implemented will

separate vehicle traffic from train traffic in the 42-mile corridor between Spokane, WA and Athol, ID. Double-tracking of the BNSF route will provide increased rail capacity. The project will also provide grade separation of 19 existing at-grade rail crossings, and a new UP yard in Spokane. The first funded project under this program is a grade separation at Havana Street in Spokane.¹⁶

- Geiger Spur and a proposed rail transload facility. Spokane County was pursuing a second rail transload facility resulting from the purchase of the Gieger Spur, a portion of BNSF rail line outside the Fairchild Air Force base. At the time of the interview, the new rail line for the spur had been completed and removing the old line from the base was in progress. The county was seeking funds to rehabilitate older portions of the spur. The county was hoping to attract a partner to assist in developing a transload facility to better serve existing business in the area.

Inland Pacific Hub Study Area's Rail Network

Railroads fall into three classifications: Class I railroads have annual revenue in excess of \$277.7 million for at least three consecutive years, Class II (regional) railroads have annual revenues greater than \$20.5 million but less than \$277.7 million, and Class III railroads (short line railroads) have annual revenues below \$20.5 million. As the name indicates, short lines operate over a relatively short distance. Short lines serve the larger railroads by collecting and distributing railcars to individual industrial and agricultural shippers and receivers.

The IPH study area has two Class I railroads operating in the region: the Burlington Northern Santa Fe Railway (BNSF) and the Union Pacific Railroad (UP). The two Class I railroads provide mainline service between the Pacific Coast and the Midwest and Southwest. Neither Class I railroad provides contiguous coast to coast rail service, although both have interchange agreements with eastern railroads that enable freight to be moved by rail to all parts of the country. Aside from carload service (boxcars, hopper cars, tank cars, etc.) both railroads have extensive intermodal networks in the western half of the U.S. which are discussed in more detail later in this section

BNSF Railway Network in the IPH Study Area

The BNSF operates three lines connecting to West Coast marine ports. Two of these converge at the Tri-Cities. The first line is the Auburn-Pasco route, which crosses the Cascade Range through the Stampede Pass tunnel and proceeds northeast paralleling US-395 and enters the Inland Pacific Hub at Ritzville and follows I-90 to Spokane, and then continues to Sandpoint and then passing through Bonners Ferry on its way to the Montana border. This line is part of the

¹⁶ <http://www.bridgingthevalley.org/>

BNSF's primary route for double-stack intermodal traffic from Spokane east to the Midwest.

BNSF's second line is the Vancouver-Pasco line, which runs through southern Washington along the north side of the Columbia River. This route is the primary route for export grain trains from the IPH to the Columbia River ports in Portland and Vancouver. From Pasco, the line joins the first-described mainline to Spokane.

The third BNSF line, the Everett-Spokane line, which passes through the Cascade Tunnel at Stevens Pass, is the BNSF's major northern transcontinental route for double-stack intermodal container trains west of Spokane. It is heavily used, operated at about 70 percent of practical capacity in 2008. It passes through Leavenworth and Wenatchee and enters the Inland Pacific Hub west of Odessa in Lincoln County. It then proceeds east parallel to much of SR 28 and then into Spokane.

The BNSF operates a branch line from Spokane to connect to the Kettle Falls International Railway (KFI). From Spokane, the branch line proceeds northwest to Chewelah, connecting with the KFI before it proceeds to Kettle Falls. From there it splits and runs two lines to British Columbia: one proceeds northwest to Laurier, paralleling US-395; the other runs northeast to the town of Boundary.

From Marshall, southwest of Spokane, the BNSF also connects to two lines into Latah County via the Washington and Idaho Railway (WIR). The first line begins at the Washington border near Potlatch and extends to Princeton, ID. The second line extends to Moscow.

Union Pacific Railroad Network in the IPH Study Area

The UP operates an east-west main line route in northern Oregon, between Portland and Hinkle along the south side of the Columbia River. The east-west primary main line continues east and south from Hinkle towards Pocatello, ID and on to Omaha and Chicago. The Hinkle to Spokane main line follows the Snake River northeast for several miles entering the IPH in southeastern Adams County. From there it parallels I-90 to Spokane. For the last 12 miles of the Hinkle-Spokane line (from Fish Lake to Spokane), the UP operates on the BNSF Lakeside Subdivision via trackage rights.

From the Hinkle-Spokane main line, the UP operates two branch lines: one branch extends from the Tri-Cities to Yakima; the other runs to Riparia in Whitman County to connect to the Great Northwest Railroad (GNWR) leading into Lewiston.

At Spokane, the UP splits. One line runs northeast through the cities of Sandpoint and Bonners Ferry to the town of Eastport linking with the Canadian Pacific Railway. The other line runs southeast connecting to the St. Maries River

Railroad (STMA) at Plummer. Another branch extends from Manito to Fairfield in southeast Spokane County.

Montana Rail Link Network in the IPH Study Area

The Montana Rail Link (MRL) is the IPH's only Class II railroad. The MRL connects with the BNSF at Spokane. From Spokane it runs northeast to Sandpoint over BNSF trackage, where it connects with the UP. From Sandpoint the MRL parallels ID SH-200 and proceeds into Montana. The MRL then runs east to Billings, passing through the cities of Missoula, Helena, and Bozeman. MRL currently serves no shippers in Washington or Idaho.

Short Line Rail Network in the IPH Study Area

A total of eight short line railroads serve the IPH study area (**Exhibit 47**). Short line railroads serving the region include the Kettle Falls International Railway, the Pend Oreille Valley Railway, the Eastern Washington Gateway Railroad, the Washington & Idaho Railroad, the Palouse River & Coulee City Railroad, the Great Northwest Railroad, the St. Maries River Railroad, and the Bountiful Grain and Craig Mountain Railroad. These railroads collectively operate nearly 900 miles of track and reach all parts of the region, with the exception of certain areas within Ferry, Shoshone and Clearwater Counties.

Short line railroads typically serve as short distance haulers between the local freight generators and receivers, or as the connecting line between Class I railroad terminals and local freight generators or receivers. Short line railroads range in length of track from only a few miles exclusively serving a distinct shipper and receiver such as a lumber mill to a wood products manufacturing plant, or the short line railroad's track can span several hundred miles connecting multiple shippers and receivers such as grain elevators with rail terminals at river or ocean ports.

Existing Rail Lines

UP	WIR	BGCM
BNSF	TCRY	STMA
GNWR	CBRC	MRL
POVA	RS	
PCC	CSCD	
KFR	EWG	

0 20 40 60 Miles

British Columbia

Sandpoint, Idaho is the junction of two inter-continental railways, the BNSF and UP and one regional railroad, the Montana Rail Link. Near downtown Sandpoint, the BNSF and UP lines over-cross and continue north along US-95 and US-2. The 70-Mile BNSF corridor between Sandpoint and Spokane, WA, known as the “funnel”, is somewhat constrained with numerous at-grade crossings and remaining sections of single track along its mainline. Conversion to double-track mainline is planned for most of or the entire BNSF corridor between Spokane

and Athol. This conversion and a series of grade crossing improvements are comprehensively known as the “Bridging the Valley Project.” When fully funded and implemented, the project will separate vehicle traffic from train traffic in the 42-mile corridor between Spokane, WA and Athol, ID.

The Union Pacific Railroad’s (UP) secondary mainline extends about 150 miles between Spokane and Eastport, ID, where it connects to the Canadian Pacific system. It consists of the former Spokane International Railway (SI) alignment, with numerous at-grade crossings. With the completion of double-tracking along the BNSF alignment, it is anticipated the UPRR may shift operations to the BNSF mainline, and the SI alignment will be used only for local deliveries if trackage rights agreements between the two railroads are agreed upon.

Railroad Capacity

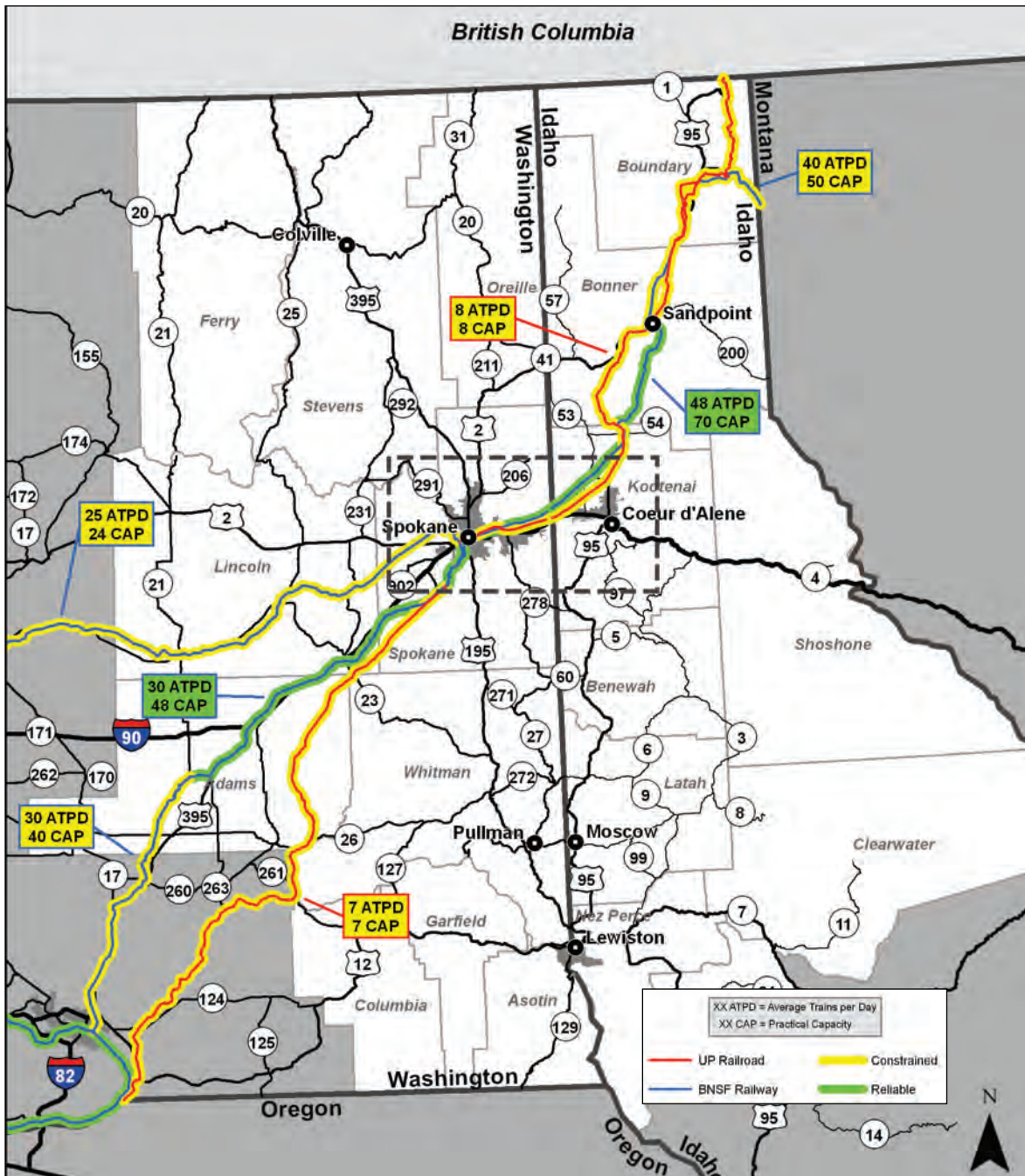
Rail Capacity is calculated in a two-step process. First, a “theoretical capacity” is determined, assuming perfect conditions and operations. Second, “practical capacity” is determined by considering factors such as possible disruptions, signal needs, human decisions, weather, possible equipment failures, supply and demand imbalances, and seasonal demand. Practical capacity is roughly 60 percent of the theoretical capacity and provides reliable service. At higher percentages, rail congestion increases rapidly and service reliability deteriorates quickly. **Exhibit 48** illustrates the rail capacity and activity on the IPH’s Class I main lines.

The BNSF typically serves 50 to 60 trains per day (sometimes up to 70 during harvest season, which is capacity) in “the funnel,” and the UP/SI route typically serves up to eight trains daily. The BNSF mainline across Stampede Pass serves about five trains daily, the Columbia River route, about 35 trains daily and Stevens Pass route handles about 16 trains per day. The UP route to the Tri-Cities serves about seven trains daily.

The BNSF Auburn-Pasco line across Stampede Pass cannot be used to relieve congestion on the Columbia River route or over Stevens Pass – This is because of ceiling of the Stampede Tunnel is not high enough to handle double stack containers. Another constraint is the 2.2 percent grade between the rail stations of Easton and Martin. Helper units (Additional locomotive power unit) must be used to accommodate heavy train over this section of track. The addition and removal of the helper units requires additional time over this line.

The BNSF operates under constrained conditions on its Everett-Spokane line, as well as between Pasco and Lind and between Sandpoint and Montana. From Lind to Sandpoint, including the Spokane vicinity, the BNSF operates under reliable conditions. The UP operates under constrained conditions on its entire run through the Inland Pacific Hub, from Hinkle to Eastport.

Exhibit 48: IPH Study Area Class I Capacity Constraints (2007)



Source: IPH Multimodal Infrastructure Report, Technical Memorandum #1

At-Grade Railroad Crossings

The Inland Pacific Hub's highway and railway networks intersect at numerous locations. Of the region's 887 at-grade railroad crossings, 878 provide some form of warning. Of these, 507 have cross-bucks only, 158 have flashing lights with gates, 122 have stop signs, and 87 have flashing lights only.

Railroad Bottlenecks

On the BNSF's Pasco-Spokane line, the primary source of bottlenecks is the distance between passing sidings. This manifests in the vicinity of Connell near the Franklin-Adams county line. On the BNSF's Everett-Spokane line, the distance between passing sidings is a secondary source. This occurs in the vicinity of Medical Lake near the Lincoln-Spokane County line. Similar conditions exist between Spokane and Sandpoint near Rathdrum.

Rail Yards

BNSF operates a major yard at Spokane known as Yardley, adjacent to overcrossings at Havana Street and Fancher Road. It is a crew change point. Traffic is a mix of originating, terminating, and through trains. Yardley processes cars to and from local industries and is a block swap location for intermodal trains.

UP operates its Spokane Yard for local industry access, originating, terminating, and through trains. It also serves as a crew change point.

For both the BSNF and the UP, yard capacity at Spokane is a secondary source of bottlenecks.

Neither Class I railroad has a dedicated intermodal facility with an overhead crane needed for loading double-stack trains. The rail yards do have side-packers which can lift containers or trailers onto or off-of flatcars. This loading method appears adequate for the level of intermodal activity that exists.

Commodity Flows Utilizing Rail in the IPH Study Area

Commodity flows for the IPH are analyzed in detail in the Inland Pacific Hub Transportation Study's *Work Element 3.2 - Regional Freight Profile*. Below is a summary of rail intermodal freight flows.

Rail Carload and Intermodal Tonnage Summary

Overall, rail flows for the IPH will see an increase in rail freight from a total 13.27 million tons in 2007 to 13.41 million tons in 2027, an increase of 1.03 percent.

The tonnage table shows carload freight in 2007 was at 12.74 million tons is forecast to decrease to 12.64 million tons in 2027 or 0.78 percent. Intermodal freight in 2007 was at 530,760 tons and is forecast to grow to 763,095 tons by 2027 or 42.7 percent (**Exhibit 49**). The table shows tonnage for carload and intermodal and the combination of the two. It also shows the amount of growth or contraction between 2007 and 2027:

- Local freight will see a decrease of 48,354 tons.

- West combined inbound and outbound: carload transportation will decrease 496,148 tons or 9.08 percent, and intermodal transport will increase 139,530 tons or 72.58 percent.
- East combined inbound and outbound: carload transportation will increase 341,543 tons or 6.49 percent, and intermodal transport will increase 88,805 tons or 29.93 percent.
- North combined inbound and outbound: carload transportation will increase 337,762 tons or 36.23 percent, and there is no intermodal service to or from the North.
- South combined inbound and outbound: carload transportation will decrease 234,096 tons or 23.8 percent, and there is no intermodal service to or from the South.

Inbound and Outbound Commodities Moved By Rail

Inbound commodities transported into the IPH by rail are shown in **(Exhibit 50)**. Coal appears to be the largest inbound and outbound commodity. However, coal is not mined in the IPH. Coal is freight merely passing through the region. One railroad brings it into the region, where it is interchanged to another railroad for continuance of the journey. Because of the interchange coal appears as inbound tonnage and again as outbound tonnage. Coal's tonnage was retained in the inbound and outbound datasets to maintain the dataset integrity. The other top commodities clay, petroleum and chemical products (including fertilizers), farm products and lumber.

Outbound commodities focus on lumber and wood products, and farm and food products **(Exhibit 51)**. Over the forecast period these commodities are forecast to decrease in outbound tonnage.

Exhibit 49: Rail Carload and Intermodal Tonnage

Rail Carload and Intermodal Tonnage			Local Traffic: Circulates Between IPH Counties	Western Origins or Destinations	Eastern Origins or Destinations	Northern Origins or Destinations	Southern Origins or Destinations	Commodity Total
County	Year	Data	Carload Intermodal	Carload Intermodal	Carload Intermodal	Carload Intermodal	Carload Intermodal	
Combined IPH Counties	2007	Tonnage	98,020	560,236 6,560	3,649,196 222,480	788,504	136,040	5,461,036
Inbound *	2027	Tonnage	49,666	534,764 8,291	4,417,696 282,968	1,050,633	144,635	6,488,653
		% vs 2007	(49.33%)	(4.55%) 26.39%	21.06% 27.19%	33.24%	6.32%	18.82%
Combined IPH Counties	2007	Tonnage	98,020	4,904,275 185,680	1,611,812 120,040	143,836	847,560	7,911,223
Outbound *	2027	Tonnage	49,666	4,433,599 331,770	1,184,854 148,357	219,469	604,868	6,972,583
		% vs 2007	(49.33%)	(9.60%) 78.68%	(26.49%) 23.59%	52.58%	(28.63%)	(11.86%)
Combined IPH Counties	2007	Tonnage	98,020	5,464,511 192,240	5,261,008 342,520	932,340	983,600	13,274,239
Total *	2027	Tonnage	49,666	4,968,363 340,061	5,602,551 431,325	1,270,102	749,504	13,411,570
		% vs 2007	(49.33%)	(9.08%) 76.89%	6.49% 25.93%	36.23%	(23.80%)	1.03%
Carload Totals	2007	Tonnage	98,020	5,464,511	5,261,008	932,340	983,600	12,739,479
Carload Totals	2027	Tonnage	<u>49,666</u>	<u>4,968,363</u>	<u>5,602,551</u>	<u>1,270,102</u>	<u>749,504</u>	12,640,185
		Change	(48,354)	(496,148)	341,543	337,762	(234,096)	(99,294)
		% vs 2007	(49.33%)	(9.08%)	6.49%	36.23%	(23.80%)	(0.78%)
Intermodal Totals	2007	Tonnage		192,240	342,520			534,760
Intermodal Totals	2027	Tonnage		<u>331,770</u>	<u>431,325</u>			763,095
		Change		139,530	88,805			228,335
		% vs 2007		72.58%	25.93%			42.70%
Carload + Intermodal	2007	Tonnage	98,020	5,656,751	5,603,528	932,340	983,600	13,274,239
Carload + Intermodal	2027	Tonnage	<u>49,666</u>	<u>5,300,133</u>	<u>6,033,876</u>	<u>1,270,102</u>	<u>749,504</u>	13,403,279
		Change	(48,354)	(356,618)	430,348	337,762	(234,096)	129,040
		% vs 2007	(49.33%)	(6.30%)	7.68%	36.23%	(23.80%)	0.97%

Source: 2007 TRANSEARCH™, Global Insight

Exhibit 50: Top Inbound Commodities Shipped by Rail (Excludes Local Traffic)

Inbound Directions: All IPH Counties: West, East, North and South From All Origins Inbound Flows: All Trade Flows from All Countries Inbound Modes: Rail: All Types								Directions: All IPH Counties: West, East, North and South All Origins Flows: All Trade Flows from All Countries Modes: Rail: All Types
Top 20 Inbound Commodities	2007 Tons	Growth % ▶	2012 Tons	Growth % ▶	2017 Tons	Growth % ▶	2027 Tons	Comparison Chart For Top 10 Inbound Commodities
Coal	2,534,792	4.53%	2,649,724	11.52%	2,954,921	11.51%	3,295,021	
Clay, Concrete, Glass or Stone	588,228	(17.09%)	487,712	8.01%	526,795	12.20%	591,079	
Petroleum or Coal Products	504,796	(4.66%)	481,293	3.70%	499,101	0.68%	502,472	
Chemicals or Allied Products	471,752	2.73%	484,641	11.91%	542,352	16.58%	632,275	
Farm Products	273,828	(6.12%)	257,073	3.02%	264,844	5.61%	279,715	
Food or Kindred Products	159,808	(0.71%)	158,681	4.35%	165,586	9.58%	181,455	
Misc Mixed Shipments	135,760	(15.92%)	114,147	11.68%	127,474	39.81%	178,216	
Lumber or Wood Products	131,000	(27.04%)	95,579	10.11%	105,246	19.84%	126,125	
Pulp, Paper or Allied Products	118,592	(10.20%)	106,497	6.49%	113,407	8.03%	122,519	
Transportation Equipment	115,480	(23.08%)	88,825	26.15%	112,056	46.47%	164,125	
Primary Metal Products	110,820	(29.39%)	78,252	2.58%	80,272	4.32%	83,738	
Waste or Scrap Materials	84,520	16.99%	98,879	8.88%	107,656	15.56%	124,406	
Freight Forwarder Traffic	71,280	(15.34%)	60,343	8.31%	65,357	33.56%	87,289	
Rubber or Misc Plastics	19,800	1.34%	20,064	(12.82%)	17,492	11.93%	19,579	
Small Packaged Freight Shipments	9,000	(15.17%)	7,635	8.94%	8,317	33.32%	11,088	
Nonmetallic Minerals	7,840	(11.76%)	6,918	9.04%	7,543	5.31%	7,944	
Misc Freight Shipments	7,200	(3.81%)	6,926	13.04%	7,829	41.86%	11,106	
Shipping Containers	6,560	(13.89%)	5,649	9.19%	6,168	34.42%	8,291	
Metallic Ores	3,960	(6.88%)	3,688	(19.26%)	2,978	40.16%	4,173	
Machinery	2,840	(20.48%)	2,258	13.09%	2,554	9.78%	2,803	
Total For Top 10 Commodities	5,034,036	(2.18%)	4,924,172	9.90%	5,411,783	12.22%	6,073,002	
Top 10's Percent of Total	93.87%		94.35%		94.57%		94.32%	
Total For Top 20 Commodities	5,357,856	(2.67%)	5,214,784	9.65%	5,717,948	12.51%	6,433,419	
Top 20's Percent of Total	99.90%		99.92%		99.92%		99.91%	
Total For All Commodities Inbound	5,363,016	(2.68%)	5,219,065	9.65%	5,722,526	12.52%	6,438,988	

Commodity	2007	2012	2017	2027
Coal	2,534,792	2,649,724	2,954,921	3,295,021
Clay, Concrete, Glass or Stone	588,228	487,712	526,795	591,079
Petroleum or Coal Products	504,796	481,293	499,101	502,472
Chemicals or Allied Products	471,752	484,641	542,352	632,275
Farm Products	273,828	257,073	264,844	279,715
Food or Kindred Products	159,808	158,681	165,586	181,455
Misc Mixed Shipments	135,760	114,147	127,474	178,216
Lumber or Wood Products	131,000	95,579	105,246	126,125
Pulp, Paper or Allied Products	118,592	106,497	113,407	122,519
Transportation Equipment	115,480	88,825	112,056	164,125

Source: 2007 TRANSEARCH™, Global Insight

Exhibit 51: Top Outbound Commodities Shipped by Rail (Excludes Local Traffic)

Outbound Directions: All IPH Counties: West, East, North and South to All Destinations Outbound Flows: All Trade Flows to All Countries Outbound Modes: Rail: All Types								Directions: All IPH Counties: West, East, North and South Flows: All Trade Flows to All Countries Modes: Rail: All Types	
Top 20 Outbound Commodities	2007 Tons	Growth % ▶	2012 Tons	Growth % ▶	2017 Tons	Growth % ▶	2027 Tons	Comparison Chart For Top 10 Outbound Commodities	
Coal	2,583,149	2.72%	2,653,434	0.47%	2,665,949	11.26%	2,966,182		
Lumber or Wood Products	1,881,720	(10.62%)	1,681,936	(6.31%)	1,575,771	(20.74%)	1,248,881		
Farm Products	1,768,218	(19.12%)	1,430,116	(20.42%)	1,138,086	(33.36%)	758,444		
Waste or Scrap Materials	387,820	(0.51%)	385,860	14.33%	441,172	38.84%	612,522		
Nonmetallic Minerals	374,844	(8.29%)	343,770	23.00%	422,835	18.23%	499,915		
Pulp, Paper or Allied Products	301,080	(5.49%)	284,565	1.37%	288,474	(4.84%)	274,509		
Food or Kindred Products	241,680	2.03%	246,586	(7.04%)	229,235	(19.93%)	183,559		
Chemicals or Allied Products	98,880	(3.66%)	95,264	7.60%	102,506	8.98%	111,713		
Clay, Concrete, Glass or Stone	57,560	0.64%	57,931	13.75%	65,897	25.02%	82,387		
Shipping Containers	50,960	(1.64%)	50,123	9.47%	54,872	36.39%	74,842		
Misc Mixed Shipments	18,240	(8.07%)	16,768	40.14%	23,498	47.62%	34,688		
Freight Forwarder Traffic	14,360	(10.22%)	12,893	4.78%	13,508	25.16%	16,906		
Transportation Equipment	13,160	17.06%	15,405	22.84%	18,924	43.00%	27,062		
Petroleum or Coal Products	7,772	(1.94%)	7,621	32.07%	10,065	30.60%	13,145		
Misc Freight Shipments	4,880	(24.67%)	3,676	(9.14%)	3,340	(10.51%)	2,989		
Rubber or Misc Plastics	3,880	8.34%	4,204	24.64%	5,239	48.65%	7,788		
Primary Metal Products	3,600	5.74%	3,807	18.25%	4,501	27.97%	5,761		
Fabricated Metal Products	800	(6.23%)	750	10.54%	829	22.78%	1,018		
Small Packaged Freight Shipments	600	(13.06%)	522	0.72%	525	15.55%	607		
Total For Top 10 Commodities	7,745,911	(6.67%)	7,229,585	(3.39%)	6,984,796	(2.46%)	6,812,953		
Top 10's Percent of Total	99.14%		99.10%		98.86%		98.41%		
Total For Top 20 Commodities	7,813,203	(6.63%)	7,295,230	(3.15%)	7,065,227	(2.01%)	6,922,917		
Top 20's Percent of Total	100.00%		100.00%		100.00%		100.00%		
Total For All Commodities Outbound	7,813,203	(6.63%)	7,295,230	(3.15%)	7,065,227	(2.01%)	6,922,917		

Source: 2007 TRANSEARCH™, Global Insight

Specialized Trains Serving the Inland Pacific Hub Study Area

Washington Grain Train

The Washington Grain Train, managed by WSDOT, and the Ports of Walla Walla, Moses Lake, and Whitman County serves over 2,500 cooperative members and farmers throughout southeastern Washington. It collects wheat and barley from grain elevators in Warden, Schrag, La Crosse, Prescott, Endicott, Willada, St. John, and Thornton.

BNSF, UP and various short line railroads move the operation's 89 grain cars. Operations are split into two different services. The first operation originates from Moses Lake and transports grain to export facilities on the Columbia River and the Puget Sound. The second operation originates from the Palouse and transports grain to the Wallula barge terminal on the Columbia River. Through these operations, grain reaches export facilities in Seattle, Tacoma, Vancouver, Kalama, and Portland.

RaileX Train

Railex, LLC is a transport and warehousing company based out of Schenectady, New York. Railex operates unit trains dedicated to transporting fresh produce, frozen foods, dried goods, and beverages. Railex trains consist of 55 64-foot temperature controlled cars with electronic temperature monitoring and GPS tracking. The underlying railroads for Railex are the UP and CSX. Railex guarantees five-day service between Wallula and the receiving end of the service, Rotterdam, NY. The trains stay intact from origin to destination, reducing time delays and minimizing product damage and degradation.

Railex has 220,000 square feet of refrigerated warehouse at Wallula, in Walla Walla County. This facility has 17,500 racked pallet positions, six distinct computer-controlled temperature zones, 19 enclosed refrigerated rail docks, 38 refrigerated truck docks, and a two-mile rail loop track.

Grain Elevators

Grain elevators are fundamental to the economies of farming communities because they store large quantities of wheat, barley, and any other dry commodities before they are sent to consuming markets. During harvest, grain trucks transport the grain from the fields to a nearby elevator. Eventually, the grain is deposited into rail hopper cars to be hauled to ports or production facilities.

Exhibit 52 displays the location of approximately 100 grain elevators in the IPH study area.

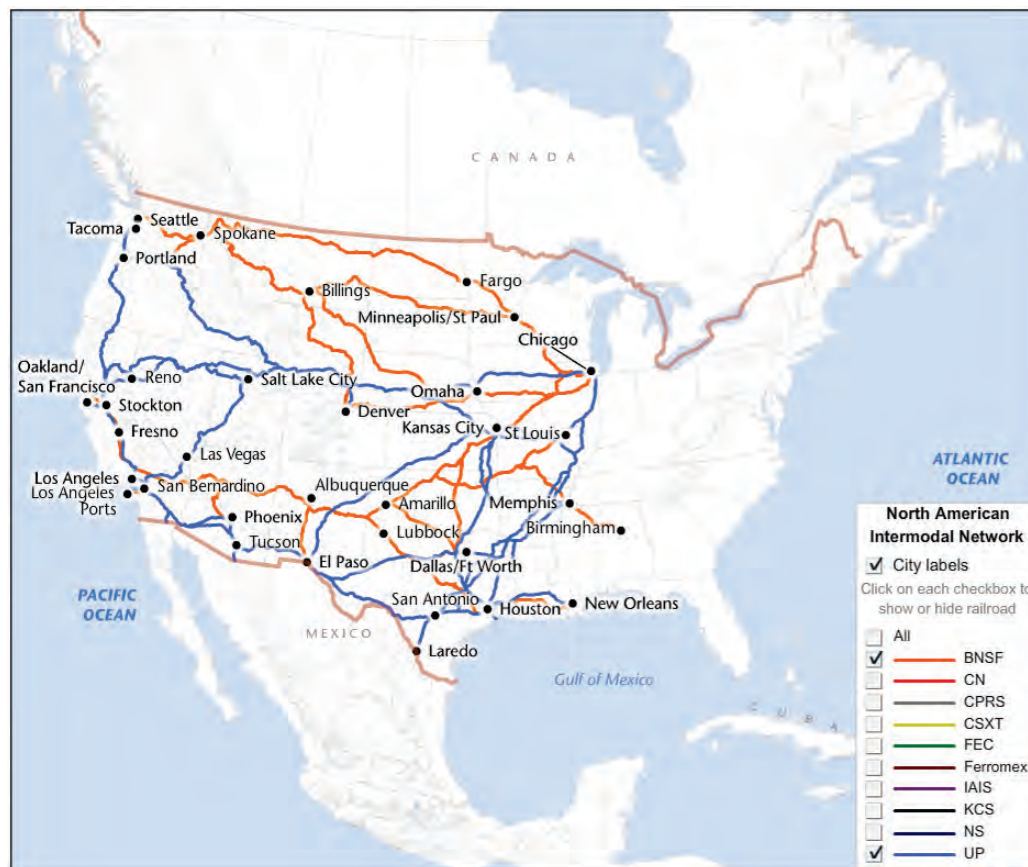
A detailed map of Idaho showing the locations of grain elevators, represented by yellow dots. The map includes major cities like Colville, Sandpoint, Coeur d'Alene, Spokane, Pullman, Moscow, Lewiston, and Pocatello. It also shows state boundaries with Washington, Oregon, Montana, and British Columbia, as well as rivers and water bodies. A legend indicates that yellow dots represent grain elevators with unknown completeness, and blue lines represent rivers and water bodies. A scale bar from 0 to 80 miles and a north arrow are provided. An inset map shows the location of Idaho within the western United States.

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Intermodal Rail Network Serving the IPH Study Area

The IPH study area has limited intermodal rail service in the region. The BNSF Railway pull a significant amount of intermodal service non-stop through the region but few of the easily recognizable, long double-stack intermodal trains stop in the region to discharge or pick-up freight. **Exhibit 53** shows the existing intermodal service routes between Seattle and Chicago BNSF's uses the northern route (gold line on the network map) while the UP uses the more southern route (blue line).

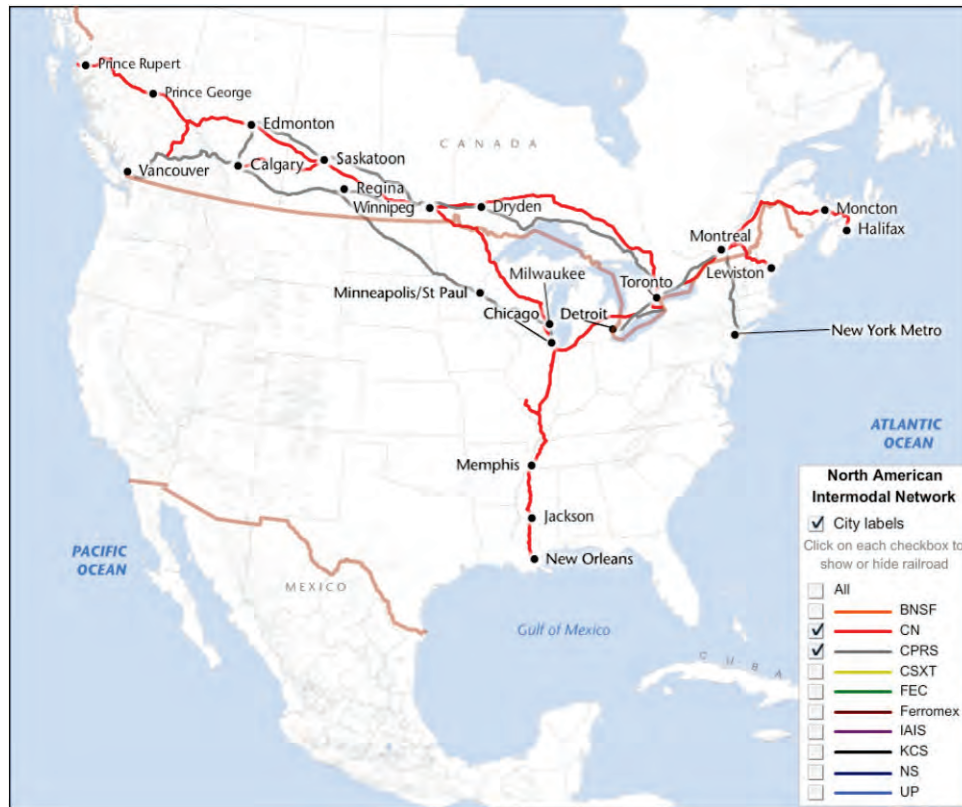
Exhibit 53: BNSF and UP Intermodal Networks



Source: Schedule Distribution Services, Inc. (SKEDZ) website

Two Canadian Class I railroads also provide intermodal service from the Pacific Coast to the Midwest gateways (**Exhibit 54**). CN's network serves two west coast ports: Vancouver and the new Prince Rupert facility, and extends its service to Halifax on the Atlantic coast. In recent years CN expanded into the U.S. market by merging with the Illinois Central railroad (IC) in 1999 which has mainlines reaching Chicago, Memphis and New Orleans. The CN is the only railroad in North America to serve all three coast lines. CP's intermodal network serves Vancouver on the west coast and the east coast to Montreal. CP has also expanded into the U.S. market by merging with the Soo Line (which owned the Milwaukee Road) in 1985, which provided access to Chicago and the Midwest markets, and the Delaware and Hudson railroad in 1991, which provided access to New York and the Eastern markets.

Exhibit 54: CN and CP Intermodal Networks



Source: Schedule Distribution Services, Inc. (SKEDZ) website

The two maps indicate that currently there is no intermodal service connecting the IPH with Canada via the Eastport, ID border crossing to Kingsgate, BC. There is rail carload connectivity between UP and CP (not shown on these intermodal maps) at the Kingsgate/Eastport border crossing. This crossing is one of the primary interchange points between the CP and the UP.

BNSF does market Intermodal service in the IPH study area, but it is typically trailer on flatcar (TOFC) service that is marketed through an IMC (Intermodal Marketing Company) like Swift or JB Hunt. Containers are loaded at the transload facility in “The Park” industrial park in Spokane Valley. Service is currently offered from Spokane to St. Paul or Chicago and from St. Paul or Chicago to Spokane.

The only railroad that has operations on both sides of the border within the study area is the Kettle Falls International Railway, LLC. The Kettle Falls International Railway, LLC (KFR) owns and operates over 160 miles of former Burlington Northern Santa Fe trackage in Northeast Washington State and Southeastern British Columbia. KFR operates from the BNSF interchange at Chewelah, WA to Columbia Gardens, BC. A second line operates from Kettle Falls, WA to Grand Forks, BC, before crossing the border again to reach San Poil, WA.

Equipment Balance

A key concept for intermodal transportation is equipment balance. Where loaded containers go for delivery, usually to densely populated areas, after being emptied, that

Inland Pacific Hub Transportation Study

location is where the empty containers are “made available” for reloading with exports. Rural and agricultural areas with less population density have less demand for inbound freight, receive fewer loaded inbound containers and consequently have fewer empty containers available for reloading. This is a critical issue facing railroads when offering intermodal service.

When empty containers are in high demand in rural areas for loading with agricultural export freight, a supply of empties must be pulled into the deficit area from a surplus area. There is a cost for pulling the empties to the desired location. The cost of the empty inbound move must be added to the shipper’s overall transportation cost. This is the major reason why using containers to export products out of rural areas is more challenging and costly than exporting from populated areas that have container consolidation centers that can provide a more adequate supply of empty containers.

Customs Inspections

There are no customs inspections of international containers handled in Spokane rail yards. Customs inspections are typically performed at the seaports such as Seattle, Tacoma or Portland, for international containers arriving from Asia, or at the Canadian border crossing points such as Eastport, ID/Kingsgate, BC with approximately 50,000 annual commercial border crossings or Frontier, WA/Paterson, BC with approximately 22,000 annual commercial border crossings.¹⁷

¹⁷ Inland Pacific Hub Transportation Study, Technical Memorandum #1, page 29, Border Crossings.
Inland Pacific Hub Transportation Study

AIR CARGO ISSUES AND OPPORTUNITIES

Many shippers interviewed during the course of the study used express package services offered by FedEx or UPS. Several of the companies interviewed also used freight forwarder air cargo services for international cargo shipments. The primary comment by these shippers was that the existing length of the runway at Spokane International Airport limited the ability for the largest class of aircraft to land at the facility and prohibited direct cargo international cargo flights to and from Asia. Spokane International Airport recently completed the first phase of upgrades to runway 3/21, including a 2,000 foot extension, bringing the total runway length to 12,000 feet.

However, despite the recent extension Spokane International Airport is unlikely to attract direct international cargo flights on a regular basis. Shippers interviewed in the region that use international air cargo services often cited the Moses Lake airfield, a former air force base with a 13,500 foot runway. Several companies noted that during harvest season dedicated air craft fly cherries from Moses Lake to Asia. While the Moses Lake example may seem noteworthy, it is charter service that is meeting a specific demand for a highly valued season crop, and has little or nothing to do with runway length. If the demand existed and the value of the product was such that the market would bear the cost of air transport, shippers in Spokane could likely attract charter service from Spokane International as well.

The composition of the Coeur d'Alene economy, based on its tradition natural resource industries of mining and timber, as well as the emergent tourism industry do not drive the sort of demand required to support air cargo service development. In addition, the difficult access between I-90 and the Coeur d'Alene airport is a significant draw-back for integrated express carriers.

An Overview of Air Cargo Services

Air cargo services are provided by several types of carriers that are differentiated by the services they offer for a wide range of customer demands. There are four basic industry segments in the air cargo industry:

- Integrated express operators
- All-cargo carriers
- Commercial service passenger airlines
- On-demand cargo charter carriers

Integrated express carriers (e.g., FedEx Express, UPS and DHL) operate a fleet of scheduled aircraft, trucks, and couriers offering door-to-door delivery service. These carriers operate extensive hub-and-spoke networks providing expansive geographic coverage. In 2007, integrated express carriers accounted for 63 percent of the U.S. domestic air cargo market, yet held only 14 percent of the international market.¹⁸ (It should be noted that DHL no longer offers domestic express service in the U.S., but does

¹⁸ Boeing World Air Cargo Forecast, 2008/2009.

offer international integrated express services). According to the Spokane International Airport web site all three major integrated express carriers serve the IPH study area; Federal Express, United Parcel Service and DHL Express.

All-cargo carriers (e.g., Atlas Air Cargo, Gemini) generally operate regular schedules of wide-body aircraft from one major airport to another, such as Los Angeles to Tokyo. Due to their airport-to-airport service structure, all-cargo carriers are concentrated in large, high-volume market airports; geographic coverage is limited. Approximately 10 to 15 percent of the world's air cargo traffic is moved by all-cargo carriers, primarily on long-haul international or trans-continental routes. In 2007, scheduled all-cargo operators accounted for 16 percent of the US domestic market.¹⁹

Commercial service passenger airlines (e.g., Delta, US Airways, United) are scheduled passenger airline operators. Belly-space in passenger aircraft operated by these carriers is generally available to move cargo airport-to-airport. Commercial air carriers account for the majority of international air cargo lift, yet provide limited domestic lift. It is estimated that 50 percent of U.S. international air cargo traffic is moved in the cargo holds of passenger aircraft. However, within the US domestic market, commercial carriers account for only 15 to 20 percent of the domestic air cargo – a market dominated by the integrated express carriers. The air cargo market share of commercial passenger carriers, particularly on domestic routes, has declined significantly due to security measures and restrictions brought about by the terrorist attacks of 9/11. Prior to 9/11, it was estimated that commercial passenger carriers accounted for 25 percent of the domestic air cargo market.

On-demand cargo charter carriers (e.g., Grand Air, Air Cargo Masters) are unscheduled air charter operators moving goods from airport-to-airport. The market share of charter cargo operations is minimal, difficult to gauge and often lumped together with all-cargo carriers. Sporadic and unscheduled operations make tracking tonnage difficult; best estimates put on-demand cargo operator market share at 5 percent domestically and 2 to 3 percent internationally.

Air Cargo Services

Within the four air cargo industry segments previously discussed, carriers offer three primary formats for air-cargo service options:

- Integrated express service
- Freight forwarding
- Airport-to-airport

Integrated express service is provided by carriers that move customer materials door-to-door, providing shipment pickup, transport via air or truck, and delivery. Integrated express operators include FedEx Express, UPS, DHL, and the US Postal Service (USPS). Express companies provide next day, document, and small package (2 to 70 lbs.) service

¹⁹ Boeing World Air Cargo Forecast, 2008/2009.

to customers. Increasingly, express operators are transporting “heavy” freight, identified as shipments of more than 70 lbs.

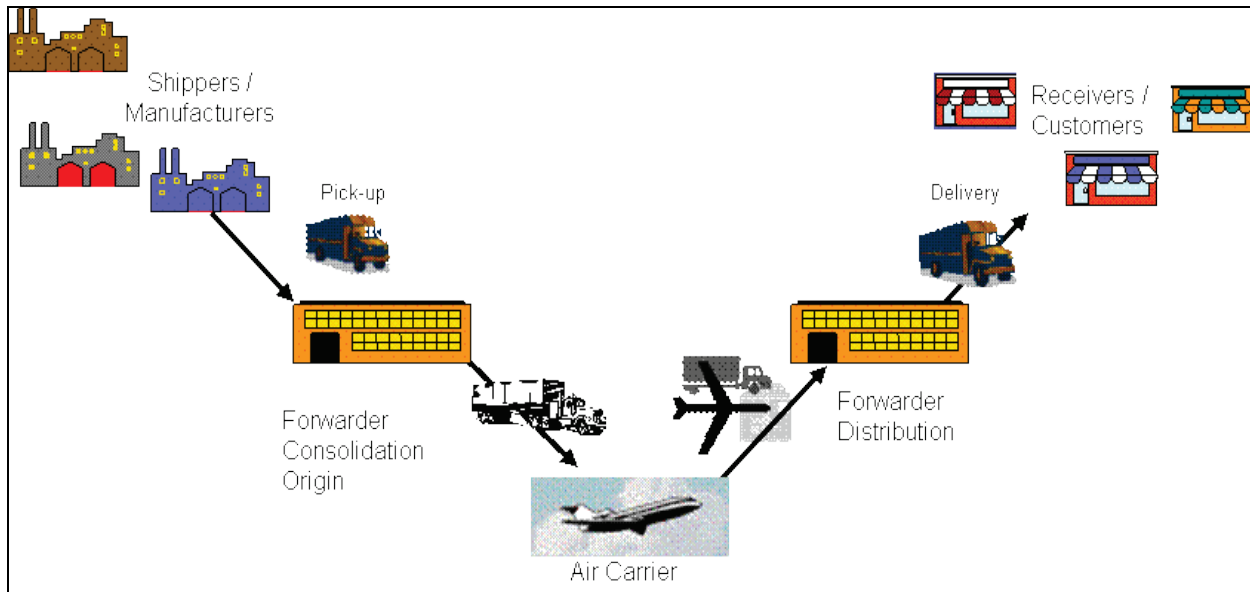
In addition to overnight service, express carriers now offer deferred services, such as second-day and third-day “time-definite” delivery. These expanded service offerings are significantly changing the dynamics of the air cargo industry. Deferred service options are predicted to surpass overnight (express) deliveries of letters, documents, and packages in the near future. In fact the two integrated carriers – UPS and FedEx – most responsible for the growth of the air cargo industry in the 1990’s are now the number one and two largest trucking companies in the U.S. In addition, the wider use of facsimiles and e-mail has cut into the overnight letter and document delivery market, and the trend is anticipated to continue. The lower cost-deferred delivery does not mean uncertain delivery; most is “time-definite,” meaning guaranteed delivery at a certain time on a certain date. This service is increasingly being used to move “heavy freight.”

Integrated express carriers operate using a hub-and-spoke system similar to the passenger airline system. The hub is the backbone to the integrated express carrier since it provides connections to each market in the integrator’s system. Each day, flights from around the U.S. arrive at integrator hubs where packages are offloaded, sorted by the destination market, and reloaded onto aircraft.

Traditional integrated express service is focused on small-volume, infrequent shippers or higher-volume shippers moving products to multiple destinations. This market is often termed the “retail” air cargo market; this market includes individual, private, and business-to-consumer (B-to-C) shippers. However, integrated express carriers are now moving into the “wholesale” market, catering to larger freight movements demanded by manufacturing and distribution operations. This traditional freight forwarder and all-cargo-carrier market includes corporate, block-space (guaranteed capacity shippers), and business-to-business (B-to-B) customers.

Freight forwarding is provided by transportation service providers that handle a wide-range of freight, from small packages that are consolidated into container loads, to oversized, one-time freight shipments. The freight forwarder acts as a broker between the shipper and the carrier (i.e., all-cargo, commercial passenger or on-demand charter). The forwarder receives a load from a customer (the shipper) and subsequently tenders the shipment to an air cargo carrier or commercial carrier. The carrier moves the shipment airport-to-airport, and then tenders the shipment to the forwarder’s agent at another airport. From this point, the forwarder makes the final delivery to the customer. **Exhibit 55** illustrates the basic steps (moving left-to-right) in a freight-forwarder air cargo shipment.

Exhibit 55: Freight Forwarder Goods Movement Process



Source: Wilbur Smith Associates

Freight forwarders often act as both the carrier and the shipper. From the perspective of the manufacturer or origin shipper, the forwarder is the carrier, because the freight moves under a tariff prepared by the forwarder. Typically, the forwarder consolidates many packages into a container or larger units that are then tendered to either scheduled all-cargo carriers (e.g., Polar Air Cargo) or to commercial passenger airlines (e.g., NWA). From the air carriers' perspective, the freight forwarder is the shipper. In addition to using third-party service providers to move freight from airport-to-airport (i.e., commercial carriers and all-cargo airlines), freight forwarders also often rely on third-party less-than-truck load (LTL) motor carriers to move under consignment to and from the airport.

Airport-to-airport service is provided by all-cargo, on-demand charter and commercial passenger carriers. Freight is dropped off at the airport by the shipper, or the shipper's freight forwarder, and is picked up at the destination airport by the customer, or the customer's agent (i.e., freight forwarder).

All-cargo carriers operate airport-to-airport services for their customers, but do not offer passenger service. All-cargo air carrier examples include Polar Air Cargo, Kitty Hawk, and Northern Air Cargo. All-cargo carriers offer scheduled service to major markets throughout the world using wide-body and/or containerized cargo aircraft.

Commercial airlines also provide air cargo services that tend to vary in scope and size from airline to airline. Industry-wide, between 5 and 16 percent of passenger airline revenues come from cargo. An airline's aircraft fleet is a significant factor in determining the size and amount of cargo the airline can fly. A regional airline with a fleet of turboprop and regional jets cannot accommodate large, bulky shipments. Airlines operating wide-body aircraft, such as the B747, B777, and A300, have containerized lower decks (which allow speed in loading and offloading) and generally are capable of handling large, bulky shipments.

Location Criteria for Air Cargo Airports

The criteria used by air cargo carriers to select and locate an air cargo facility at a specific airport tend to vary with the operational, financial, and strategic objectives of the carrier. Despite varied needs and objectives, it is possible to identify some typical air cargo airport location requirements. These requirements are based on the anticipated use of the air cargo facility and type of air cargo carrier or carriers that may operate there.

Local Market Station Criteria

The prime factor in determining direct air cargo service is strong local production and consumption of air cargo intensive commodities within the served airport's market area. This can be driven by either large population centers or concentrations of industry requiring, providing, or distributing commodities and products that utilize airfreight at the highest rates. Examples of products that utilized high rates of airfreight include:

- Aeronautics - Equipment & Parts
- Automotive - Equipment & Parts
- Pharmaceuticals
- Computers & Computer Components
- Diagnostic Equipment
- Medical Equipment
- Software
- Textiles - Garments
- Perishables - Flowers, Fruit, Vegetables & Fish
- Economically Perishable Materials - Printed Material
- Telecommunications Equipment - Cell Phones, iPhones, etc.
- Photographic Film

Exhibit 56 shows the forecasted growth for IPH study area air cargo commodities. Overall inbound air cargo tonnage in the IPH study area is expected to increase 21 percent between 2007 and 2027. Through 2027 the fastest growing commodity groups are expected to be *Machinery*, *Misc. Mixed Shipment* and *Transportation Equipment* which is projected to grow 52 percent, 38 percent, and 33 percent respectively. Other high growth air cargo commodities include *Miscellaneous Manufactured Products*, *Instrument/Photo Equipment* and *Pulp Paper Products*. Outbound air cargo tonnage in the IPH study area is expected to increase nearly 19 percent between 2007 and 2027 (**Exhibit 57**). Through 2027 the fastest growing commodity groups are expected to be *Primary Metal Products*, *Misc. Mixed Shipments*, *Machinery* and *Electrical Equipment*. Other fast growing commodities include *Furniture/Fixtures*, *Instrument/Photo Equipment* and *Rubber and Plastics*.

Exhibit 56: Inbound Air Cargo Commodity Forecasts

Inbound Directions: All IPH Counties: All Directions From All Origins Inbound Flows: All Trade Flows from All Countries Inbound Modes: Air: All Types								Directions: All IPH Counties: All Directions From All Origins Flows: All Trade Flows from All Countries Modes: Air: All Types								
Top 20 Inbound Commodities		2007 Tons	Growth % ►	2012 Tons	Growth % ►	2017 Tons	Growth % ►	2027 Tons	Comparison Chart For Top 10 Inbound Commodities							
Mail or Contract Traffic		5,439	(17.12%)	4,508	(3.95%)	4,330	(5.23%)	4,103								
Misc Mixed Shipments		3,437	(14.55%)	2,937	3.98%	3,054	37.75%	4,207								
Machinery		2,722	10.97%	3,021	25.22%	3,783	52.34%	5,762								
Chemicals or Allied Products		1,811	(16.94%)	1,504	2.26%	1,538	(3.72%)	1,481								
Transportation Equipment		1,187	25.95%	1,496	14.30%	1,709	33.36%	2,279								
Printed Matter		978	(12.78%)	853	(0.29%)	850	1.57%	864								
Electrical Equipment		759	(12.58%)	664	15.11%	764	26.32%	965								
Farm Products		519	(4.18%)	498	(13.17%)	432	(24.86%)	325								
Apparel or Related Products		360	(25.05%)	270	(21.15%)	213	(29.37%)	150								
Pulp, Paper or Allied Products		339	(11.10%)	301	6.42%	320	13.44%	363								
Instrum, Photo Equip, Optical Eq		338	26.31%	427	24.34%	530	50.87%	800								
Rubber or Misc Plastics		269	(3.85%)	259	11.30%	288	35.50%	391								
Food or Kindred Products		236	0.93%	239	2.49%	245	4.84%	256								
Fresh Fish or Marine Products		221	(1.03%)	219	2.73%	225	5.82%	238								
Fabricated Metal Products		204	(7.77%)	188	10.18%	207	21.30%	251								
Misc Manufacturing Products		74	7.64%	80	20.60%	96	44.35%	139								
Clay, Concrete, Glass or Stone		28	(28.51%)	20	(2.01%)	20	(12.60%)	17								
Textile Mill Products		25	11.46%	28	9.98%	31	0.20%	31								
Primary Metal Products		18	(51.36%)	9	(16.69%)	7	(29.52%)	5								
Leather or Leather Products		17	(3.21%)	16	(15.67%)	14	(19.29%)	11								
Total For Top 10 Commodities		17,551	(8.55%)	16,050	5.87%	16,993	20.64%	20,500								
Top 10's Percent of Total		92.37%		91.45%		91.01%		90.49%								
Total For Top 20 Commodities		18,982	(7.63%)	17,534	6.40%	18,656	21.35%	22,639								
Top 20's Percent of Total		99.91%		99.91%		99.91%		99.93%								
Total For All Commodities Inbound		19,000	(7.63%)	17,550	6.39%	18,672	21.33%	22,655								

Source: 2007 TRANSEARCH™, Global Insight

Exhibit 57: Outbound Air Cargo Commodity Forecasts

Outbound Directions: All IPH Counties: All Directions to All Destinations Outbound Flows: All Trade Flows to All Countries Outbound Modes: Air: All Types								Directions: All IPH Counties: All Directions to All Destinations Flows: All Trade Flows to All Countries Modes: Air: All Types							
Top 20 Outbound Commodities	2007 Tons	Growth % ►	2012 Tons	Growth % ►	2017 Tons	Growth % ►	2027 Tons	Comparison Chart For Top 10 Outbound Commodities							
Mail or Contract Traffic	18,205	1.00%	18,386	(14.14%)	15,787	(20.61%)	12,534								
Pulp, Paper or Allied Products	9,731	10.02%	10,706	16.80%	12,504	34.00%	16,755								
Machinery	2,931	3.43%	3,032	21.22%	3,675	57.12%	5,774								
Chemicals or Allied Products	2,131	(11.19%)	1,893	6.60%	2,018	7.30%	2,165								
Food or Kindred Products	1,968	7.37%	2,113	16.82%	2,468	31.04%	3,234								
Farm Products	1,966	2.31%	2,012	3.77%	2,088	7.60%	2,246								
Misc Mixed Shipments	1,679	(7.62%)	1,551	20.16%	1,864	62.63%	3,032								
Electrical Equipment	1,139	(8.42%)	1,043	15.70%	1,207	53.99%	1,858								
Nonmetallic Minerals	903	10.25%	995	5.39%	1,049	11.63%	1,171								
Primary Metal Products	784	15.27%	903	33.54%	1,207	74.77%	2,109								
Fabricated Metal Products	704	11.43%	784	18.57%	930	38.04%	1,284								
Furniture or Fixtures	608	22.85%	747	36.51%	1,020	77.95%	1,814								
Lumber or Wood Products	403	4.03%	419	10.96%	465	21.28%	564								
Instrum, Photo Equip, Optical Eq	387	3.70%	402	27.37%	512	67.46%	857								
Rubber or Misc Plastics	300	1.78%	305	23.27%	377	47.42%	555								
Petroleum or Coal Products	170	14.04%	194	19.59%	232	30.37%	302								
Apparel or Related Products	151	(45.19%)	83	(20.21%)	66	(42.74%)	38								
Misc Manufacturing Products	118	1.31%	120	17.51%	141	48.80%	209								
Clay, Concrete, Glass or Stone	59	(2.16%)	58	5.71%	61	13.90%	70								
Printed Matter	17	(4.74%)	16	8.36%	17	16.49%	20								
Total For Top 10 Commodities	41,437	2.89%	42,635	2.89%	43,866	15.99%	50,879								
Top 10's Percent of Total	93.38%		93.12%		91.95%		89.86%								
Total For Top 20 Commodities	44,354	3.17%	45,762	4.20%	47,686	18.68%	56,592								
Top 20's Percent of Total	99.95%		99.96%		99.95%		99.95%								
Total For All Commodities Outbound	44,376	3.17%	45,782	4.21%	47,708	18.68%	56,618								

Source: 2007 TRANSEARCH™, Global Insight

Integrated Express Carrier Requirements

Integrated express carriers, (i.e., FedEx Express, UPS, and DHL) providing door-to-door overnight service, have the most stringent location criteria requirements. Due to tight time constraints dictated by commitments to the customer and operational demands of the carrier's tightly controlled network, integrated express carriers typically serve the airport nearest their customer base. The market area of an integrated express carrier rarely extends beyond a 60-mile radius of the airport being served. The core market for most integrated express carriers is based on large population centers that drive document and parcel shipments (though industry concentrations are typically a component of this core market).

Typically, there is little flexibility for the integrated express carrier to relocate to an alternate airport short of a geographical shift in customer base (movement or expansion of the surrounding market area). For example, as the population of Los Angeles grew and expanded inland, integrated express carriers began to shift service eastward to Ontario International Airport from Los Angeles International. Now most integrated express carriers operate at both airports to serve the Los Angeles market (and UPS established a regional hub at Ontario International Airport).

Freight Forwarder and All-Cargo Airline Requirements

Freight forwarders (e.g., Eagle Global Logistics and Panalpina) and all-cargo airlines (e.g., Kalitta Air, and Polar Air Cargo) have less stringent location criteria when selecting an airport for cargo operations. Freight forwarders usually define their market areas by individual customers rather than large population or industrial centers. Long-term, independent consolidation and distribution stations (other than international gateway facilities) are virtually nonexistent in the freight forwarder community; these services and facilities are contracted to third-party operators. In essence, the freight forwarder's customer location is its local market station, and the nearest airport is the consolidation point.

Since freight forwarders generally do not operate under the same time constraints as an express integrator, the forwarder can be more selective than an integrator when choosing an airline or airport. Depending on the size and service commitment of the shipment freight forwarders truck shipments anywhere from 200 miles to 600 miles to an airport. By not having fixed hubs/station networks throughout the nation, freight forwarders can maintain a high degree of responsiveness and flexibility in fluctuating market conditions. But, the absence of a network also limits the freight forwarder's ability to handle numerous small shipments transiting through multiple origins and destinations. Forwarder operations differ from the integrated express carriers in the following ways:

- Provide airport-to-airport versus door-to-door service
- Have higher usage and reliance on truck feeder service
- Do not offer express service
- Catchment area can extend 600 miles from an airport and cover several market areas

Since forwarders and all-cargo airlines generally operate under more flexible time constraints than an integrated express operator, there is more flexibility in terms of the location of the airport used to serve the market area. Selection criteria for an all-cargo airline tend to be:

- Access to interstate highways to facilitate trucking
- Location of transportation and distribution infrastructure
- LTL trucking services and facilities
- Core customer base

These criteria are usually found at primary airports in a given market and are evidenced by the almost universal co-existence of integrated express carriers, all-cargo airlines, and freight forwarders at every major airport in the nation. All-cargo carriers rely on freight forwarders to generate cargo, thus all-cargo carriers will tend to locate at airports with demonstrated freight forwarder cargo volume. If the volume within a given market is not sufficient to economically justify dedicated, scheduled air service, forwarders truck cargo to the nearest airport with available lift or will charter ad-hoc lift as needed. Note that if time allows, trucking is almost always the preferred and most economical option being 75 to 90 percent cheaper than air transport.

Air Cargo Hub Criteria (Regional, National and International)

Central access relative to U.S. population centers is the over-riding consideration for air cargo carriers seeking to establish or relocate a hub operation. **Exhibit 58** lists the top 20 cargo airports in North America. Note that Seattle/Tacoma International at 20th is the closest major air cargo hub to the IPH study area.

National Hubs must be centrally located to U.S. population centers, and centrally located geographically to allow fluid hub-and-spoke network operation. National hubs must also have superior access to multiple interstate highways since feeder truck activity used to the extent possible to reduce the overall cost of network operations. In North America, the Ohio Valley Regional has become the standard for national hub operations. Examples of national hubs located in, serving flights bound for both domestic and international routes, located in or near, the Ohio Valley are the following:

- | | |
|------------------|-------------------------|
| • FedEx Express | • Memphis, TN |
| • UPS | • DHL Worldwide Express |
| • Louisville, KY | • Cincinnati, OH |
| • BAX Global | • Toledo, OH |

Exhibit 58: Top 20 North American Cargo Airports **

<i>Airport Name</i>	<i>2003 ACI Cargo</i>		<i>Cargo Hub</i>	<i>Cargo Gateway</i>	<i>Total Air Cargo Carriers</i>	<i>Cargo Ramp Space (acres)^</i>	<i># of Cargo Bldgs</i>	<i>Warehouse Space (sq. ft.)</i>
	<i>N.A. Rank</i>	<i>World Rank</i>						
<i>Memphis Int'l</i>	1	1	Yes		17	176	0	4,200,000
<i>Ted Stevens Anchorage Int'l</i>	2	4	Yes	Yes	28	204	4	200,000
<i>Los Angeles Int'l</i>	3	6	Yes*	Yes	34	170	24	2,100,000
<i>Miami Int'l</i>	4	22		Yes	36	85	14	2,400,000
<i>JFK International</i>	5	11		Yes	38	94	37	4,100,000
<i>Louisville Int'l</i>	6	12	Yes		3	300	2	4,000,000
<i>Chicago O'Hare Int'l</i>	7	13	Yes*	Yes	27	67	15	2,615,433
<i>Indianapolis Int'l</i>	8	20	Yes*		5	23	5	1,700,000
<i>Newark Liberty Int'l</i>	9	21	Yes*		12	41	11	1,450,000
<i>Hartsfield Atlanta Int'l</i>	10	11		Yes	17	58	12	1,800,000
<i>Dallas/Ft Worth Int'l</i>	11	25	Yes*	Yes	20	52	30	2,600,000
<i>Metro Oakland Int'l</i>	12	28	Yes*	Yes	4	38	5	400,000
<i>San Francisco Int'l</i>	13	31		Yes	15	54	11	845,000
<i>Ontario Int'l</i>	14	34	Yes*	Yes	16	52	5	676,000
<i>Philadelphia Int'l</i>	15	35	Yes*	Yes	6	111	8	67,500
<i>Cincinnati/N. Kentucky</i>	17	39	Yes*		5	124	8	450,000
<i>George Bush Intercont.</i>	18	21		Yes	13	58	26	880,000
<i>Boston-Logan Int'l</i>	19	43		Yes	24	38	9	550,000
<i>Seattle/Tacoma Int'l</i>	20	45	Yes	Yes	22	46	17	850,000
<i>Average</i>					18	94	13	1,678,102

Source: Air Cargo World Airports Directory, Airports Council International-North America (ACI-NA), AirNav.com, Wilbur Smith Associates.

^Multi-use ramp area reported by some airports.

*Regional hub

**Honolulu ranks 16th in North America but was not included in this analysis due to its unique island location.

Regional Hubs – Regional hub location criteria are more dependent on a carrier's network structure than market characteristics (population and industry). Regional hubs were developed by integrated express carriers to divert cargo away from congested national hubs by facilitating intra-region freight flow. Regional hubs, as their name implies, serve a region of the country as a central collection, sort, and distribution facility. **Exhibit 59** depicts the location of FedEx Express, UPS and DHL regional hubs.

Exhibit 59: Integrated Express Carrier Regional Hubs



Source: Wilbur Smith Associates

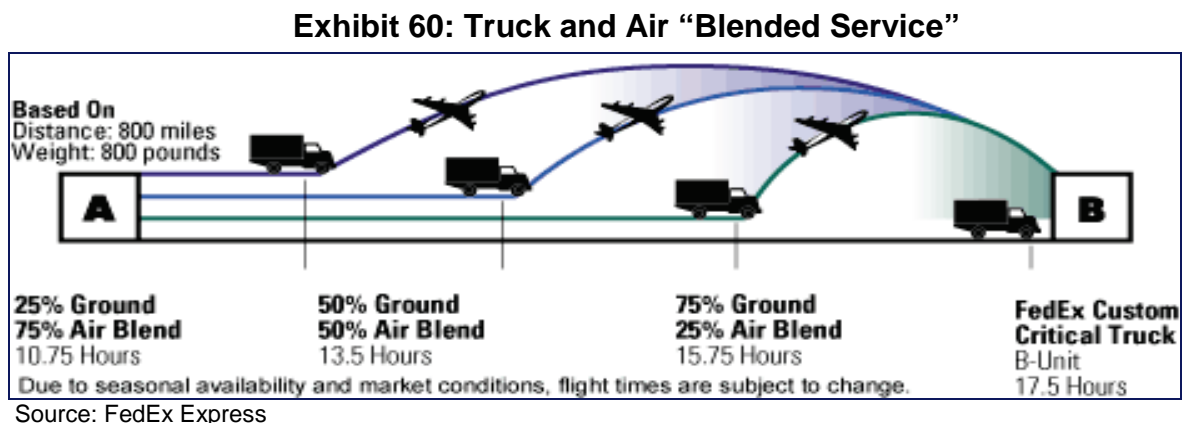
The size and scope of operations for the largest air cargo carriers, FedEx Express and UPS, logistically prevents their operation from a single national hub. Each of these carriers operates regional sort centers on the east and west coast, as well as several sort centers across the country. Regional hubs, unlike their national hub counterparts, tend to concentrate more heavily on trucking operations for deferred material or intra-region movement of freight. While air cargo aircraft serve these facilities, their primary function is to facilitate truck-to-truck and air-to-truck freight transfer, whereas the national hub's main function is to facilitate air-to-air transfer of air cargo. DHL is the only integrated express carrier which operates a single national hub.

Because regional hubs differ in focus from national hubs (i.e., truck and air operations), there is an added dimension to site selection criteria for a regional hub: direct or easy access to the Interstate Highway System. It is essential that the regional hub facility be in proximity to multiple interstate facilities that provide easy and rapid access to the markets served.

Second-Day Air Hubs

UPS operates Second-Day Air Hubs within their transport system. These hubs provide airlift for UPS packages not requiring overnight delivery but the distances require shipping on both trucks and aircraft. As shippers have become more cost conscious integrated express carriers have developed products to meet their logistical needs. This trend in the air cargo industry is the result of shippers cutting costs from time overnight service to time-definite services.

Exhibit 60 (from the FedEx Express website) indicates how trucking and aircraft serve the customers' needs. FedEx Express uses "blended service," where a packages and parcels may be trucked out of the originating market and trucked several hundred miles away to an airport where it is loaded on an aircraft either at a hub or an airport with a local market station. For example, second-day delivery parcels destined for Miami may be trucked from Kansas City to Indianapolis (IND), where it is loaded on a FedEx Express jet aircraft at the IND regional hub. The package is then loaded onto an aircraft where it is flown to Miami. This operation saves valuable space for higher priority air cargo on the FedEx Express based aircraft in Kansas City yet permits the carrier to meet the shipper's need to get the package to Miami within two days. This type of trucking activity may also occur in reverse order.



Similar to the logic provided in the example above, UPS has developed second-day air hubs in its network. For example, Des Moines International Airport functions as a second-day air hub for UPS as does Spokane International Airport. In the mid-90's, UPS established a second-day Hub at Des Moines International. Currently, there are 38 UPS flights per/week and they employ around 150 people. UPS is the primary air cargo carrier at the Des Moines International Airport. It operates Boeing 757s, 767s, and Airbus 300s at the airport. Flights arrive from Rockford, Newark, Ontario (California), Oakland, Sacramento, Omaha, and the Louisville hub. These flights then depart for Philadelphia, Ontario (California), Long Beach, Sacramento, Spokane, Omaha, and the Louisville hub. In Spokane, the second-day hub operations are not as extensive as Des Moines but still serve a vital role for UPS. UPS operates inbound and outbound flights into Spokane from Portland and Seattle's Boeing Field as well as their Regional Hub in Dallas (DFW) and their Midwest second-day hub in Des Moines. Aircraft used in Spokane by UPS include Airbus 300-6 and Boeing 767-300.

West Coast Airports Air Cargo Roles

Focusing on the Western U.S. regional hub development, FedEx Express, and UPS both have west coast regional hubs. FedEx Express' regional hub facility is located at Oakland International Airport while UPS regional hub is located in Ontario, California. Over 90 percent of air cargo activity at both airports is related to integrated express carrier activity. The remainder is associated with passenger airlines. It is noteworthy to point out that the airports in Oakland and Ontario do not have any all-cargo carriers (i.e., Polar Air Cargo) operating at their airports. UPS' operations at Ontario, and its proximity to Los Angeles, also allow the carrier to have minimal operations at Los Angeles International Airport (LAX).

DHL formerly operated a regional hub in Riverside, California but closed this facility in 2008 as a result of their reorganization. DHL currently does not operate a regional hub anywhere in the U.S.

Anchorage International Airport serves as an intercontinental hub for FedEx Express, UPS and to a lesser extent DHL. Anchorage has unique rights for exchange of cargo between international carriers so that cargo arriving from aircraft originating in Europe, Asia and North America may be transloaded between aircraft.

Other major airports along the west coast may not function as a cargo hub but act as international gateways for air cargo to be transported on passenger airlines, integrated express carriers and all-cargo carriers or freighters. These airports include San Francisco International, Portland International, Seattle-Tacoma International and to a certain degree Vancouver International Airport.

San Francisco International – SFO functions as an international cargo gateway and large market station for the integrated express carriers. Passenger airlines also transport a considerable amount of air cargo in the belly compartments of aircraft. Several major domestic and international air carriers operate through SFO. In 2008, United Airlines was the largest carrier of international merchandise imports and the second largest carrier of exports. The top air carriers were United Airlines, Asiana Airlines, China Airlines, and Eva Airways. Of the three North American integrators – only FedEx Express & DHL operate at SFO.

In spite of having its major western region hub at nearby Oakland International Airport, FedEx Express operates three days weekly service to Tokyo Narita from SFO, as well as six weekly flights to Asia via Anchorage. FedEx Express also operates morning departures to its Memphis hub bypassing the regional hub in Oakland with packages originating in San Francisco. UPS serves the Bay Area by operating air cargo aircraft flights out of Oakland and San Jose.

Portland International – PDX is largely a domestic cargo airport with little international cargo activity. In 2008, approximately 90 percent of PDX's freight was carried in integrated express carriers. Integrators FedEx Express (49 percent), UPS (24 percent) and DHL (ABX's 7 percent) account for almost 80 percent of annual freight at PDX.

The only foreign passenger carrier Lufthansa provides belly cargo capacity on its scheduled flights to Europe, while Delta/Northwest operates internationally from PDX to Tokyo and to Amsterdam.

Seattle-Tacoma International – SEA's international freight accounts for 33 percent of total air cargo. Korean Air is the largest air cargo freighter operator at SEA and the aircraft on this route is shared with a stop in SFO. Luxembourg-based Cargolux serves SEA with four weekly freighters which stop in Calgary on the way over to Prestwick, Scotland. SEA's only other foreign freighter operator is Taiwan-based China Airlines. SEA also has service in the belly compartment of passenger aircraft to Europe on British Airways, SAS Scandinavian and Air France. SAS uses SEA as its main U.S. western region gateway, trucking in freight from both LAX and SFO to feed the operation.

Asian passenger carriers with belly cargo capacity include EVA Air and South Korea-based Asiana Airlines (2.0 percent). SEA also had substantial volumes of international freight transported by US belly carriers Delta/Northwest Airlines and United Airlines.

Vancouver International –

Vancouver (YVR) is subject to a different bilateral aviation environment and (due to its international border with the U.S.) is incapable of efficiently competing with either Seattle or Portland as a regional distribution hub beyond Canada.

Freight Forwarders

Freight forwarders do not operate hubs (national or regional) in the same manner as an express air cargo integrators or all-cargo airlines. Since freight forwarders rely heavily on third-party operators (commercial passenger carriers, all-cargo airlines, LTL trucking) to move material, the forwarders themselves have very little influence on where their third-party contractors locate hub, warehouse, or distribution facilities. The freight forwarder (with the exception of Panalpina in Huntsville, Alabama) locates where ever there is a critical mass of air cargo lift, trucking operations, warehouse, and distribution facilities. Generally, these transportation facilities and services tend to reach critical mass in major market areas near, or on, international airports with widebody and cargo aircraft service. These markets are generally also served by an extensive network of highways and interstates. Some larger examples include the following (western examples):

- Seattle-Tacoma (serving West Coast, Asia and Europe)
- San Francisco (serving Asia and Europe)
- Los Angeles International (serving West Coast and Asia)
- Vancouver International (serving Western Canada and Northwest U.S., Europe and Asia)

International Gateways: Location criteria for an international gateway tend to be facility and service-oriented. The primary driver for international gateway selection is an abundance of wide-body lift to international destinations by three sources:

- Commercial passenger carriers (e.g., Delta, United, Lufthansa)
- Express integrators or all-cargo airlines (e.g., UPS, FedEx Express, DHL)
- All-cargo carriers - scheduled or chartered (e.g., CargoLux, Polar Air Cargo)

Lower deck/belly space on commercial passenger carriers provides approximately half of all international air cargo movement in and out of the U.S. The heavy use of commercial passenger carriers is evident when examining the top U.S. international air cargo gateways in comparison to the largest international passenger embarkation/debarkation airports. **Exhibit 61** lists the top 20 continental non-hub U.S. international gateways by total tonnage. The majority of the largest gateways coincide with airports exhibiting heavy international passenger traffic. The exception to this rule applies to Memphis, Louisville, Rockford, Indianapolis, Oakland and Ontario which function primarily as national or regional hubs for integrated express carriers. It is noteworthy to point out that the integrated express market reflects a matured network and has experienced relatively little expansion in the last decade. The most recent regional hub in the U.S. is the addition of FedEx Express's regional hub in Greensboro North Carolina which provides connections for air cargo traffic in the Northeast US and Southeast US.

Exhibit 61: Top Non-Hub International Gateways (2008)

Rank	ID	City	Airport	2008 Landed Weight Cargo	Change from 2007
1	MEM	Memphis	Memphis International	19,500,093,674	-0.22%
2	ANC	Anchorage	Ted Stevens Anchorage International	17,951,597,580	-15.02%
3	SDF	Louisville	Louisville International-Standiford Field	10,445,498,827	0.14%
4	MIA	Miami	Miami International	6,988,513,672	-5.94%
5	LAX	Los Angeles	Los Angeles International	5,751,595,501	-16.17%
6	IND	Indianapolis	Indianapolis International	5,128,484,161	-3.32%
7	JFK	New York	John F Kennedy International	4,444,315,500	-13.10%
8	ORD	Chicago	Chicago O'Hare International	4,206,916,900	-4.42%
9	OAK	Oakland	Metropolitan Oakland International	3,484,046,450	-3.83%
10	EWK	Newark	Newark Liberty International	3,453,120,325	-7.84%
11	DFW	Dallas-Fort Worth	Dallas/Fort Worth International	3,228,104,260	-7.95%
12	ONT	Ontario	Ontario International	2,699,776,864	-3.19%
13	PHL	Philadelphia	Philadelphia International	2,527,521,975	-8.12%
14	ATL	Atlanta	Hartsfield - Jackson Atlanta International	2,334,922,810	-7.44%
15	HNL	Honolulu	Honolulu International	2,064,028,654	-8.97%
16	SFO	San Francisco	San Francisco International	1,549,361,900	-25.43%
17	IAH	Houston	George Bush Intercontinental/Houston	1,508,589,067	-1.93%
18	SEA	Seattle	Seattle-Tacoma International	1,493,544,435	8.03%
19	RFD	Chicago/Rockford	Chicago/Rockford International	1,419,957,532	-3.70%
20	PHX	Phoenix	Phoenix Sky Harbor International	1,350,082,904	-5.08%

Source: FAA - Calendar Year 2008 Air Carrier Activity Information System

Seattle ranks 18th among continental U.S. non-hub gateways, primarily due to the volume of belly-freight transported by passenger flight operations from the airport. Factors contributing to the reliance on commercial passenger carriers for air cargo include:

- Competitively priced airport-to-airport service
- Developed international networks
- Domination of international air cargo markets by freight forwarders

Passenger carrier networks cater to the passenger traffic, regardless of the demand for cargo lift. Demand for international passenger lift, as would be expected, is focused on large population centers. Each of the top international gateways listed in **Exhibit 58** is located in a densely populated area of the U.S. International cargo lift provided by commercial passenger carriers, accounting for 50 percent of international capacity, is nearly always tied to international passenger airports located in major population centers.

Seldom will a passenger carrier change or end an international passenger route due to the lack of air cargo traffic. Strict focus on passenger service, which drives most market and financial decisions, inadvertently subsidizes air cargo movement by passenger revenues. Since the plane is essentially “paid for” by passenger revenues, a commercial passenger carrier can exercise substantial pricing advantages over all-cargo and express integrators when flying international air cargo.

Freight forwarders currently control about 80 percent of international air cargo tonnage and are naturally attracted to the larger international airports. At these airports, forwarders can gain access to highly-developed domestic and international air networks, negotiate highly competitive air service rates, and achieve proximity to large market areas with vital transportation/distribution infrastructure. Freight forwarders utilize either scheduled aircraft (all-cargo carriers or commercial passenger belly space) or operate charter aircraft on a regular basis to serve markets large enough to support dedicated aircraft.

All-cargo carriers offering international airport-to-airport service also tend to operate at large, commercial airports in major metropolitan areas. Airport-to-airport service relies on ancillary service companies such as freight forwarders, LTL trucking companies, and customs brokers. Due to the international freight volumes generated by commercial passenger carriers, the ancillary companies required to service airport-to-airport air cargo provided by all-cargo carriers are currently in place at large international airports. These airports have achieved a “critical mass” of carriers, trucking, infrastructure, and forwarders that make these airports attractive in terms of cost, efficiency, and flexibility.

Chartered and contracted aircraft flying on international routes can be operated either on a scheduled basis or an on-demand basis. For the purposes of evaluating the support needed for an international gateway facility, it is necessary to focus on scheduled contract aircraft. Scheduled contract aircraft are generally for use by express integrators or freight forwarders. Express integrators use these aircraft to supplement their own fleet of aircraft and provide added flexibility as air cargo demand fluctuates. These aircraft will serve either the integrator’s national hub directly or an international gateway that has a surrounding market area large enough to support a dedicated aircraft (e.g., New York metro area and Los Angeles metro area).

Integrated express carriers move a majority of their international traffic directly from their respective national hubs. International-bound material is collected from locations throughout the U.S. via the integrator’s domestic network and consolidated at the national hub for transit on an integrator-owned or operated aircraft. Through the utilization of the domestic network to collect, consolidate, and distribute international freight via the express integrator’s national hub, the integrator has essentially created a catchment area for its national hub spanning the entire nation. This fact explains why Memphis (FedEx Express

hub), Indianapolis (FedEx Express hub), Louisville (UPS hub), Cincinnati (DHL hub), and Dayton (Menlo hub) are in the top 25 list of international cargo gateways, despite their location at airports with limited or no international passenger service.

Air Cargo Development

When selecting an airport for air operations, fostering the growth and development of air cargo requires an understanding of the criteria, strategic factors, and decision-making process utilized by air cargo carriers and shippers for air operations. The expansion and evolution of the air cargo industry, in terms of both volume and service levels, require air cargo carriers to continually review not only the capacity of existing operations; but also the opportunities in new markets (customer base), new service offerings, or growth in the airports catchment area. The following sections examine potential growth and development scenarios and their associated impacts on transportation infrastructure in the IPH study area

Local Market Growth

Local market growth, or growth within an airport's catchment area, will likely drive most increases in air cargo activity within the IPH study area. The local market growth scenario assumes that current air cargo route and network structure will remain static (i.e., no hub or gateway development) moving into the future and that only the natural growth rate (accepted forecast factors associated with an airport's catchment area) will drive increased usage of existing air cargo airports. Increased volume transiting existing air cargo airports, whether driven by market growth or carrier network development, will place infrastructure demands on both airside air cargo facility capacity and landside access routes handling the additional truck traffic. The primary airside concern for the IPH study area air cargo operators will be adequate ramp space for simultaneous aircraft operations, equipment storage and maintenance areas, ramp (airside) access points for trucks and courier vans, and aircraft handling capabilities (either self-handle or third-party contractors).

Economic development activities within air cargo market areas (e.g., location of auto manufacturing plant) or air cargo development plans (e.g., construction of a regional air cargo distribution center) can also dramatically increase regional air cargo growth rates beyond the local market's natural growth rate.

Hub and Gateway Development

Hub development potential for the IPH study area airports remains limited within the realm of existing express integrators and all-cargo carriers. Simply put, the U.S. air cargo industry and air cargo networks are mature and well developed with limited potential for major hub development outside of the existing network structure. The IPH study area's proximity to existing national and regional hubs limits the geographic and network necessity to expand hub operations to the east of Seattle/Vancouver, Spokane International will continue to act as consolidation points for smaller surrounding markets.

International gateway development potential is predicated upon two factors: 1) The availability of international commercial service flights (lift) out of Spokane International and 2) Demand-driven needs from regional shippers in the IPH study area. Wide-body commercial lift (passenger service) is the core component in attracting and sustaining

international air cargo service. Absent such international commercial passenger service, it is likely that international air cargo will continue to be drayed (trucked) to alternate airports such as Seattle for international air transit.

Increasing Market Capture

In 2008, the state of Washington ranked 4th and Idaho ranked 38th among all states in total export trade by dollar value.²⁰ **Exhibit 62** and **Exhibit 63** display the top commodity exports, and export destinations for both Idaho and Washington by dollar value for 2006 – 2009.²¹ In 2009, Idaho accounted for more than one-third of all U.S. export of electronic integrated circuits. Washington accounted for one-half of all U.S. exports of Civilian Aircraft, Engines and Parts. Top export countries for both states include Canada, China and South Korea. The IPH study area should seek to capitalize on and expand existing high-value export products as one strategy for seeking expanded air cargo services.

²⁰ U.S. Census Bureau, U.S. International Trade in Goods and Services, series FT-900; <http://www.census.gov/compendia/statab/2010/tables/10s1269.xls>

²¹ Export data specific to the 19 IPH study area counties was not available.

Exhibit 62: Top Export Commodities for Idaho and Washington by Dollar Value

ID	Description	2006 Value	2007 Value	2008 Value	2009 Value	'06 % Share	'07 % Share	'08 % Share	'09 % Share	% ▲, '08 – '09
---	Total IDAHO Exports and % Share of U.S. Total	3,727	4,703	5,005	3,880	0.4	0.4	0.4	0.4	-22.5
---	Total, Top 25 Commodities and % Share of State Total	798	3,699	3,750	2,990	21.4	78.6	74.9	77.1	-20.3
Rank										
1	MEMORIES, ELECTRONIC INTEGRATED CIRCUITS	0	1,618	1,737	1,338	0	34.4	34.7	34.5	-23
2	ELECTRONIC INTEGRATED CIRCUITS	0	1,068	811	539	0	22.7	16.2	13.9	-33.6
3	PARTS & ACCESSORIES FOR ADP MACHINES & UNIT	Ida	304	201	174	10.5	6.5	4	4.5	-13.1
4	SILVER, SEMIMANUFACTURED	1	0	88	126	0	0	1.8	3.3	43.8
5	LEAD ORES AND CONCENTRATES	45	71	86	89	1.2	1.5	1.7	2.3	2.7
WA	Description	2006 Value	2007 Value	2008 Value	2009 Value	'06 % Share	'07 % Share	'08 % Share	'09 % Share	% ▲, '08 – '09
---	Total WASHINGTON Exports and % Share of U.S. Total	42,391	52,089	54,498	51,739	4.1	4.5	4.2	4.9	-5.1
---	Total, Top 25 Commodities and % Share of State Total	30,155	38,263	39,480	40,086	71.1	73.5	72.4	77.5	1.5
Rank										
1	CIVILIAN AIRCRAFT, ENGINES, AND PARTS	22,140	27,524	21,426	26,253	52.2	52.8	39.3	50.7	22.5
2	SOYBEANS, WHETHER OR NOT BROKEN	1,365	2,322	4,469	3,717	3.2	4.5	8.2	7.2	-16.8
3	CORN (MAIZE), OTHER THAN SEED CORN	1,071	1,518	3,118	1,414	2.5	2.9	5.7	2.7	-54.7
4	OIL (NOT CRUDE) FROM PETROL & BITUM MINERAL	973	896	1,932	1,218	2.3	1.7	3.5	2.4	-37
5	WHEAT (OTHER THAN DURUM WHEAT), AND MESLIN	888	1,260	2,211	1,140	2.1	2.4	4.1	2.2	-48.5

Note: Figures in millions of US Dollars

Source: U.S. Census Bureau, Foreign Trade Statistics: <http://www.census.gov/foreign-trade/aip/elom.html>

Exhibit 63: Top Export Destinations for Idaho and Washington by Dollar Value

ID	Country	2006 Value	2007 Value	2008 Value	2009 Value	2006 % Share	2007 % Share	2008 % Share	2009 % Share	% Change, 2008 - 2009
---	Total IDAHO Exports and % Share of U.S. Total	3,727	4,703	5,005	3,880	0.4	0.4	0.4	0.4	-22.5
Rank	Total, Top 25 Countries and % Share of State Total	3,596	4,559	4,797	3,764	96.5	96.9	95.8	97	-21.5
1	Canada	564	609	952	743	15.1	12.9	19	19.1	-22
2	Taiwan	172	304	347	652	4.6	6.5	6.9	16.8	88.2
3	Singapore	484	1,092	1,280	415	13	23.2	25.6	10.7	-67.6
4	China	593	723	394	388	15.9	15.4	7.9	10	-1.6
5	Korea, South	275	198	200	295	7.4	4.2	4	7.6	47
WA	Country	2006 Value	2007 Value	2008 Value	2009 Value	2006 % Share	2007 % Share	2008 % Share	2009 % Share	% Change, 2008 - 2009
---	Total WASHINGTON Exports and % Share of U.S. Total	42,391	52,089	54,498	51,739	4.1	4.5	4.2	4.9	-5.1
Rank	Total, Top 25 Countries and % Share of State Total	36,482	46,054	48,660	47,645	86.1	88.4	89.3	92.1	-2.1
1	China	5,282	7,311	8,310	9,113	12.5	14	15.2	17.6	9.7
2	Canada	6,239	7,673	9,238	6,791	14.7	14.7	17	13.1	-26.5
3	Japan	5,542	6,196	7,590	5,567	13.1	11.9	13.9	10.8	-26.7
4	United Arab Emirates	2,615	2,116	2,155	2,763	6.2	4.1	4	5.3	28.2
5	Korea, South	2,272	2,747	3,261	2,034	5.4	5.3	6	3.9	-37.6

Note: Figures in millions of US Dollars

Source: U.S. Census Bureau, Foreign Trade Statistics: <http://www.census.gov/foreign-trade/aip/elom.html>

Spokane International Airport Domestic Air Cargo Activity

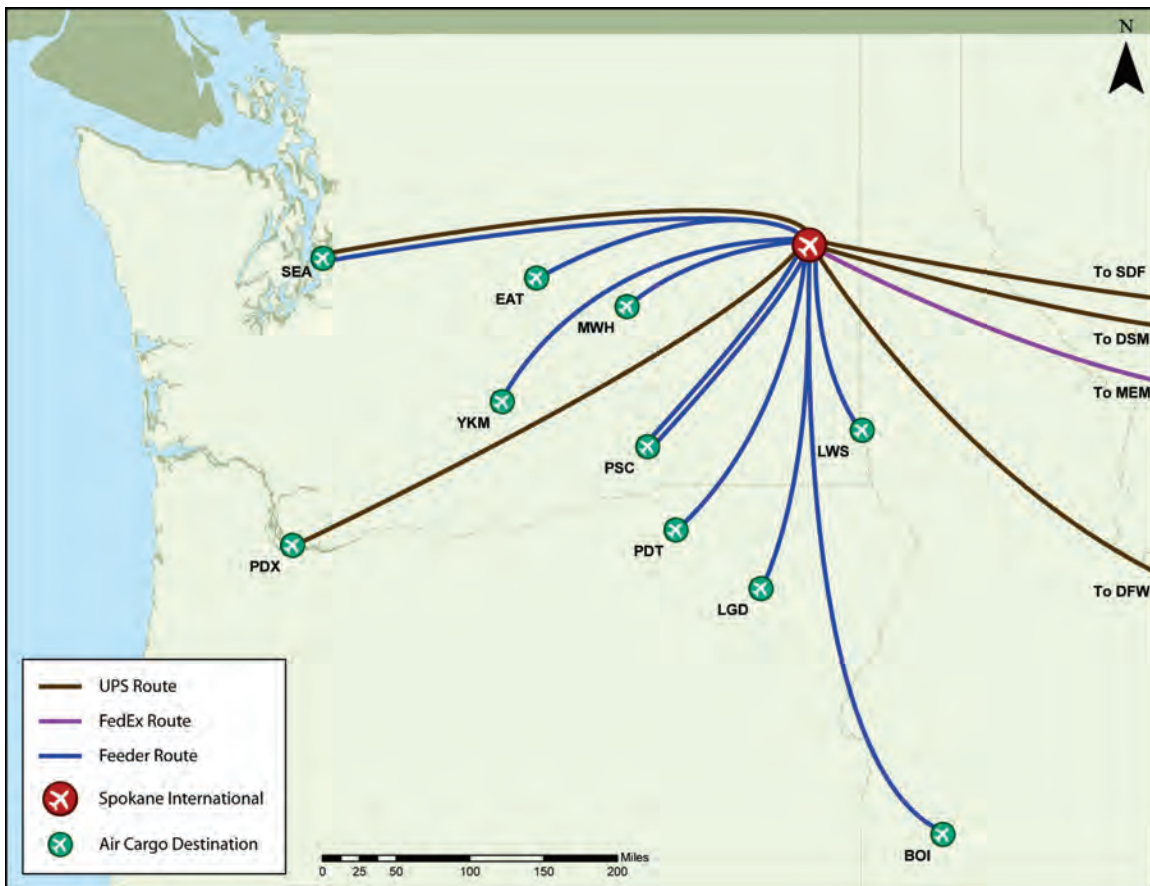
Spokane International Airport has considerable domestic air cargo operations taking place every business day. The airport serves the northwest region for FedEx as they serve smaller communities in the northwest with a fleet of Cessna Caravans and ATR feeder aircraft. FedEx uses a hub-and-spoke system to serve communities such as Pasco, Yakima and Lewiston. UPS uses the airport as a Second-Day Hub where lower-priority air cargo is transported into and out of the region. This type of hub requires four spoke routes from UPS hubs and stations on the West Coast, Midwest and South Central parts of the country. A network of trucks feeds into the second-day hub as well. **Exhibit 64** and **Exhibit 65** identify and display these routes.

Exhibit 64: Spokane International Airport Domestic Air Cargo Network

Airport Routes		Route Type	Carrier	Route Color
Spokane Int'l Airport	Seattle, WA	Feeder		Blue
Spokane Int'l Airport	Boise, ID	Feeder		Blue
Spokane Int'l Airport	Wenatchee, WA	Feeder		Blue
Spokane Int'l Airport	La Grande, WA	Feeder		Blue
Spokane Int'l Airport	Lewiston, ID	Feeder		Blue
Spokane Int'l Airport	Moses Lake, WA	Feeder		Blue
Spokane Int'l Airport	Pendleton, OR	Feeder		Blue
Spokane Int'l Airport	Pasco, WA	Feeder		Blue
Spokane Int'l Airport	Yakima, WA	Feeder		Blue
Spokane Int'l Airport	Memphis, TN	HUB	FEDEX	Purple
Spokane Int'l Airport	Louisville, KY	HUB	UPS	Brown
Spokane Int'l Airport	Dallas/Fort Worth	HUB	UPS	Brown
Spokane Int'l Airport	Portland, OR	Station	UPS	Brown
Spokane Int'l Airport	Seattle, WA	Station	UPS	Brown
Spokane Int'l Airport	Des Moines, IA	Hub (2nd day)	UPS	Brown

Source: Federal Aviation Administration, IFR records

Exhibit 65: Spokane International Airport Domestic Air Cargo Network



The IPH study area has a good base of air cargo services to build on. The best option for the region is to likely focus on increasing its market capture through attracting a business with significant air cargo demands, or continuing to attract numerous small air cargo users.

Runway length is a key consideration for international air cargo operations. Analysis of U.S. airports where FedEx, UPS, and DHL have scheduled cargo jet flights indicates the average length of the primary runway at these airports averages over 10,000 feet in length. U.S. Airports where FedEx operates have an average runway length of 10,230 feet, while UPS runways average 10,410 feet, and DHL runways average 11,460 feet. However, these runway lengths include airports with some of the longest runways in the world such as Denver International with a 16,000 foot long runway and New York's JFK International with a runway over 14,000 feet in length. These runway lengths skew the data to a degree. FedEx and UPS operate at some airports with less than 7,000 feet of runway length. FedEx has scheduled Boeing 727 service into Huntington, West Virginia and Roanoke, Virginia which have primary runway lengths of 6,517 and 6,800 feet respectively. Spokane International Airport's primary runway length of 9,001 feet is adequate to accommodate mid-size cargo jets such as the B727, B757 and large cargo jets such as the B747. The airport's master plan calls for

extending the runway to 11,000 feet in length and eventually adding a third runway.

PORT AND WATERWAY ISSUES AND OPPORTUNITIES

The port authorities in the IPH study area provide a crucial economic development tool, as their enabling legislation allows them to acquire property, develop industrial parks, and provide economic incentives to potential businesses. In those regions that have Ports, they are a vital tool to the economic development efforts of the region and in many cases own most if not all of the industrially developed property that could provide a location for future business and industries.

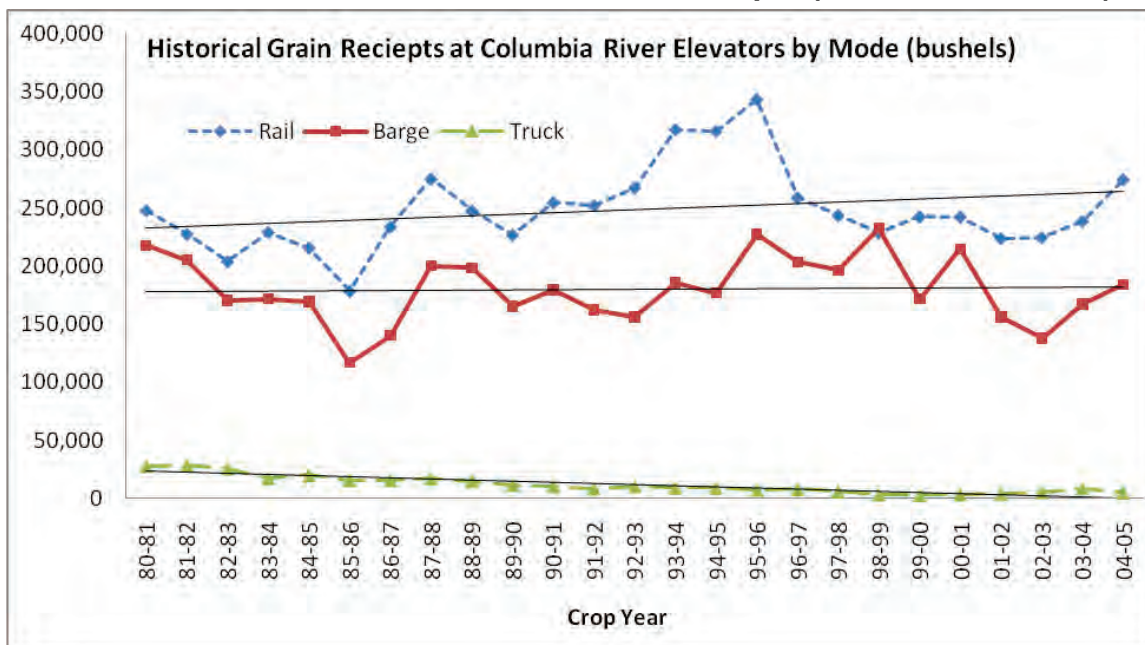
In an area heavily based on natural resource industries like agriculture and timber production, water transport often provides the most efficient means of transporting heavy goods, and provides a competitive option to rail and truck transport.

New opportunities may also result from a recent project to deepen the Columbia River channel from 40 to 43 feet deep. As a result of this navigational improvement larger TEU vessels could navigate the channel to Portland, OR. If/after a vessel operator commits to using Portland as a port of call (instead of Tacoma or Seattle) there will be more containers shipped inbound to the IPH, making more containers available for outbound transit down Lewiston to Portland for export. The barge trip is less expensive than the highway trip so it will reduce transportation costs, and interject additional competition and make containerized products originating in the IPH study area more competitive.

There are several constraints impacting future opportunities for port facilities in the IPH study area. The most notable constraint maybe the changing nature of agriculture away from bulk, raw grain movements to more value-added and specialized identity preserved shipments. Agriculture is one of the primary users of the study area's port facilities. The working paper *Economic Basis Analysis and Freight Dependent Industries* examined agriculture industry trends in the study area in greater detail. One notable finding from a study by Washington State University is that over the past twenty-five years the volume of grain moving by all modes through the Columbia River grain elevators has remained relatively flat (**Exhibit 66**).

Lower land values, cheap labor and improved transportation systems in countries such as South America will continue to challenge the traditional bulk or "fungible" grain market of the U.S. The trend in American agriculture production is toward more value added products such as bio-fuels, livestock and poultry production and semi-finished or finished food products from grain such as potato flakes and pasta. Many of these products are moving toward containerized transport, and to that extent the container on barge facility at Lewiston is well positioned to capture increases in this type of traffic.

Exhibit 66: Columbia River Elevator Grain Receipts (1980-81 to 2004-05)²²



Other challenges facing ports on the Columbia/Snake River system is the ability to maintain the aging infrastructure that enables commercial navigation, and environmental activism. A lock maintenance project scheduled to begin in December of 2010 funded by the American Recovery and Reinvestment Act of 2009. While the planned lock maintenance is a beneficial investment that will benefit the long term viability of the Snake-Columbia River System, but the outage is expected to last 14 weeks which may driver away some shippers in the short term.

While extraordinary efforts have been made on the Columbia/Snake River system to maintain the native salmon runs, many environmentalists view salmon restoration efforts as a complete failure, and commercial uses of the river as an inhibitor to other forms of economic development:

"Lewiston's "port" also places a hangman's noose around the fish of Oregon's Imnaha, Grande Ronde, Wenaha, Lostine, Minam, Wallowa, and Powder rivers, Idaho's South and Main Clearwater, North, South and Middle Salmon, Selway, Rapid, Lochsa, and many more, strangling the economies of towns throughout the region, along the Columbia, and up and down the Pacific Coast. In 1993 the sport fishery for just one Snake River species—the summer steelhead—generated \$90 million and created 2,700 jobs, even with the run in semi-ruins. (The same year the Lewiston port directly employed 22 people.) The four dams' removal, according to the Army Corps, will create 12,000 new jobs. Economic studies say dam removal would generate long-term billions. Yet subsidy

²² Ken Casavant, Marcia Gossard and Eric Jessup; *Grain Receipts at Columbia River Grain Terminals 1980-1981 to 2004-2005*. Washington State University. Nov. 2005 (Chart by WSA).

recipients and their political supporters have constructed a pro-dam propaganda machine that views any criticism of this deadly "port" as treason.²³

Weight limits and spring road restrictions are another infrastructure challenge facing some ports in the study area. This issue has come to light especially with the planned maintenance of the locks, which will require some ports to transport more goods via the highway system during period when load restrictions may be in place.

Snake River System

The Snake River flows for 1,040 miles from northwestern Wyoming through southern Idaho and then traversing the Idaho/Oregon and Idaho/Washington borders to Lewiston-Clarkston. As the Snake River passes Lewiston-Clarkston and bends from the south to the west, it receives the Clearwater River from the east, its largest tributary. From there the Snake River winds west for 160 miles through the Palouse before joining the Columbia River near the Tri-Cities.

Shipping on the Snake River is enabled by four large dams. From east to west, proceeding downriver, these include the Lower Granite Lock and Dam, the Little Goose Lock and Dam, the Lower Monumental Lock and Dam, and the Ice Harbor Lock and Dam. The dams accommodate a shipping channel fourteen feet deep and 250 feet wide. They are owned and operated by the U.S. Army Corps of Engineers. Prior to their completion in the 1970s, products from the region were transported by truck and rail to the Tri-Cities, Portland, and other destinations.

Agricultural products are among the main goods transported on the Snake River. Grain, mainly wheat, accounts for more than 85 percent of the cargo. Other products include peas, lentils, forest products, and petroleum.

The U.S. Army Corps of Engineers plans during late 2010 to early 2011 to start work on a \$10 million project for replacement of Lower Monumental Lock and Dam's downstream navigation lock gate. In recent years, inspections of the gate revealed structural fatigue and required annual welding repairs to continue reliable operations. Replacing the gate will include fabrication and construction work, employing an estimated 523 people. Fabrication of the gate is estimated to take seven to 10 months. Local agencies, Ports, shippers, carriers, and logistics providers have banded together to investigate ways participants continue to get their products to market by truck and/or rail during the anticipated 12 to 16 week closure. The closure duration is not a permanent change, but it will initiate investigation into alternative means to move product into and out of the region. Innovative ideas such as more use of short line rail to move wheat to Pasco and then on to the Pacific Northwest ports could become a normally considered routing instead of truck. If service and economics prove acceptable, it could spur

²³ Sierra club magazine; *Second Coming*. David James Duncan. © 2008:
<http://www.sierraclub.org/sierra/200003/salmon1.asp>

longer term studies for investment in the short line rail system to improve track, rail equipment and facilities in the region.

Agricultural products are among the main outbound goods transported on the Snake River. Grain, mainly wheat, accounts for more than 85 percent of the cargo that travels down river to the seaports in the Portland, OR and Vancouver, WA area. Other products include peas, lentils, and forest products. For example, J.R. Simplot, an Idaho agribusiness, uses the container barge service to Portland to export refrigerated containers full of chilled or frozen potato products and other chilled processed food products.

Inbound products traveling upriver from Portland and Vancouver include petroleum, fertilizers, and a variety of containerized freight that arrives on containerships at Portland's Terminal 6, which is located 105 miles inland from the Pacific coast. At Terminal 6 containers get transloaded onto barges for river transport.

Highway distance from the Portland area to Lewiston is approximately 340 miles, or about eight hours truck traveling time. Barge service travel duration is approximately 51 hours. However, the trade off for barge service is the lower cost which can benefit less time-sensitive freight. Although varying, barge service has an acceptable time frame because it can reduce transit costs by 25 percent or more depending on the season, truck availability and the rise or fall of the fuel surcharge.

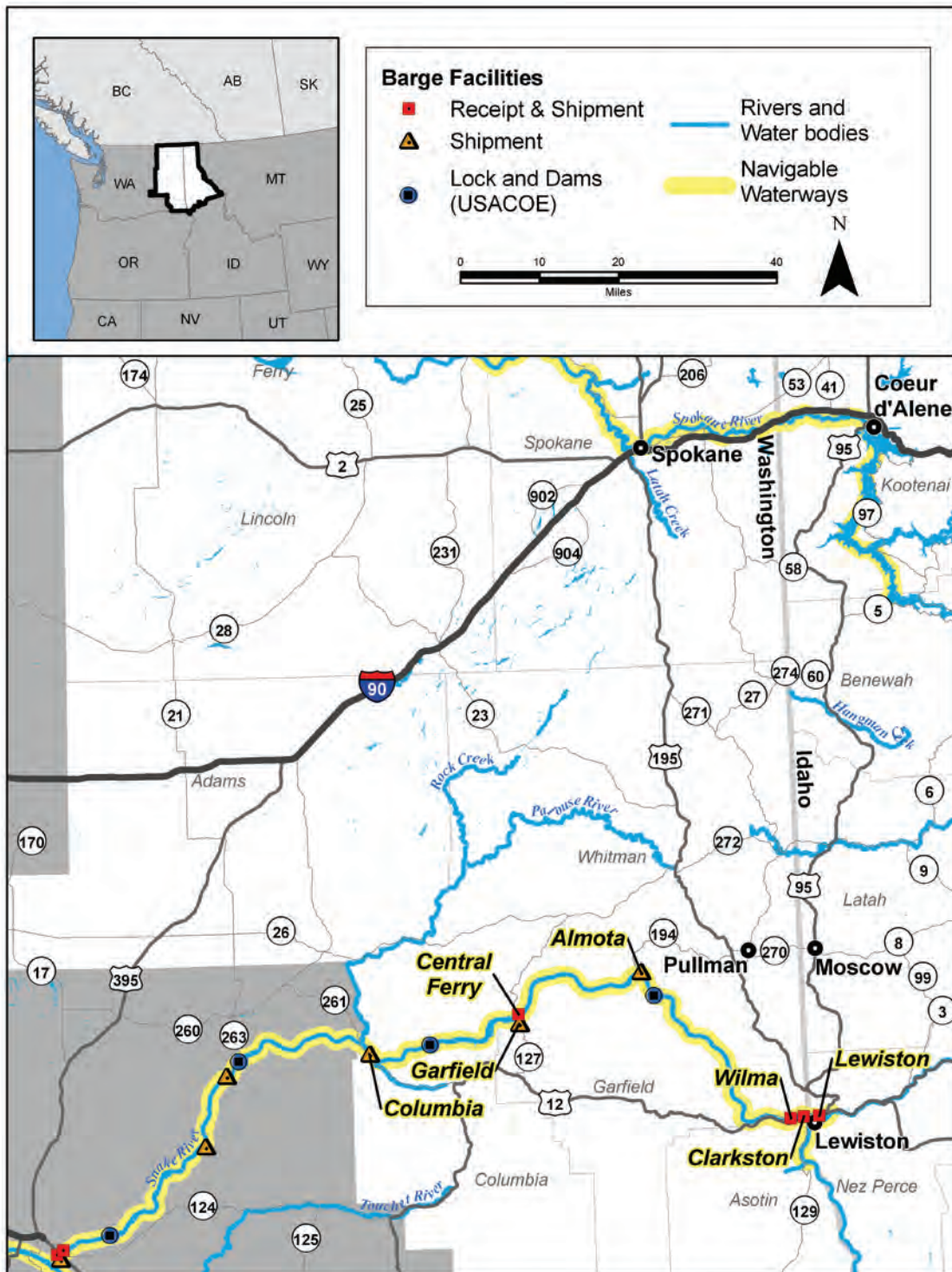
Barge service is not only more fuel efficient, it produces fewer emissions²⁴. Using one gallon of fuel, one ton of cargo can be transported 514 miles by barge, 202 miles by rail and only 59 miles by truck. On a ton/mile basis, rail produces about twice the amount of carbon emissions as barge service and truck service produces over 74 times the amount as barge service.

Snake River Ports

Within the IPH study area, five port authorities have freight operations on the Snake River. From east to west starting in Idaho at the confluence of the Snake and Clearwater Rivers, these include the Ports of Lewiston, Clarkston, Whitman County (includes Wilma, Almota and Central Ferry), Garfield, and Columbia, which is on the western edge of the IPH study area (**Exhibit 67**).

²⁴ Tidewater Transportation Services web site, <http://www.tidewater.com/transport.php#benefits>

Exhibit 67: Snake River Port and Dam System



Source: USACE, RITA/BTS, and VECTOR-Vanderbilt University; National Waterway Network, NTAD 2009. EPA and USGS-NHD, 2004. USGS-EROS Ortho-photography, 2006. BTS Associates, *Lower Snake River Transportation Study Final Report*. June 2003. WSDOT, *Washington State 2010-2030 Freight Rail Plan*, December 2009. Wilbur Smith Associates, January 2010.

Port of Lewiston

The Port of Lewiston is located at the confluence of the Snake and Clearwater Rivers. It is the easternmost port on the Columbia/Snake River system. Located 465 miles from the Pacific Ocean, it is the most inland port on the west coast.

The Port's intermodal connections include highway and rail. US-12 provides connections to Montana to the east and both Walla Walla and the Tri-Cities to the west, while US-95 and US-195 provide connections to I-90 and Spokane-Coeur d'Alene to the north. US-95 provides connections to I-84 and southwest Idaho to the south. The Great Northwest Railroad connects the Port to the main lines of the BNSF and the UP.

The Port is served by both barge and tug lines and accommodates the transfer of both containerized cargo and a variety of bulk commodities. Grain shipments are the chief commodity handled. Over 90 percent of the lintels and soybeans grown in the Palouse are exported. Heredity preserved, soft white wheat is exported in containers out of the port. Lewis-Clark Terminal and CLD Pacific Grain have a combined storage capacity of 6.2 million bushels (186,000 tons).

The Port can handle oversized, heavyweight cargo which can be rolled off the barges, eliminating the need for a heavy lift crane. With a permit, the oversized cargo can move along US 12 to cross Idaho without height restrictions to reach Montana and beyond. The route from Asia via Portland, up the Snake River to Lewiston, and on US 12 to Montana is envisioned to become part of the growing supply chain for heavy equipment, large tanks and wind turbines.

Containerized traffic at the Port of Lewiston is dependent upon the availability of container loading at the Port of Portland. Shippers in the area prefer to take advantage of the lower cost of river barge shipping but when loading space on the containerships in Portland is not available, they must use truck drayage to Seattle/Tacoma for containerized exports. The Snake River channel is currently being dredged to a depth of 43 feet. This will enable larger containerships to reach Portland, increasing the number of container slots available for loading. Eventually this will increase the amount of containerized freight moving out of Lewiston to Portland.

A potential opportunity for Lewiston is to act as a roll-on/roll-off (Ro-Ro) interchange point to bring in oversized cargoes such as large tanks for bio-fuel producers or wind turbine blades up the river. Cargoes destined for Montana could be placed on trailers at the coast and rolled on to barges. At Lewiston the trailers could be rolled off of the barges and then use US 12 across ID to Montana with only one oversized permit and without any overhead obstructions.

Port of Clarkston

The Port of Clarkston, headquartered in the City of Clarkston, Asotin County, is the farthest inland port in Washington State. The port resides on the south bank

of the Snake just downriver from the Port of Lewiston. It is approximately 460 miles from the mouth of the Columbia River. The port has intermodal connections to highways but no rail access. US-12 runs east-west along the southern boundary of the port property and SR-128 borders on the west.

The Port of Clarkston operated mainly as a port for pleasure craft and cruise boats that journey up Hell's Canyon, America's deepest gorge. The tourist boat season is during the late spring, summer and fall. The Port of Clarkston operates one of the largest cranes on a navigable river east of Portland. The crane is capable of moving logs, containers, and other cargo. *"As a far inland seaport, many large yachts are sent up the river from Portland and loaded on trucks bound for Texas, Indiana, and other inland states. Boats have been moved that are up to 78 feet in length and weigh more than 90,000 pounds."*²⁵

Port of Whitman County

The Port of Whitman County, headquartered in Colfax, has three waterfront facilities on the Snake River: Wilma, Central Ferry, and Almota.

Wilma Facility

The Wilma facility is located on the north side of the Snake River directly across from Clarkston. Of the Whitman County Port's three facilities on the Snake River, Wilma is the largest and busiest. Wilma's service area covers an estimated 200-mile radius. Wilma's intermodal connections include highway and rail. SR-128 connects Wilma to US-12 to the south and US-95 to the east. The Great Northwest Railroad connects it to the UP main line at Riparia.

The average annual daily truck traffic to and from Wilma is approximately 100 trucks per day, peaking at 300 trucks per day during harvest. The full spectrum of products transported to the facility include wood chips, hog fuel, timber, soft white and hard red wheat, dry peas and lentils, and other grains. The port has a large conveyor crane for off-loading wood sawdust that is used in the manufacture of tissue paper.

Wilma's grain storage capacity is approximately 4.6 million bushels (138,000 tons).

²⁵ Port of Clarkston Website: <http://portofclarkston.com/on-the-water/crane/>

Almota Facility

The Almota facility is located thirty miles downriver from Wilma, west of the Lower Granite Lock and Dam. Of the Port's three sites, Almota is the smallest. Almota's service area covers a 50-mile radius encompassing farming communities in Whitman, Garfield, and Latah Counties. Almota's connections include highway and a potential for rail. SR-194 and Almota Road connect Almota to



Source: Tidewater Transportation Services, <http://www.tidewater.com/data/20040115.pdf>

US-195 to the east and SR-26 to the west. Through construction of a siding, the Great Northwest Railroad would connect the facility to Lewiston to the east and the UP main line at Riparia to the west.

Almota serves as a trans-shipment point for local white wheat and is an alternative to direct rail service. Almota's grain storage capacity is approximately 3.7 million bushels (111,000 tons). However, the Almota site, consisting of 11 acres, is constrained with no capacity for expansion. In addition, access to the facility via Almota Road, has a seven percent grade and drops 1,250 feet. The road is closed to truck traffic during the spring thaw, slowing the local economy. Local authorities believe the Port's could expand its service area and boost its capacity for grain intake with the completion of the Wawawai - Lower Granite Dam road project.

Central Ferry Facility

The Central Ferry facility is located twenty miles downriver from Almota. Central Ferry's service area reaches into Whitman, Spokane, Garfield, and Columbia counties. Central Ferry's intermodal connections include highway and rail. SR-127 connects to SR-26 to the north and US-12 to the south. The Great Northwest Railroad connects Central Ferry to Lewiston to the east and the UP main line at Riparia to the west.

The average annual daily truck traffic to and from Central Ferry is approximately 60 trucks per day, peaking at 125 trucks per day during harvest.

Central Ferry is a major trans-shipment point for local white wheat. Central Ferry has a grain storage capacity of approximately 4.6 million bushels (138,000 tons).

Port of Garfield

The Port of Garfield, headquartered in Pomeroy, operates a grain elevator directly across from Central Ferry on the south side of the river. The elevator has

no intermodal connections and is accessible only by SR-127 which connects to WA SR-26 to the north and US-12 to the south. The facility dock is exclusively leased for barging grain to market.

Port of Columbia

The Port of Columbia, headquartered in Dayton, operates a grain elevator barge loading facility at Lyons Ferry, located approximately 20 miles downriver from Central Ferry. Connections include highway and potential for rail. The facility has direct access from SR-261 to SR-260. SR-260 connects with east-west SR-26 or north-south US-395. SR-261 also connects with US-12 to the south. The UP's Hinkle-Spokane mainline passes directly through Lyons Ferry, and a branch line runs east to Riparia to connect with the Great Northwest Railroad. The rail line could be accessed through the construction of a siding which would then enable rail connections west to the Tri-Cities, north to Spokane, and east to Lewiston.

Commodity Flows Utilizing the Snake River Ports

Commodity flows for the IPH are analyzed in detail in the Inland Pacific Hub Transportation Study's Work Element 3.2 - Regional Freight Profile. Below is a summary of freight flows moved on barge on the Snake River in the IPH study area.

Inbound and Outbound Commodities Moved by Water

Inbound commodities transported into the IPH by water are shown in (**Exhibit 68**). Petroleum and coal products appear to be the largest inbound commodity. The petroleum commodity group includes fertilizer which is used by the agricultural industry. Other top commodities farm and food products, nonmetallic minerals and scrap products brought into the area for processing and/or transshipment, and lumber.

Outbound commodities focus on farm and food products, as well as waste and scrap, and are shown in **Exhibit 69**. Over the forecast period the farm commodity tonnage decreases while at nearly a proportional rate food and kindred products increase. This could be an indication of a change in the finished state of the agricultural products that are exported from the region.

Exhibit 68: Inbound Commodities Transported by Water

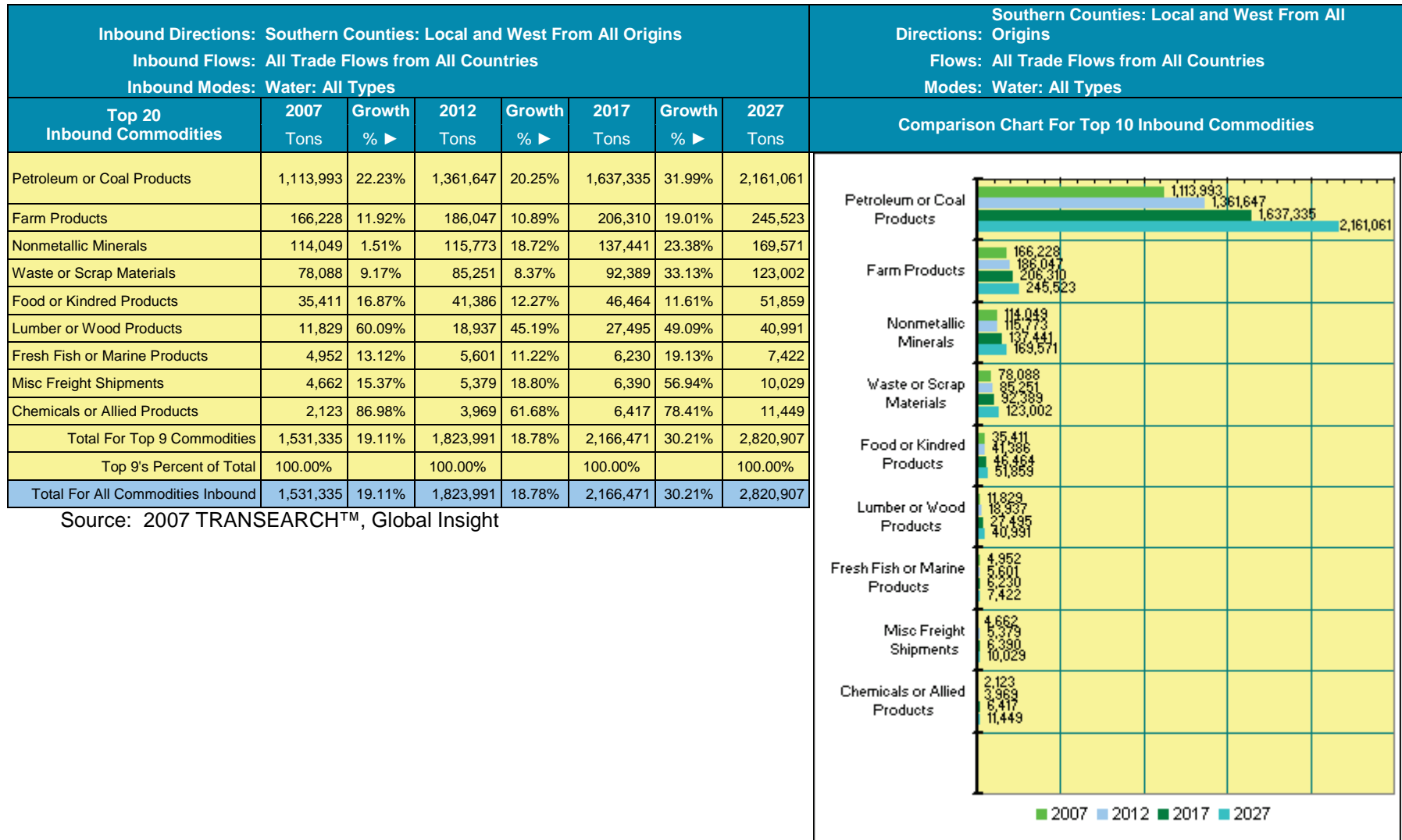
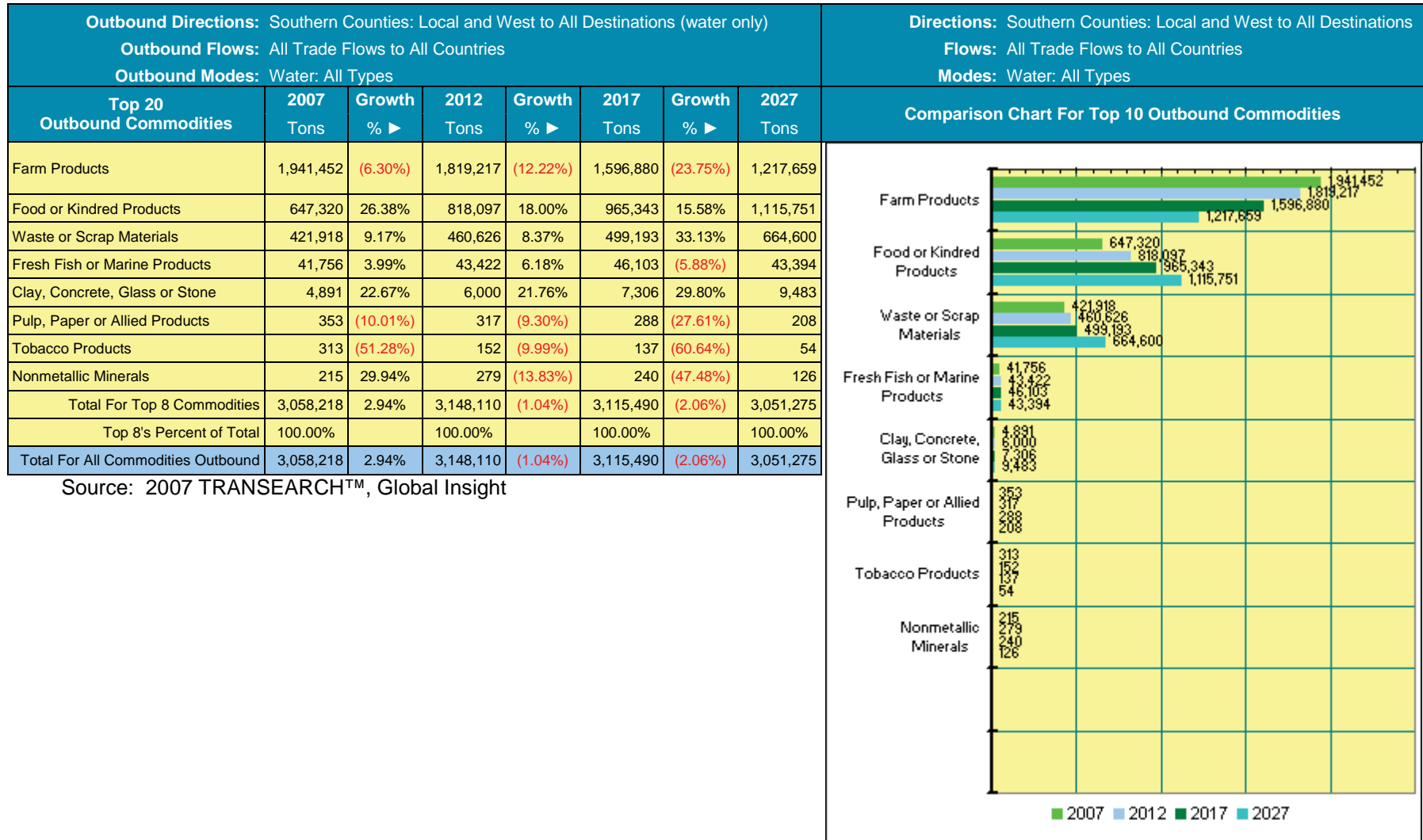


Exhibit 69: Outbound Commodities Transported by Water



Source: 2007 TRANSEARCH™, Global Insight

INLAND PACIFIC HUB

Transportation Study



Technical Memorandum 2

Inland Pacific Hub Multimodal Trade Assessment

June, 2010

Final

WilburSmith
ASSOCIATES

In Association with

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GLOSSARY OF TERMS AND ACRONYMS

Term	Definition
BEA	Bureau of Economic Analysis, U.S. Department of Commerce
BEA Regions	<p>The U.S. Department of Commerce, Bureau of Economic Analysis (BEA) has defined 179 BEA geographic regions. BEA's economic areas define the relevant regional markets surrounding metropolitan or micropolitan statistical areas. They consist of one or more economic nodes-metropolitan or micropolitan statistical areas that serve as regional centers of economic activity-and the surrounding counties that are economically related to the nodes.</p> <p>To view a map of BEA Regions, go to: www.bea.gov/newsreleases/general/2004/pdf/rea1104.pdf</p>
BTS	Bureau of Transportation Statistics, U.S. DOT, Research and Innovative Technology Administration
Class I Railroad	The largest rail carriers in the U.S., classified by operating revenue. In 2008 Class I carriers has operating revenue exceeding \$401.4 million. Currently seven railroads operating in the U.S. are classified as Class I, including BNSF and Union Pacific in the western U.S.
COFC/TOFC	These acronyms mean "Container on Flat Car" and "Trailer on Flat Car", respectively. These are two common types of intermodal freight.
Combination Truck	A power unit (truck or tuck tractor) and one or more trailing units.
Container	A typical container is 40 or 48 feet long, 8 feet tall and 8 feet wide. These steel boxes are used internationally to transport freight by sea, rail and highway. Container traffic is measured in twenty-foot equivalent units (TEUs).
BTS / Container	The Border Crossing/Entry Data series from the Bureau of Transportation Statistics defines a "container" as any conveyance entering the U.S. for commercial purposes, full or empty. This BTS definition of a container includes a variety of single unit and semitrailer truck configurations.
Containerization	This technique of using a boxlike device in which a number of packages are stored, protected, and handled as a single unit in transit.
Container Provider	For international shipments, containers are typically provided by the ocean carrier from its available empty inventory within proximity of the shipper.
Deadhead	Trucking industry reference to one leg of a round trip that is traveled empty.
Distribution Center	Warehousing facilities, where typically like commodities in containers or truck-load lots are resorted into mixed truck loads for distribution to retail outlets or customers.

Term	Definition
Drayage Carrier	The service offered by a motor carrier for pickup and delivery of ocean, rail or air cargo containers.
Genetically Modified Organisms (GMO)	Genetic modification is a special set of technologies that alter the genetic makeup of organisms such as animals, plants or bacteria. Crops are commonly modified to enhance taste and quality, reduce maturation time, increase nutrients, yields and stress tolerance, improve resistance to diseases, pests and herbicides, or for new products and growing techniques. Consumers in some countries have protested the use of genetic modification in food products.
Inbound Freight Flows	The freight that originates outside a particular state or region and terminated in that state or region.
Inland Port	The term inland port is used in two different but related ways to mean either a port on an inland waterway or an inland site carrying out some functions of a seaport. An inland port in the wide sense, as used in common speech, is simply a port on an inland waterway such as a river, lake or canal. The term inland port is also used in a narrow sense in the field of transportation systems to mean a rather more specialized facility that has come about with the advent of the intermodal container (standardized shipping container) in international transport. Rather than goods being loaded and unloaded in such ports, shipping containers can just be transferred between ship and road vehicle or ship and train. The container may be transferred again between road and rail elsewhere and the goods are only loaded or unloaded at their point of origin or final destination.
Internal Flows	Freight that originated and terminates within a particular state or region.
Intermodal	Freight that travels from origin to destination on more than one mode of transportation such as a container that arrives from Asia by sea and is transferred to rail for the remainder of its journey.
Just-in-Time Inventory System	An inventory and inbound manufacturing strategy that smoothes material flows into assembly and manufacturing plants. The strategy seeks to minimize inventory investment by scheduling delivery of raw materials to the point where they are needed, at the precise time required.
Less Than Truckload (LTL) and Small Package Carriers	LTL carriers consolidate many smaller shipments from multiple shippers located in a common area or region, sort them at dock facilities according to common designation and then line-haul trailers to a destination dock for delivery.
Location Quotient	An index for comparing an area's share of a particular activity with the area's share of some basic or aggregate phenomenon. As applied to economic analysis it is a measure of the relative industrial concentration within a specific region, as compared to a broader base geographic or economic region.

Term	Definition
NAICS	The North American Industry Classification System: The North American Industry Classification (NAICS) is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy. NAICS was developed under the auspices of the Office of Management and Budget (OMB), and adopted in 1997 to replace the Standard Industrial Classification (SIC) system. It was developed jointly by the U.S. Economic Classification Policy Committee (ECPC), Statistics Canada, and Mexico's Instituto Nacional de Estadística, Geografía e Informática (INEGI), to allow for a high level of comparability in business statistics among the North American countries.
National Highway System (NHS)	Approximately 160,000 miles of roadway important to the nation's economy, defense and mobility. The NHS includes Interstate, and other Principal Arterials, Strategic Highway Network (STRAHNET), Major Strategic Highway Network Connectors, and Intermodal Connectors. The NHS was designated as a high priority system under the Clinton Administration.
National Network (NN) Highways	The National Network of Highway includes: (1) the Interstate Highway System; and, (2) other designated highways, which on June 1, 1991 were part of the Federal-Aid Primary System in effect at that time. There are highways that have been certified by the states to FHWA as being capable of safely handling large commercial motor vehicles. The total National Network system is about 200,000 miles, and a complete listing of the highways included in the NN can be found in 23 CFR Part 658, Appendix A.
Outbound Freight Flows	The freight that originates in a particular state or region and terminates outside of that state or region.
Private Carriers	Unlike "for-hire" trucking services, private carrier fleets are operated by businesses whose primary business is something other than transportation. For instance, private carrier fleets may be operated by manufacturers, distributors, retailers, or other businesses operating trucks as an internal value-added function primarily to meet their own business shipping needs. While private truck fleets primarily serve a single company, private carriers are allowed to sell unused backhaul capacity on a for-hire basis. Wal-Mart is an example of a private carrier.
Shift-Share Analysis	<p>Shift-share analysis is one way to account for the competitiveness of a region's industries and to analyze the local economic base. This analysis is primarily used to decompose employment changes within an economy over a specific period of time into mutually exclusive factors. It paints a picture of how well the region's current industries are performing by systematically examining the national, local and industrial components of employment change. A shift-share analysis will provide a dynamic account of total regional employment growth that is attributable to growth of the national economy, a mix of faster or slower than average growing industries, and the competitive nature of the local industries.</p> <p>Source: Career Development Resources, Shift-Share Analysis Narrative, socrates.cdr.state.tx.us/iSocrates/files/ShiftShareNarrative.pdf</p>

Term	Definition
Short-ton	A unit of weight equal to 2,000 pounds.
SIC	Standard Industrial Classification system – An industry classification system used by the U.S. Census Bureau in the Economic Census up to 1997, when the SIC was replaced by the North American Industry Classification System (NAICS).
Single-unit Truck	A large truck on a single frame with at least 2 axles and 6 tires. Excludes “other 2-axle, 4-tire vehicles” noted above.
Supply Chain	A group of physical entities such as manufacturing plants, distribution centers, conveyances, retail outlets, people and information which are linked together through processes (such as procurement or logistics) in an integrated fashion, to supply goods or services from source through consumption.
TEU	Twenty-foot Equivalent Unit – the standard of measurement for intermodal containers. Early containers used for cargo were 20 feet long, 8 feet wide and 8.5 feet high. Today containers come in a variety of sized including 40-foot, 45-foot and 53-foot domestic containers.
Third Party Logistics (3PL)	A firm that specializes in logistics services that are provided to other companies.
Through-Freight Flows (Overhead flows)	Freight traffic volumes that originate and terminate beyond the borders of a state or region, but that use transportation infrastructure of the state or region during transit.
Transload	The practice of transferring product between truck and rail transportation. In most instances, a transload facility operator, third-party logistics company, or broker facilitates transloading for both the shipper and the consignee. These companies coordinate truck and rail connections and frequently offer warehousing and other services to facilitate storage and delivery.
Transloading	The practice of transferring product between truck and rail transportation. It allows shippers and their customers to enjoy much of the cost benefits of rail transportation without having a rail siding at their door-at the lease an expensive proposition, and for many companies, a physical impossibility. In most instances, a transload facility operator, third-party logistics company, or transportation broker facilitates transloading for both the shipper and the consignee. These companies coordinate truck and rail connections and frequently offer warehousing and inventory management services to facilitate storage and delivery.
Transshipment	The shipment of merchandise to the point of destination in another country on more than one vessel or vehicle. The liability may pass from one carrier to the next, or may be covered by “Thorough Bills of Lading” issued by the first carrier.

Term	Definition
Truckload Carrier	The truckload (TL) motor carrier segment generally does not operate across a regular route, but rather deliver shipments at or near the first delivery point for a “backhaul” load. TL carriers generally have little need for extensive terminal or warehousing facilities.
TSA	Transportation Satellite Accounts. An extension of the U.S. input-output (I-O) accounts. Satellite accounts rearrange information from the basic economic accounts for the purpose of analyzing important economic activities more completely than is otherwise possible.
World Trade Organization	An organization established on January 1, 1995 replacing the previous General Agreement on Tariffs and Trade (GATT) that forms the cornerstone of the world trading system.

Notes:

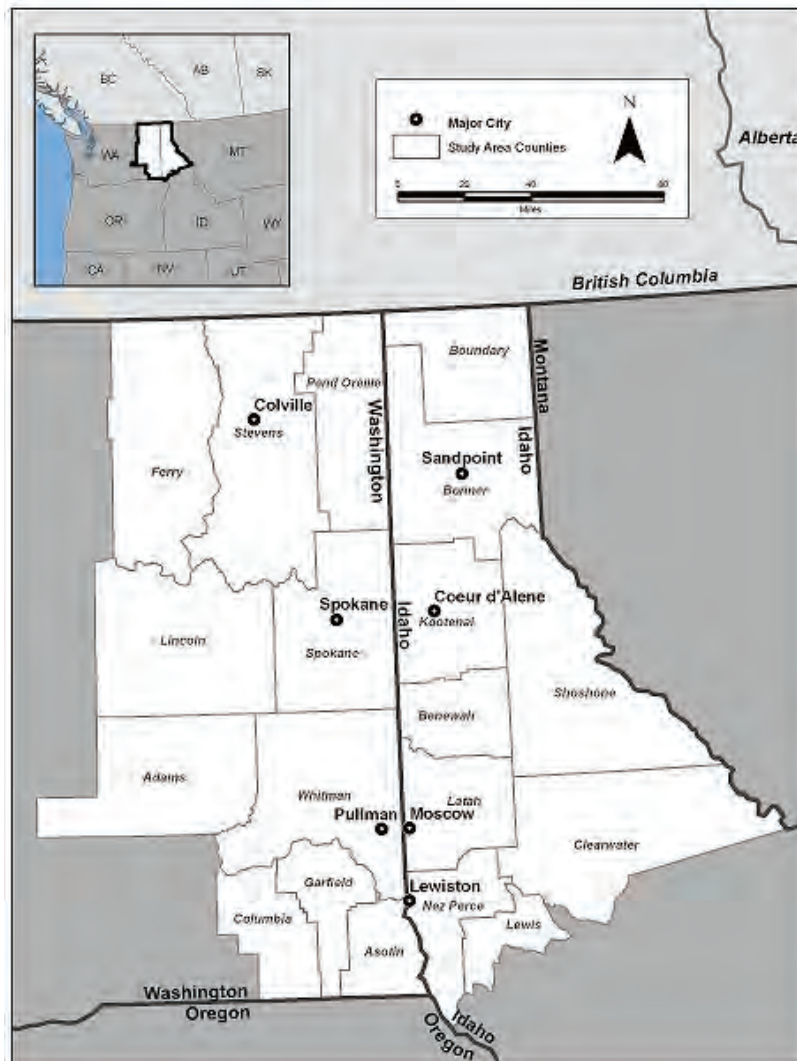
- Information on trucking industry segments provided by the American Transportation Research Institute (ATRI) and adapted from the American Trucking Trends 2004, American Trucking Association
- Information on Class I railroads taken from Wikipedia.com
- Transloading definition taken from: *Shouldn't you be transloading?* John Paul Quinn
- Logistics Management May 1, 2005: <http://www.logisticsmgmt.com>

INTRODUCTION

The Inland Pacific Hub (IPH) study area is comprised of nineteen counties located in eastern Washington and northern Idaho (**Exhibit 1**). The economic interests of this region are represented in part by the Inland Pacific Hub Advisory Board, a public-private partnership established by and consisting of representatives from both states. The Board's objective is to establish the Inland Pacific Hub study area as a multimodal global gateway to increase international commerce.

The region has a landmass of nearly 30,000 square miles and a population of approximately 875,000. It includes ten counties in Washington (Ferry, Stevens, Pend Oreille, Lincoln, Spokane, Adams, Whitman, Columbia, Garfield, and Asotin) and nine counties in Idaho (Boundary, Bonner, Kootenai, Benewah, Shoshone, Latah, Clearwater, Nez Perce, and Lewis). The Inland Pacific Hub study area is bordered by British Columbia, Canada to the north and Montana to the east. Southern Idaho and northeastern Oregon are situated to the south, while central Washington lies to the west.

Exhibit 1: Inland Pacific Hub Study Area



Source: HNTB Corporation and Wilbur Smith Associates, January 2010.

The IPH Advisory Board has partnered with the Washington State Department of Transportation and the Idaho Transportation Department to study the region's capacity for economic development. The Inland Pacific Hub Transportation Study has two objectives: 1) To identify the Inland Pacific Hub study area's capacity as a globally-connected, multimodal transportation gateway; and, 2) To identify the critical infrastructure requirements needed to drive the IPH study area's future economic growth.

REPORT ORGANIZATION AND COMPOSITION OF TASK 3

To accomplish the objectives established by the IPH Advisory Board, Wilbur Smith Associates, in association with Halcrow and HNTB, proposed a work plan based on six tasks:

- Task 1: Analyze Existing Transportation Market
- Task 2: Profile Existing Multimodal Transportation Infrastructure (Tech Memo 1)
- Task 3: Profile Regional Economic Assets (Tech Memo 2)
- Task 4: Profile Commercial and Technology Assets (Tech Memo 3)
- Task 5: Identify Public Education and Stakeholder Involvement
- Task 6: Compile Final Report and Phase II Recommendations

TECHNICAL MEMORANDUM 2

Several of the six tasks noted above (Tasks 2, 3 and 4) have Technical Memoranda as final task deliverables. Technical Memorandum 2 is a summary report based on five, more-detailed working papers that break the analysis associated with Task 3 into discrete work elements. The five more-detailed working papers forming the basis of this Technical Memorandum are:

Working Paper 3.1 – Economic Base Analysis/Freight Dependent Industries: The purpose of this analysis is to identify robust and competitive industries in the study area and surrounding regions that are supporting the IPH study area economy. The analysis examines which industries may be weakening and identifies industries that show potential for growth. Key measures examined in the analysis include jobs, wages and economic value of traded sectors in the IPH study area. Working paper 3.1 presents the results of a quantitative analysis of the Inland Pacific Hub study area's economy, and addresses the key transportation-related factors that affect the region's economic conditions. The working paper serves as an introduction to the IPH study area economy and establishes key trends affecting the regional economy, and important industries in the study area.

Working Paper 3.2 – Regional Freight Profile: The working paper presents an analysis of commodity flow data for the IPH study area. The main information resource for this analysis is Global Insight, Inc.'s 2007 TRANSEARCH™ database. TRANSEARCH™ is one of the most comprehensive databases in use today to describe how freight moves between various markets. The TRANSEARCH™ dataset purchased for this study contained over 470,000 freight records depicting the nature of freight movements between:

- The 19 counties comprising the IPH study area
- IPH study area counties and other regions of the U.S.
- IPH study area counties and areas in Canada or Mexico that have imports or exports with the IPH study area.

Understanding freight flows in the region was one of the initial steps needed to gain a clear understanding of the economic activity of the area and how that affects the transportation network. The information presented in Working Paper 3.2 includes: a regional summary of commodities and markets; a summary of modes serving the IPH study area by tonnage and value; a county cluster summary; individual county summary; commodity detail; and, import and export detail.

Working Paper 3.3 – Regional Competitiveness: This working paper investigates how the Inland Pacific Hub study area compares to other areas of the country with respect to access to transportation services and logistics capabilities. The paper presents information about how transportation costs affect business decisions across various sectors of the economy and identifies potential strategies for addressing transportation issues facing the IPH study area. The working paper also presents several relevant supply chain examples: retail, grain and potatoes and demonstrates how these goods move across transportation networks in the region. Finally, two comparison regions from other areas of the U.S. are compared to the IPH study area to examine commonalities and differences in transportation needs, and to view how other areas are addressing some issues similar to those facing the IPH study area.

Working Paper 3.4 – Trade Opportunities: This working paper examines how well IPH study area transportation infrastructure and logistics capabilities match trade opportunities. The paper begins with a summary of recent trends in international trade, including key trading partners and potential opportunities and threats to the Pacific Northwest and the IPH study area. The discussion presents promising trade/market opportunities for the IPH study area, and identifies unmet transportation needs with regards to building future trade capacity. The working paper also presents alternative models for developing inland ports and discusses which models may provide opportunity for the IPH study area.

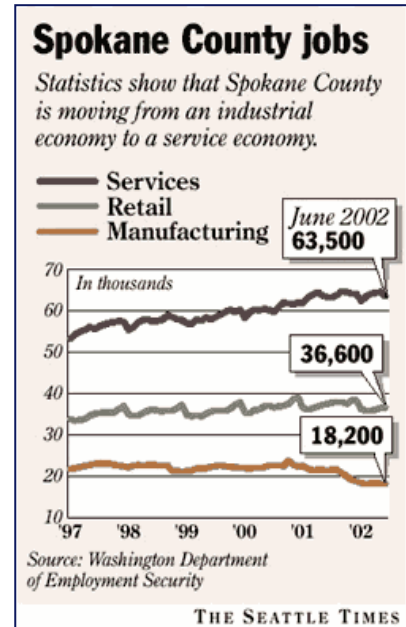
Working Paper 3.5 – Modal Issues: This working paper examines the existing multimodal freight transportation systems in the IPH study area, including key gateways and intermodal connections for the purpose of identifying modal and intermodal constraints and opportunities. Border crossings are also examined as an integral part of the region's transportation system.

Each of these detailed working papers and any associated technical appendices are available on the Inland Pacific Hub project website at: <http://www.inlandpacifichub.org/>

THE ECONOMY OF THE INLAND PACIFIC HUB STUDY AREA

In recent decades, the make-up of the U.S. economy has undergone a significant structural shift: In the early 1980's, manufacturing was the leading sector of the U.S. economy, roughly equal in economic contribution to the Services and "FIRE" (finance, insurance, and real estate) sectors combined. Over the course of the last three decades the services sector of the U.S. economy has significantly outpaced manufacturing growth as a percentage of Gross Domestic Product (GDP). **By 2005, the Services sector had increased its share of the U.S. national economy to account for 68 percent of current-dollar GDP.**¹

These structural changes in the U.S. economy can also have profound effects on regional economies such as the IPH study area. As the U.S. economy changes, the service sector is becoming an increasingly larger share of jobs and output, and the IPH study area is no exception to the trend, as shown in the sidebar published by the Seattle Times in 2002 regarding employment growth in Spokane County, the region's most populous county. **Exhibit 2** shows 2008 employment data for the 19-county study area. The top employment sectors in the IPH study area were:



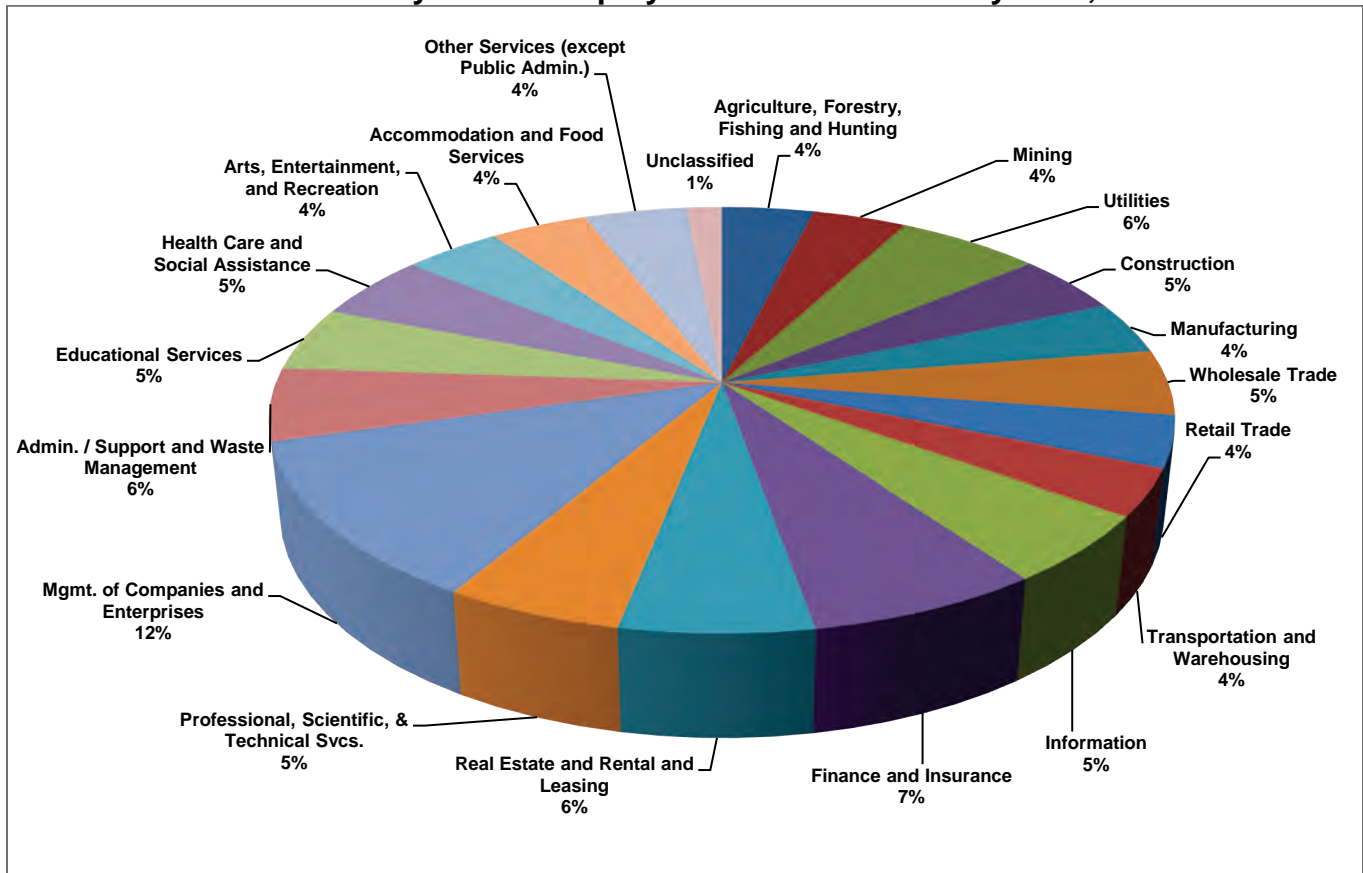
1. State and Local Government (211,740 employees)
2. Retail Trade (65,200 employees)
3. Health Care and Social Assistance (57,560 employees)
4. Construction (40,710 employees)
5. Manufacturing (37,350 employees)

Currently, *State and Local Government* is the largest employment sector in the IPH study area (31 percent). Three of the top five employment sectors in the IPH study area are service industries: *Retail Trade* (10 percent); *Health Care and Social Assistance* (9 percent); and *Construction* (6 percent). The *Manufacturing* sector ranks fifth in terms of regional jobs, comprising six percent of the regional work force. When examined using "earnings by industry" the top five sectors remain unchanged, however the rank order changes:

1. State and Local Government (\$3.2 billion)
2. Health Care and Social Assistance (\$2.2 billion)
3. Manufacturing (\$1.9 billion)
4. Retail Trade (\$1.7 billion)
5. Construction (\$1.4 billion)

¹ BEA News, "Gross Domestic Product by Industry for 2003" www.bea.doc.gov/bea/newsrel

Exhibit 2: Industry Sector Employment for the IPH Study Area, 2008



Source: Woods and Poole Complete Economic Data Source - 2008

IPH STUDY AREA EMPLOYMENT TRENDS

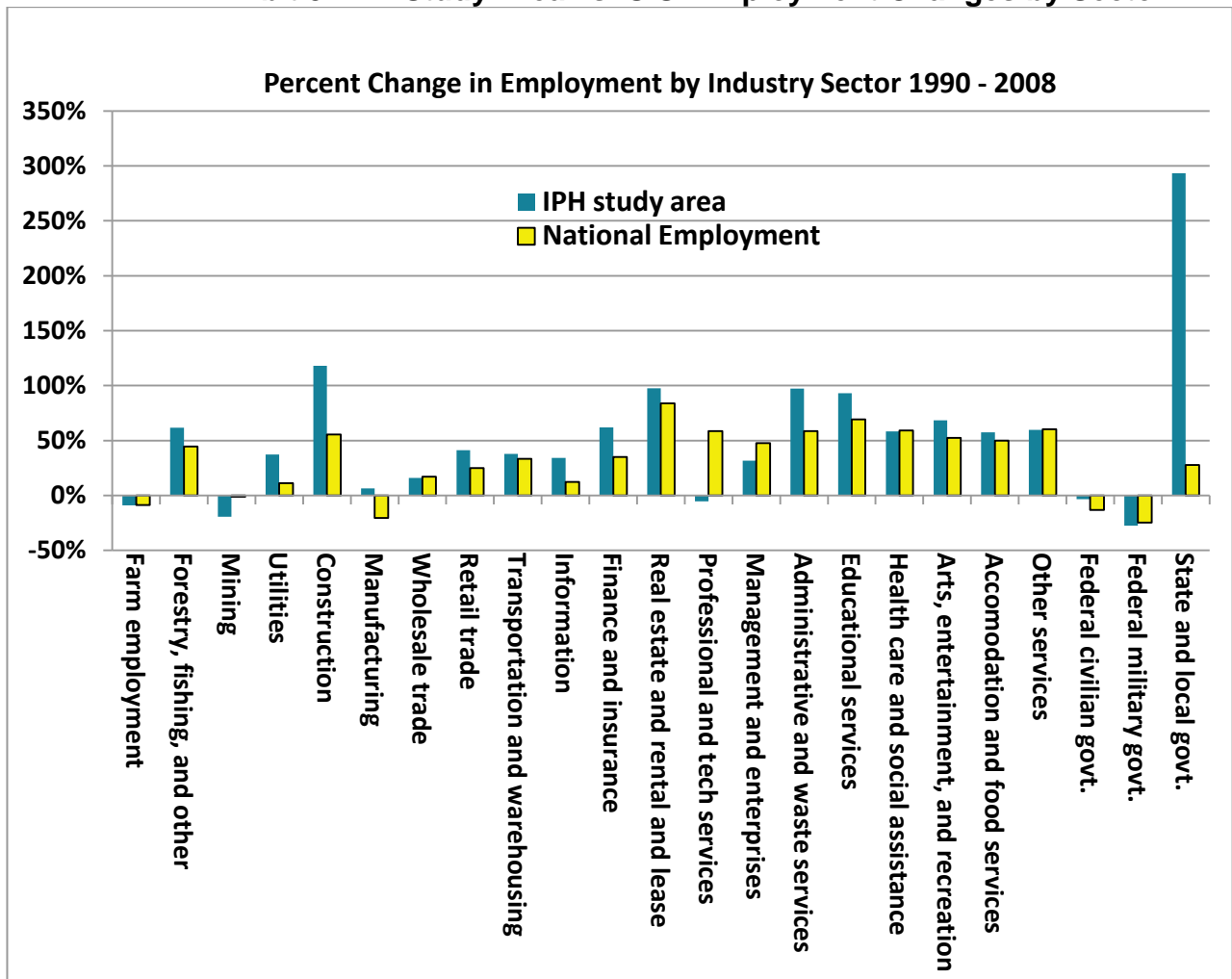
Exhibit 3 shows change in employment across industry sectors from 1990 through 2008. The table compares the percentage change by industry sector for the nineteen counties of the IPH study area to change in employment by sector to the U.S. economy as a whole. The top 10 employment sectors in the IPH study area have remained nearly the same with the exception of *Wholesale Trade* and *Farm Employment* being replaced by *Administrative and Waste Services* and *Finance and Insurance* in 2008 employment estimates. Industry sectors in the IPH study area that experienced employment declines included:

- Farm Employment (-3 percent)
- Mining (-20 percent)
- Professional and Technical Services (-5 percent)
- Federal Civilian Government (-3 percent)
- Federal Military Government (-27 percent)

While the percentage declines in *Mining* and *Professional and Technical Services* were considerably steeper in the study area as compared to the national level, *Mining* employment

in particular is often cyclical and tied to demand in other industries such as construction, electronics, transportation, and jewelry.

Exhibit 3: IPH Study Area vs. U.S. Employment Changes by Sector



Source: 2008 Woods and Poole Economics, Inc. and Wilbur Smith Associates.

IPH STUDY AREA INDUSTRY CONCENTRATION AND COMPETITIVENESS

“Location quotient” (LQ) is an economic analysis technique for measuring industrial concentration for a specific geographic area (e.g., the IPH study area), as compared to a broader region like the U.S. The LQ is calculated as the ratio of an industry’s share of the local employment to the respective industry’s share of employment in the base economy. Relative employment, though imperfect, serves as a good proxy for the industrial composition of an economy.

An industry LQ of less than 1.0 suggests that the industry’s role in the local economy is proportionally smaller than the same industry’s share in the base economy. It further

suggests that the local economy is likely to be a net importer of the goods and/or services from that industry.

An industry LQ greater than 1.0 has a share of the local economy proportionally larger than the same industry's share in the base economy, and suggests local output from that industry exceeds local demand for those goods and services, allowing the excess production to be exported. **Exhibit 4** shows industries with the highest LQs for the IPH study area.

Exhibit 4: Industry Location Quotients for the IPH Study Area

Industry	Location Quotient
State and Local Government	2.93
Forestry, Fishing, and Other	1.82
Farm Employment	1.29
Construction	0.93
Retail Trade	0.90
Health Care and Social Assistance	0.85
Accommodation and Food Services	0.81
Arts, Entertainment, and Recreation	0.80
Federal Military Government	0.80
Other Services	0.78

Source: 2008 Woods and Poole Economics, Inc. and Wilbur Smith Associates.

Concentrated industries in the IPH study area (those with a LQ greater than 1.0) include *State and Local Government*; *Forestry, Fishing and Other*; and, *Farm Employment*. The concentration of *State and Local Government* employment in the IPH study area is nearly three times that of the national economy.

Shift-share is an econometric technique for analyzing the competitiveness of a region's industries. Shift-share analysis is primarily used to decompose employment changes within an economy over a specific period of time into mutually exclusive factors. It paints a picture of how well a region's current industries are performing by systematically examining the national, local, and industrial components of employment change. Shift-share analysis can provide a dynamic account of total regional employment growth that is attributable to: 1) growth of the national economy; 2) a mix of faster or slower than average growing industries; and, 3) the competitive nature of the local industries.²

Between 1990 and 2008 the IPH study area grew in employment by 118,000 non-governmental jobs, and 169,400 government jobs. Shift-share analysis is a method for disaggregating changes in employment over time into several components for the purpose of gaining insights into the forces driving employment changes in the region. The shift share analysis investigates changes in industry employment into three components:

² Information taken from: Texas Work Force Commission: Standardized Occupational Components for Research and Analysis of Trends in Employment System (SOCRATES): <http://socrates.cdr.state.tx.us/iSocrates/Shshare/SSwhatIs.asp>

- The National Growth Effect - explains how much of the industrial job growth within the IPH study area is the result of the overall health of the national economy (If the regional industry grew at the industry's national growth rate, what would be the result?)
- The Industrial Mix Effect - explains how much industrial job growth in the IPH study area results from growth within a specific industry or cluster at the national level (How much growth can be attributed to the region's mix of industries?)
- The Regional Competitiveness Effect - explains how much of the change in a specific industry sector is the result of unique competitive advantages within the region (How many jobs are created as a result of the region's unique attributes).

The results of a shift-share analysis for the IPH study area is presented in **Exhibit 5** for the period of 2000 to 2008. Interpretations of the shift-share results and potential policy implications are discussed in light of guidelines adapted from existing research on this topic.³ They do not include employment in federal, state, or local government agencies.

INTERPRETING THE SHIFT-SHARE RESULTS

National Growth Effect: This component measures the share of regional job growth due to growth in the national economy. If a regional industry grew at the industry's national growth rate from 2000 to 2008, the job growth would have been almost 40,000 jobs (**Exhibit 5**). The national business climate affects consumer confidence and influences other components of the economy.

Industrial Mix Effect: This component measures how an industry has grown due to differences in industry and total national growth rates. The industrial mix component of 1.6 suggests the IPH study area had 1,600 more jobs than it would have had if its structure were identical to the nation during the period (**Exhibit 5**). The negative industrial mix effect in the *Manufacturing* sector over the period suggests that the IPH study area would have had almost 11,000 fewer manufacturing jobs than it had, if the regions manufacturing sector had followed the national trend. When employment is concentrated in sectors with higher industrial effects, a region can expect more employment growth. In the IPH study area there is a concentration of employment in sectors that are growing nationally. The largest employment growth in this segment of the shift-share analysis is in the *Real Estate* and *Health Care and Social Assistance* sectors.

Regional Competitive Effect: This shift-share component accounts for the growth or decline in employment within the IPH study area that is not attributable to national growth, or growth in the *Industry* sector. The regional competitive effect explains how much of the change in a specific sector results from unique competitive advantages or challenges within the region. In those sectors where the competitive effect is positive, this sector has a regional advantage in fostering employment growth. *Manufacturing, Construction, Administrative and Waste Services, and Retail Trade* represent the most significant regional competitive effects in the IPH study area. The finding suggests that the IPH study area has unique conditions and

³ Mitchell, William, and Ellen Carlson (November 2003). *Why do disparities in employment growth across metropolitan and regional space occur?* Working Paper No. 03-09. Centre of Full Employment and Equity. The University of Newcastle. Callaghan NSW 2308, Australia

advantages that are contributing to strong growth in these sectors and can attract additional employment because the region has competitive assets that positively affect these sectors.

Exhibit 5: Shift-Share Analysis for the IPH Study Area, 2000 – 2008⁴

Industry	National Share (Thousands)	Industry Mix (Thousands)	Regional Shift (Thousands)	Total Shift (Thousands)
Farm Employment	1.6	-2.7	-0.7	-1.8
Forestry, Fishing, and Other	0.7	-0.5	-0.6	-0.4
Mining	0.2	-0.1	-0.1	0.0
Utilities	0.1	-0.2	0.2	0.1
Construction	3.0	3.1	4.6	10.8
Manufacturing	3.9	-10.9	5.1	-1.8
Wholesale Trade	1.8	-1.0	-0.5	0.3
Retail Trade	6.0	-2.5	2.1	5.5
Transportation and Warehousing	1.2	-0.4	1.1	1.9
Information	0.7	-1.4	0.8	0.1
Finance and Insurance	1.9	0.5	1.4	3.7
Real Estate and Rental and Lease	1.5	5.5	-0.8	6.2
Professional and Tech Services	2.2	1.4	0.8	4.4
Management and Enterprises	0.4	0.0	-0.5	-0.1
Administrative and Waste Services	1.8	1.1	4.4	7.2
Educational Services	0.7	1.3	0.8	2.7
Health Care and Social Assistance	5.0	4.3	-1.9	7.5
Arts, Entertainment, and Recreation	0.9	0.6	0.3	1.9
Accommodation and Food Services	3.2	1.5	0.8	5.4
Other Services	2.7	2.0	-1.0	3.7
Total	39.4	1.6	16.3	57.3

Source: 2008 Woods and Poole Economics, Inc. and Wilbur Smith Associates

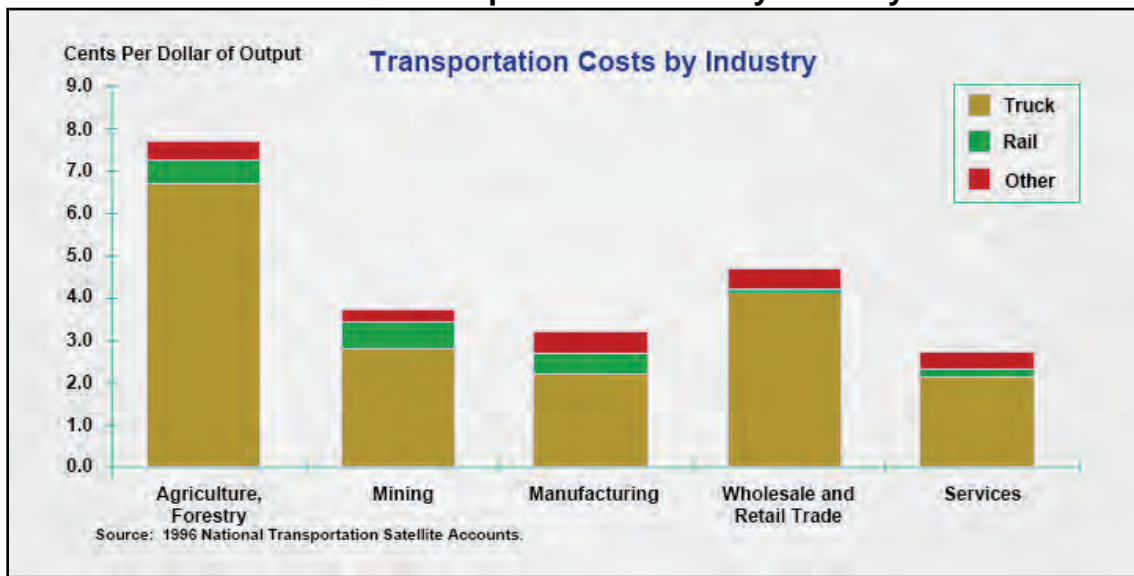
FREIGHT DEPENDENT INDUSTRIES

Within both national and regional economies, some sectors use transportation facilities and services more extensively than other sectors. Historically, transportation was undervalued when measuring its impact on the U.S. economy, primarily because up until the 1990's only "for-hire" transport services were measured. The sizeable contribution of in-house transportation services to economic activity was not explicitly identified in early economic data collection activities. In 1991, Congress established the Bureau of Transportation Statistics (BTS) and charged the new agency with compiling better statistics related to transportation's impact on economic activity. In 1999, BTS published research based on newly devised Transportation Satellite Accounts (TSA) that developed cost relationships between transportation services and output for all sectors of the U.S. economy. Even though

⁴ Bureau of Labor Statistics, Census of Employment and Wages; U.S. Census Bureau, Workforce Explorer, WA Department of Labor; ID Workforce Trend Profiles, WSA analysis

this ground-breaking research is now over a decade old, the findings about the consumption of transportation services by industry is still widely used today. **Exhibit 6** shows the transportation requirements (in cents per dollar of industry output) for several major industry sectors. The graphic illustrates that industries like *Forestry and Agriculture* require approximately twice the level of transportation outputs when compared to *Manufacturing* or *Services*.

Exhibit 6: Transportation Costs by Industry



Source: 1996 National Transportation Satellite Accounts

A recent study on rural transportation jointly conducted by the U.S. Departments of Agriculture and Transportation found that today agriculture remains the single largest user of freight transportation services in the U.S.:

“Agriculture is the largest user of freight transportation in the United States, claiming 31 percent of all ton-miles transported in the United States in 2007. Much of this freight travels out of the country. Global agricultural supply and demand have changed rapidly since 1990. Corn and soybeans have increased dramatically in both consumption and production. During the past 5 years, half of American wheat was exported, along with 36 percent of the soybean crop and 19 percent of the corn crop. These exports travel from the inland areas of the United States where they are produced to borders and ports by way of a network of trucks, trains and barges.”⁵

In the IPH study area, *Agriculture, Forestry* and *Mining* sectors of the economy comprise less than five percent of the total regional employment. However, these three sectors of the IPH study area economy are significant users of the region’s transportation resources. **Exhibit 7**

⁵ *Study of Rural Transportation Issues*, USDOT and USDA, April 2010.
<http://www.ams.usda.gov/AMSV1.0/RuralTransportationStudy>

and **Exhibit 8** show the make-up of outbound commodity shipments from the IPH study area by both tonnage and value, respectively.

By weight, the top five outbound commodities in 2007 were:

- Lumber or Wood Products (10.9 million tons)
- Secondary Traffic (7.7 million tons)
- Farm Products (5.9 million tons)
- Nonmetallic Minerals (2.9 million tons)
- Food and Kindred Products (2.1 million tons)

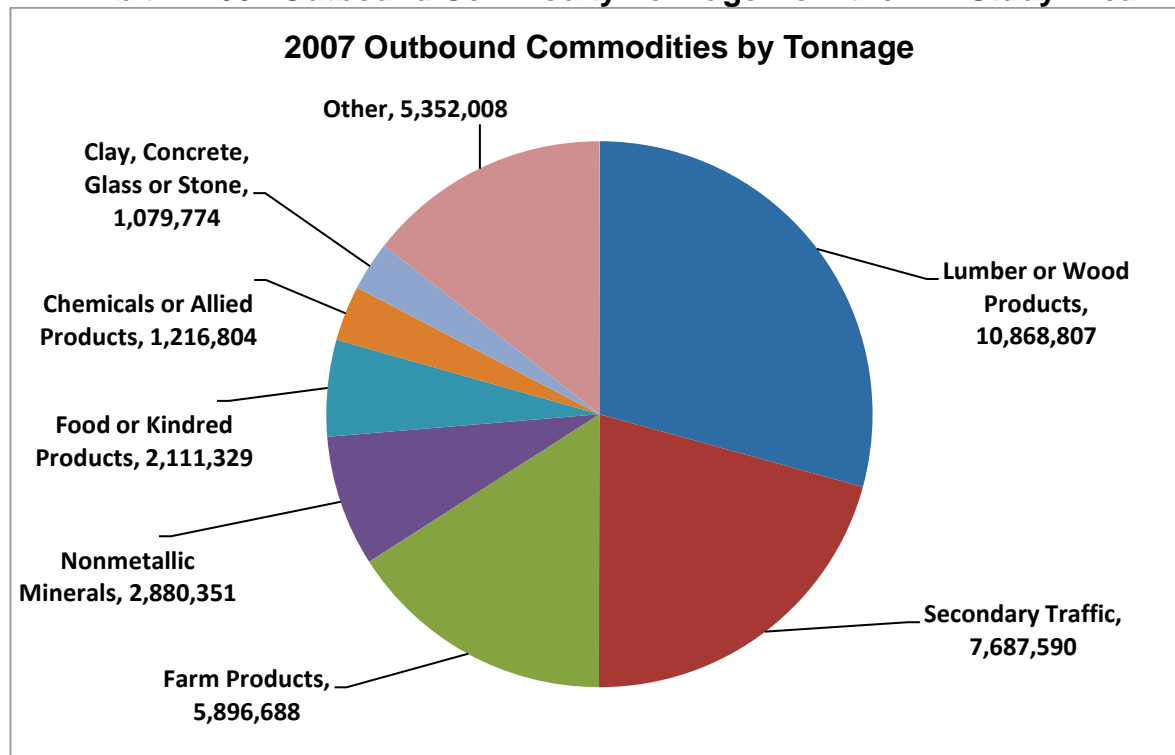
By value, the top five outbound commodities in 2007 were:

- Secondary Traffic (\$71.7 billion)
- Electrical Equipment (\$19 billion)
- Machinery (\$8.1 billion)
- Lumber or Wood Products (\$5.8 billion)
- Chemicals or Allied Products (\$4.2 billion)

While the commodity classification scheme differs somewhat from that used for employment, charts in **Exhibit 9** suggest that *Timber and Wood Production*, *Agriculture*, *Mining*, and *Manufacturing* make up more than eighty percent of all products shipped out of the region in 2008. While traditional industries such as *Timber*, *Agriculture* and *Mining* ship out of the region a significant amount of volume (about 22 million tons), they produce relatively low value (about \$8 billion) compared to the *Secondary Traffic* (around 7.7 million tons and \$71.7 billion) and the *Manufacturing* sector (around 2 million tons and \$31 billion).

The dominant commodities by tonnage suggest that there are five industries in the IPH study area that are particularly intensive users of the region's freight system. Lumber or wood products are both associated with the **timber industry**. "Secondary Traffic" represents shipments of customer goods and thus has a strong tie to the **retail sales business**. Farm products are part of the **agricultural sector**. Nonmetallic minerals are associated with the **mining industry**. Finally, electrical equipment, machinery and chemicals or allied products are all associated with the **manufacturing sector**. These commodities currently dominate freight movements in the IPH study area, and will likely continue to do so into the future.

Exhibit 7: 2007 Outbound Commodity Tonnage from the IPH Study Area⁶



Source: Global Insight 2007 TRANSEARCH™ Data and Wilbur Smith Associates.

COMMODITY FORECASTS FOR THE IPH STUDY AREA

A summary of tonnage change for inbound commodities for 2027 compared to 2007 is shown in **Exhibit 8**. Inbound commodity total tonnage in 2007 was 37.8 million tons and is forecast to grow by 8.3 million tons by 2027 to reach 46.1 million tons. The exhibit sums all tonnage gains and losses for all modes in all directions to indicate which commodities are forecast to experience net gains (9,552,985 tons) or declines (-1,287,923 tons). There is a net increase for inbound commodities of 8,265,062 tons.

⁶ The raw TRANSEARCH™ data file from Global Insight suggests that *Coal* makes up a significant percentage of the IPH study area's outbound commodity movement. Research by the study determined that *Coal* is actually an overhead product that merely passes through the region but is transferred within the region between two railroads. The transfer of product is recorded on documents used to construct the TRANSEARCH™ file as the origin for the outbound movement. Since no coal is actually produced in the IPH study area, *Coal* has been removed from the outbound commodity table.

Exhibit 8: IPH Study Area Inbound Commodity Forecast 2007 vs. 2027

Inbound Commodities – Change in Tonnage 2027 Over 2007			
Commodities with Increased Tonnage		Commodities with Decreased Tonnage	
Secondary Traffic	3,557,913	Lumber or Wood Products	-1,230,546
Nonmetallic Minerals	1,079,735	Apparel or Related Products	-42,761
Coal	790,343	Leather or Leather Products	-12,134
Chemicals or Allied Products	486,897	Air Freight Drayage to Airport	-2,123
Electrical Equipment	486,379	Tobacco Products	-359
Transportation Equipment	449,785	Total Decrease	-1,287,923
Primary Metal Products	414,071		
Farm Products	398,840		
Food or Kindred Products	383,178		
Petroleum or Coal Products	314,558		
Machinery	204,338		
Rail Intermodal Drayage to Ramp	178,226		
All Other	808,742		
Total Increase	9,552,985		
Net Change = 8,265,062			

Source: 2007 TRANSEARCH™ data, Global Insight

A summary of tonnage change for outbound commodities for 2027 compared to 2007 is shown in **Exhibit 9**. Outbound commodities total tonnage in 2007 was 50.6 million tons and is forecast to grow by 4.8 million tons by 2027 to reach 55.4 million tons. The exhibit sums all tonnage gains and losses for all modes in all directions to indicate which commodities are forecast to experience net gains (8,955,429 tons) or declines (-4,150,702 tons). There is a net increase for inbound commodities of 4,804,727 tons.

Exhibit 9: IPH Study Area Outbound Commodity Forecast 2007 vs. 2027

Outbound Commodities – Change in Tonnage 2027 Over 2007			
Commodities with Increased Tonnage		Commodities with Decreased Tonnage	
Secondary Traffic	3,896,160	Lumber or Wood Products	-2,927,128
Nonmetallic Minerals	1,479,975	Farm Products	-936,269
Machinery	722,467	Primary Metal Products	-162,905
Chemicals or Allied Products	581,208	Electrical Equipment	-65,682
Coal	383,033	Food or Kindred Products	-27,932
Transportation Equipment	374,815	Apparel or Related Products	-17,209
Waste or Scrap Materials	259,403	Metallic Ores	-5,233
Furniture or Fixtures	235,138	Leather or Leather Products	-4,329
Misc. Manufacturing Products	214,093	Misc. Freight Shipments	-1,887
Clay, Concrete, Glass or Stone	205,427	Textile Mill Products	-1,828
Fabricated Metal Products	158,959	Tobacco Products	-248
Rail Intermodal Drayage to Ramp	99,315	Air Freight Drayage to Airport	-54
Rail Intermodal Drayage from Ramp	88,518	Total Decrease	-4,150,702
All Other	256,919		
Total Increase	8,955,430		
Net Change = 4,804,727			

Source: 2007 TRANSEARCH™ data, Global Insight

COMMODITIES FORECASTS/FLOWS RELATED TO NATURAL RESOURCES⁷

The following summarizes the current and future volumes of commodities produced from mining, farming and forestry activities in the IPH study area.

- **Lumber and wood products** are the largest natural resource commodity by tonnage shipped.
 - ↓ Inbound tonnage for 2007 was at 5.8 million tons and is forecast to decrease by 21.08 percent by 2027 down to 4.6 million tons.
 - ↓ Outbound tonnage for 2007 was at 12.2 million tons and is forecast to decrease by 23.87 percent by 2027 down to 9.3 million tons.
- **Nonmetallic minerals** are the second largest natural resource commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 7.5 million tons and is forecast to grow by 14.41 percent by 2027 to reach 8.5 million tons.
 - ↑ Outbound tonnage for 2007 was at 10.2 million tons and is forecast to grow by 14.43 percent by 2027 to reach 11.7 million tons.
- **Farm products** are the third largest natural resource commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 2.2 million tons and is forecast to grow by 16.34 percent by 2027 to reach 2.8 million tons.
 - ↓ Outbound tonnage for 2007 was at 5.7 million tons and is forecast to decrease by 16.32 percent by 2027 down to 4.8 million tons.
- **Clay, Concrete, glass or stone products** are the fourth largest natural resource commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 2.3 million tons and is forecast to grow by 5.57 percent by 2027 to reach 2.5 million tons.
 - ↑ Outbound tonnage for 2007 was at 2.0 million tons and is forecast to grow by 10.03 percent by 2027 to reach 2.2 million tons.
- **Food and kindred products** are the fifth largest natural resource commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 2.1 million tons and is forecast to grow by 18.49 percent by 2027 to reach 2.4 million tons.
 - ↓ Outbound tonnage for 2007 was at 1.5 million tons and is forecast to decrease by 1.82 percent by 2027 staying around 1.5 million tons.
- **Petroleum and coal products** are the sixth largest natural resource commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 1.8 million tons and is forecast to grow by 17.32 percent by 2027 to reach 2.1 million tons.
 - ↑ Outbound tonnage for 2007 was at 347,000 tons and is forecast to grow by 17.32 percent by 2027 to reach 408,000 tons.

⁷ Note: The TRANSERCH data purchased for the study does not include pipeline movements. However, a major pipeline traverses the IPH study area carrying significant volumes of petroleum products to and through the region.

COMMODITIES FLOWS RELATED TO TRANSPORTATION AND LOGISTICS ACTIVITIES

The following summarizes the current and future volumes of commodities produced from activities associated with transportation related activities such as pick-ups and deliveries, warehousing and logistics.

- **Secondary freight** is the largest transportation related commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 6.5 million tons and is forecast to grow by 54.44 percent by 2027 to reach 10.1 million tons.
 - ↑ Outbound tonnage for 2007 was at 9.0 million tons and is forecast to grow by 43.14 percent by 2027 to reach 12.9 million tons.
- **Rail intermodal drayage** to and from ramps is included in transportation related commodities by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 516,000 tons and is forecast to grow by 51.07 percent by 2027 to reach 780,000 tons.
 - ↑ Outbound tonnage for 2007 was at 434,000 tons and is forecast to grow by 43.26 percent by 2027 to reach 622,000 tons.

COMMODITIES FLOWS RELATED TO MANUFACTURING OR VALUE-ADDED PROCESSES

The following summarizes the current and future volumes of commodities produced from manufacturing or value-added processes.

- **Chemical or allied products** are the largest manufacturing or value-added commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 1.8 million tons and is forecast to grow by 26.69 percent by 2027 to reach 2.3 million tons.
 - ↑ Outbound tonnage for 2007 was at 1.2 million tons and is forecast to grow by 45.22 percent by 2027 to reach 1.8 million tons.
- **Primary metal products** are the largest manufacturing or value-added commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 1.1 million tons and is forecast to grow by 35.62 percent by 2027 to reach 1.5 million tons.
 - ↓ Outbound tonnage for 2007 was at 630,000 tons and is forecast to decrease by 25.83 percent by 2027 down to 467,000 tons.
- **Electrical equipment** is the largest manufacturing or value-added commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 476,000 tons and is forecast to grow by 102.17 percent by 2027 to reach 962,000 tons.
 - ↓ Outbound tonnage for 2007 was at 756,000 tons and is forecast to decrease by 8.69 percent by 2027 down to 689,000 tons.
- **Fabricated metal products** are the largest manufacturing or value-added commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 392,000 tons and is forecast to grow by 24.58 percent by 2027 to reach 489,000 tons.
 - ↑ Outbound tonnage for 2007 was at 692,000 tons and is forecast to grow by 22.96 percent by 2027 to

reach 851,000 tons.

- **Pulp, paper or allied products** are the largest manufacturing or value-added commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 486,000 tons and is forecast to grow by 11.27 percent by 2027 to reach 541,000 tons.
 - ↑ Outbound tonnage for 2007 was at 686,000 tons and is forecast to grow by 8.31 percent by 2027 to reach 743,000 tons.
- **Machinery** is the largest manufacturing or value-added commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 225,000 tons and is forecast to grow by 90.69 percent by 2027 to reach 429,000 tons.
 - ↑ Outbound tonnage for 2007 was at 678,000 tons and is forecast to grow by 106.44 percent by 2027 to reach 1.4 million tons.
- **Transportation equipment** is the largest manufacturing or value-added commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 519,000 tons and is forecast to grow by 86.68 percent by 2027 to reach 968,000 tons.
 - ↑ Outbound tonnage for 2007 was at 486,000 tons and is forecast to grow by 77.07 percent by 2027 to reach 861,000 tons.
- **Furniture or fixtures** are the largest manufacturing or value-added commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 154,000 tons and is forecast to grow by 35.06 percent by 2027 to reach 208,000 tons.
 - ↑ Outbound tonnage for 2007 was at 286,000 tons and is forecast to grow by 82.14 percent by 2027 to reach 521,000 tons.
- **Rubber or miscellaneous products** are the largest manufacturing or value-added commodity by tonnage shipped.
 - ↑ Inbound tonnage for 2007 was at 162,000 tons and is forecast to grow by 38.65 percent by 2027 to reach 224,000 tons.
 - ↑ Outbound tonnage for 2007 was at 107,000 tons and is forecast to grow by 49.98 percent by 2027 to reach 161,000 tons.

THE MODAL PROFILE OF FREIGHT IN THE IPH STUDY AREA

Commodities that flow into, out of, within and through the Inland Pacific Hub study area reflect the region's economic output and consumption patterns. Understanding freight flows in the region is one of the initial steps needed to gain a clear understanding of the economic activity of the area and how that affects the transportation network.

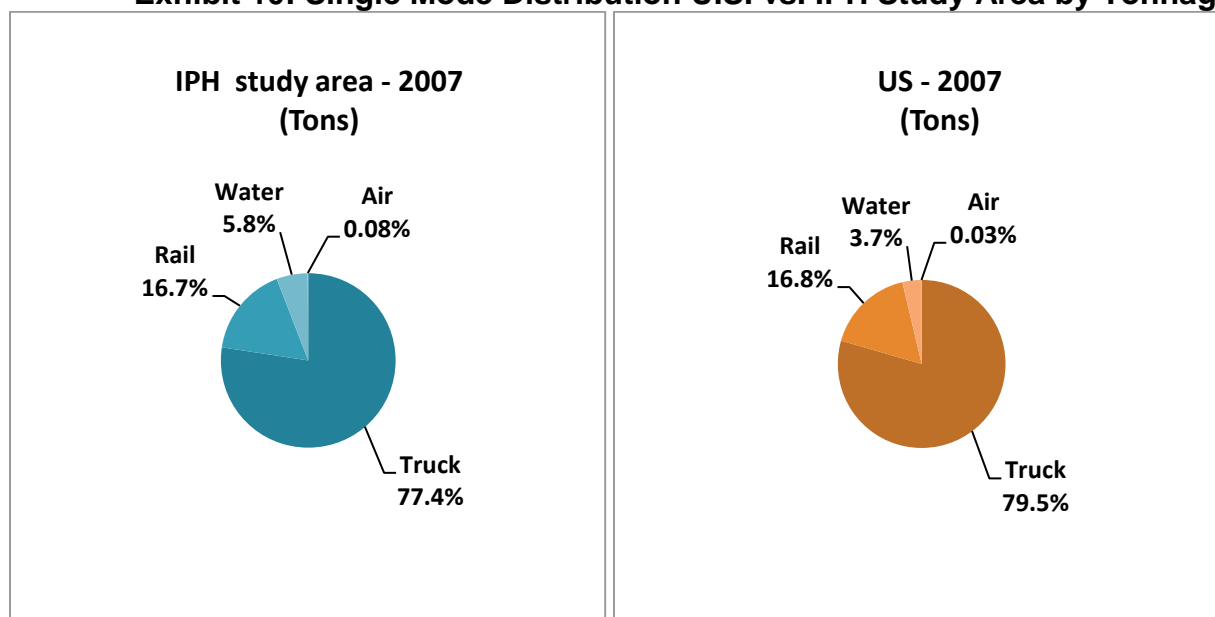
The main information resource for the analysis of study area commodity movements is Global Insight Inc.'s 2007 TRANSEARCH™ database. TRANSEARCH™ is one of the most comprehensive databases in use today to describe how freight moves between various markets. The dataset purchased for the *Inland Pacific Hub Transportation Study* contained over 470,000 freight records depicting the nature of freight movements between:

- The 19 counties within the IPH study area
- The IPH study area counties and all 179 Bureau of Economic Analysis (BEA) units - *economic areas* defined by the U.S. Census Bureau
- The IPH study area counties and areas in Canada or Mexico that have imports or exports within the study area

NATIONAL FREIGHT TRENDS AND COMPARISONS TO THE IPH STUDY AREA

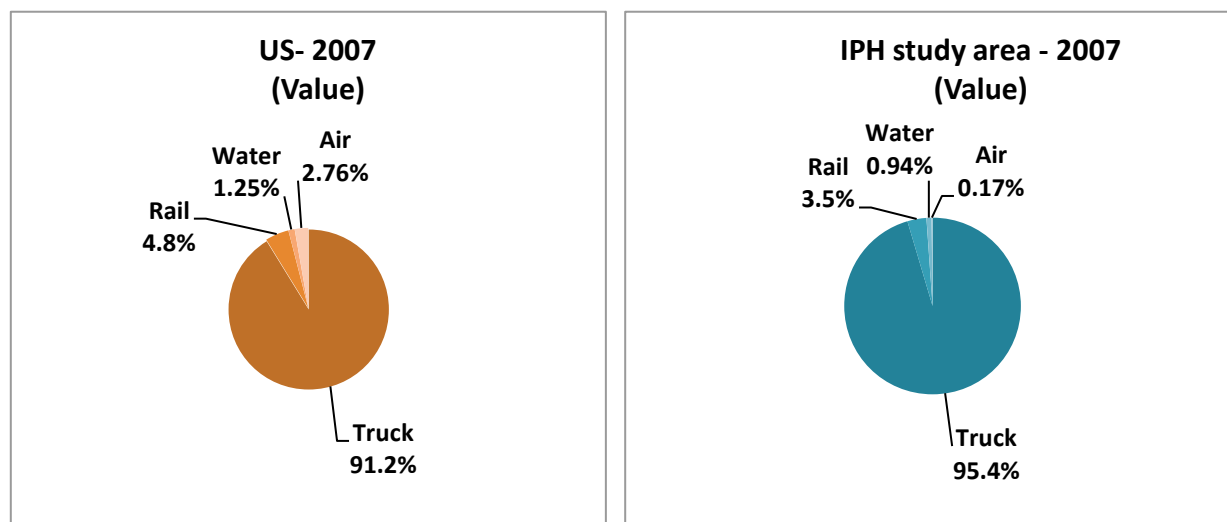
Based on the 2007 TRANSEARCH™ database, over 167 million tons of freight moved on the transportation system into, out-of, within and through the IPH study area by truck, air, rail and water. **Exhibit 10** and **Exhibit 11** compare the modal distribution by tonnage and value for goods moved throughout the U.S. and for the IPH study area. Note the “through” flows are not included in the modal summary for the IPH study area. (When “through” flows are included, the share of rail by tonnage increases to 43 percent and 20 percent by value). This side by side comparison of mode share for the IPH study area and the nation show very similar utilization.

Exhibit 10: Single Mode Distribution U.S. vs. IPH Study Area by Tonnage



Sources: U.S. - 2007 Commodity Flow Survey, BTS / IPH- 2007 TRANSEARCH™, Global Insight

Exhibit 11: IPH Study Area – Single Mode Distribution – by Value



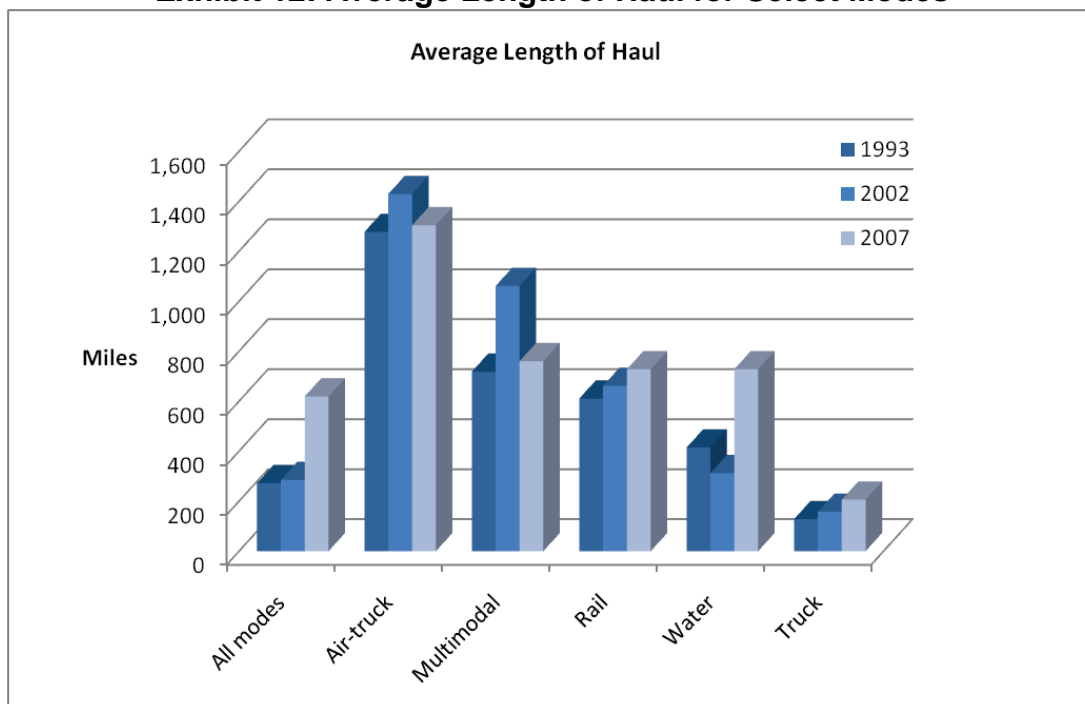
Sources: U.S. - 2007 Commodity Flow Survey, BTS / IPH- 2007 TRANSEARCH™, Global Insight

Not surprisingly trucking is the most heavily employed mode of transportation both across the U.S. and the IPH study area, due to its flexibility, high service quality and competitive nature. Rail shares for the IPH study area and the U.S. are nearly identical by volume and only slightly higher in the IPH study area by value. In terms of air cargo and water shipments, the IPH study area appears to utilize these modes at a slightly higher rate on a volume basis. The somewhat higher level of utilization of air cargo and water modes likely reflects the unique economic make-up of the IPH economy. For instance agriculture in the region is a heavy user of both modes: bulk grain shipments are carried to the coast on the

Columbia/Snake River System, and at times perishable fruits like cherries and processed foods like bleu cheese are delivered to market via air cargo.

Exhibit 12 displays the trend in the average length of haul by mode from the past three Commodity Flow Surveys (CFS) conducted by the U.S. Bureau of Transportation Statistics. Overall, more goods are traveling longer distances. According to the 2007 CFS, the average length of haul in trucking has increased nearly 24 percent over 2002. Currently, the average truck shipment moves 206 miles. The average length of haul for rail increased nearly 10 percent during the same time frame, for an average distance of 728 miles. Interviews with rail personnel also suggest that intermodal rail service has even higher average lengths of haul; according to BNSF the average length of haul for intermodal shipments on western railroads is approximately 2,500 miles.⁸ For access to some markets (Asian gateway ports and western Canada) the IPH study area has a significant market advantage in terms of distance, with trip lengths for some modes less than the average. However, as will be discussed later in this paper, the short distance to coastal gateways and unbalanced directional flows may also present the IPH study area with barriers to efficiently accessing global markets.

Exhibit 12: Average Length of Haul for Select Modes



Source: USDOT, Research and Innovation Technology Administration (RITA), Bureau of Transportation Statistics (BTS). Notes: The Commodity Flow Survey (CFS) is a partnership between BTS and the U.S. Census Bureau. The Air-truck mode is defined as: *Air (includes truck and air) - Shipments that used air or a combination of truck and air.* (Data compiled by WSA).

⁸ Discussion with Vann Cunningham, Vice President of Economic Development, BNSF Railway

THE ROLE OF FREIGHT MODES IN THE GLOBAL ECONOMY

Trade has become a significant component of the U.S. economy, and services such as transportation and warehousing have grown rapidly to support this trade economy. Freight transportation is also becoming more multimodal as many goods travel farther and sophisticated supply chain management systems seek to maximize inherent benefits offered by each mode.

The trend toward a trade-based economy has shaped national transportation policy toward intermodal freight transportation (i.e., the ability to smoothly transition freight shipments from one mode to another).⁹ Intermodal transportation has become the centerpiece of U.S. transport policy since Congress passed the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991. Containerization is the common standard that enables intermodal freight transport. Since 1980, intermodal container volumes have increased eight-fold. In 2006, railroad intermodal traffic in the U.S. exceeded 14.2 million units; containerized freight accounted for 11.8 million units. With the recession that began in 2008, container volumes dropped significantly, but long term container traffic is expected to grow.

The success of intermodal freight transportation results from economic synergies gained by integrating the best attributes of each individual mode. Working together each mode performs most efficiently the task it does best. Typically, railroad line-haul costs are less than those for motor carriers, while motor carriers have greater flexibility and universal access to industrial and commercial locations. Joint services take advantage of these strengths but are much more complicated than single mode movements, due to the specialized equipment, terminals and coordination among firms. The additional cost and complexity creates important prerequisites for the success of rail intermodal such as the availability of willing firms skilled in providing intermodal services.

In order for intermodal rail services to produce a rate advantage, shipments typically must move a significant distance (500 miles or more) to allow rail line-haul economies to outweigh higher terminal and transaction costs. Other requirements usually include significant volume to operate daily trains with on-time reliability competitive with trucking. As a result, rail intermodal services are ordinarily provided only in high volume corridors between major population centers.

Speed to market is one of the most important factors in supply chain design and execution and it influences modal selection by commodity type. Every supply chain differs in its need to economize on cost while at the same time arranging to consistently deliver the freight at the right time to the right destination in good condition.

Some commodities must get to the market very fast before the product's perishable life span expires. Usually, the higher the price and the fresher the product, the faster it must get to market. Fresh food must get to market while it is fresh and safe for consumption, usually only a few days. An expensive cell phone must get to market in a few weeks before the next

⁹ The terms intermodal and multimodal are often used interchangeably. For discussion purposes multimodal will be used to describe any transfer of freight between two or more modes not involving containerized freight. Intermodal will be used to describe containerized freight movements.

competitive model with newer features and benefits attracts buyers' interest. A pharmaceutical must arrive in days before its potency date expires. Other commodities have wider windows for delivery because of their lower cost and more flexible consumption period.

FREIGHT MODES IN THE IPH STUDY AREA

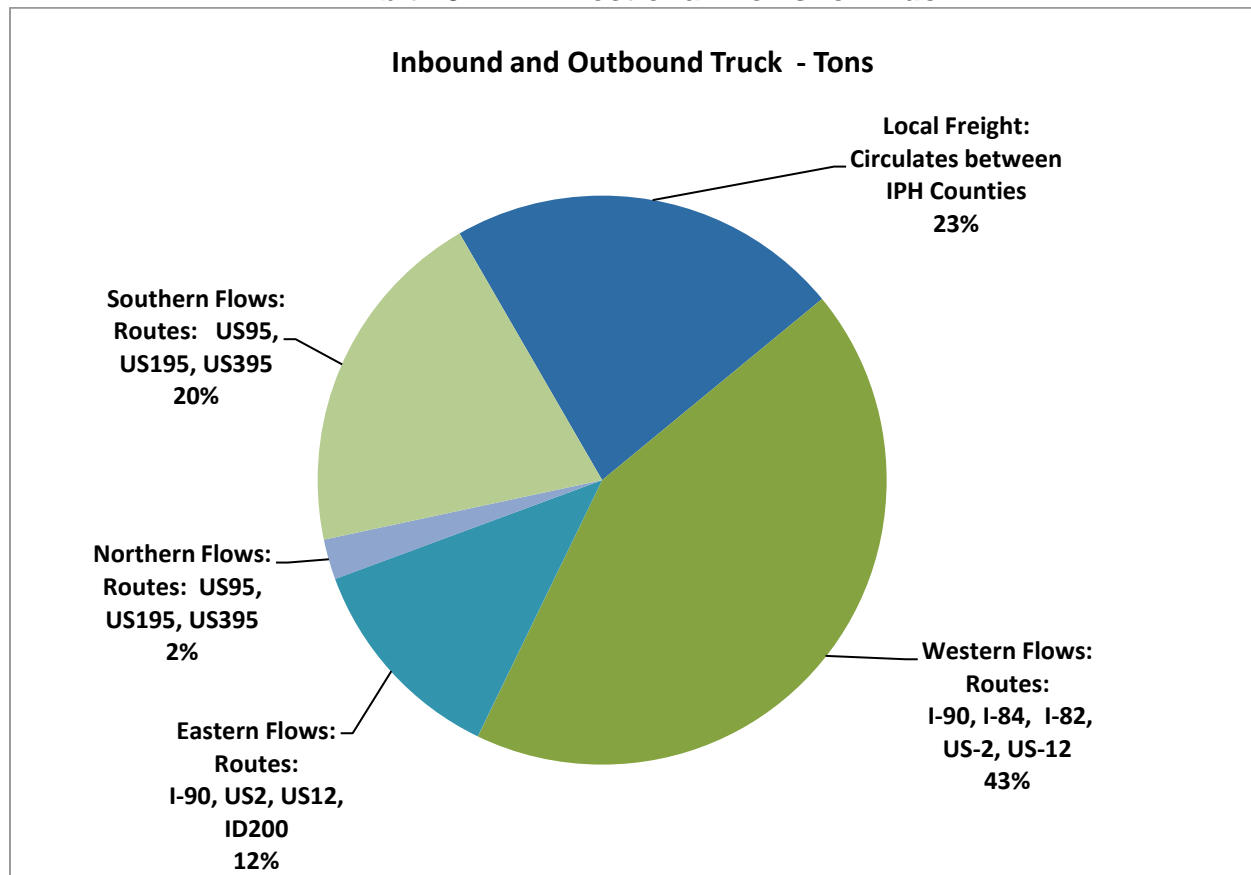
By mode, trucks handle the largest proportion of the IPH study area's freight by both tonnage and value. In 2007, tonnage by mode was distributed as:

- Eighty-three million tons of freight, or 54 percent, was moved by truck
- Rail accounted for 68 million tons of freight, or 43 percent
- Water-borne freight, mostly agriculturally derived products out of Whitman, Columbia, Garfield, Nez Perce and Asotin Counties accounted for 4.5 million tons of freight, or 3 percent
- Air freight out of Spokane amounted to 45,000 tons, or 0.03 percent (the TRANSEARCH™ dataset for airfreight does not capture all private airfreight activity (e.g., chartered air cargo), thus activity at Coeur d'Alene airport or other airports in the study area, assumed to be small for the overall study, may be unreported/under-represented)

The vast majority of freight in the IPH study area moves by truck and/or rail. Of the freight moving via air, 99.99 percent of the commercial airfreight occurs in the central counties and there is minimal impact on the other IPH counties. Freight transported by water on the Snake River is a factor for the southern counties; the other study area counties do not have navigable rivers for waterborne freight transport.

Exhibit 13 shows the directional movement for truck movements exclusive of through-flows. The direction of movement is also linked on the chart to the key highway facilities that would carry goods in these directions to market. The 2007 TRANSEARCH™ dataset suggests that currently 60 percent of goods moving in and out of the area are moving on an east-west axis. Twenty-three percent of truck movements stay within the IPH study area. Twenty percent of the inbound and outbound flows move between the study area and markets to the south. Only 2 percent of the truck tonnage with an origin or destination in the study area is flowing out of the study area to Canada, or into the study area from Canada.

Exhibit 13: IPH Directional Flows for Truck



Source: WSA analysis of TRANSEARCH™ data, 2007

Knowledge of the truck oriented freight movement is important as it provides clues about key markets and sheds light on lane balance issues. Understanding freight flows in the region is an initial step in understanding the economic activity of the area. Combined, inbound and outbound truck flows account for 52 percent of all truck movements by tonnage and 51 percent by value. Through-flows account for 33 percent and 45 percent, respectively. Internal truck flows account for the remaining 15 percent of tonnage and 4 percent of value. These findings suggest that there is a significant difference in the distribution of value-to-weight for freight internally circulating the IPH study area (-10.9 percent) versus through truck traffic which shows a positive (+12.1 percent) account; i.e., internal movements tend to be high weight, low value while through movements tend to be high value, low weight.

- More commodities are destined outbound (31.8 percent) versus inbound (20.5 percent) via truck. This finding suggests a high likelihood of empty truck returns to the IPH study area.
- Inbound and outbound truck flows are projected to increase by 18.5 percent between 2007 and 2027.
- Through truck traffic accounts for 33 percent of tonnage and 45 percent of value.

- Combined, inbound and outbound truck flows show significance towards the **west** (29.1 percent, 30.7 percent) and **south** (13.5 percent, 11.4 percent), by tonnage and value, respectively.
- Of particular note are flows to and from the **north** which represent only 2 percent of all inbound and outbound truck flows. These findings suggest unrealized potential for increased export and import trade with Canadian provinces.
- All tonnage differences show higher outbound volumes over inbound volumes with the magnitudes of difference being the greatest for the south traffic lane followed by the east, west, and north. On traffic lanes to the south, there is an imbalance of 6,272,824 tons based on outbound tonnage of 9,280,323 versus inbound tonnage of 3,007,499. In this regard, the data substantiates stakeholder comments that web-based “load boards” always had a lot of carriers looking for backhauls between Boise, ID and the study area.

IPH TRUCK ISSUES: LANE BALANCE, DENSITY AND THROUGH TRAFFIC

The basic elements of transportation by mode are the same or similar across the country (i.e., driver wages, equipment costs, insurance, etc.). Even fuel cost in a specific time period levels out in a long-haul operation despite different levels of taxation by region. The biggest factors for a trucker are fuel and driver wages which are both variable based on distance for an over-the-road fleet. Length of haul is a critical element for these carriers.

Another area of variability that is important to the competitiveness of the IPH study area is in the balance of market demand for equipment. Equipment and volume balance are significant factors in every mode. Air freight carriers look for balance in a market as do the intermodal companies, and all others where asset utilization is important. As has been presented throughout this research, the Inland Pacific Hub study area has a heavy reliance on trucking to support area business. Therefore, factors affecting trucking have particular significance to the competitive position of the region.

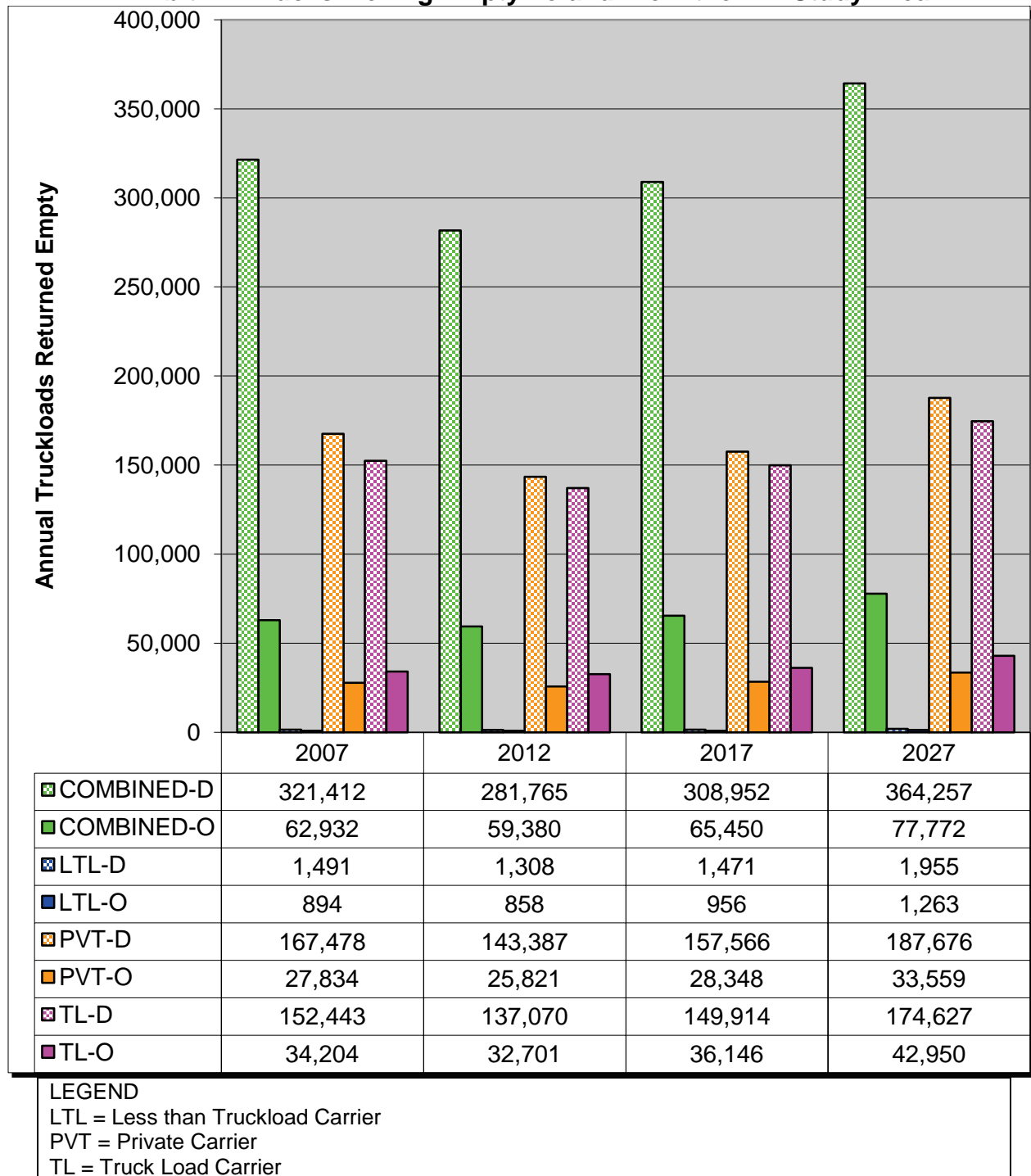
During stakeholder interviews that were conducted as part of the study effort, shippers and trucking company officials raised the issue of unbalanced traffic lanes on a number of occasions. In the freight industry lexicon, lane balance is determined by the volume of “loaded” inbound and outbound trips. All modes seek balance in a traffic lane, because a balanced lane will fully utilize operating assets in both directions. An unbalanced lane suggests that equipment is moving in one direction empty.

The commodity analysis of the TRANSEARCH™ data suggests that for all modes by weight, inbound traffic makes up 15 percent of all freight movements, while the outbound share is 24 percent. For just the truck mode, inbound shipments by tonnage comprise 20 percent of movements, and outbound shipments comprise 30 percent of movements. When through flows are removed from the dataset, the percentage gap between inbound and outbound grows further: Inbound – 32 percent and outbound – 50 percent.

The TRANSEARCH™ dataset purchased for the study included current and future estimates of empty truck movements by industry segment. **Exhibit 14** shows the number of empty truck movements coming into and leaving the IPH study area. **Exhibit 15** shows the estimated empty truck miles associated with these units. These charts suggest that the IPH study area

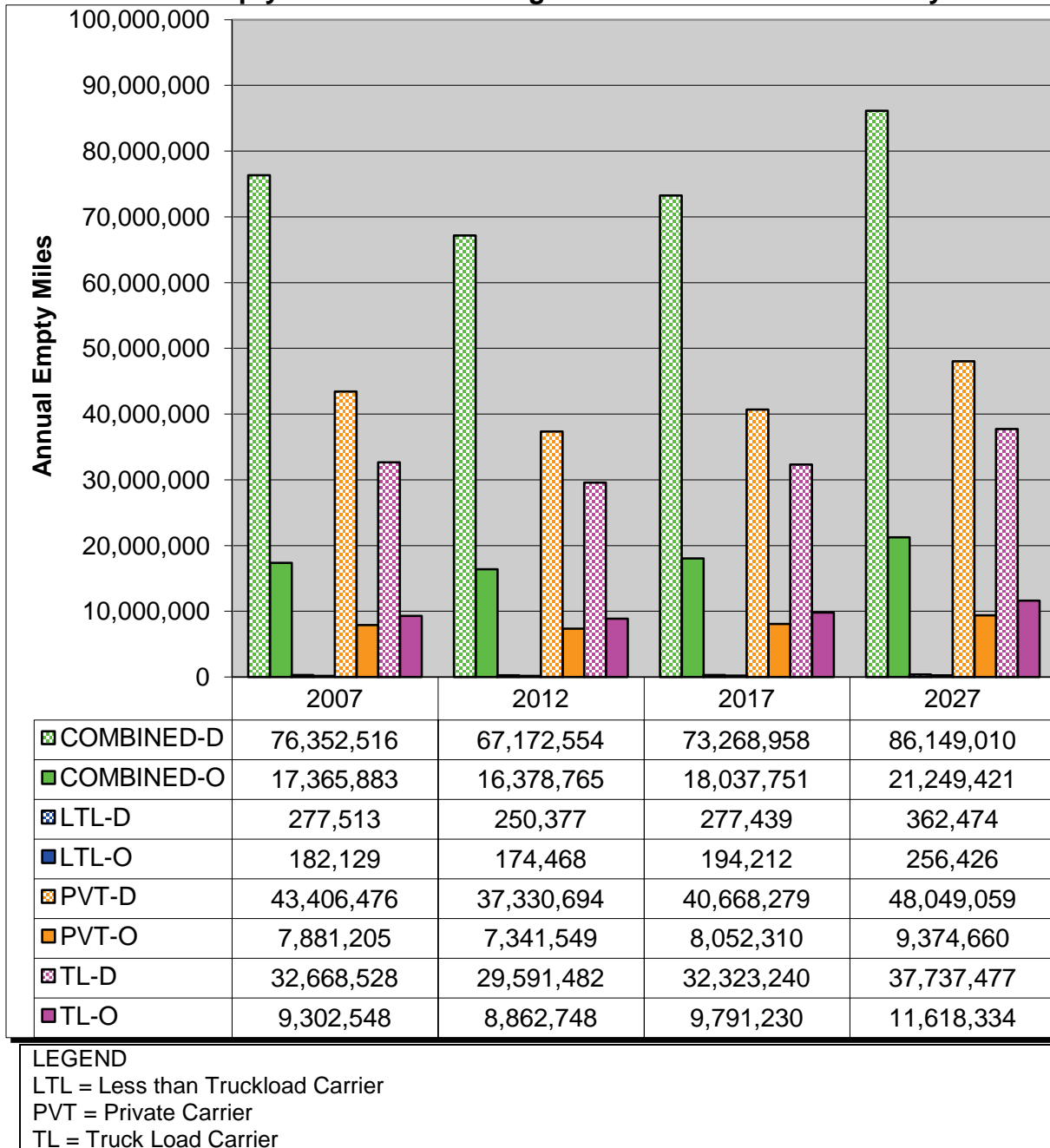
currently has a significant lane balance issue which continues to grow in the future if the conditions do not change in a way that will positively impact outbound shipments from the study area.

Exhibit 14: Trucks Moving Empty To and From the IPH Study Area



Source: WSA analysis of TRANSEARCH™ data, 2007

Exhibit 15: Empty Truck Miles Moving Into and Out Of the IPH Study Area



Source: WSA analysis of TRANSEARCH™ data, 2007

The ability to identify relative levels of directional distribution with regards to value and tonnage is useful to understand potential trade gaps and better assess the economic return of enhancements to transportation systems. Also, relative to inbound and outbound access and efficiency, directional flow analyses can be used to identify truck related lane balance issues. Lane balance has been identified as one of the more consistent and overarching modal issues throughout the interview and freight forum activities. The measures of lane

balance discrepancy are calculated in **Exhibit 16**. The key findings for lane balance relative to the direction of inbound and outbound traffic are as follows:

- There is a lane balance discrepancy of 6,272,824 tons of IPH commodity trade with the south based on outbound tonnage of 9,280,323 versus inbound tonnage of 3,007,499. This represents the highest tonnage difference and also represents the highest magnitude of discrepancy.
- All tonnage discrepancies show increased outbound tonnages over inbound tonnage with magnitudes of discrepancies in lane balance followed by the east, north, and west.

Exhibit 16: IPH Truck Lane Balance Comparison

2007 IPH Truck Freight Flow Lane Balance						
Truck Freight Flow Direction	Tonnage			Value		
	Truck Tonnage	Inbound vs. Outbound Difference	Difference Relative %	Truck Values	Inbound vs. Outbound Difference	Difference Relative %
Inbound						
From West	12,628,000	-1,254,365	-9.9%	\$49,816,586,355	\$14,292,594,001	-28.7%
From East	2,412,529	-2,642,130	-109.5%	\$9,234,071,885	\$13,682,658,792	-148.2%
From North	620,627	-173,202	-27.9%	\$735,807,539	\$235,278,921	32.0%
From South	3,007,499	-6,272,824	-208.6%	\$19,168,430,874	-\$4,151,024,303	-21.7%
Inbound Subtotal	18,668,655	-10,342,521	-55.4%	\$78,954,896,654	\$31,890,998,175	-40.4%
Outbound						
To West	13,882,365	1,254,365	9.0%	\$64,109,180,356	\$14,292,594,001	22.3%
To East	5,054,659	2,642,130	52.3%	\$22,916,730,677	\$13,682,658,792	59.7%
To North	793,829	173,202	21.8%	\$500,528,618	-\$235,278,921	-47.0%
To South	9,280,323	6,272,824	67.6%	\$23,319,455,177	\$4,151,024,303	17.8%
Outbound Subtotal	29,011,176	10,342,521	35.7%	\$110,845,894,829	\$31,890,998,175	28.8%

Source: 2007 TRANSEARCH™, Global Insight, Inc.

Freight transport pricing is largely driven by two factors: lane balance and lane density. As discussed, lane balance impacts the ability of carriers to utilize assets in both directions. Lane density simply refers to the volume of shipments a carrier is moving in a particular lane. Higher volumes result in a variety of cost savings due to economies of scale, and the ability to distribute fixed costs (e.g., a regional terminal) over more volume.

Capacity balance is another indicator of cost. Balance occurs when a market size is sufficient to demand inbound freight traffic at a level equivalent to its rate of production such that equipment coming in loaded is able to leave loaded and the numbers are relatively equal and consistent with time. The most balanced areas have good manufacturing potential or trade opportunities coupled with a population center with matching demand.

In order to target markets and promote economic growth, a region must have the necessary transportation connectivity to reach desired market locations. Population density is one of the primary drivers of freight density and geography, plus connectivity drives many modal service options. The Inland Pacific Hub study area is well connected to coastal population centers in the Pacific Northwest with Interstate 90, several Class I rail lines, the Columbia-Snake River System and frequent air service between Spokane and Seattle. What the IPH study area lacks are similar connections to Canadian population centers to the north.

The ability of the region to foster higher outbound volumes to bring traffic lanes serving the region into balance will be important to achieving more competitive transport pricing, service quality and consistency. While achieving better lane balance would be an improvement over the current situation, improved pricing must also be accompanied by more focused lane density. To some extent the broad array of service options being offered across various modes may in fact have negative effects on the availability and pricing of some services.

A second effect of empty miles is the exposure for cost and service that stems from rising fuel prices. Carriers are not able to directly recover higher fuel expenses through a fuel surcharge because the surcharge typically applies to only loaded miles between origin and destination. This creates complications when carriers try to estimate this cost in their base pricing. Because the variability can be significant, it is difficult to accomplish and acts as a deterrent to business, something that will decrease the availability and quality of capacity.

When transportation costs exceed the increased inventory-in-transit and safety stock costs, shippers will seek a less costly mode (e.g., truck moves to intermodal, some intermodal moves to rail carload, and in some cases the structure of the supply chain shifts to different locations for sourcing and distribution). Not only does the mode shift but the length of haul over which the mode shift is attractive shortens. As fuel prices rise, the effect on trucking is much stronger and the trade-off between the inventory expenses related to transit time of the intermodal service changes.

The distance-based costs of fuel and driver wages for long-haul trucking are the most significant items. For this reason, geographic location and distance to market is a clear detriment of transportation cost. These characteristics obviously cannot be changed. Therefore, if a region is dependent on trucking, the focus must be on closer markets and commodities with a high enough value to support the additional cost.

Another challenge facing the IPH study area is the high percentage of through truck traffic which consumes IPH infrastructure, while providing little economic value in return. Currently through truck traffic accounts for about one-third of all truck freight movements in the study area. Understanding the amount of through truck freight is important because while this traffic enjoys the public use and benefit of the study area's highway assets, this traffic contributes far less in revenues than the maintenance, congestion and environmental costs it generates. A multi-jurisdictional approach can assist the IPH study area scope, understand, prioritize, and fund issues that may contribute to or be impacted by through truck traffic, such as:

- **Location of Economic Developments** – Locations central to businesses and modal links in the study area can reduce overall truck miles and carbon impacts.
- **Route Management and Diversions** – Freight trips are blind toward geopolitical boundaries, so freight route management based on overall utility to the study area will reduce redundancy and cost burdens from underutilized facilities.
- **Right-of-way Acquisitions** – As discussed above a comprehensive master plan representing the highest and best use investments based on a regional planning approach can reduce costs associated with redundant freight corridors.
- **Rail Access** – Railroads base investments on lane density and lane balance. Duplicative or competing rail projects without sufficient freight volumes may result in fewer services and less access, as opposed to more.
- **Highway and Bridge Maintenance** – Studies in other states have shown that illegal overweight truck operations result in disproportionately high levels pavement and bridge damage. Duplicative truck travel corridors require twice the enforcement efforts to monitor illegal operations. The inability to monitor or enforce legal operations on a regular basis across a wide number of corridors is likely to result in higher highway and bridge maintenance costs.
- **Carbon Impacts** – See route management and diversions.
- **Linkage of Intelligent Highway Systems** – Freight trips are blind toward geopolitical boundaries, so integrated commercial vehicle advisory systems based on overall utility to serving the study area will reduce redundancy and cost burdens from duplicative services.

The need for multijurisdictional approaches is clearly evident with regard to improvements to north-south access routes in the region. The North Spokane Corridor project on US-395 will certainly improve the north-south movement of goods passing through Spokane and will provide a limited access, divided highway connection to I-90 from the north side of Spokane. However, north of the Spokane urban/suburban environment US-395 becomes the less efficient route to Canadian population centers in Western Alberta. Another popular route for accessing the northern border of the study area is to use US-95. However, the junction of I-90 and US-95 North suffers from local congestion problems on the north side of Coeur d'Alene, affecting regional traffic. As a result, accessing Canada from the study area requires a regional solution. The issue of access to Canada and border gateways serving the IPH study area will be revisited in a more detailed discussion of cross border flows later in this document.

RAIL TRANSPORT FREIGHT FLOWS BY DIRECTION

Summary information about directional rail flows to and from the IPH study area is presented in **Exhibit 17**. Recall that total rail flows on the IPH study area rail network were equal to 68 million tons in 2007. Excluding through-flows the total rail tonnage moving on the IPH study area rail network in 2007 was 13.3 million tons.

Railroads also analyze directional freight movements, and lane balance is a key determinant to the siting of new facilities:

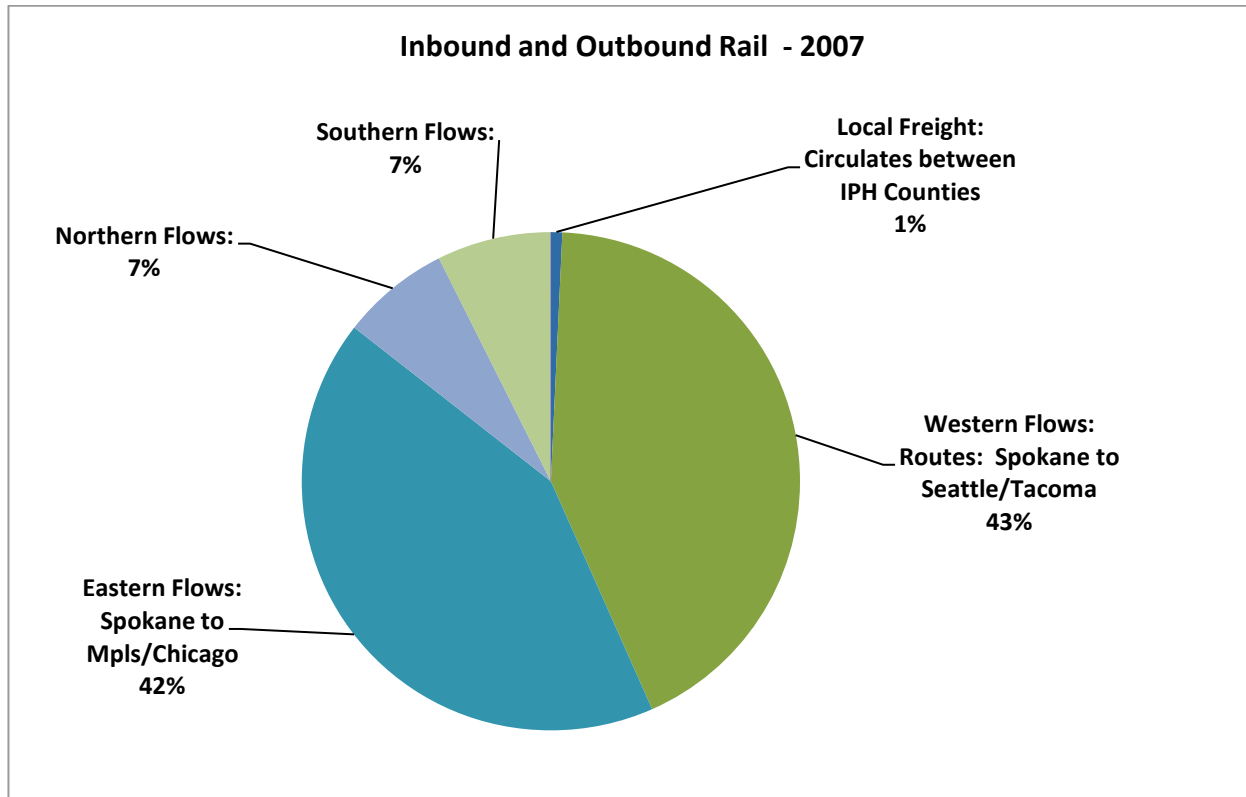
- IPH rail tonnage internal to the study area was 98,020 tons

- Inbound rail movements from all directional markets was 5.46 million tons
- Outbound rail flows to all directional markets was 7.91 million tons

Rail tonnage is forecast to grow one percent and reach 13.4 million tons by 2027:

- Internal rail flows in the IPH study area are forecast to decline 49 percent to 49,666 tons
- Inbound freight is forecast to grow to 6.49 million tons, or increase 18.8 percent
- Outbound freight is forecast to drop to 6.97 million tons, a decrease of 11.8 percent

Exhibit 17: IPH Directional Flows for Rail



Source: WSA analysis of TRANSEARCH™ data, 2007

The forecast data suggests that regional commerce will continue to rely on railroads to bring products into the IPH study area. However, the forecasts also suggest that either some commodity groups will convert from rail to truck, or that some commodities normally shipped via rail will be decreasing in total tonnage produced. Based on the commodity forecasts presented early, the latter case may apply to some natural resource related commodities such as timber products.

FREIGHT TRANSPORT ON IPH STUDY AREA PORT AND RIVER FACILITIES

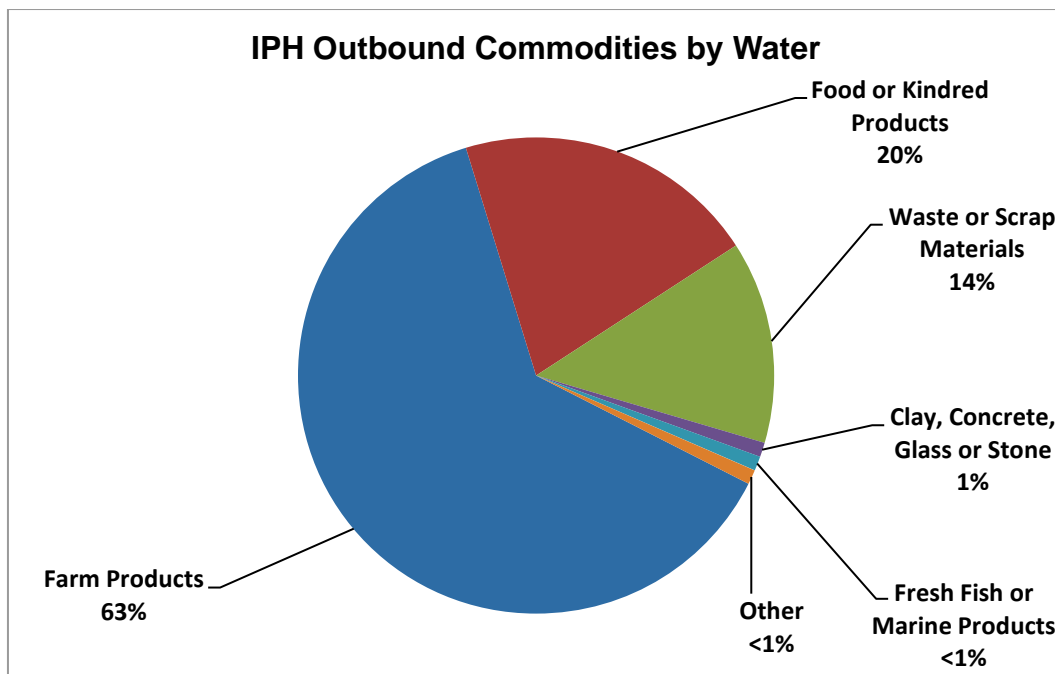
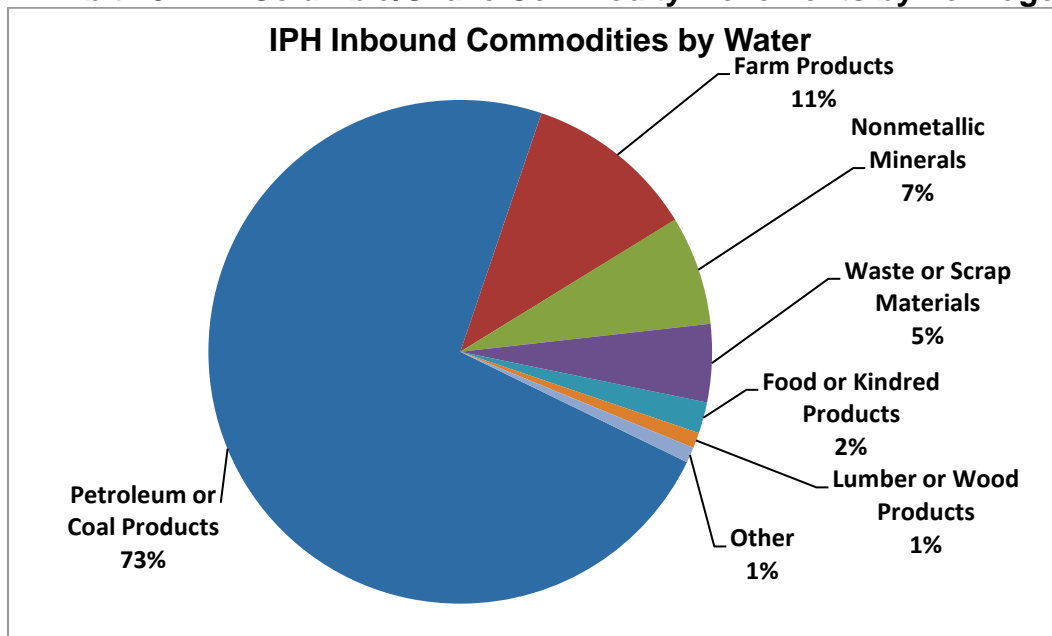
The Columbia/Snake River System serving the IPH study area exists only in the southern counties of the study area. In an area heavily based on natural resource industries like

agriculture and timber production, water transport often provides the most efficient means of transporting heavy goods, and provides a competitive option to rail and truck transport.

The Snake River flows for 1,040 miles from northwestern Wyoming through southern Idaho and then traversing the Idaho/Oregon and Idaho/Washington borders to Lewiston-Clarkston. As the Snake River passes Lewiston-Clarkston and bends from the south to the west, it receives the Clearwater River from the east, its largest tributary. From there the Snake River winds west for 160 miles through southeastern Washington before joining the Columbia River at the Tri-Cities.

Agricultural products are among the main goods transported on the Snake River. Grain, mainly wheat, accounts for more than 85 percent of the cargo. Other products include peas, lentils, forest products, and petroleum. **Exhibit 18** shows the distribution of products moving inbound and outbound from ports on the Columbia/Snake River ports located in the IPH study area.

Exhibit 18: IPH Columbia/Snake Commodity Movements by Tonnage



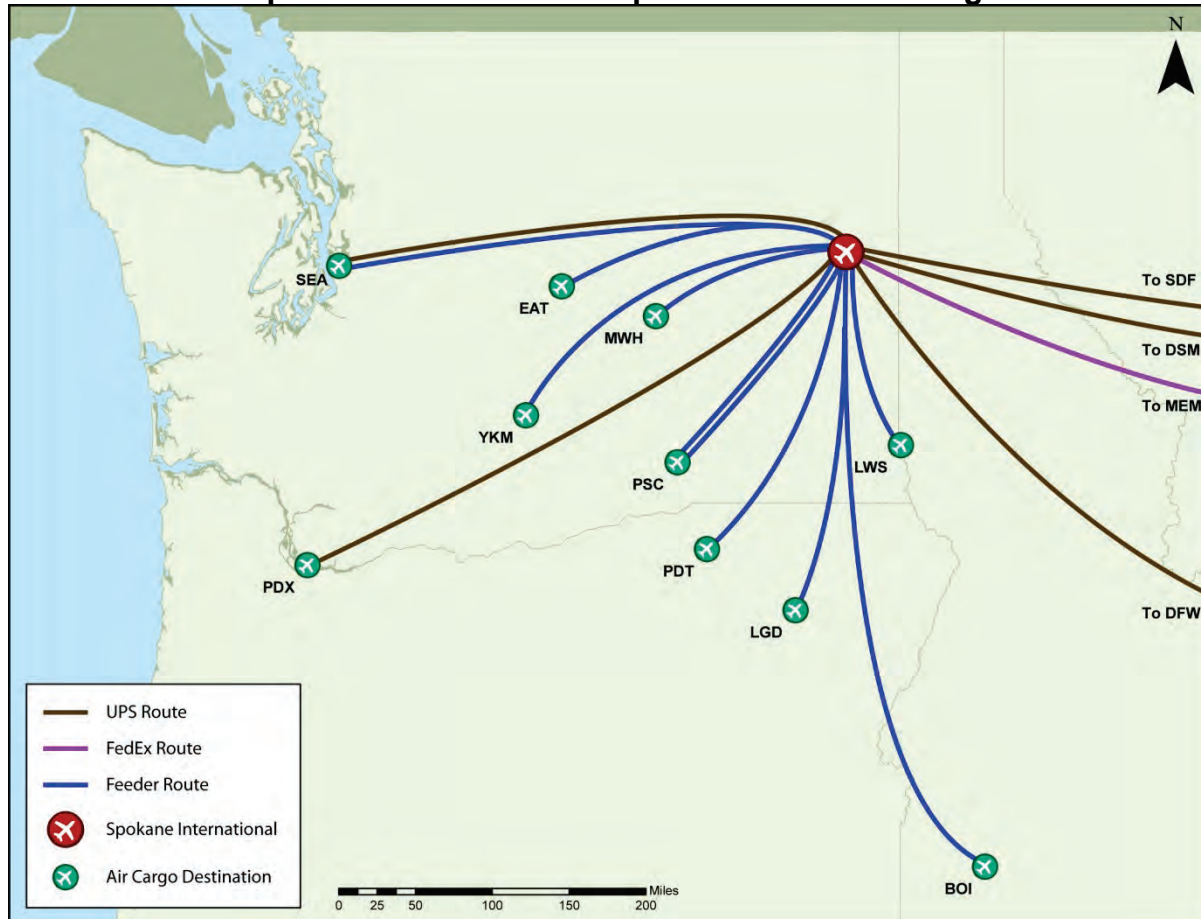
Source: 2007 TRANSEARCH™ data, Global Insight, WSA Analysis

AIR CARGO MOVEMENTS IN THE IPH STUDY AREA

Many of the shippers interviewed for the study in the IPH study area used express package services offer by FedEx or UPS. Several of the companies interviewed also used freight forwarder air cargo services for international cargo shipments.

Spokane International Airport has considerable domestic air cargo operations taking place every business day. The airport serves the northwest region for FedEx as they serve smaller communities in the northwest with a fleet of Cessna Caravans and ATR feeder aircraft. FedEx uses a hub-and-spoke system to serve communities such as Pasco, Yakima and Lewiston. UPS uses the airport as a Second-Day Hub where lower-priority air cargo is transported into and out of the region. This type of hub requires four spoke routes from UPS hubs and stations on the West Coast, Midwest and South Central parts of the country. A network of trucks feeds into the second-day hub as well. **Exhibit 19** displays these routes.

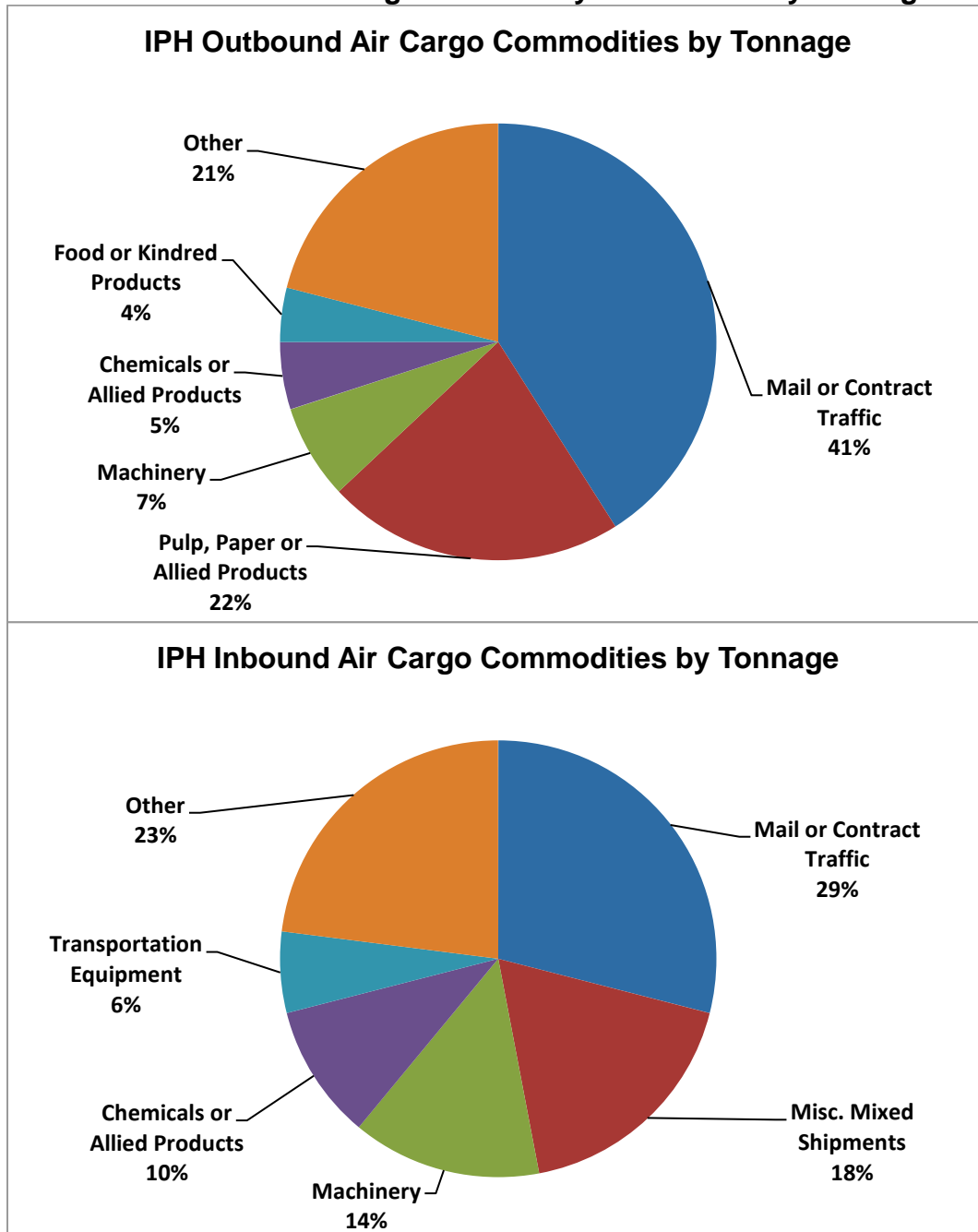
Exhibit 19: Spokane International Airport Domestic Air Cargo Network



Source: Wilbur Smith Associates

Exhibit 20 shows the composition of commodities in the IPH study area using air cargo services, both inbound and outbound. Inbound air cargo tonnage in the IPH study area is expected to increase 21 percent between 2007 and 2027. Through 2027, the fastest growing commodity groups are expected to be *Machinery*, *Misc. Mixed Shipment* and *Transportation Equipment*. Outbound air cargo tonnage in the IPH study area is expected to increase nearly 19 percent between 2007 and 2027. Through 2027, the fastest growing commodity groups are expected to be *Primary Metal Products*, *Misc. Mixed Shipments*, *Machinery* and *Electrical Equipment*.

Exhibit 20: IPH Air Cargo Commodity Movements by Tonnage



Source: 2007 TRANSEARCH™ data, Global Insight, WSA Analysis

IPH STUDY AREA: EXISTING MARKETS & TRADE OPPORTUNITIES

Exhibit 21 shows the disposition by mode and direction of the 167 million tons of freight moved on the IPH study area transportation system in 2007. (The mode is displayed across the top of the table, and the direction of shipments is indicated along the left hand column, e.g., Internal, Inbound, etc).

The largest share of tonnage in the IPH study area is “through-freight”. Sometimes referred to as “overhead freight”, it is freight that has no origin or destination in the study area – it is just passing through (third row from the bottom). In 2007, approximately 53 percent of the freight utilizing study area transportation assets was through freight. Through-freight places demands on the capacity and preservation of the regional transportation assets, but aside from jobs related to freight support services (truck stops, lodging, freight transfer terminals, etc.) through-freight does not create jobs or economic output for the IPH study area. Through-freight is less connected to the region’s economic activity than inbound or outbound freight which supports jobs at factories, stores and other businesses. Through-freight typically moves along national freight corridors such as I-90 or along the major Class I rail lines.

Exhibit 21: Total Freight Flow Tonnage by Mode and Direction

Freight Flow Direction	2007 Tonnage of IPH's Freight Flows					Direction %
	Truck	Rail	Water	Air	Total	
Internal to Study Area	13,729,929	98,020	2,131	128	13,830,208	8.3%
Inbound						
From West	12,628,000	566,796	1,529,204	5,571	14,729,572	
From East	2,412,529	3,871,676		11,847	6,296,052	
From North	620,627	788,504		108	1,409,239	
From South	3,007,499	136,040		1,345	3,144,884	
Inbound Subtotal	18,668,655	5,363,016	1,529,204	18,872	25,579,747	15.3%
Outbound						
To West	13,882,365	5,089,955	3,056,087	24,148	22,052,555	
To East	5,054,659	1,731,852		1,479	6,787,990	
To North	793,829	143,836		17,683	955,348	
To South	9,280,323	847,560		939	10,128,822	
Outbound Subtotal	29,011,177	7,813,203	3,056,087	44,249	39,924,715	23.9%
Internal + Inbound + Outbound	61,409,761	13,274,239	4,587,422	63,248	79,334,670	47.4%
Combined Truck + Rail	74,684,000					
Through Traffic	29,690,825	58,308,175			87,999,000	52.6%
Total For All Traffic	91,100,586	71,582,414	4,587,422	63,248	167,333,670	100.0%
Mode Distribution %	54.4%	42.8%	2.74%	0.04%	100.0%	
Combined Truck & Rail	97.2%					

Source: Global Insight 2007 TRANSEARCH™ data

Imported goods arriving by container to the ports in Seattle/Tacoma or Portland moving by truck or train to inland destinations are likely sources of the IPH study area’s high through freight volumes. Containerized freight moved eastbound by intermodal trains for delivery to

Chicago, Memphis and other inland points typically do not stop during the rail journey, except for train crew changes or maintenance. Conversely, freight moving westbound from the Midwest by truck or rail, destined to Seattle, Tacoma or Portland for export doesn't typically stop in the IPH study area except for service activities such as refueling or lodging.

Outbound freight represents 24 percent of the total tonnage moving on the IPH study area transportation network. Outbound freight typically results from locally generated industries and products such as *Agriculture, Mining, Forest Products, Food Processing*, etc. in the IPH study area. Outbound flows represent study area exports destined to other parts of the Pacific Northwest (PNW), the U.S. or foreign countries. Outbound freight flows generally represent contributions to employment, income and economic activity in the base region.

Inbound freight represents 15 percent of the total tonnage in the IPH study area. Inbound freight typically results in job activities in the industries of *Distribution, Retail* and *Manufacturing* (raw materials or sub-components). Inbound freight also provides many of the supplies needed for service industries.

Internal freight amounted to approximately eight percent of the total tonnage and represents freight with both an origin and a destination in the 19-county study area. Internal freight also results in jobs in the industries of *Distribution, Retail*, and *Manufacturing*, and provides many of the supplies needed for service industries. However, internal freight does not necessarily attract revenues from outside the study area to contribute to the economic and tax base of the IPH study area.

By value, the Global Insight TRANSEARCH™ data suggests that in 2007 approximately \$470 billion worth of freight moved across the IPH study area transportation networks. Nearly \$254 billion, or 54 percent, of that value was associated with through-freight. Of the remaining value of the freight movements, 25 percent was outbound, 18 percent was inbound, and three percent was internal freight. By value, inclusive of through-flows, the highway/truck mode accounts for a 79 percent share of goods moving on study area networks. When through-flows are removed from the total, 95 percent of the freight movement in the IPH study area is by truck on area highways.

IPH STUDY AREA IMPORT AND EXPORT FREIGHT FLOWS SUMMARY

NAFTA imports of 6.4 million tons (**Exhibit 22**) represented 25 percent of the 2007 total of 25.6 million inbound tons that were shipped into the IPH study area. Canada shipped 99.5 percent of the imports into the IPH study area. Most imports originated in British Columbia and Alberta and are destined to Spokane County. Rail moved 53.9 percent of the inbound tonnage. The minimal amount of imports from Mexico all arrived by truck. The top commodities imported include *Chemicals, Petroleum Products, Lumber and Wood Products, Paper and Pulp, Food Products* and *Clay Products*. The majority originate in British Columbia or Alberta.

Exhibit 22: 2007 IPH Study Area NAFTA Import Summary – by Tons

2007 Tons Imported From NAFTA Origins:				2007 NAFTA Import Tons Received By IPH Destinations:			
Origin Province/State	Truck	Rail	Total	Destination County	Truck	Rail	Total
British Columbia, BC	2,019,419	1,327,927	3,347,346	Spokane County, WA	717,607	2,097,020	2,814,627
Alberta, AB	503,479	1,667,132	2,170,611	Adams County, WA	162,809	363,913	526,722
Saskatchewan, NB	55,672	356,014	411,686	Nez Perce County, ID	65,413	358,063	423,476
Ontario, ON	203,837	42,644	246,481	Kootenai County, ID	224,835	173,394	398,229
Quebec, PQ	109,159		109,159	Garfield County, WA	126,826	259,331	386,157
Manitoba, MB	15,774	44,146	59,920	Whitman County, WA	245,272	112,793	358,066
New Brunswick, NB	25,151		25,151	Stevens County, WA	278,559		278,559
Nova Scotia, NS	5,040		5,040	Ferry County, WA	191,764		191,764
Newfoundland, NL	677		677	Pend Oreille County, WA	176,557	10,319	186,876
Prince Edward Island, PE	354		354	Lincoln County, WA	155,490	15,244	170,734
From Canada Total	2,938,563	3,437,863	6,376,426	Asotin County, WA	168,442		168,442
Mexico, MEX	7,694		7,694	Columbia County, WA	162,370		162,370
Distrito Federal, DF	6,185		6,185	Bonner County, ID	98,099		98,099
Chihuahua, CHI	4,114		4,114	Boundary County, ID	23,621	26,985	50,606
Veracruz, VER	3,357		3,357	Lewis County, ID	28,378	20,800	49,178
Nuevo Leon, NUL	3,236		3,236	Latah County, ID	36,231		36,231
Jalisco, JAL	2,350		2,350	Benewah County, ID	31,139		31,139
Coahuila De Zaragoza, COA	1,066		1,066	Clearwater County, ID	24,175		24,175
Guanajuato, GUA	741		741	Shoshone County, ID	20,976		20,976
Tamaulipas, TAM	724		724	From Canada Total	2,938,563	3,437,863	6,376,426
Michoacan, MIC	509		509	Spokane County, WA	24,350		24,350
Puebla, PUE	396		396	Kootenai County, ID	1,857		1,857
Sinaloa, SIN	289		289	Nez Perce County, ID	1,135		1,135
San Luis Potosi, SLP	288		288	Whitman County, WA	1,022		1,022
Sonora, SON	146		146	Bonner County, ID	743		743
Baja California Norte, BCN	142		142	Stevens County, WA	632		632
Queretaro, QUE	97		97	Lincoln County, WA	420		420
Hidalgo, HID	74		74	Latah County, ID	379		379
Morelos, MOR	45		45	Asotin County, WA	330		330
Aguascalientes, AGS	21		21	Adams County, WA	265		265
Tlaxcala, TLX	9		9	Benewah County, ID	130		130
Durango, DUR	8		8	Clearwater County, ID	107		107
From Mexico Total	31,491		31,491	Shoshone County, ID	62		62
NAFTA Total	2,970,055	3,437,863	6,407,917	Boundary County, ID	50		50
Canada Percentage	98.9%	100.0%	99.5%	Pend Oreille County, WA	6		6
Mexico Percentage	1.1%		0.5%	Ferry County, WA	2		2
				From Mexico Total	31,491		31,491
				From NAFTA Total	2,970,055	3,437,863	6,407,917
				Canada Percentage	98.9%	100.0%	99.5%
				Mexico Percentage	1.1%		0.5%

Source: 2007 TRANSEARCH™, Global Insight, WSA Analysis

The IPH study area also exported 4.6 million tons (**Exhibit 23**) to Canada and Mexico. This represented 11.6 percent of the 2007 total of 39.9 million outbound tons leaving the IPH study area. Canada received 94.6 percent of the exports. Most of the exports originated in Spokane and Stevens Counties and were destined to British Columbia. Truck moved 95.7 percent of the outbound tonnage to Canada. A minimal volume of exported goods to Mexico were all shipped by truck. The top commodities exported include *Farm and Food Products*, *Lumber, Wood, Paper and Pulp*, and *Nonmetallic Minerals*. The majority originate in Spokane and Stevens County.

Exhibit 23: 2007 NAFTA Export Tonnage

2007 Import Tons Shipped From NAFTA Origins:				2007 NAFTA Import Tons Received By IPH Counties:			
Origin Province/State	Truck	Rail	Total	Destination County	Truck	Rail	Total
British Columbia, BC	2,019,419	1,327,927	3,347,346	Spokane County, WA	717,607	2,097,020	2,814,627
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New Brunswick, NB	25,151		25,151	Stevens County, WA	278,559		278,559
Nova Scotia, NS	5,040		5,040	Ferry County, WA	191,764		191,764
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Coahuila De Zaragoza, COA	1,066		1,066	Clearwater County, ID	24,175		24,175
Guanajuato, GUA	741		741	Shoshone County, ID	20,976		20,976
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Sonora, SON	146		146	Bonner County, ID	743		743
Baja California Norte, BCN	142		142	Stevens County, WA	632		632
Queretaro, QUE	97		97	Lincoln County, WA	420		420
Hidalgo, HID	74		74	Latah County, ID	379		379
Morelos, MOR	45		45	Asotin County, WA	330		330
Aguascalientes, AGS	21		21	Adams County, WA	265		265
Tlaxcala, TLX	9		9	Benewah County, ID	130		130
Durango, DUR	8		8	Clearwater County, ID	107		107
From Mexico Total	31,491		31,491	Shoshone County, ID	62		62
NAFTA Total	2,970,055	3,437,863	6,407,917	Boundary County, ID	50		50
				Pend Oreille County, WA	6		6
Canada Percentage	98.9%	100.0%	99.5%	Ferry County, WA	2		2
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				Canada Percentage	98.9%	100.0%	99.5%
				Mexico Percentage	1.1%		0.5%

Source: 2007 TRANSEARCH™, Global Insight, WSA Analysis

TRADE OPPORTUNITIES; EXPANDING MARKETS

The break-down of commodity volumes currently using IPH study area transportation networks, indicates that more than half are through movements or overhead. The questions that then follow are: 1) *Since through-freight does not currently stop in the IPH study area, would an inland port offer significant value to shippers and carriers?;* and, 2) *Would locating a regional hub in the IPH study area significantly alter movements of through-freight along I-90 or the rail lines?* These questions will be explored further as other elements of this multimodal trade assessment are discussed, and several models for inland port development are explored.

The geographic position of the study area provides unique marketing opportunities in three specific areas – domestic, NAFTA, and Asian. The region has good connectivity to the population centers directly west and to port locations with direct reach to Asian markets. The population centers to the southwest in California create a natural market for the region's products, and to the north and east is Alberta, one of the fastest developing provinces of Canada.

Southeast Asia, India and China are predicted to grow as major markets for U.S. international trade. International trade for Washington State, Idaho and the Inland Pacific Hub study area is Asia-centered and so the study area has a vested interest in maintaining, and growing its international trade relationships with Asia.

To reach east coast ports for export to Europe, some shippers in the IPH study area are draying containers to intermodal rail connections in Vancouver, BC. The typical truck route is I-90 to Seattle, then up I-5 to Vancouver where containers are loaded on Canadian railroad trains bound to the Port of Montreal. A more direct intermodal connection to the Canadian rail system to reduce the circuitous drayage currently required could help open new market opportunities to the region for those products requiring a lower priced transportation services over a longer length of haul. However, railroad intermodal facilities do not currently exist directly north of the IPH study area, and discussions with Class I railroads in the region expressed that such a development was unlikely in the near future.

For domestic intermodal moves east the BNSF intermodal schedule currently offers a trailer-based service (trailer on flatcar) to Minneapolis and Chicago. Currently, there is not a container product service offered on the schedule to and from Spokane. A consistent and reliable container intermodal service is needed to reach the east and southeast areas of the United States. Thus, those parts of the country are less viable markets for the study area, especially for lower value commodities.

Within or near the IPH study area there are other existing intermodal rail service offerings, such as RailEx in Wallula, WA and a new service being proposed by BNSF originating in the Port of Quincy. Attention to the drayage and consolidation requirements might promote increased use and therefore flexible solutions.

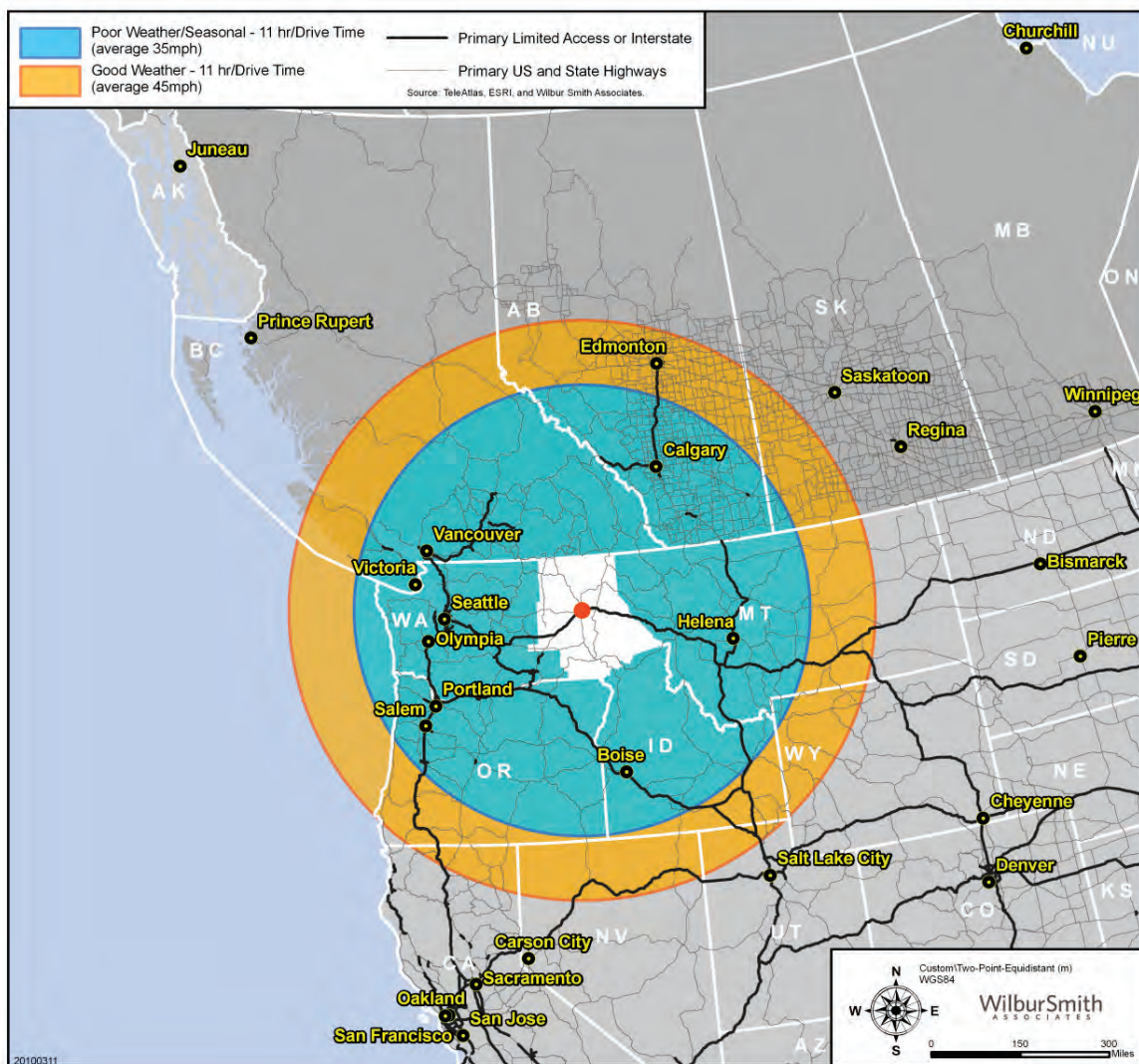
Products from the IPH study area are already reaching international markets. Many of the regional industries are sending and receiving materials and finished goods to Asia, Europe, and other parts of the world. For example, one IPH study area company imports raw materials from Dubai and sends finished products to Europe and other locations via the east coast ports. This company sends some of their finished products out of the region by truck but some move by rail intermodal by draying the products west to Seattle where some are containerized and then moved north to the Canadian railways to reach the East Coast ports.

CANADIAN MARKETS

The IPH study area shares a border with Canadian Provinces where approximately 5 million Canadians live within a 1,200 mile radius of the IPH study area. In review of current regulations, an 11 hour drive time was defined and measured geographically using a 45 mph

good weather and 35 mph poor weather travel time adjustment for the regional terrain and transportation system (**Exhibit 24**). These measures equate to simplified travel time buffer rings of 495 and 385 miles, respectively. In effect, the travel time buffers capture the primary Canadian cities of Edmonton and Calgary which together comprise a population of over 1.7 million people. These cities north/northeast of the IPH study area, can be competitively served via truck transport and offer a significant market opportunity.

Exhibit 24: Geographic Region Accessible from the IPH Study Area



Nearly all of the NAFTA imports and 95 percent of the exports originating from or coming to the IPH study area involve trade with British Columbia and Alberta. Furthermore, Canadian Government trade statistics estimate that Canada accounted for nearly 12 percent of Washington's foreign export trade and 13 percent of Idaho's, and it was estimated that in 2008, 153,000 jobs in the State of Washington and 33,500 jobs in the State of Idaho were supported by U.S.-Canada trade.

Every avenue should be explored to open this market for IPH products. This includes cross border initiatives to limit trade barriers and encourage exchange of products. Public agencies from across the border should become part of a coalition for regional development that includes both sides. Cross border trade is important for both the U.S. and Canada and it should be expanded beyond national and provincial/state trade to the border communities. The importance of opening an efficient north-south connection and actively engaging the cities and cross border regions on issues of policy and trade should be a clear priority for expanding trade interests of the IPH study area.

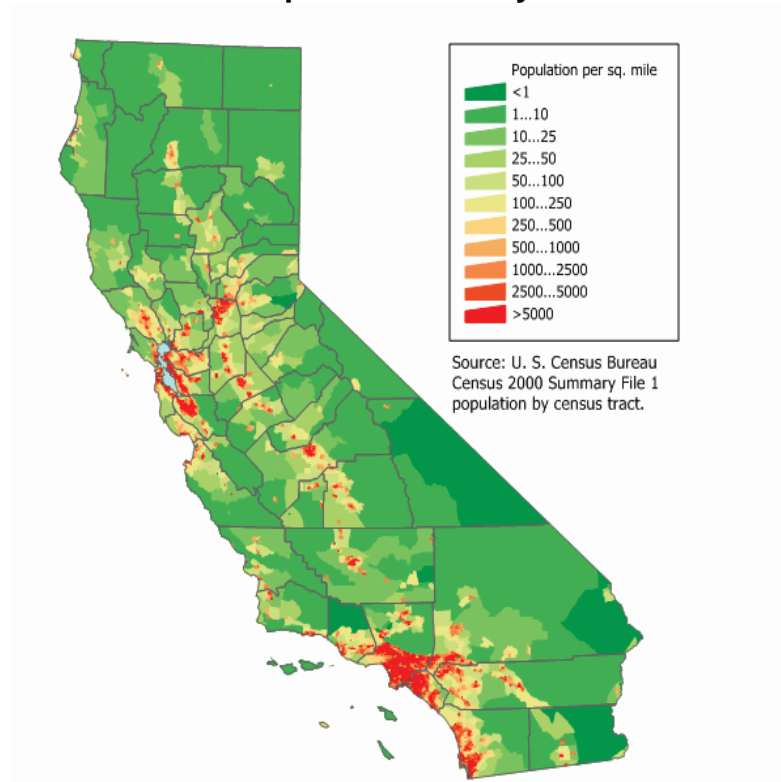
Two of the three major Canadian markets within a one-day drive, Edmonton and Calgary, cite optimistic GDP growth percentages. Assessed at the height of the recession from 2008 to 2009, Calgary's estimated GDP for 2008 was \$70.1 billion (Canadian). Projections over the next five years suggest this figure will increase to \$87.8 billion (Canadian). This marks a 25.2 percent rise in regional GDP related to *Trade, Manufacturing, and Transportation and Warehousing*.¹⁰ By comparison, PricewaterhouseCoopers estimates that Seattle's 2008 GDP was \$235 billion dollars and Portland's was \$110 billion.

OTHER TRADE OPPORTUNITIES – U.S. REGIONAL MARKETS

Within the United States, the IPH study area's regional domestic market extends east towards Denver and south to Phoenix, capturing some of the fastest-growing population centers. California's population of 37 million people is clustered along the I-5 and US 101 corridors (**Exhibit 25**). The IPH has good access to the corridor by highway and can access rail intermodal service that is available from Seattle and Portland.

¹⁰ <http://calgaryebrochure.com/>, 03/12/2010, Calgary Corporate Economic, Calgary's Economic Outlook 2009-2019, 2nd quarter 2009

Exhibit 25: Population Density of California

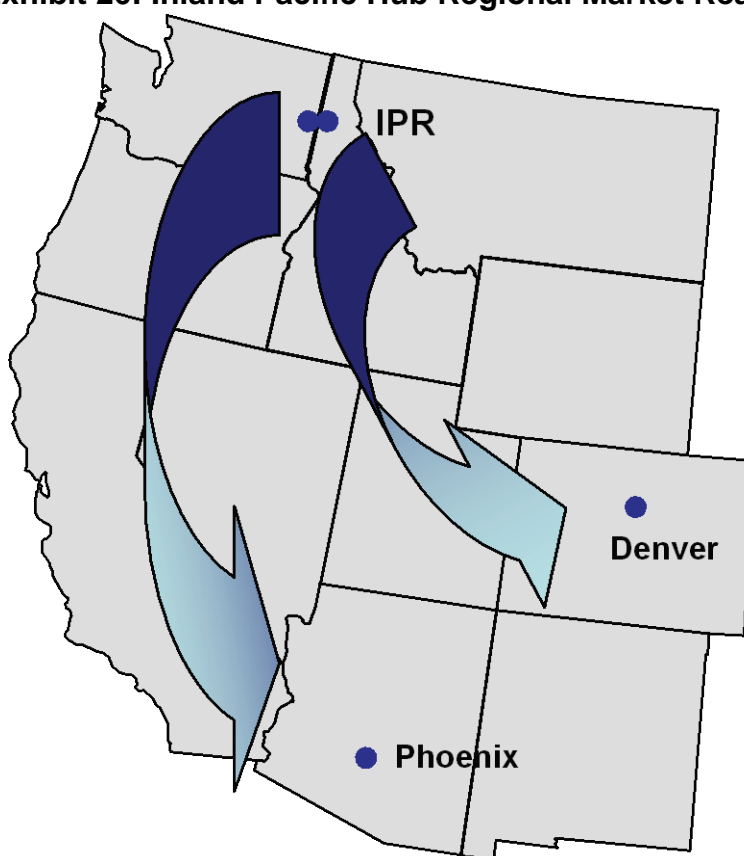


California represents one of the largest population centers in the country and is readily accessible to the IPH study area. Further development and marketing of local goods will increase bi-directional trade, and the transportation and shipping demands associated with goods distribution.

Regional markets are an important aspect of developing volume and density, which are the components necessary to bring significant change to the modal options and opportunities for distribution center development. The regional component of trade is a beginning step in a broader scope and is also viable in the framework of the short-term lag in international opportunities.

From Spokane, a directional route to the southeast through Montana and Idaho to the Salt Lake City metro area offers a market of approximately 1.1 million people that is relatively isolated and best served by truck, which is an advantage for the IPH study area. Extending further south is the Phoenix metropolitan area, another fast growing market accessible from the IPH study area (**Exhibit 26**). Directly west are the population centers of Portland, Seattle and Vancouver. These cities represent a sizeable market for products produced within the IPH study area. They are also the primary gateway for the import and export markets that may develop within the study area.

Exhibit 26: Inland Pacific Hub Regional Market Reach



OTHER TRADE OPPORTUNITIES – NON-TRADITIONAL ECONOMIC SECTORS

Commodity and economic forecasts project future declines in the farm products and forestry related industries, which are significant elements of the IPH base economy. One of the reasons for declines in farm products such as grains is a trend for a greater share of raw agriculture products are being processed at or near the point of production. Bio-fuels and livestock production are just two examples of the growing trend toward more value-added agriculture taking place today. So while forecasts of farm product commodity movements suggest a decline, processed food products are projected to grow. Forest related products are closely tied to the housing market which is likely to see a slow recovery in the wake of the mortgage crises that began in 2008. In addition, the growing trend toward electronic media will continue to negatively impact the demand for paper and newsprint.

However, opportunities exist to build off traditional market sectors in the IPH study area and develop new product offerings and market to new regions outside the study area. Examples of new market opportunities include agricultural heritage, tourism, food processing, clean technology, and energy. In addition, the region's skilled labor force and proximity to existing technology clusters may offer opportunities to further develop the high-tech industry within the study area. Developing these market opportunities will entail not only continuing to maintain the agricultural and natural resource base, but to invest in and further develop higher value activities.

Agriculture Heritage and Tourism: The IPH study area has an established, well-known agricultural base, with wineries, apples, and potatoes as the leaders among the numerous products grown and sold. Grain and other agricultural products such as dairy, remain important to the region's health. According to posted statistics, the Washington State Department of Agriculture licenses around 3,000 food and milk processors, milk producers, food storage warehouses, and custom meat facilities. In addition to leading the U.S. in potatoes grown for processing, Washington State is the third largest wine producer in the U.S. with more than 600 wineries. Idaho's major crops are similar, with strong dairy, beef, potato and grain (hay and wheat) production.

Direct marketing initiatives should focus on the specific promotion of the IPH study area's local growers. This includes marketing efforts to create recognition of regional brands (i.e., the "Happy California Cows"). The additional promotion from public and industry efforts reaches beyond what individual companies can achieve in expanding their industries. There are existing campaigns and resources, such as Idaho's "Idaho Preferred" campaign to market and connect consumers to local producers.

In terms of regional development and connectivity, the potential to support and expand local markets, especially at a time when international trade is low and the recovery horizon uncertain, can improve farm and agricultural profitability and create employment opportunities related to production, processing and retailing, while preserving a working landscape and the natural resources that attract visitors. Investing in rural roads and development areas around these capabilities makes sense for the region and improves the flow of agricultural products into the markets.

At present, a number of organizations, associations and government departments in the IPH study area are implementing similar initiatives as they look to promote the region's producers. Similar to the nationwide registry maintained by LocalHarvest, the Washington State Farmers Market Association maintains a searchable list of locations, and the Washington State Department of Agriculture maintains a searchable database of food and agricultural suppliers. In addition, marketing and grant programs are available.

Agriculture and Food Processing Equipment: A related and necessary product, which is important to the IPH study area's farmers and agricultural industries, is agricultural equipment. This includes farm field and farmstead machinery for crop and agricultural livestock production, tractors, planting and harvesting, fertilizing, tillage and irrigation equipment, as well as barnyard and milking machinery and construction equipment. As previously indicated, much of the U.S. demand for this equipment is satisfied via Asian imports to the west coast ports. Much of the equipment requires assembly activities post arrival, work that is done in many locations throughout the country. Full-line new products are one aspect of this market, and replacement parts offer another. There is a large market for distribution of parts for agricultural and construction equipment, given the relatively long life and continuous wear and tear to equipment.

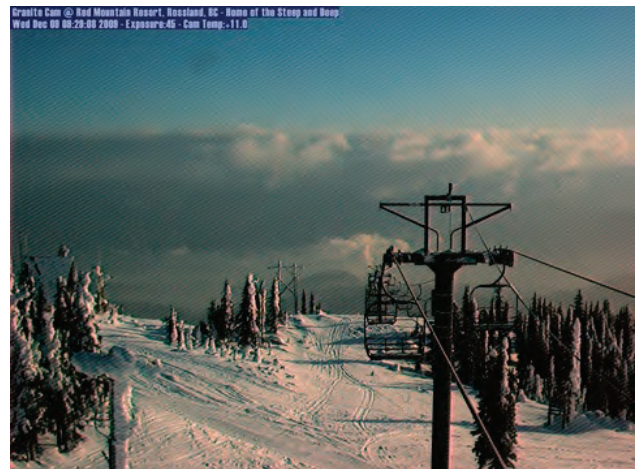
The food processing and packaging equipment manufacturing industries are also related to the agricultural industries, and have experienced similar trends with increased international competition, especially from developing countries, particularly China and India, as food

manufacturing companies push the competitive pressure to protect their margins onto the equipment manufacturers. These production categories include food processing machinery, machinery and components for sanitary operation and cleaning, canning, bagging, packing or unpacking, bottling and other forms of sealing.

Farm to Pharmacology: Beyond farming and processing equipment, actual food processing and other processing of agricultural products is a heritage industry for the region. More generally, the U.S. food processing and manufacturing industry has faced increased competitive pressures associated with globalization and general trade patterns. At the same time, certain sub-sectors involved with higher-value and niche products, including locally-sourced and organic ingredients, are reporting modest growth and there are continued opportunities to serve this market. Innovation and improved efficiency remain key to companies' survival and ability to compete in global markets and protect product margins remain. A number of agencies and associations in the Pacific Northwest, including the Northwest Food Processors Association (NWFPA), are working with the industry to support and assist with knowledge and technology transfer and adoption.

The IPH study area is home to several businesses that process agricultural products of the region for export. Many of the companies have regional, national, and international scope and have aggressive plans for growth. They are tied to the region through the resources, the farming tradition, and access to skilled labor. These companies are well vested in the region and offer stability in the economy. They are also high-tech and forward thinking, drawing the agricultural traditions into the future.

Tourism: Agricultural heritage has been described as a tourism opportunity. There are more features of the region that can be promoted. The access to natural resources in the entire region is perfect for all seasons with camping, outdoor competitions, fishing, hunting, and water sports all available within the region. This includes the Canadian side of the border as well. The directions for travel to Red Mountain Resort in Rossland, B.C. list Spokane as the entry airport. Spokane is the gateway to the Columbia Basin wine country. Opportunities abound to package these travel features for appeal on both sides of the border and throughout the United States and Canada.



Clean Technology: Clean Technology is another targeted economic activity that the IPH study area and Washington State, in particular, are looking to develop. In addition to sensor and device manufacturers, a number of biodiesel and alternative energy production facilities have opened in the region. Oil prices will fluctuate, but most economists agree they will continue to increase over the long term. Increased consumer demand will be a factor as the

United States pursues policies promoting energy independence and green energy. To the extent that the region can further develop the biofuel industry, linking agricultural production to refinery and fuel distribution, there is the opportunity for economic gain. Infrastructure investment in support of fuel distribution will be important.

Problems are developing around the country relative to the transport of wind turbines related to the large size of the propellers. The problems are occurring with roadways, bridges, and other infrastructure elements that are in the route between the source and the final location. With the planned development of wind farms in the IPH study area there will be a need to consider the “logistics” of these shipments in moving them to the intended locations and how those logistics needs will be accommodated.

High-Tech Industries: The transportation products industry is one of the state's leading exports to Canada, with movement of parts and components across the border. Business of this type indicates the ability to develop a more high-tech cluster of industry, fostering the growth of skilled jobs and the associated additional economic opportunity. The IPH study area has the skilled labor base and the educational institutions to continue the flow, and the attraction of high-tech industry is a definite direction for the future.

IPH STUDY AREA MODAL ASSETS - MODAL ISSUES

As part of the study effort, the consultant team conducted nearly 50 interviews with a wide array of private sector freight interests including shippers, service providers and public sector stakeholders. In addition, three regional forums were held during December of 2009. These half-day forums in Pullman, WA, Sandpoint, ID and Spokane Valley, WA were attended by interested citizens, business representatives, local governments and elected officials.

In general most businesses that the consultant team spoke to were satisfied with the access to and level of services available across the modal spectrum within the IPH study area. Comments about levels of service were concentrated primarily around the availability and cost of trucking services, which was sometimes seasonal. Because the IPH study area is a producer region with more outbound than inbound freight, shippers often have to pay premium rates because carriers must “deadhead” or travel empty to pick up loads. Public officials interviewed by the consultant team seemed to express more concerns with access to rail services, than most private sector shippers that were interviewed.

STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS

Ultimately the consultant team visited in-person or by phone, 48 public and private sector entities. The list of businesses and public sector entities interviewed included:

- Major businesses (shippers/receivers) in key industries that rely on the region’s transportation system
- Service / utility providers
- Major carriers from trucking and rail modes
- Air freight forwarders and integrated air cargo companies
- Operators of major intermodal / freight facilities (e.g., rail yards, airports)
- Warehouse and distribution facilities
- Logistics service providers
- Metropolitan Planning Organizations (MPOs) and local governments
- State and provincial governments

Participants were asked to identify the greatest strengths and the greatest weakness of the regional transportation system. The responses as presented by those who were interviewed are summarized below as Strengths, Weaknesses, Opportunities and Threats.

Strengths:

- Geographically close to the border with Canada
- Less Than Truckload (LTL) services in the region and the level of competition among trucking companies serving the regional hub of Spokane
- The greatest region transportation asset is I-90, we also have a great airport and good rail service

- The size of the community and its people
- The proximity of the Inland Pacific Hub study area to the Port of Seattle is one of the major transportation strengths
- The ability to use trucks at the 105,500 lb. weight limit was one of the biggest strengths of the region, as many other regions of the U.S. are limited to 80,000 lbs.
- Two Class I railroads provide service and The Park (Spokane Business & Industrial Park) in Spokane Valley is unique in that not many industrial parks are served by two Class I railroads
- Trucking service in the region is relatively good and convenient
- Overall rail service is good
- Rail service to/from the east has improved a lot over the past eight years

Weaknesses

- Lack of backhauls / lane balance in the region results in higher trucking costs. One of its biggest challenges is the lack of backhauls – as only 10 to 15 percent of its outbound trucks return loaded. The constant search for backhauls to help balance shipping lanes is challenging and costly
- Containers coming into Spokane from the coast go back empty
- The north/south corridor is the biggest issue – need a better connection to Canada. The region needs a north-south freeway. The north-south freeway started in the 1960's and its still not finished, it is a stretch that should take six minutes to drive six miles, instead it takes 45 to 50 minutes
- The most challenging transportation issue is carrier availability; the lack of backhauls often makes it difficult to attract carriers to remote areas
- Seasonality of agriculture steals drivers and equipment from the available pool
- Overall conditions of the regional road network (near Spokane) and winter maintenance
- Bigelow Gulch Road: truck drivers avoid in winter due to safety
- Market Street is one example of a local street that is difficult to negotiate due to intersection design
- Rail rates are poor and getting worse
- The lack of a double stack intermodal facility is the greatest weakness as currently rail containers are transloaded from flatbeds
- A longer runway that would enable direct international flights from Asia to land at Spokane International Airport
- Trucking shipments from Seattle over the mountain passes in winter often causes delays and introduces variability in the supply chain
- Getting drivers to and from the plant, congestion and lack of access management on routes between major loading points and I-90
- Low weight limit on UP from Spokane to Plummer (18 miles of 263,000 lbs.)
- Runway length at Spokane International Airport limits plane size

- Container supply & adequate facilities
- Better cell phone coverage in market area would be really good: drivers rely on them, and communications are key
- Load limits on federal system in jurisdictions beyond Idaho and Washington. Ability to carry more freight per truck (CA limit is 80,000 lbs) / various states have various limits
- Eastern connections for inbound products are costly (from Michigan, Connecticut, South Carolina, and Chicago)

Opportunities

- Increase regional freight mobility among national/international trade corridors, urban by-passes, and other freight dependent networks
- Develop a north/south corridor to equalize trade/lane balance with Canadian trade partners in British Columbia and elsewhere in Canada
- Create interoperability between major regional truck routes (consistency in regulations, geometric design, etc.)
- Continue to improve and develop communications and technology applications for fostering efficient freight transportation in the region
- Preservation of existing short line and regional railroads to facilitate economic development and improved Class I rail efficiency
- Preserving the Spokane airport as a regional airfreight hub for the IPH study area
- Creation of a regional comprehensive master plan for the entire IPH influence area
- Transporting over-dimension loads of oil rig and other heavy equipment through the region
- Establishing a regional freight shippers group
- Develop inbound market for goods coming into the Ports of Lewiston, Whitman County and Clarkston. Currently many barges and containers arrive empty

Threats

- Truck parking issues along I-90
- Access and design issues (Dover Bridge height and weight restrictions, Trent Avenue, Bigelow Gulch Road, Market Street in Francis, Airway Heights connections on Highway 2, and others) at freight generating facilities
- Border crossing constraints (hours of operation, technology, etc.)
- Project funding project prioritization schemes within the region
- The seasonality of safely moving freight within the IPH study area
- Local airport easements
- Railroad grade crossings impact on general traffic stream safety
- Utility, broadband, and other general services constraints in rural areas

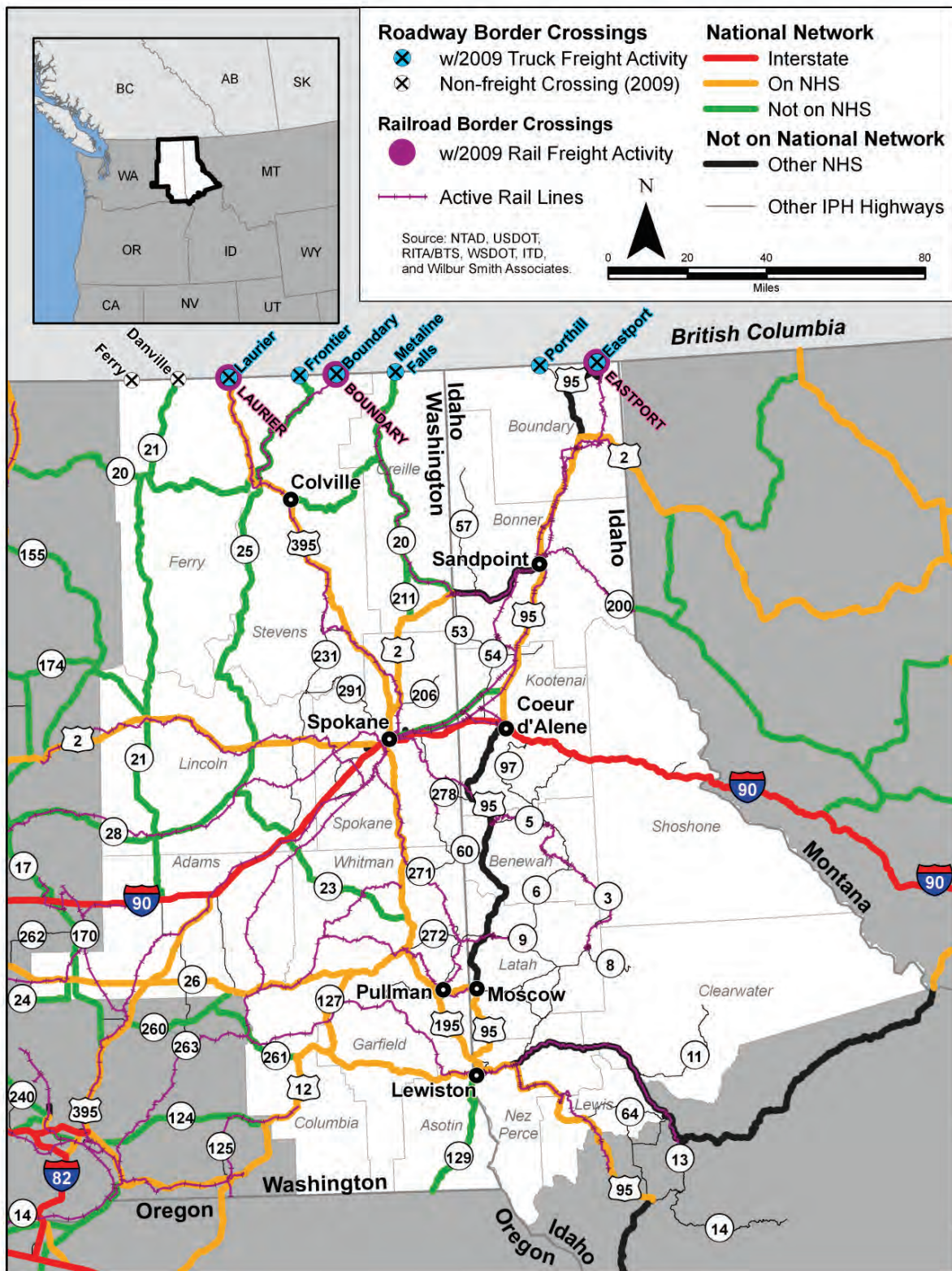
IPH STUDY AREA BORDER CROSSING INFRASTRUCTURE

In working paper 3.4 - *Trade Opportunities* there is a discussion presented on trade barriers such as tariffs, quotas and product restrictions. However, these types of constraints are not particular to the IPH study area. The focus of the discussion here pertains to infrastructure related barriers or restrictions at border crossing between the IPH study area and Canada. Other regulatory barriers including truck size and weight differences are discussed in a later section of this report.

A critical aspect of improving infrastructure and expanding markets is to truly develop the “regional” thinking and sharing of strategic interests in a way that takes advantage of individual capabilities and applies funding resources to those projects which have the most benefit for the most people, giving attention to the needs of the rural and indigenous populations as well as the urban areas.

Along the IPH study area border with Canada there are a total of six international border crossings showing freight activity in 2009. Washington maintains four of the six border crossings and Idaho maintains the remaining two. Three of the four Washington crossings are served by highways: US-395 at Laurier/Cascade, British Columbia (BC); SH-25 at Frontier/Paterson, BC; and, SH-31 above Metaline Falls at Nelway, BC. An additional crossing using local roads is located at Boundary/Waneta, BC, northeast of Northport. There are two additional border crossings in Washington that show only vehicle, pedestrian and/or bus activity in 2009. These crossings include Danville/Grand Forks, BC serviced by SH-21 and Ferry/Midway, BC accessed via Customs Road/CR-501. Both of the Idaho border crossings in Idaho are served by highways: US-95 at Eastport/Kingsgate, BC and SH-1 at Porthill/Rykerts, BC. **Exhibit 27** shows the location of all the border crossings within the IPH study area with respect to the National Network (NN) and NHS.

Exhibit 27: IPH Study Area - Border Crossings



Source: National Transportation Atlas Database (NTAD) 2009, USDOT, WSDOT, ITD, RITA-BTS, and Wilbur Smith Associates.

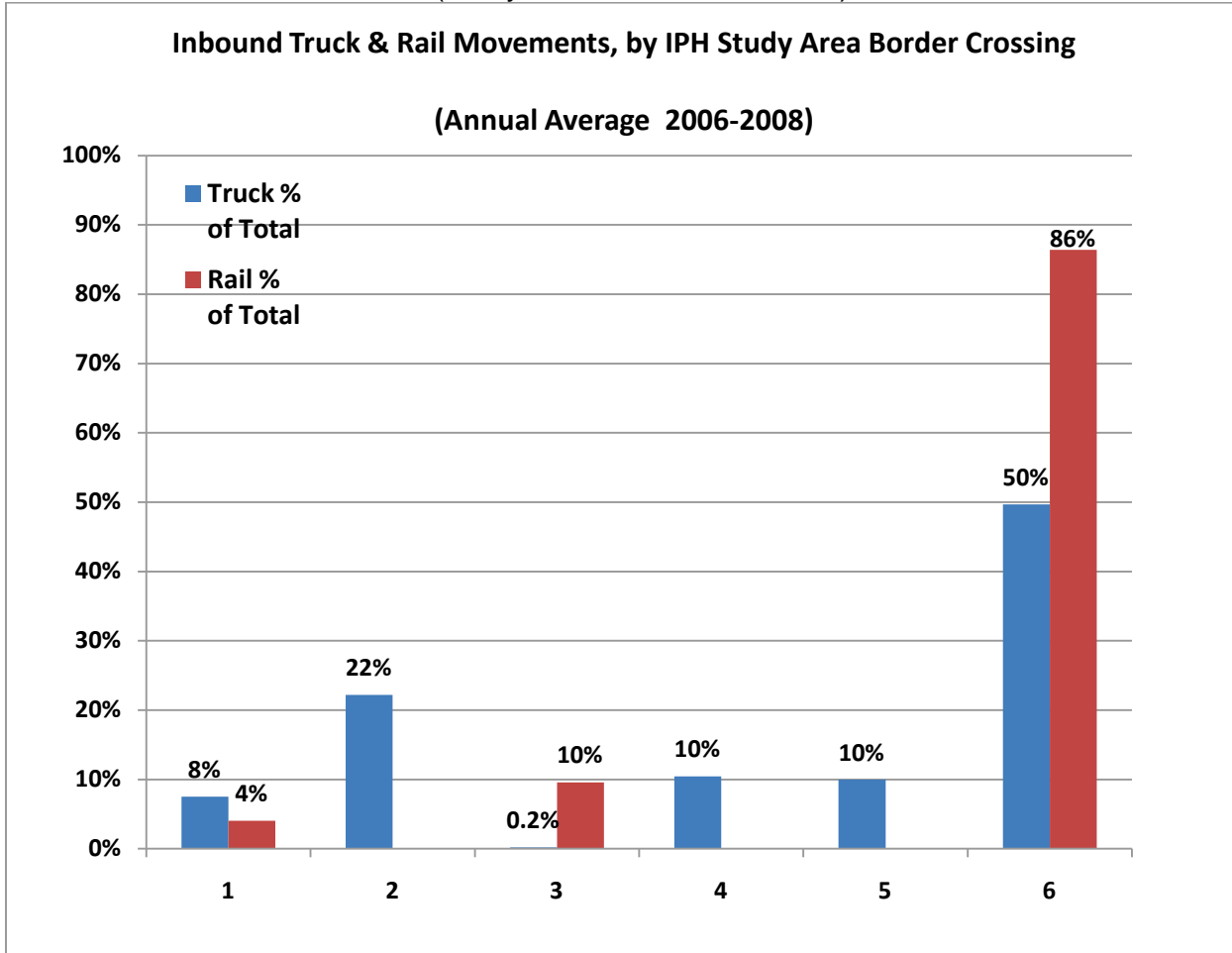
The BTS Border Crossing/Entry Data also gives counts for Truck and Rail container crossings (Note: Container Crossings is defined by BTS as any conveyance entering the U.S. used for commercial purposes, full or empty). The classification of inbound containers includes: stakebed truck, truck with a car carrier, van, pickup truck/car, flatbed truck, piggyback truck with two linked trailers/containers (equals 2 containers), straight truck, bobtail truck, railcar, rail flatbed car stacked with four containers (equals 4 containers on each rail car if there is multiple box containers count each container and the flatbed car.), and tri-level boxcar with multiple containers inside (equals 3 containers). The series only includes containers moving as inbound shipments. Customs and Border Protection does not collect comparable data on outbound crossings. However, this information could be garnered from individual bridge operators, border state governments, or the Canadian government.

In terms of 2009 train crossing activity, three international rail border crossings are located along the IPH study area boundary with Canada. The two Washington rail crossings served by Kettle Falls International Railway (KFR) are found at Laurier/Cascade, BC and Boundary/Waneta, BC. The one Idaho rail crossing is served by the Union Pacific Railroad (UP) at Eastport/Kingsgate, BC.

Among the border crossing sites, only the Frontier, WA/Paterson, BC (SH-25) and Eastport, ID/Kingsgate, BC (US-95) stations provide 24-hour service year round. Despite this, activity is highest at the Porthill and Eastport, ID locations. Average annual daily traffic (AADT) volume reaches about 670 vehicles per day at Eastport and 530 vehicles per day at Porthill. None of the Washington crossings serve daily volumes exceeding 350 vehicles per day.

Based on the BTS border crossing data, commercial truck traffic is highest at the Eastport, ID (US-95) crossing, with nearly 50,000 annualized incoming truck container crossings for the three year period 2006 to 2008. This volume represents 50 percent of the six 'active' study area crossings with documented truck container activity in 2009 (**Exhibit 28**). The next highest truck container crossing is located at Frontier, WA/Paterson, BC (SH-25) with 22,287 crossings, representing a 22 percent share of the crossings. (Two crossings not shown, Danville and Ferry, list zero inbound truck counts in the BTS data for recent years).

Exhibit 28: Percentage Share of Inbound Truck & Rail Border Crossings
(Full-year counts, 2006-2008)



Source: BTS Border Crossing/Entry Data, 03/23/2010. http://www.bts.gov/help/border_crossing_entry_data.html

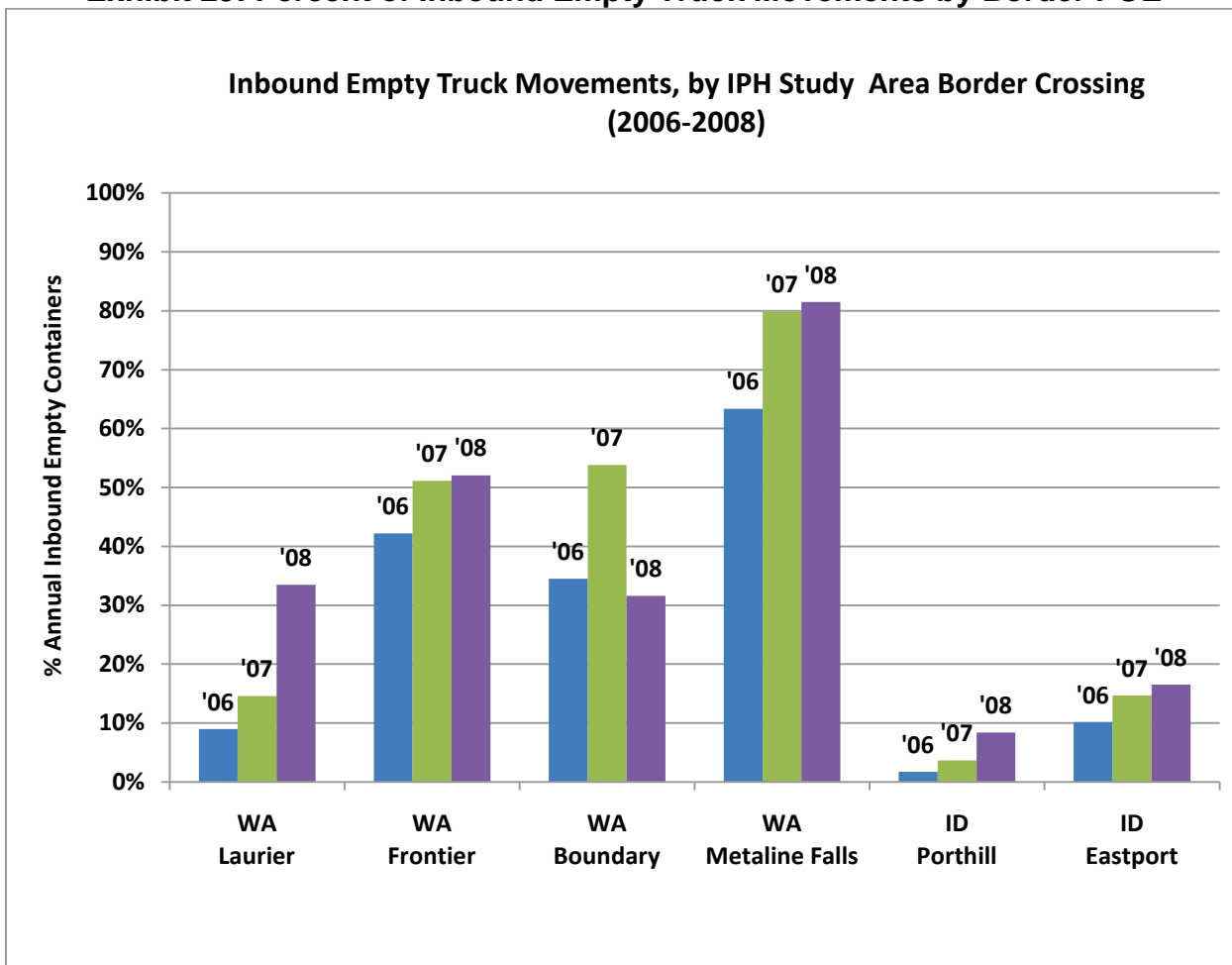
Together the Porthill, ID/Rykerts, BC (SH-1) crossing which feeds off of US-95 and the Eastport (US-95) crossing represent 60 percent of all inbound truck container crossings in the IPH study area. In terms of a similar comparison based on the National Network and NHS, the Laurier, WA/Cascade, BC (US-395) and the Frontier, WA/Paterson, BC (SH-25) crossing which feeds off of US-395, together represent a 30 percent share of all inbound truck container crossings. Adding in a third connected crossing at Boundary, WA/Waneta, BC adds a three-year average of 188 which gives little percentage-share improvement.

An aspect of border crossing selection efficiency is the amount of empty or “deadhead” traffic. All motor carrier operations perform with a certain degree of empty miles, whereby the carrier is moving empty equipment with no related revenue to offset cost. The greater the imbalance of the ratio of loaded units moving in one direction compared to the opposite direction, the greater the possibility the operation will seek an alternative. This alternative crossing, while possibly generating circuitous miles and cost, may create a more balanced flow. This reduces the associated overhead cost of all traffic and results in a more profitable pattern. As this proportion of empty movement, Percent of Empties (PoE) approaches zero,

traffic is more likely to continue utilizing the crossing. Extrapolation of this concept beyond the PoE, the ability to operate with a greater percentage of the units moving loaded, carriers have less need to inflate per mile charges to shippers to offset the related empty mile cost.

Exhibit 29 identifies the percentage of inbound empty truck units at each of the border point of entry (POE) within the study area, for the available (full-year) counts 2006 to 2008. Eastport and Porthill have consistently had the lowest percentage of empty truck movements over the three year time period. The percentage of empty trucks moving inbound through Laurier has more than doubled since the onset of the recession. All other crossings show a similar trending increase in empty truck movements with the exception of Boundary which shows a considerable spike in 2007. This is reflective of a relatively large increase in truck container crossing counts in 2007 (442) compared with 84 in 2006 and 38 in 2008. As a whole the Boundary crossing only constitutes 0.2 percent of all truck container crossing counts in the study area.

Exhibit 29: Percent of Inbound Empty Truck Movements by Border POE



Source: BTS Border Crossing/Entry Data, 03/23/2010 http://www.bts.gov/help/border_crossing_entry_data.html

Based on BTS TransBorder Freight Data, the Eastport border crossing consistently ranks among the top 20 U.S./Canada commercial ports of entry by dollar volume, (however nearly

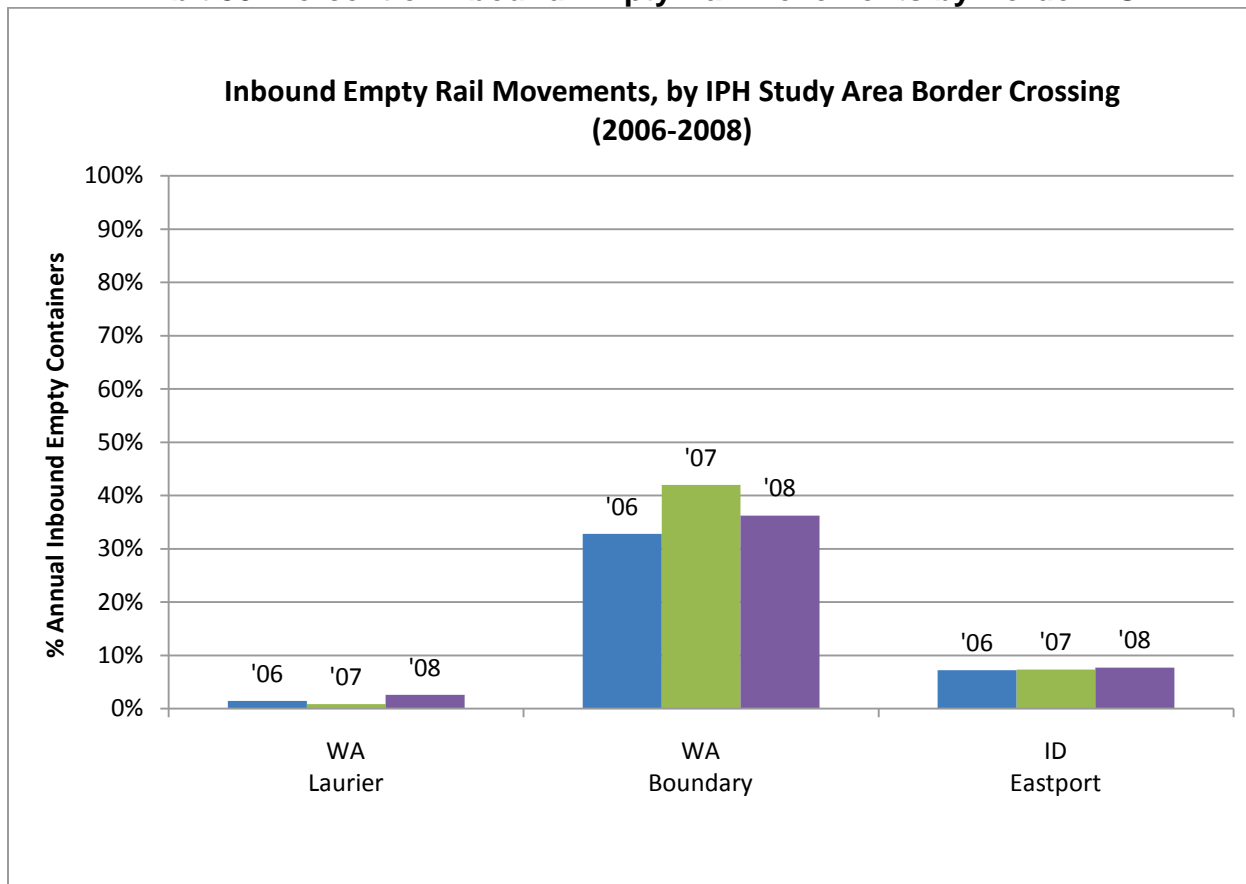
one-half of the total value flowing through Eastport is derived from petroleum products transported by pipeline).¹¹ Truck routing is heavily influenced by cost, as a function of total VMT. The shortest identified, truck friendly route selection incorporates this crossing and is identified with movements between the Edmonton and Calgary, Alberta markets and the Oregon and California markets. The primary products crossing the border include lumber and wood products, livestock, and fertilizer.

The Union Pacific Railroad also crosses the international border at Eastport, ID. Daily train traffic averages three at this crossing. On an annual basis, over 68,000 containers enter at this crossing. Primary commodities shipped by rail include petroleum products, propane, potash, and lumber.

The rail crossing at Eastport continues to perform in a balanced environment, relative to other border PoEs in the study area (**Exhibit 30**). Boundary again shows a spike in 2007 which is a more significant finding for this crossing with respect to rail. Boundary represents the second highest rail crossing in the study area with 10 percent of the activity during the period 2006 to 2008 (**Exhibit 31**). The Eastport crossing accounts for 86 percent while the Laurier crossing accounts for only four percent.

¹¹ Bureau of Transportation Statistics, North American Transborder Freight Data:
http://www.bts.gov/programs/international/transborder/TBDR_FastFactsTGMPC.html

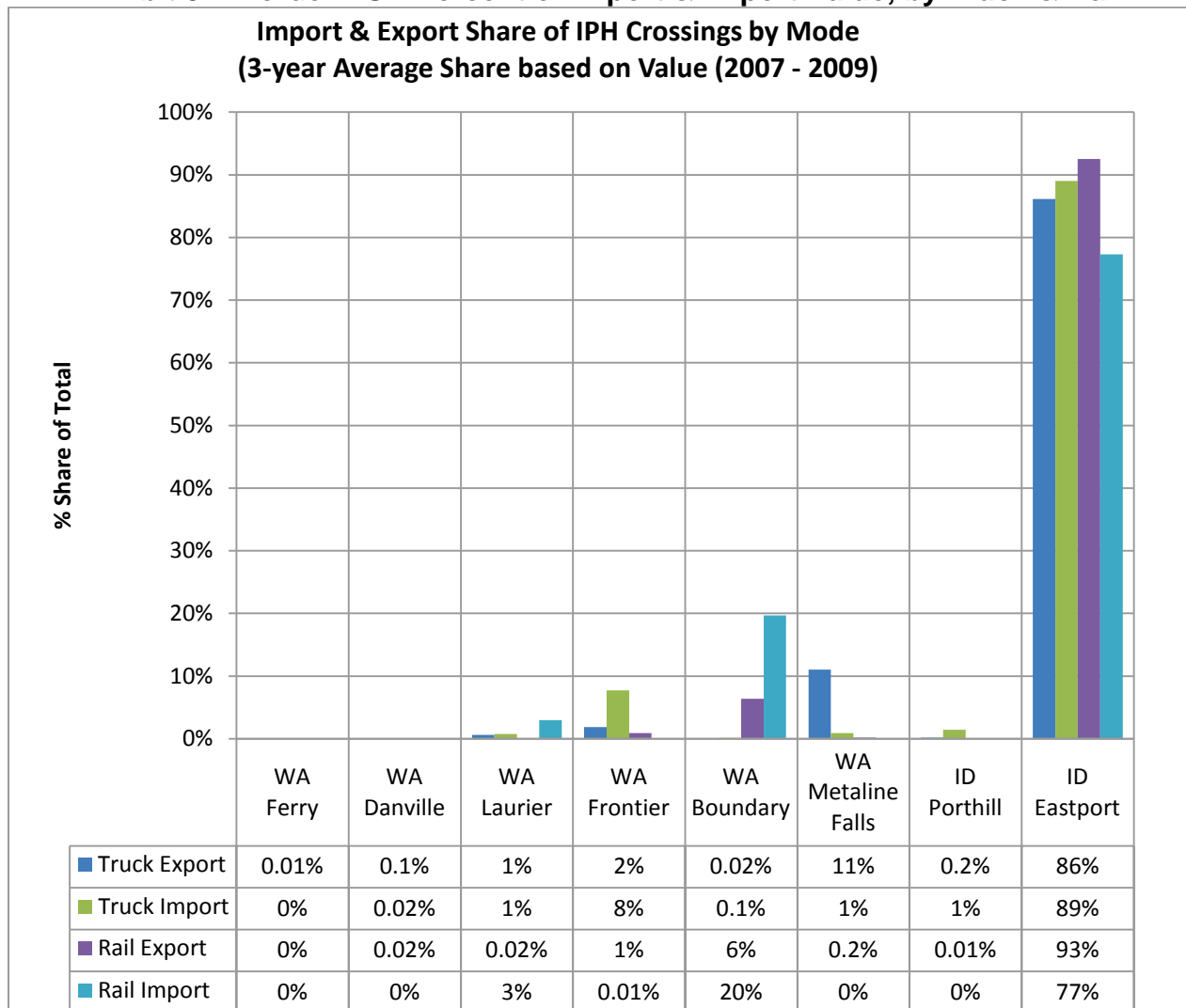
Exhibit 30: Percent of Inbound Empty Rail Movements by Border POE



Source: BTS Border Crossing/Entry Data, 03/23/2010. http://www.bts.gov/help/border_crossing_entry_data.html,

Given the lack of outbound truck and rail unit movement counts, the BTS Transborder Freight Data offers a comparison of the border crossings rank with respect to Import and Export value. **Exhibit 31** shows the import and export percentage share of truck and rail values for each crossing relative to all IPH border crossings based on a three-year average calculated for 2007 to 2009. From the 'value' perspective, it is quite evident that Eastport significantly outweighs all other IPH crossings. The three-year average of rail and truck import value at Eastport equates to \$2.3 billion versus an export total of \$1.4 billion. The import versus export gap at this crossing closes only when considering movements by truck and rail. This is highly indicative of the \$4.4 billion of imported petroleum moving by pipeline over this crossing.

Exhibit 31: Border POE Percent of Import & Export Value, by Truck & Rail



Source: BTS North American Transborder Freight Data , 03/22/2010
http://www.bts.gov/programs/international/transborder/TBDR_QA.html

BORDER CROSSING OPPORTUNITIES

Interviews with both private and public stakeholders in the IPH study area suggest a strong state of residence preference for which highway facilities and border crossings should be improved in support of increasing trade with Canada.

Some of the border crossings serving the IPH study area are likely to be constrained by investments in efficiency improvements. In the current environment of fiscal constraints coupled with the need to increase the security and efficiency of U.S. border crossings, the US Customs and Border Protection Agency has tended to focus in investments on the highest volume crossing. Many low volume border crossings, especially across the U.S. border with Canada have struggled to maintain hours, staffing and technology improvements. Therefore, a cooperative approach to prioritize border crossing improvements is likely to best serve the region as a whole.

Free and Secure Trade (FAST) service is a joint venture between the U.S. Customs and Border Protection and the Canada Border Services Agency (CBSA). This service allows a pre-screened membership the ability to cross the border in a simpler manner and reduce the frequency of delays. FAST requires certification of the shipper, receiver, and carrier. When a FAST-approved driver arrives at the border, he or she presents three bar-coded documents to the border services officer (one for each of the participating parties: the driver, the carrier and the importer). The officer can quickly scan the bar codes while all trade data declarations and verifications are done at a later time, away from the border. Under FAST, eligible goods arriving for approved companies and transported by approved carriers using registered drivers are cleared into Canada or the United States with greater speed and certainty, which reduces costs for FAST participants.¹²

This service is available at nineteen border crossings, none of which are in the IPH study area. The crossings at Oroville, WA and Sweetgrass, MT are the closest FAST processing centers. Introduction of this service at a crossing may serve as an attraction to traffic currently directed by this consideration. FAST works well in those situations where there are consistent and numerous shipments between parties (e.g. automobile manufacturing between Detroit and Windsor, CA). Without the support of these large shipper-receiver-carrier operations a dedicated FAST lane will be underutilized. Based on the existing activity data, Eastport would likely be the only IPH study area crossing that may be a candidate for the FAST service processing improvements.

Economic development and related improvements to better accommodate and access border crossings within the IPH study area can create competitive advantages for business shipping. Increased daily crossings can also have positive impacts on tourism, recreation, and possibly cross-border employment.

HIGHWAY AND TRUCK ISSUES IN THE IPH STUDY AREA

While truck transport represents one independent mode, it is also the primary integrator between the other modes in an intermodal/multimodal network. Highways were often the primary concern of shippers interviewed during the stakeholder outreach efforts. Many pointed to specific highway bottlenecks and deficient highway facilities such as Bigelow Gulch Road and the Huetter Bypass, but the need for an efficient north-south corridor extending from the Canadian border through the region was the most often cited highway deficiency.

Other frequently raised issues included the difficulty of getting competitive trucking rates to external markets when carriers must “deadhead” or travel empty into the region. A number of manufacturers also noted that regional season demands, due to agricultural harvests, often left them searching for equipment or carriers to serve their needs.

A number of shippers also noted the benefits they derive from being able to operate longer combination vehicles (LCVs) in the region. However, a number of shippers also noted the

¹² <http://www.cbsa-asfc.gc.ca/prog/fast-expres/menu-eng.html>, 03/11/2010

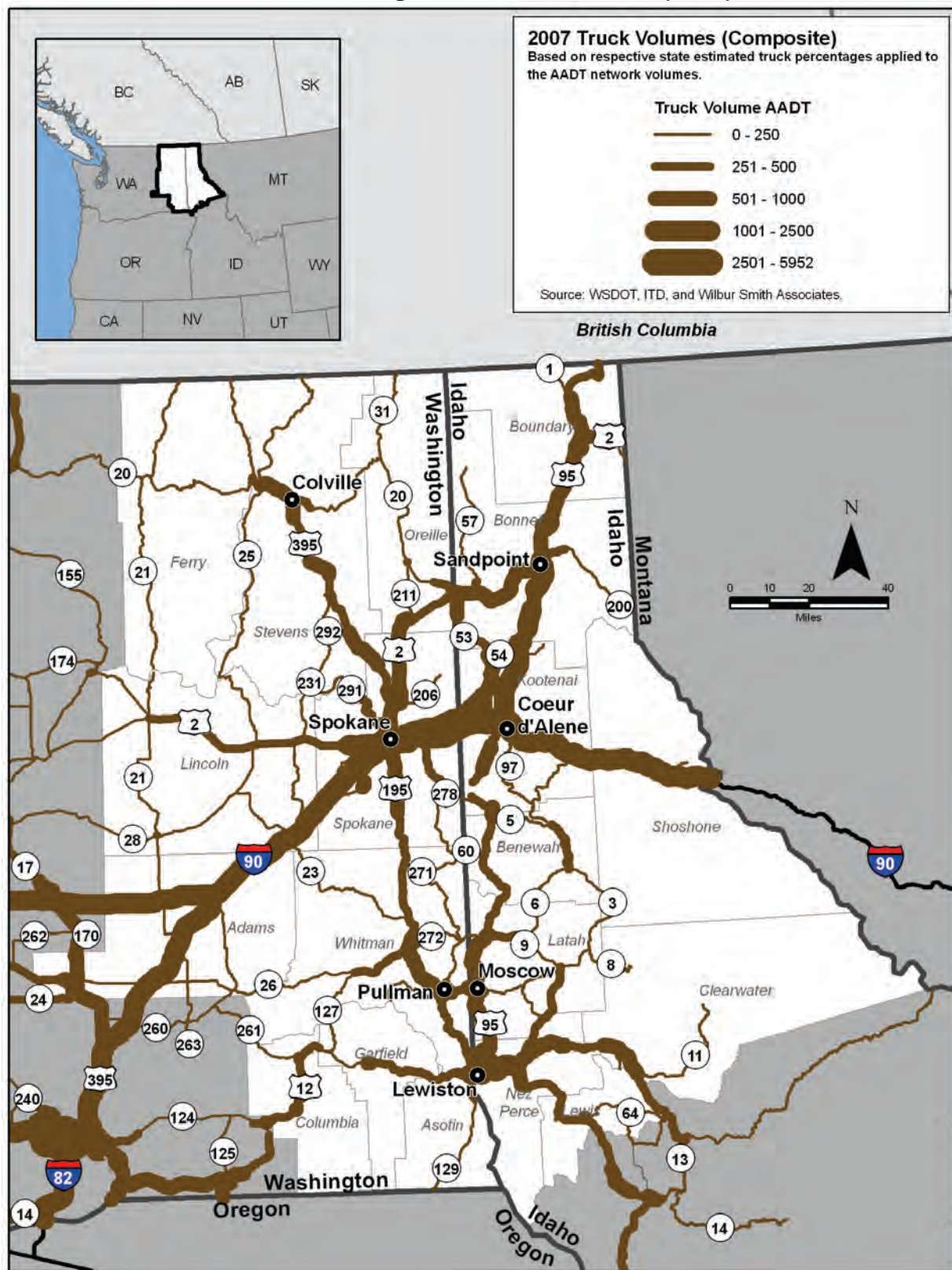
increased benefits that could come from greater uniformity in size and weight regulations across the Western U.S. One carrier operating LCV's in Idaho noted that they sometimes get warnings on "Blue Routes" in the study area due to off-tracking regulations. Blue Routes limit doubles configurations to 61 feet of trailers and 75 feet overall length without a permit. Configurations operating on these routes cannot exceed 5.5 feet of off-tracking.¹³ Among the Blue Routes in the IPH study area: SH3, SH5, SH6, SH8, SH9, the eastern portion of SH200 and US-12.

KEY ELEMENTS OF THE IPH STUDY AREA TRUCK NETWORK

Public sources of truck traffic volumes have been assembled and mapped to visualize the proportional distribution of freight traffic on the IPH network. Linear network GIS data for WSDOT and ITD were coalesced to be able to map the proportional distribution of AADT truck volumes on the entire IPH study area highway network. The proportional line thickness identifies various sections of roadways with relatively higher levels of truck volumes. While the information does not specifically indicate the level of commodity flow in terms of tonnage and/or value it does identify highway sections and connections maintaining proportionally larger volumes of truck traffic activity. This information offers additional best available data to review, compare, and prioritize route-based modal issues. **Exhibit 32** show average annual daily truck (AADT) volumes for the IPH regional highway network. **Exhibit 33** provides additional detail for Spokane and Coeur d'Alene.

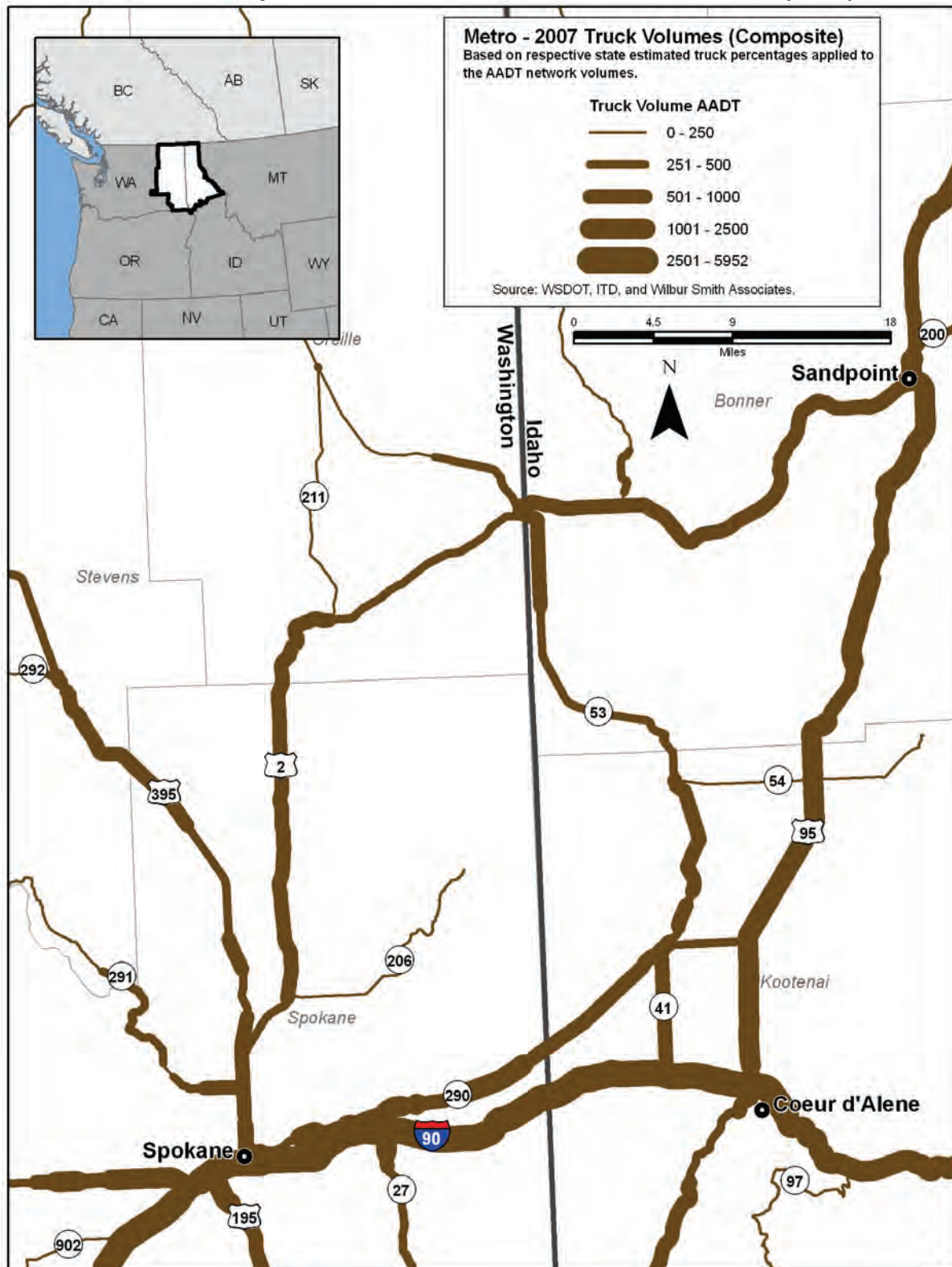
¹³ Routes Designated for Extra-Length Combinations: <http://itd.idaho.gov/dmv/poe/documents/extra.pdf>

Exhibit 32: Regional Truck Volumes (2007)



Source: WSDOT, ITD, and Wilbur Smith Associates

Exhibit 33: Spokane and Coeur d'Alene Truck Volumes (2007)



Source: WSDOT, ITD, and Wilbur Smith Associates

REGIONAL NORTH-SOUTH CONNECTIONS

North-south freight movement serving the Inland Pacific Hub study area includes primary routes US-395 and US-2 in eastern Washington and US-95 in western Idaho.¹⁴

US-395: In Spokane, US-395 travels concurrently with US-2 on Division Street and Ruby Street, in an urban/suburban environment characterized by low speeds, traffic signal control, and uncontrolled access. North of the Spokane Wye, US-2 extends into Idaho with a connection to US-95 in Sandpoint. North of the Spokane urban/suburban environment US-395 continues north to the Canadian border at Laurier, WA.

Completion of the North Spokane Corridor (NSC) east of downtown Spokane will provide a multi-lane limited access facility for designation as US-395. The NSC project will construct a 60 mph limited access urban freeway along a new alignment starting at the I-90 Thor/Freya Street interchange, running northward 10.5 miles, interchanging with existing US-2 and rejoining the current US-395 route at Wandermere, approximately three miles north of the Newport Y. The project shifts US-395 from Division Street to Market Street, approximately two miles to the east. Other interchanges will be located at Trent Avenue (SR-290), Wellesley Avenue, Francis/Freya Street, Parksmith Drive, and Farwell.

The Francis to Farwell segment between the Francis/Freya and Farwell Interchanges opened to traffic in August, 2009. It is anticipated that the Farwell to Wandermere segment will be open to traffic by late summer 2011. Upon completion of the north end of the NSC corridor, approximately 5.7 miles will then be operational. When completed, the corridor is expected to improve freight and commuter mobility through the metropolitan area. The rest of the freeway will be built as funding is made available. In order to provide a connection to I-90, Spokane County has completed an Environmental Impact Statement for the widening of Bigelow Gulch Road between Francis Avenue on the west and Wellesley Avenue on the east. The first phase of this project, between Francis Avenue and Argonne Road, will serve to connect the North-South Corridor to I-90 until funding for completion of the North-South Corridor is secured.

A recent article in the Spokane Journal of Business identifies several development opportunities resulting from the NSC improvements. The opportunities identified are centered on the first three interchanges of what eventually will become Spokane's north-south freeway, a multimodal, limited access facility that will substantially reduce north/south travel time in the Spokane vicinity. The multi-modal design of the facility will support alternative transportation options such as park and ride lots, future space for high capacity transit such as light rail, and integration with a pedestrian/bicycle trail, that parallels the full length of the corridor; named the "Children of the Sun Trail".

Continuing north of Spokane, US-395 consists of two to three lanes, with intermittent climbing lanes and four-lane sections, continuing approximately 100 miles to the border crossing at Laurier. The northern portions of US-395 wind through sparsely populated

¹⁴ Note: US-2 is primarily an east-west route across the northern states. Spokane to Newport to Bonners Ferry within the IPH study area is an exception due to geography, but beyond these points US-2 is east-west again.

mountainous terrain. The biggest challenge for US-395 becoming a significant international trade corridor is the lack of population centers north of Colville.

South of Spokane, US-395 runs concurrent with I-90 west to Ritzville, and turns south towards the Tri-Cities. It consists of a limited access four-lane facility between Kennewick and I-90.

US-2: US-2 extends north of Spokane as a two-lane State Highway with intermittent four-lane divided segments, including left- and right-turn lanes and center two-way left-turn lanes. It connects to Newport, at the Idaho border, 47 miles north of Spokane. Crossings at the Canadian border are available at Eastport and Porthill, Idaho, 90 to 100 miles beyond Newport.

US-95: US-95 provides the only continuous north-south route in western Idaho, extending from the Oregon state line to the border with Canada, a distance of 538 miles. For most of its length, it is a rural two-lane State highway. Idaho may widen portions of the corridor to a four-lane divided highway as warranted by traffic, safety and funding considerations. This widening has been completed in Coeur d'Alene north of I-90, portions west of Coeur d'Alene Lake, and south of Moscow to Lewiston.

Construction is underway on several segments of US-95 from north of Hayden to north of Sandpoint. Between Wyoming Avenue and the SH-53 junction, a two-lane section of US-95 is being widened to connect with four-lane segments on both ends. Widening the highway will create four continuous lanes from Coeur d'Alene to north of Garwood. A traffic signal at Lancaster Road will also be constructed to improve safety. In Sandpoint, the ITD is constructing an alternate alignment for US-95 entitled the 'Sand Creek Byway' project. It consists of 2.1 miles of new alignment connecting US-95, from the northern end of the Long Bridge, directly to SH-200 and US-95 north of Sandpoint. The project includes six bridges, 65 retaining walls, and a pedestrian/bike pathway. Construction will continue into 2012 and represents one of the largest single projects in Idaho Transportation history.

Other areas of US-95 are programmed for widening in the Capital Investment Program (2009-2013). These include the segment between the top of Lewiston Hill to Genesee, Thorn Creek Road to Moscow, and segments between Garwood and Sagle. Completion of the widening of additional segments is dependent on funding availability.

OPPORTUNITIES AND CONSTRAINTS FOR NORTH-SOUTH CONNECTIONS

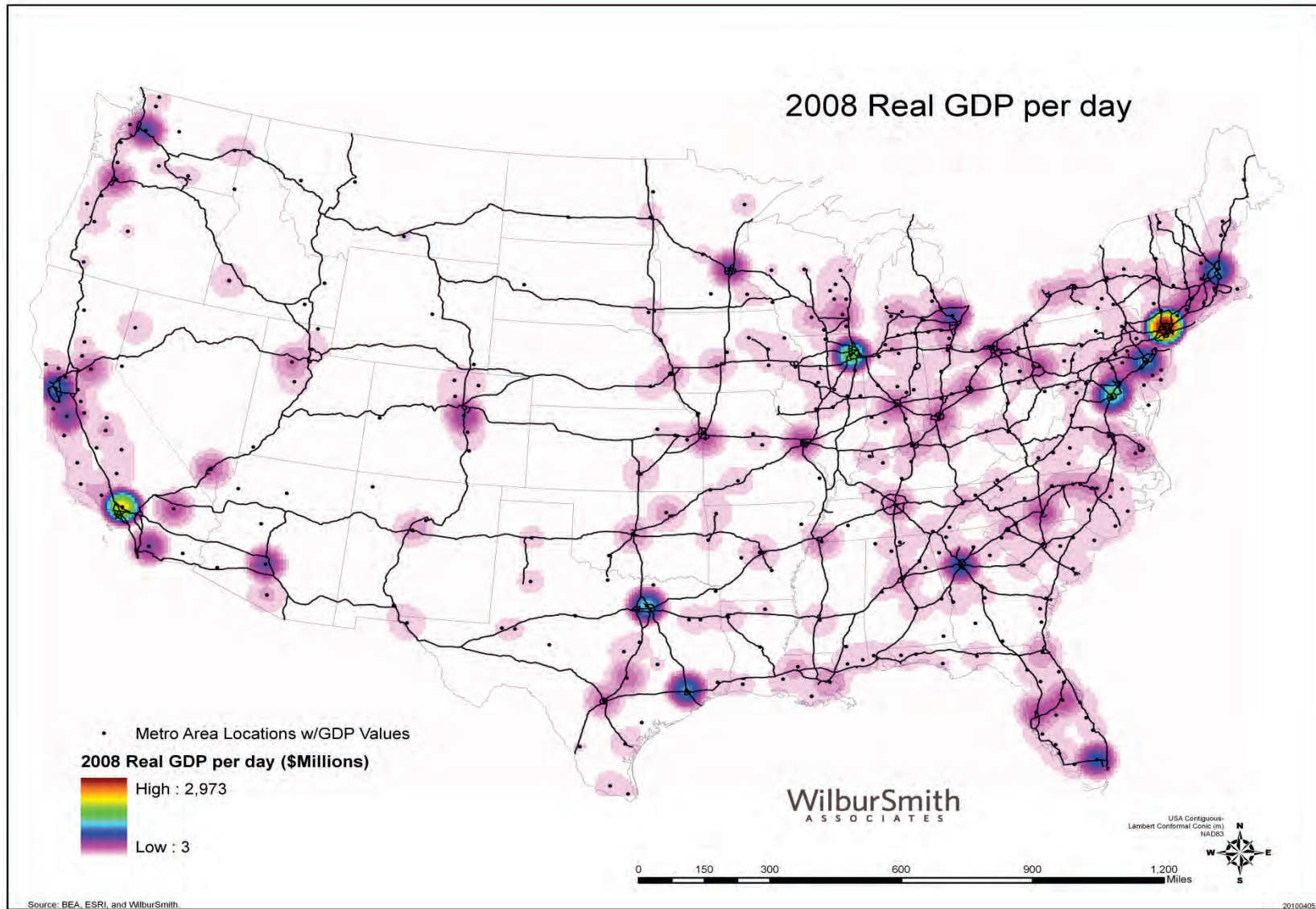
As previously discussed, capacity balance is another indicator of cost. Balance occurs when a market size is sufficient to demand inbound freight traffic at a level equivalent to its rate of production such that equipment coming in loaded is able to leave loaded and the numbers are relatively equal and consistent with time. The most balanced areas have good manufacturing potential or trade opportunities coupled with a population center with matching demand. When one of these categories is out of line then imbalance generates additional costs.

In order to target markets and promote economic growth, a region must have the necessary transportation connectivity to reach desired market locations. Population density is one of the

primary drivers of freight density and geography, plus connectivity drives many modal service options. The Inland Pacific Hub study area is well connected to coastal population centers in the Pacific Northwest with Interstate 90, several Class I rail lines, the Columbia-Snake River systems and frequent air service between Spokane and Seattle. What the IPH study area lacks are similar connections to Canadian population centers to the north, namely Calgary and Edmonton, and U.S. population centers to the south, namely Boise, Salt Lake City, Las Vegas, Phoenix and southern California.

In *Working Paper 3.4: Trade Opportunities* the necessity and benefits of focusing trade efforts on a north-south axis were discussed. The map in **Exhibit 34** displays economic activity across the U.S in terms of real gross domestic product (GDP) per day. The map also shows the Interstate Highway System of the U.S. Examining this map closely suggests that the IPH study may be the most isolated economic center of its size in terms of access to north-south interstate highway facilities.

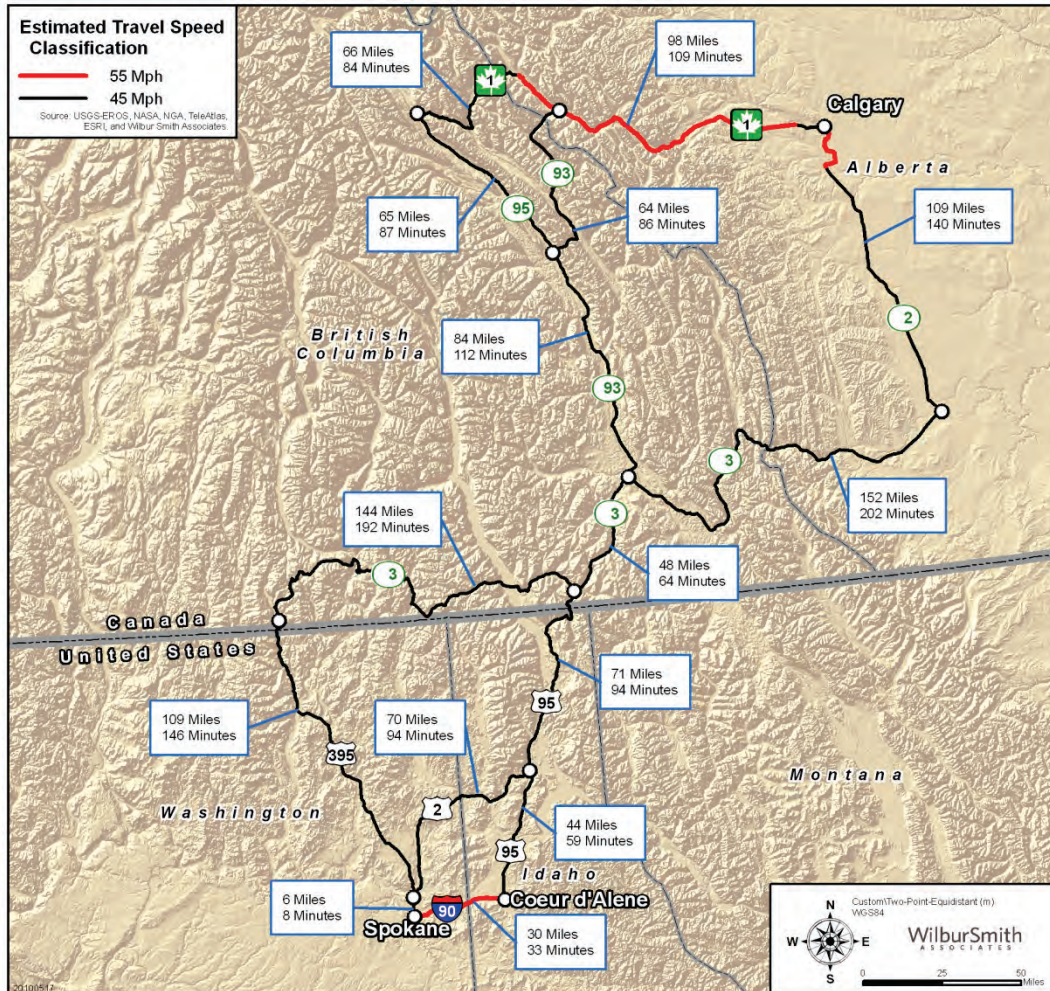
Exhibit 34: Population and Economic Activity Centers in the U.S.



The map in **Exhibit 35** provides a GIS analysis of alternative routes between Spokane and Calgary. Adding up various segments results in the following distance and drive time estimates for three primary alternates:

- I-90, US-95, Provincial 3, Provincial 2: 454 miles, 600 minutes
- US-395, US-2, US-95, Provincial 3, and Provincial 2: 456 miles, 609 minutes
- US-395, Provincial 3, and Provincial 2: 568 miles, 759 minutes

Exhibit 35: Alternative Canadian Access Route Distance and Drive Time¹⁵



The first two options using the Eastport border crossing are very close in terms of mileage and drive time. However, the I-90/US-95 route option may not fully consider peak hour

¹⁵ Travel time estimation procedure: Access controlled facilities were assigned a travel time based on an average trip speed of 55 mph, while the non-access controlled segments were assigned an average trip speed of 45 mph. State highways, US highways, and ramps were assigned a value of 45 mph, irrespective of through town segments. These travel speeds do not reflect posted speed limits on individual segments. These average speeds and travel times were determined reasonable based on interviews with local trucking firms.

congestion that is sometimes problematic on US-95 north of I-90 in Coeur d'Alene. Nonetheless, either of these two options appear superior to a US-395 route through Laurier. To fully examine a corridor running between the border facility at Eastport, ID and the Spokane, WA area, the associated route segments and the vehicle size and weight limits that apply are examined in the following section.

REGIONAL ROADWAY NETWORKS IMPACTING TRUCK SIZE AND WEIGHT

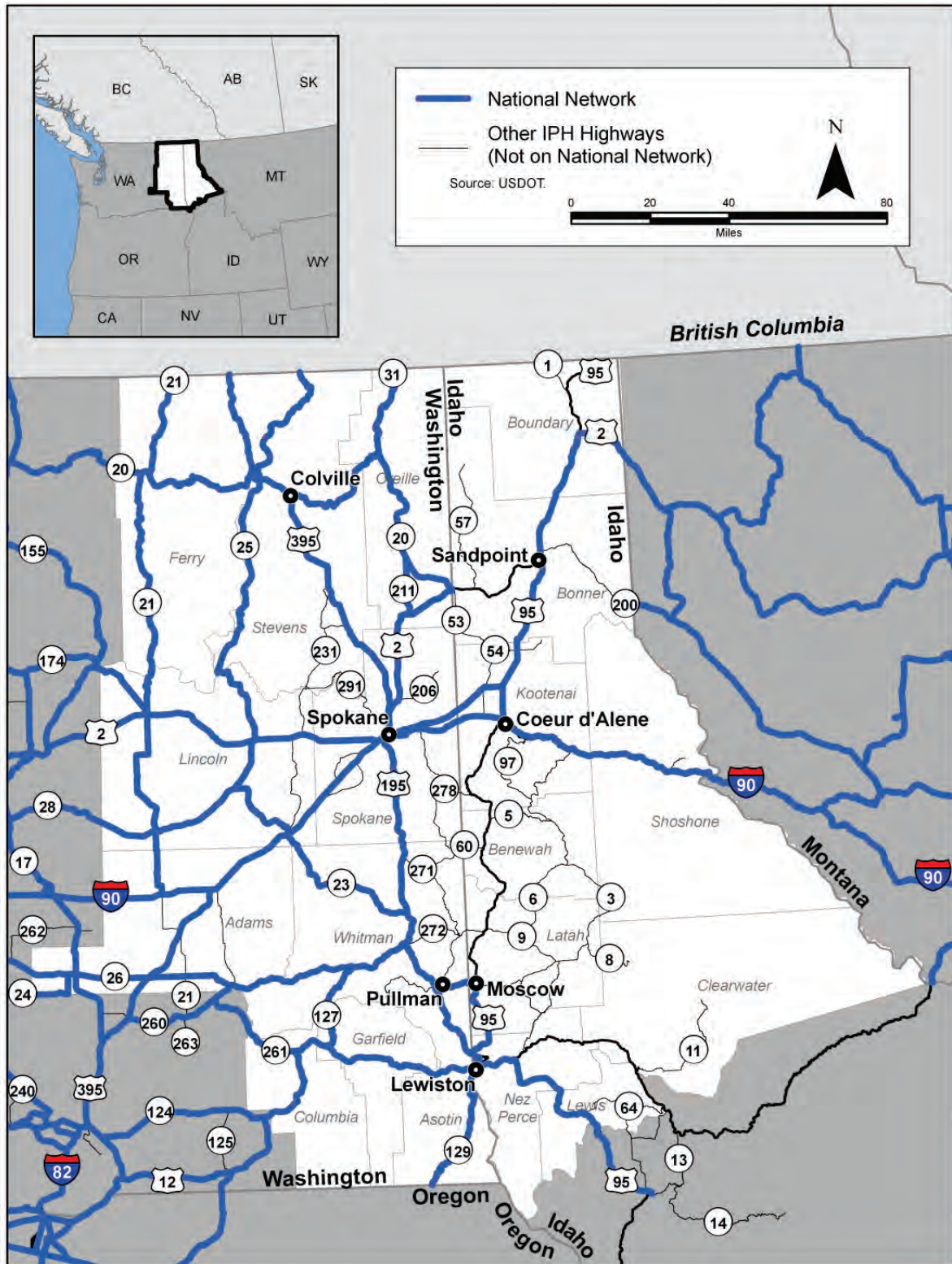
The regional roadway network is comprised of federal, state, and local roadways that are designated differently according to their intended purpose. The most important of these networks with respect to truck size and weight is often the National Network (NN). The NN of Highways includes: 1) the Interstate Highway System; and, 2) other highways designated by the states in response to the Surface Transportation Assistance Act (STAA) of 1982. The NN, sometimes referred to as the national truck network consists of highways submitted to FHWA as being capable of safely handling larger commercial motor vehicles.

It should be noted that the NN Highway system is different than the National Highway System (NHS). The NHS was developed by the USDOT in cooperation with states, municipalities and metropolitan planning organizations, as a high priority investment network. The NHS includes the Interstate Highway System, and the Strategic Highway Network (STRAHNET) which is the system of public highways that provide defense access, continuity and emergency capabilities for defense purposes. Other principal arterials and connector routes are also part of the NHS.

The total NN system is about 200,000 miles. The segments of the NN in the IPH study area are shown in **Exhibit 36**.

The truck size and weight regulations applying to the NN and other highways in the IPH study area, as well as those applying to surrounding jurisdictions are summarized in **Exhibit 37**. Of note is the higher gross vehicle limit (GVW) of 105,500 allowed on interstate and NN routes in the IPH study area. In Washington State, due to grandfather provisions, no permits are needed to operate at a GVW of 105,500 provided the truck complies with the federal bridge formula. In Idaho, trucks with a GVW of 105,500 lbs. are allowed on NN routes including Interstate highways, but trucks over 80,000 lbs are required to obtain a special permit.

Exhibit 36: NN Segments in the IPH Study Area



Source: Federal Highway Administration (FHWA)-Oak Ridge National Laboratory (ORNL), March 2010.

Exhibit 37: Regional Truck Size and Weight Regulations

	Width	Height	Length (Interstate & Designated Federal Routes)			Length (State/Provincial Routes)			Maximum Gross Vehicle Weight Interstate Highways	Maximum Gross Vehicle Weight Other Highways	Single Axle (lbs)	Tandem axle (lbs)
			Semitrailer in Tractor-semitrailer combo	Full Trailer	Double Trailer	Semitrailer in Tractor-semitrailer combo	Full Trailer	Double Trailer				
Federal									80,000		20,000	34,000
WA	102"	14'	53' (1)	53'	61' (2)	53' (1)	53'	61' (2)	105,500 (3)	105,500 (3)	20,000	34,000
OR	102"	14'	53'	40'	NS (4)	53'	40'	(5)	80000 (6)	80,000	20,000	34,000
ID	102"	14'	53'	53'	NS (7)	48' (8)	48'	(9)	80000 (10)	105,500	20,000	37,800 (11)
MT	102"	14'	53'	28'6"	NS (12)	53'	NS	65' (13)	80,000	80,000	20,000	34,000
AB	102"	13'6"	53'		75'5"	53'	41'	82' (14)	87,080 (15)	139,993	20,060	37,480
BC	102"	13'6"	53'		75'5"	48'	41'	82' (14)	87,082	139,993 (16)	20,060	37,480

Note: Table footnotes appear on the following page.

Footnotes for Exhibit 37

- (1) Trailers from 53' to 56' require a permit
- (2) Trailers from 61' to 68' require a permit
- (3) Provided vehicle complies with Federal bridge gross weight formula
- (4) Overall length not specified if trailing units, including space between, do not exceed 68' and first semitrailer does not exceed 40'
- (5) 75' overall on Group 1 highways; first trailer in combination not to exceed 40'. No overall length limit on Group 1 highways if the measurement from the front of the first trailer to the rear of the second trailer does not exceed 60' (including distance between trailers).
- (6) Two consecutive sets of tandem axles may carry a gross load of 34,000 lbs. each if the overall distance between the first and last axle is 36' or more
- (7) Overall length is 68' for the trailing unit including space between
- (8) 53' on some highways
- (9) 68' of trailers allowed on National Network roads. 61' of trailers, or 75' overall, allowed on non-National Network roads
- (10) Permit needed to exceed 80,000 lbs. up to 105,500 lbs.
- (11) When not over 80,000 lbs. GVW
- (12) Length of doubles not specified but trailers are limited to 28'6" each
- (13) Not specified when trailer length does not exceed 28' and operated within 10 miles of the interstate, designated, or primary highway; otherwise, 65' overall length
- (14) For A Train Doubles
- (15) For 5-axle tractor-semitrailer
- (16) For 7-axle unit
- (17) The GVW allowable by overweight permit is subject to the seasonal stability of the roadway and the capacity of the structures on the route of travel.
- (18) The State of Idaho has developed 7 overweight levels with varying single/tandem axle weight restrictions

NATIONAL NETWORK IMPLICATIONS ON EXPANDING TRADE WITH CANADA

Attracting goods movement to a corridor may not solely be influenced by VMT, as cost advantages, or other operational advantages may also yield benefits to carriers. Other benefits that enhance the rate of travel between two locations, could be associated with eliminating extraneous activities associated with differences in regulatory compliance (e.g., different weight or size limits when crossing a border), and assigning regulatory compliance activities to more natural points of operational activity enhance the movement along a corridor. Changes that generate a lower cost structure to carriers translate to more reliable transit times and lower costs for shippers. A key enhancement to the development of the corridor is the expansion of increased lengths and weights between the Canadian markets and key freight nodes in the study area. The ability to provide continuous service, as governed by the most robust regulations in the corridor could address several operational advantages:

- Reduce the total number of trips: Increased length (volume) would permit additional amounts of freight which “cubes out” to move per trip. Increased weight limits would allow the same benefit for those commodities that “weigh out”.

- Continuous transit between the two locations without the need for equipment transfers at transload facilities at the border or warehouse staging to await appropriate equipment.
- The ability to provide continuing customs services related to in-bound transit, further inland, thus reducing the need to slow transit for the remainder of the cargo.

A possible attraction for truck transit from the Canadian markets, specifically Alberta, utilizing the IPH study area as an entry point to western U.S. markets, would be the introduction of a more advantageous path for trucking productivity. Providing an opportunity for penetration beyond the border with larger truck configurations would in effect reduce trip counts to transport these goods into the U.S.

One way that eastern Washington and northern Idaho could expand its trade opportunities, especially with Canada, would be to allow larger 105,500 lb. Canadian truck configurations to cross the border (on the non-NN segment of US-95) and then travel into some reasonable point within the region where loads could be deconsolidated. Idaho actually does this on a small segment of US-95. Heavier Canadian lumber trucks are allowed access to a lumber reload center in Eastport where they are loaded onto rail or smaller trucks. A potential opportunity to expand this concept could include a consolidation point near Sandpoint, as it provides excellent transportation access into Washington via Highway 2 or access to Coeur d'Alene via Highway 95. The map in **Exhibit 38** shows the potential route of this proposed high productivity north/south trade or commerce corridor.

The process to assign expanded length and weight regulation is complicated by the need to satisfy federal regulation across all segments of the proposed corridor, some of which are designated as on the NN, while others are not (**see insert on Exhibit 40**).

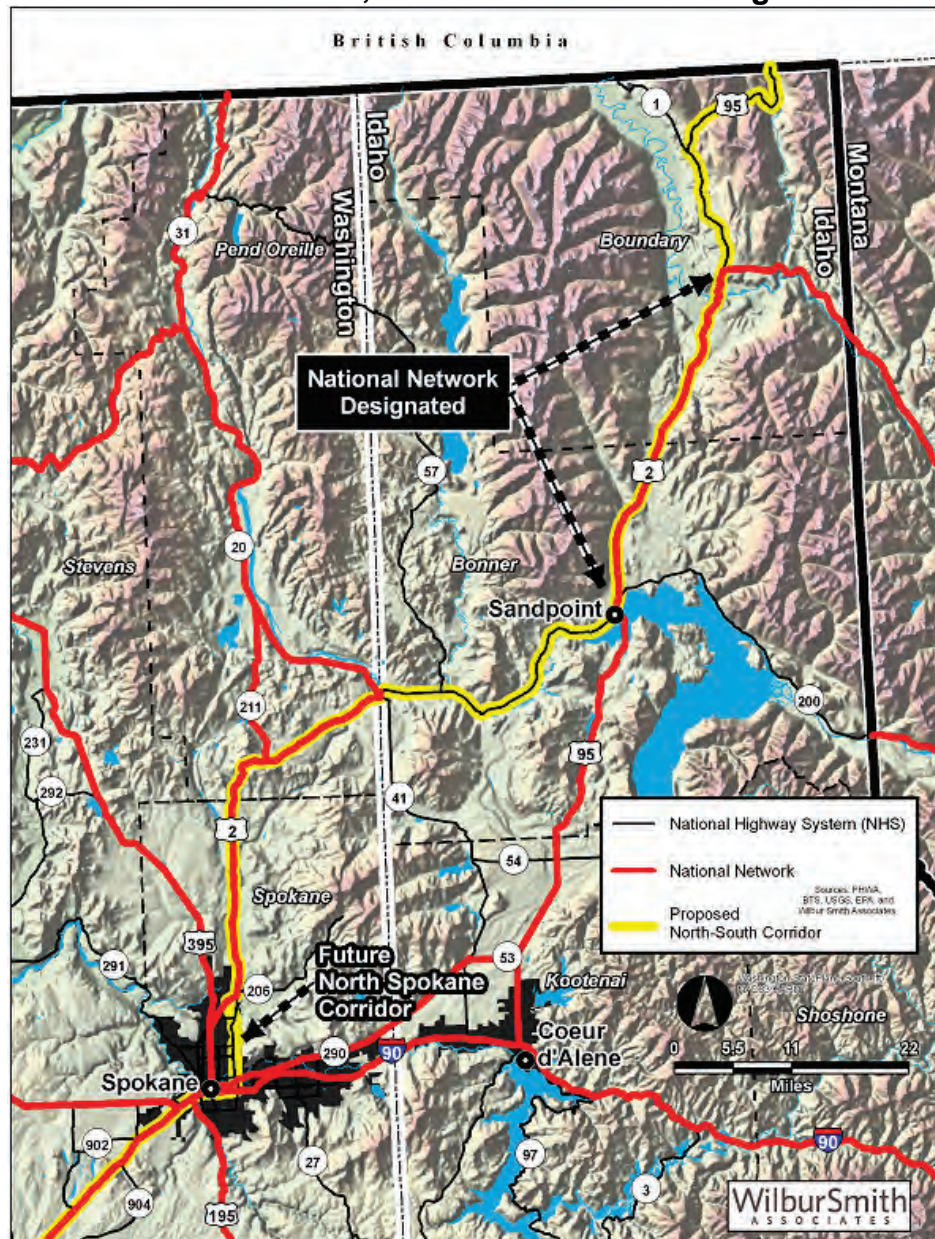
Portions of the suggested trade corridor are designated as NN highway segments, such as US-2, north of Spokane to Dover, ID, and the US-95 segment from Sandpoint, ID to Bonners Ferry, ID. Under federal regulations LCV weight limits were “frozen” on the Interstate Highway System, and size limits were “frozen” on the NN by the Intermodal Surface Transportation Efficiency Act (ISTEA):

“ISTEA is an acronym for Intermodal Surface Transportation Efficiency Act of 1991. It imposed two separate freezes: (1) on the maximum weight of longer combination vehicles, which consist of any combination of a truck tractor and two or more trailers or semitrailers which operate on the Interstate System at a gross weight over 80,000 pounds; and (2) on the overall length of the cargo carrying units of combination vehicles with two or more such units where one or both exceed 28.5 feet in length on the National Network. The maximum weight of longer combination vehicles and the maximum length of the cargo carrying units of combination vehicles is the weight or length in actual and legal operation in a State on June 1, 1991, as documented in appendix C to 23 CFR 658. Also frozen were the routes and conditions in effect on June 1, 1991, for vehicle combinations subject to the freeze, as shown in appendix C to 23 CFR 658.”¹⁶

¹⁶ FHWA, Office of Freight Management and Operations:
<https://fhwaapps.fhwa.dot.gov/vswp/qa/qa.jsp?category=23%20CFR%20658.23#S0-149>

Since no portions of the suggested corridor would operation along interstate routes, it would appear that Washington and Idaho could consider adopting Canadian weight limits of 139,500 lbs. However, length limitations frozen by ISTEA include an overall limit of 68 feet in Washington State. In Idaho the limit is 95 feet. The current length limit for Canadian B-train double LCV configurations is 82 feet.

Exhibit 38: US-2, North-South Corridor Segment

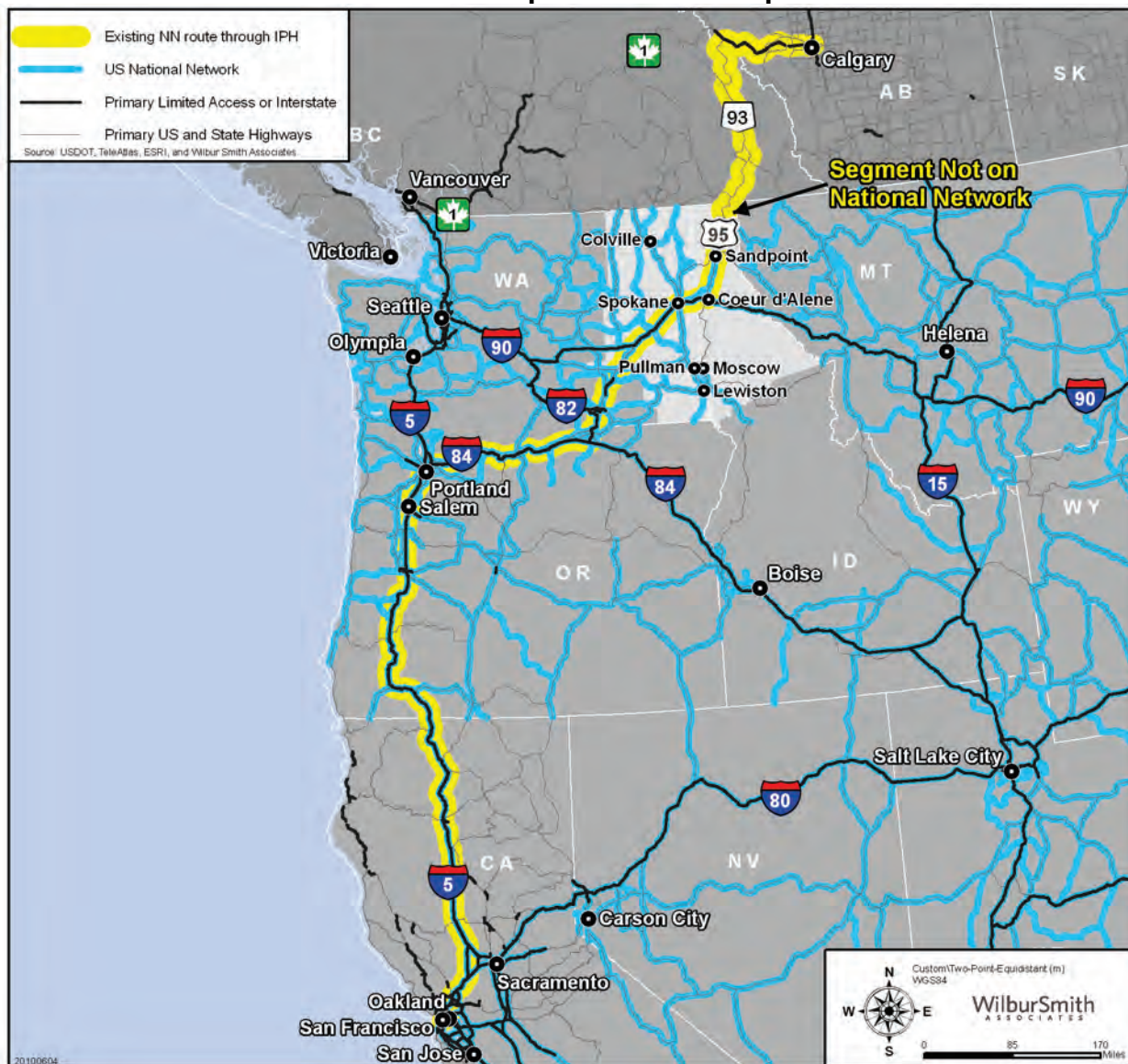


Source: FWHA-ORNL, BTS, USGS, EPA, and Wilbur Smith Associates.

An expansion of this corridor could introduce the inclusion of LCV beyond the IPH node to accommodate U.S. authorized configurations. Truck traffic moving throughout eastern Washington is limited to long combination vehicle (LCV) configurations which do not support the use of triples. Triples configuration is the attachment of three 28-foot trailers to a single

tractor. This configuration is authorized for use in neighboring states. This equipment, not common to truckload or specialized movement, is found in less than truckload and small package carriers such as Yellow-Roadway Corporation, FedEx and UPS. A practical example is following the movement of 28-foot trailers from the California-Oregon border to the Canadian or Idaho borders (**Exhibit 39**). This corridor is one that has previously been identified as a logical selection for truck transport of goods, both domestically and internationally.

Exhibit 39: Triples Route Example



*NOTE: Route is shortest NN route between points

Current federal regulations require state law to authorize the use of trailer combinations utilizing two 28-foot trailers, in tandem, to be allowed on the NN. Oregon and Idaho authorize the use of three 28-foot trailers, or triples, to be used. To transport six 28 foot trailers from California to the Canadian border or to Idaho (without consideration of Hours of Service requirements):

- Three twin trailer combinations (tractor-semitrailer, trailer, trailer) requiring three drivers, travel north from California on Interstate 5.
- Upon entering Oregon where triples are allowed, the drivers reconfigure the three units into two and one driver and tractor returns to California – since only two are required to carry the trailers through Oregon.
- Upon reaching the Washington border, a third driver and power unit would again be needed, so the two triple configurations would need to be broken down into three twin trailer configurations once again to access Canada.

As this simple illustration shows, the differences in regulations between states add cost and complexity to carrier operations reducing the attraction of the route in this example.

In each alternative, total VMT for the same amount of goods movement is increased, adding to issues such as air quality concerns, increased road wear and maintenance, and additional compliance monitoring efforts to accommodate the additional trip counts.

The lack of a high-level, north-south corridor was one of the most often repeated weaknesses of the IPH study area during interviews with shippers and carriers. The existing north-south corridor status may well contribute in part to existing lane imbalance issue in the study area. Cargo owners for goods currently moving between the external regions would experience improved service and reliability as “freight moves freight”, or increased volumes drive carrier participation and investment in the corridor. New participants in the corridor may realize reduced pricing, over current lanes, based on carrier savings and advantage gained by placing goods into traditional backhaul lanes.

Many stakeholders in the IPH study area seem to be focused on debating which highway; US-395 or US-95, should be developed as the north-south trade with Canada. Trade and the freight movements that result are driven by population (consumption) and industry (production). Spokane is the largest production center in the study area, while Calgary and Edmonton offer two isolated, but promising consumption markets. In combination US-395, US-2 and US-95 appears to offer the most direct route between the major population centers on either side of the border. This combination of routes would also offer better regional connectivity to the study area’s other modal assets. Overall, the entire IPH study area stands to gain with a more direct access between the Alberta, British Columbia and Saskatchewan provinces and the U.S. markets of Oregon and western Washington and significant populations of central and northern California.

URBAN BYPASS ROUTES IN THE IPH STUDY AREA

There are a number of urban projects in the study area have the potential to ease urban traffic congestion and serve regional truck circulation.

Spokane Projects: The Bigelow Gulch/Forker Connector would be located in Spokane County along the existing Bigelow Gulch Road corridor. It would extend from Francis Avenue in Spokane to an intersection near Sullivan Road and Wellesley Avenue on the east. Parts would consist of widening Bigelow Gulch Road to an urban five-lane cross-section, and parts would be constructed as a rural four-lane section.

The corridor is heavily used today, with Argonne Road, as a circumferential route in the northeast quadrant of the Spokane metropolitan area. The new connector would be positioned to serve truck traffic for the numerous industries located in this portion of the Spokane River Valley. The route would be accessed from I-90 at the Sullivan Road or Argonne Road interchanges. With the completion of the North Spokane Corridor, an interchange at Freya St would provide north-south connections. The environmental clearance for the project was secured from the FHWA in April, 2008. The portion of the project west of Argonne Road is currently under design, and funding is committed in the County's 2009-2012 Transportation Improvement Plan.

Colville, WA: Seventy miles north of Spokane improvements to US-395 in Colville began as a study to "bypass" the downtown area. However, a community led study projected that moving traffic off "main street" would lead to the demise of some local businesses. An alternative solution is taking a phased approach to making improvements that will protect the viability of downtown businesses while also providing alternative routes for truck traffic. A city street in Colville has been designated the preferred Colville Truck Route to keep large commercial vehicle out of the downtown area. The truck route features to roundabouts, a north and south constructed to accommodate very large vehicles. The roundabout projects were conceived to increase intersection capacity, provide ease of turning movements for trucks, and provide a "gateway" into the community.¹⁷

Coeur d'Alene: In Idaho, the Huetter Bypass has been proposed to relieve the portion of US-95 between Coeur d'Alene and Hayden. It would be developed as a controlled-access north-south route between I-90 and SH 53. It would occupy portions of Huetter Road and the Union Pacific Railroad right-of-way. The project would provide benefits to freight movement by avoiding the congested US-95 arterial route. The bypass would consist of four lanes initially, with provision for future widening to six lanes. Interchanges would be located at I-90 between Post Falls and Coeur d'Alene, at SH 53, and at one-mile intervals to serve local destinations.

The project will require an environmental review to identify a Preferred Alternative. Efforts are currently underway to preserve right-of-way for the corridor. The time frame for construction of the Huetter Bypass is expected to be 11 to 15 years in the future

Sandpoint ID: The ITD is also constructing 2.1 miles of a new alignment connecting US-95, from the northern end of the Long Bridge, directly to Idaho 200 and US-95 north of Sandpoint. The project includes six bridges, 65 retaining walls, and a pedestrian/bike pathway. Building an alternate route on US-95 on the eastern side of Sandpoint has been a topic of local interest since the 1940s and has generated considerable debate among supporters and opponents. Several ideas have been discussed in the community over the years, but those ideas didn't progress beyond the drawing board until 1990 when ITD began considering the US-95 North/South Alternative Route. The \$98 million project is currently underway and is scheduled for completion in 2012.¹⁸

¹⁷ <http://www.wsdot.wa.gov/biz/csd/>

¹⁸ <http://www.itd.idaho.gov/Projects/D1/SandCreekByway/>

INLAND PACIFIC HUB STUDY AREA'S RAIL NETWORK

Railroads fall into three classifications: Class I railroads have annual revenue in excess of \$277.7 million for at least three consecutive years, Class II (regional) railroads have annual revenues greater than \$20.5 million but less than \$277.7 million, and Class III railroads (short line railroads) have annual revenues below \$20.5 million. As the name indicates, short lines operate over a relatively short distance. Short lines serve the larger railroads by collecting and distributing railcars to individual industrial and agricultural shippers and receivers.

The IPH study area has two Class I railroads operating in the region: the Burlington Northern Santa Fe Railway (BNSF) and the Union Pacific Railroad (UP). The two Class I railroads provide mainline service between the Pacific Coast and the Midwest and Southwest. Neither Class I railroad provides contiguous coast to coast rail service, although both have interchange agreements with eastern railroads that enable freight to be moved by rail to all parts of the country. Aside from carload service (boxcars, hopper cars, tank cars, etc.) both railroads have extensive intermodal networks in the western half of the U.S. which are discussed in more detail later in this section.

BNSF RAILWAY NETWORK IN THE IPH STUDY AREA

The BNSF operates three lines connecting to West Coast marine ports. Two of these converge at the Tri-Cities. The first line is the Auburn-Pasco route, which crosses the Cascade Range through the Stampede Pass tunnel and proceeds northeast paralleling US-395 and enters the Inland Pacific Hub at Ritzville and follows I-90 to Spokane, and then continues to Sandpoint and then passing through Bonners Ferry on its way to the Montana border. This line is part of the BNSF's primary route for double-stack intermodal traffic from Spokane east to the Midwest.

BNSF's second line is the Vancouver-Pasco line, which runs through southern Washington along the north side of the Columbia River. This route is the primary route for export grain trains from the IPH study area to the Columbia River ports in Portland and Vancouver. From Pasco, the line joins the first-described mainline to Spokane.

The third BNSF line, the Everett-Spokane line, which passes through the Cascade Tunnel at Stevens Pass, is the BNSF's major northern transcontinental route for double-stack intermodal container trains west of Spokane. It is heavily used, operated at about 70 percent of practical capacity in 2008. It passes through Leavenworth and Wenatchee and enters the Inland Pacific Hub study area west of Odessa in Lincoln County. It then proceeds east parallel to much of SR 28 and then into Spokane.

The BNSF operates a branch line from Spokane that connects to the Kettle Falls International Railway (KFI). From Spokane, the branch line proceeds northwest to Chewelah, connecting with the KFI before Kettle Falls. There the line splits and lines run in to British Columbia: one northwest to Laurier, paralleling US-395; the other runs northeast to the town of Boundary. From Marshall, southwest of Spokane, the BNSF also connects to two lines into Latah County via the Washington and Idaho Railway (WIR). The first line begins at the Washington border near Potlatch and extends to Princeton, ID. The second line runs to Moscow.

UNION PACIFIC RAILROAD NETWORK IN THE IPH STUDY AREA

The UP operates an east-west main line route in northern Oregon, between Portland and Hinkle along the south side of the Columbia River. The east-west primary main line continues east and south from Hinkle towards Pocatello, ID and on to Omaha and Chicago. The Hinkle to Spokane main line follows the Snake River northeast for several miles entering the IPH study area in southeastern Adams County. From there it parallels I-90 to Spokane. For the last 12 miles of the Hinkle-Spokane line (from Fish Lake to Spokane), the UP operates on the BNSF Lakeside Subdivision via trackage rights.

From the Hinkle-Spokane main line, the UP operates two branch lines: one branch extends from the Tri-Cities to Yakima; the other runs to Riparia in Whitman County to connect to the Great Northwest Railroad (GNWR) leading into Lewiston.

At Spokane, the UP splits. One line runs northeast through the cities of Sandpoint and Bonners Ferry to the town of Eastport linking with the Canadian Pacific Railway. The other line runs southeast connecting to the St. Maries River Railroad (STMA) at Plummer. Another branch extends from Manito to Fairfield in southeast Spokane County.

THE IMPLICATIONS OF HAVING ACCESS TO TWO CLASS I RAILROADS

Exhibit 40 shows the advantage of having access to competing rail services (based upon several commodities and 2007 rate data for four Class I railroads) for locations served by more than one railroad. The "non-captive" rates assume competition between at least two rail carriers. Freight-delivery costs of major railroads are often more than twice as much for "captive" traffic cargo sent to or from areas served by a single railroad as for freight of shippers that can choose between at least two carriers. Cost per ton varies based on distance and other factors.

Exhibit 40: Railroad Freight Delivery Costs

Product	Rate Type	BNSF	CSF	Norfolk	Union Pacific
Farm	Captive	\$46.33	\$40.18	\$25.30	\$45.02
	Non-Captive	\$25.54	\$22.18	\$13.95	\$24.82
Coal	Captive	\$20.98	\$22.47	\$22.73	\$21.50
	Non-Captive	\$ 9.01	\$ 9.65	\$ 9.76	\$ 9.24
Pulp	Captive	\$88.30	\$61.93	\$59.53	\$91.30
	Non-Captive	\$37.56	\$26.34	\$25.32	\$38.84
Chemicals	Captive	\$42.99	\$40.71	\$44.28	\$43.92
	Non-Captive	\$21.48	\$20.34	\$22.12	\$21.94
Primary Metal	Captive	\$66.62	\$43.18	\$37.36	\$70.34
	Non-Captive	\$32.59	\$21.12	\$18.27	\$34.40
All Commodities	Captive	\$48.13	\$36.27	\$36.99	\$48.25
	Non-Captive	\$22.32	\$16.82	\$17.15	\$22.38

Source: Escalation Consultants, based on data from the Surface Transportation Board, 2007

REGIONAL AND SHORTLINE RAILROADS IN THE IPH STUDY AREA

The Montana Rail Link (MRL) is the IPH's only Class II railroad. The MRL connects with the BNSF at Spokane. From Spokane it runs northeast to Sandpoint over BNSF trackage, where

it connects with the UP. From Sandpoint the MRL parallels ID SH-200 and proceeds into Montana. The MRL then runs east to Billings, passing through the cities of Missoula, Helena, and Bozeman. MRL currently serves no shippers in Washington or Idaho.

A total of eight short line railroads serve the IPH study area (**Exhibit 41**). Short line railroads serving the region include the Kettle Falls International Railway, the Pend Oreille Valley Railway, the Eastern Washington Gateway Railroad, the Washington & Idaho Railroad, the Palouse River & Coulee City Railroad, the Great Northwest Railroad, the St. Maries River Railroad, and the Bountiful Grain and Craig Mountain Railroad. These railroads collectively operate nearly 900 miles of track and reach all parts of the region, with the exception of certain areas within Ferry, Shoshone and Clearwater Counties.

Short line railroads typically serve as short distance haulers between the local freight generators and receivers, or as the connecting line between Class I railroad terminals and local freight generators or receivers. Short line railroads range in length of track from only a few miles exclusively serving a distinct shipper and receiver such as a lumber mill to a wood products manufacturing plant, or the short line railroad's track can span several hundred miles connecting multiple shippers and receivers such as grain elevators with rail terminals at river or ocean ports.

[illegible]

Sandpoint, Idaho is the junction of two inter-continental railways, the BNSF and UP and one regional railroad, the Montana Rail Link. Near downtown Sandpoint, the BNSF and UP lines over-cross and continue north along US-95 and US-2. The 70-Mile BNSF corridor between Sandpoint and Spokane, WA, known as the “funnel”, is somewhat constrained with numerous at-grade crossings and remaining sections of single track along its mainline. Conversion to double-track mainline is planned for most of or the entire BNSF corridor between Spokane

and Athol. This conversion and a series of grade crossing improvements are comprehensively known as the “Bridging the Valley Project.” When fully funded and implemented, the project will separate vehicle traffic from train traffic in the 42-mile corridor between Spokane, WA and Athol, ID.

The Union Pacific Railroad’s (UP) secondary mainline extends about 150 miles between Spokane and Eastport, ID, where it connects to the Canadian Pacific system. It consists of the former Spokane International Railway (SI) alignment, with numerous at-grade crossings. With the completion of double-tracking along the BNSF alignment, it is anticipated the UPRR may shift operations to the BNSF mainline, and the SI alignment will be used only for local deliveries if trackage rights agreements between the two railroads are agreed upon.

IPH RAILROAD ISSUES AND OPPORTUNITIES

Most shippers interviewed in the region expressed general satisfaction with their access to the variety of rail services in the region. A number of shippers who regularly shipped or received goods via container commented that having access to true double-stack intermodal service would be nice, but acknowledged the unlikelihood of the proposition given the proximity of the region to the coast. As discussed earlier, double-stack, container unit trains offer the best service and rates, but to maintain low transit times and high reliability, Class I railroads move these trains between the coast and Chicago with few or no stops. Several shippers interviewed indicated that intermodal services offered by in the region had actually improved in recent years based on the length of shipping time and access to containers. Without significant changes in the current market dynamics, for instance a severe decline in Asian imports moving through PNW gateways, the IPH study area will likely continue as a second tier intermodal hub.

The fact that several railroads operate and provide service in the IPH study area appears to be raising the level of innovation and service competition. A number of shippers had raised concerns over the difficulty and cost of moving products to East Coast markets and East Coast ports for export to Europe. Yet, a number of services that serve East Coast markets are either operating or have been proposed by existing carriers (e.g. Railex and Port of Quincy) offer potential opportunities for shippers in the study area.

Bulk shippers also acknowledged overall satisfaction with access to rail services in the region, however several commented that they felt pricing could be better. A number of studies on rail rates have suggested that shipper or receiver locations served by two or more Class I railroads experience better rates than those captive to a single railroad. A fair number of the shippers/receivers in joint access areas like Spokane are open to both the UP and the BNSF Railway. The shippers/receivers on short line railroad facilities are primarily closed or captive, and can only ship on the short lines’ Class I connecting carriers. (Kettle Falls International Railway only connects with the BNSF in Washington.) A number of shippers also commented on a capacity constraint between Plummer and Spokane on the UP line. The constraint exists because this segment of rail line cannot accommodate the new weight standard of 286,000 gross pounds for hi-cube box cars. This constraint limits what can be loaded into railcars that utilize this segment, and has the potential of making the rail a less competitive than other options, like truck.

Public officials interviewed for the study tended to be more vocal and focused on rail issues and pointed to a number of high profile projects underway to improve the rail network and spur economic development:

- Bridging the Valley (BTV) is a series of projects to address railroad/highway conflicts in the communities between Spokane, WA and Athol, ID. In this project, the existing Union Pacific (UP) operations would be relocated to the Burlington Northern Santa Fe (BNSF) mainline assuming BNSF and UP can negotiate mutually-accepted trackage rights agreements. Additional track would be constructed on the BNSF corridor, which today consists of both single and double track mainline. The Bridging the Valley project, when fully funded and implemented will separate vehicle traffic from train traffic in the 42-mile corridor between Spokane, WA and Athol, ID. Double-tracking of the BNSF route will provide increased rail capacity. The project will also provide grade separation of 19 existing at-grade rail crossings, and a new UP yard in Spokane. The first funded project under this program is a grade separation at Havana Street in Spokane.
- Geiger Spur and a proposed rail transload facility. Spokane County was pursuing a second rail transload facility resulting from the purchase of the Geiger Spur, a portion of BNSF rail line outside the Fairchild Air Force base. At the time of the interview, the new rail line for the spur had been completed and removing the old line from the base was in progress. The county was seeking funds to rehabilitate older portions of the spur. The county was hoping to attract a partner to assist in developing a transload facility to better serve existing business in the area.

The rail carriers interviewed with regard to service to the study area differed widely in their views. The U.S. Class I carriers view certain types of rail service as simply a business decision. The railroads have and continue to rationalize their networks for efficiency and are attempting to limit the number of stops for certain train types, such as double-stack train container units. The railroads have prioritized their investment dollars out into the future and contend there are simply many more projects of higher priority than providing double-stack intermodal service to a region less than 300 miles from deep water ports.

With regard to making rail connections to the Port of Prince Rupert, none of the railroads contacted believed any competing rail development would occur, noting there was little or no value proposition given the existing geography of the railroads. Canadian National Railway (CN) is currently running dedicated trains from the Port of Prince Rupert to major cities such as Chicago and Memphis. Even though the rail segment is longer than from Seattle/Tacoma to these inland locations, the service is competitive because these trains run non-stop between Prince Rupert and the destination city, reducing the overall transit time. Trying to tap into Prince Rupert in a more circuitous route through the IPH study area would be less competitive compared to the existing, more direct CN routes from the port to Chicago.

RAILROAD CAPACITY

Rail Capacity is calculated in a two-step process. First, a “theoretical capacity” is determined, assuming perfect conditions and operations. Second, “practical capacity” is determined by considering factors such as possible disruptions, signal needs, human decisions, weather, possible equipment failures, supply and demand imbalances, and seasonal demand. Practical

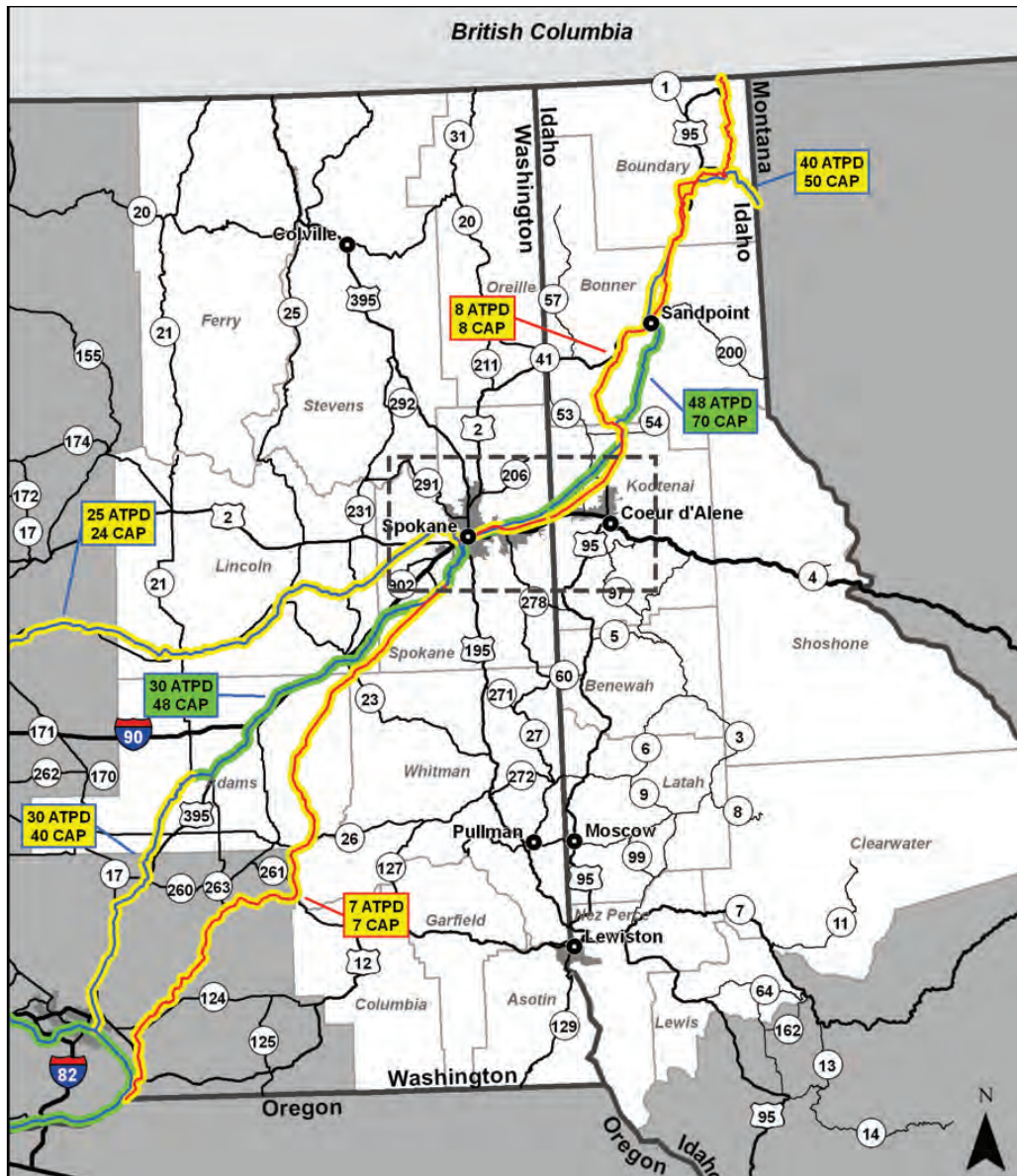
capacity is roughly 60 percent of the theoretical capacity and provides reliable service. At higher percentages, rail congestion increases rapidly and service reliability deteriorates quickly. **Exhibit 42** illustrates the rail capacity and activity on the IPH study area's Class I main lines.

The BNSF typically serves 50 to 60 trains per day (sometimes up to 70 during harvest season, which is capacity) in “the funnel,” and the UP/Spokane International (SI) route typically serves up to eight trains daily. The BNSF mainline across Stampede Pass serves about 5 trains daily, the Columbia River route, about 35 trains daily and Stevens Pass route handles about 16 trains per day. The UP route to the Tri-Cities serves about seven trains daily.

The BNSF Auburn-Pasco line across Stampede Pass cannot be used to relieve congestion on the Columbia River route or over Stevens Pass – This is because of ceiling of the Stampede Tunnel is not high enough to handle double stack containers. Another constraint is the 2.2 percent grade between the rail stations of Easton and Martin. Helper units (Additional locomotive power unit) must be used to accommodate heavy train over this section of track. The addition and removal of the helper units requires additional time over this line.

The BNSF operates under constrained conditions on its Everett-Spokane line, as well as between Pasco and Lind and between Sandpoint and Montana. From Lind to Sandpoint, including the Spokane vicinity, the BNSF operates under reliable conditions. The UP operates under constrained conditions on its entire run through the Inland Pacific Hub, from Hinkle to Eastport.

Exhibit 42: IPH Study Area Class I Capacity Constraints (2007)



Source: IPH Multimodal Infrastructure Report, Technical Memorandum #1

RAILROAD BOTTLENECKS AND CONSTRAINTS

On the BNSF's Pasco-Spokane line, the primary source of bottlenecks is the distance between passing sidings. This manifests in the vicinity of Connell near the Franklin-Adams county line. On the BNSF's Everett-Spokane line, the distance between passing sidings is a secondary source. This occurs in the vicinity of Medical Lake near the Lincoln-Spokane County line. Similar conditions exist between Spokane and Sandpoint near Rathdrum.

BNSF operates a major yard at Spokane known as Yardley, adjacent to overcrossings at Havana Street and Fancher Road. It is a crew change point. Traffic is a mix of originating, terminating, and through trains. Yardley processes cars to and from local industries and is a block swap location for intermodal trains.

UP operates its Spokane Yard for local industry access, originating, terminating, and through trains. It also serves as a crew change point.

For both the BSNF and the UP, yard capacity at Spokane is a secondary source of bottlenecks. Neither Class I railroad has a dedicated intermodal facility with an overhead crane needed for loading double-stack trains. The rail yards do have side-packers which can lift containers or trailers onto or off of flatcars. This loading method appears adequate for the level of intermodal activity that currently exists in the study area.

AIR CARGO AND PORT INFRASTRUCTURE

Hub and Gateway Development

Hub development potential for the IPH study area airports remains limited within the realm of existing express integrators and all-cargo carriers. Simply put, the U.S. air cargo industry and air cargo networks are mature and well developed with limited potential for major hub development outside of the existing network structure. The IPH study area's proximity to existing national and regional hubs limits the geographic and network necessity to expand hub operations to the east of Seattle/Vancouver, Spokane International will continue to act as consolidation points for smaller surrounding markets.

International gateway development potential is predicated upon two factors: 1) The availability of international commercial service flights (lift) out of Spokane International and 2) Demand-driven needs from regional shippers in the IPH study area. Wide-body commercial lift (passenger service) is the core component in attracting and sustaining international air cargo service. Absent such international commercial passenger service, it is likely that international air cargo will continue to be drayed (trucked) to alternate airports such as Seattle for international air transit.

Increasing Market Capture

In 2008, the state of Washington ranked 4th and Idaho ranked 38th among all states in total export trade by dollar value.¹⁹ **Exhibit 43** and **Exhibit 44** display the top commodity exports, and export destinations for both Idaho and Washington by dollar value for 2006 – 2009.²⁰ In 2009, Idaho accounted for more than one-third of all U.S. export of electronic integrated circuits. Washington accounted for one-half of all U.S. exports of Civilian Aircraft, Engines and Parts. Top export countries for both states include Canada, China and South Korea. The IPH study area should seek to capitalize on and expand existing high-value export products as one strategy for seeking expanded air cargo services.

¹⁹ U.S. Census Bureau, U.S. International Trade in Goods and Services, series FT-900; <http://www.census.gov/compendia/statab/2010/tables/10s1269.xls>

²⁰ Export data specific to the 19 IPH study area counties was not available.

Exhibit 43: Top Export Commodities for Idaho and Washington by Dollar Value

ID	Description	2006 Value	2007 Value	2008 Value	2009 Value	'06 % Share	'07 % Share	'08 % Share	'09 % Share	% ▲, '08 – '09
---	Total IDAHO Exports and % Share of U.S. Total	3,727	4,703	5,005	3,880	0.4	0.4	0.4	0.4	-22.5
---	Total, Top 25 Commodities and % Share of State Total	798	3,699	3,750	2,990	21.4	78.6	74.9	77.1	-20.3
Rank										
1	MEMORIES, ELECTRONIC INTEGRATED CIRCUITS	0	1,618	1,737	1,338	0	34.4	34.7	34.5	-23
2	ELECTRONIC INTEGRATED CIRCUITS	0	1,068	811	539	0	22.7	16.2	13.9	-33.6
3	PARTS & ACCESSORIES FOR ADP MACHINES & UNIT	Ida	304	201	174	10.5	6.5	4	4.5	-13.1
4	SILVER, SEMIMANUFACTURED	1	0	88	126	0	0	1.8	3.3	43.8
5	LEAD ORES AND CONCENTRATES	45	71	86	89	1.2	1.5	1.7	2.3	2.7
WA	Description	2006 Value	2007 Value	2008 Value	2009 Value	'06 % Share	'07 % Share	'08 % Share	'09 % Share	% ▲, '08 – '09
---	Total WASHINGTON Exports and % Share of U.S. Total	42,391	52,089	54,498	51,739	4.1	4.5	4.2	4.9	-5.1
---	Total, Top 25 Commodities and % Share of State Total	30,155	38,263	39,480	40,086	71.1	73.5	72.4	77.5	1.5
Rank										
1	CIVILIAN AIRCRAFT, ENGINES, AND PARTS	22,140	27,524	21,426	26,253	52.2	52.8	39.3	50.7	22.5
2	SOYBEANS, WHETHER OR NOT BROKEN	1,365	2,322	4,469	3,717	3.2	4.5	8.2	7.2	-16.8
3	CORN (MAIZE), OTHER THAN SEED CORN	1,071	1,518	3,118	1,414	2.5	2.9	5.7	2.7	-54.7
4	OIL (NOT CRUDE) FROM PETROL & BITUM MINERAL	973	896	1,932	1,218	2.3	1.7	3.5	2.4	-37
5	WHEAT (OTHER THAN DURUM WHEAT), AND MESLIN	888	1,260	2,211	1,140	2.1	2.4	4.1	2.2	-48.5

Note: Figures in millions of US Dollars

Source: U.S. Census Bureau, Foreign Trade Statistics: <http://www.census.gov/foreign-trade/aip/elom.html>

Exhibit 44: Top Export Destinations for Idaho and Washington by Dollar Value

ID	Country	2006 Value	2007 Value	2008 Value	2009 Value	2006 % Share	2007 % Share	2008 % Share	2009 % Share	% Change, 2008 - 2009
---	Total IDAHO Exports and % Share of U.S. Total	3,727	4,703	5,005	3,880	0.4	0.4	0.4	0.4	-22.5
Rank	Total, Top 25 Countries and % Share of State Total	3,596	4,559	4,797	3,764	96.5	96.9	95.8	97	-21.5
1	Canada	564	609	952	743	15.1	12.9	19	19.1	-22
2	Taiwan	172	304	347	652	4.6	6.5	6.9	16.8	88.2
3	Singapore	484	1,092	1,280	415	13	23.2	25.6	10.7	-67.6
4	China	593	723	394	388	15.9	15.4	7.9	10	-1.6
5	Korea, South	275	198	200	295	7.4	4.2	4	7.6	47
WA	Country	2006 Value	2007 Value	2008 Value	2009 Value	2006 % Share	2007 % Share	2008 % Share	2009 % Share	% Change, 2008 - 2009
---	Total WASHINGTON Exports and % Share of U.S. Total	42,391	52,089	54,498	51,739	4.1	4.5	4.2	4.9	-5.1
Rank	Total, Top 25 Countries and % Share of State Total	36,482	46,054	48,660	47,645	86.1	88.4	89.3	92.1	-2.1
1	China	5,282	7,311	8,310	9,113	12.5	14	15.2	17.6	9.7
2	Canada	6,239	7,673	9,238	6,791	14.7	14.7	17	13.1	-26.5
3	Japan	5,542	6,196	7,590	5,567	13.1	11.9	13.9	10.8	-26.7
4	United Arab Emirates	2,615	2,116	2,155	2,763	6.2	4.1	4	5.3	28.2
5	Korea, South	2,272	2,747	3,261	2,034	5.4	5.3	6	3.9	-37.6

Note: Figures in millions of US Dollars

Source: U.S. Census Bureau, Foreign Trade Statistics: <http://www.census.gov/foreign-trade/aip/elom.html>

Spokane International Airport Domestic Air Cargo Activity

Spokane International Airport has considerable domestic air cargo operations taking place every business day. The airport serves the northwest region for FedEx as they serve smaller communities in the northwest with a fleet of Cessna Caravans and ATR feeder aircraft. FedEx uses a hub-and-spoke system to serve communities such as Pasco, Yakima and Lewiston. UPS uses the airport as a Second-Day Hub where lower-priority air cargo is transported into and out of the region. This type of hub requires four spoke routes from UPS hubs and stations on the West Coast, Midwest and South Central parts of the country. A network of trucks feeds into the second-day hub as well. **Exhibit 45** and **Exhibit 46** identify and display these routes.

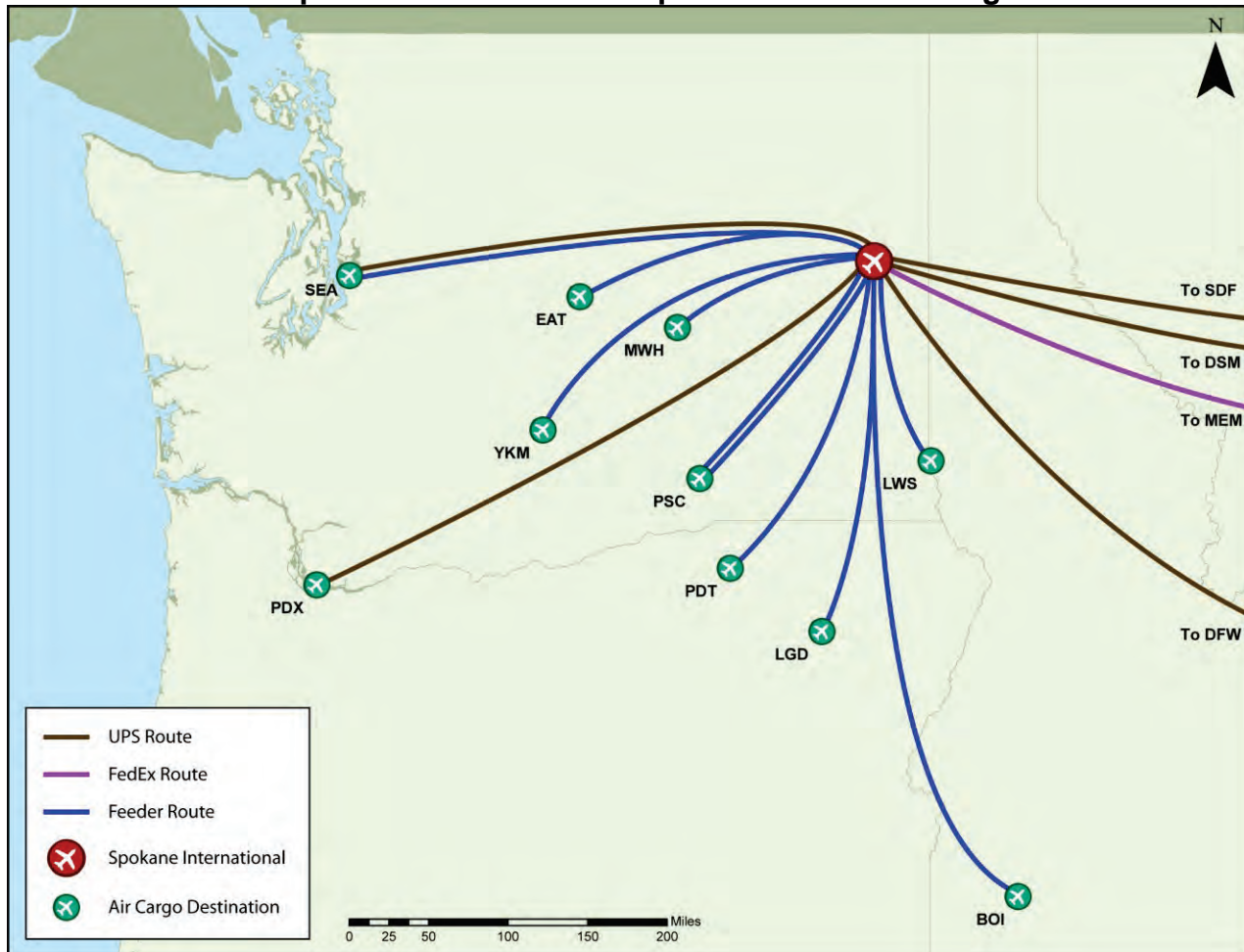
Exhibit 45: Spokane International Airport Domestic Air Cargo Network

Airport Routes		Route Type	Carrier	Route Color
Spokane Int'l Airport	Seattle, WA	Feeder		Blue
Spokane Int'l Airport	Boise, ID	Feeder		Blue
Spokane Int'l Airport	Wenatchee, WA	Feeder		Blue
Spokane Int'l Airport	La Grande, WA	Feeder		Blue
Spokane Int'l Airport	Lewiston, ID	Feeder		Blue
Spokane Int'l Airport	Moses Lake, WA	Feeder		Blue
Spokane Int'l Airport	Pendleton, OR	Feeder		Blue
Spokane Int'l Airport	Pasco, WA	Feeder		Blue
Spokane Int'l Airport	Yakima, WA	Feeder		Blue
Spokane Int'l Airport	Memphis, TN	HUB	FEDEX	Purple
Spokane Int'l Airport	Louisville, KY	HUB	UPS	Brown
Spokane Int'l Airport	Dallas/Fort Worth	HUB	UPS	Brown
Spokane Int'l Airport	Portland, OR	Station	UPS	Brown
Spokane Int'l Airport	Seattle, WA	Station	UPS	Brown
Spokane Int'l Airport	Des Moines, IA	Hub (2nd day)	UPS	Brown

Source: Federal Aviation Administration, IFR records

Spokane International Airport is the primary airport serving the IPH study area for both passengers and freight. Spokane International has considerable domestic air cargo operations taking place every business day. The airport serves the northwest region for FedEx as they serve smaller communities in the northwest with a fleet of Cessna Caravans and ATR feeder aircraft. FedEx uses a hub-and-spoke system to serve communities such as Pasco, Yakima and Lewiston. UPS uses the airport as a Second-Day Hub where lower-priority air cargo is transported into and out of the region.

Exhibit 46: Spokane International Airport Domestic Air Cargo Network



The IPH study area has a good base of air cargo services to build on. The best option for the region is to likely focus on increasing its market capture through attracting a business with significant air cargo demands, or continuing to attract numerous small air cargo users.

Port and Waterway Issues and Opportunities

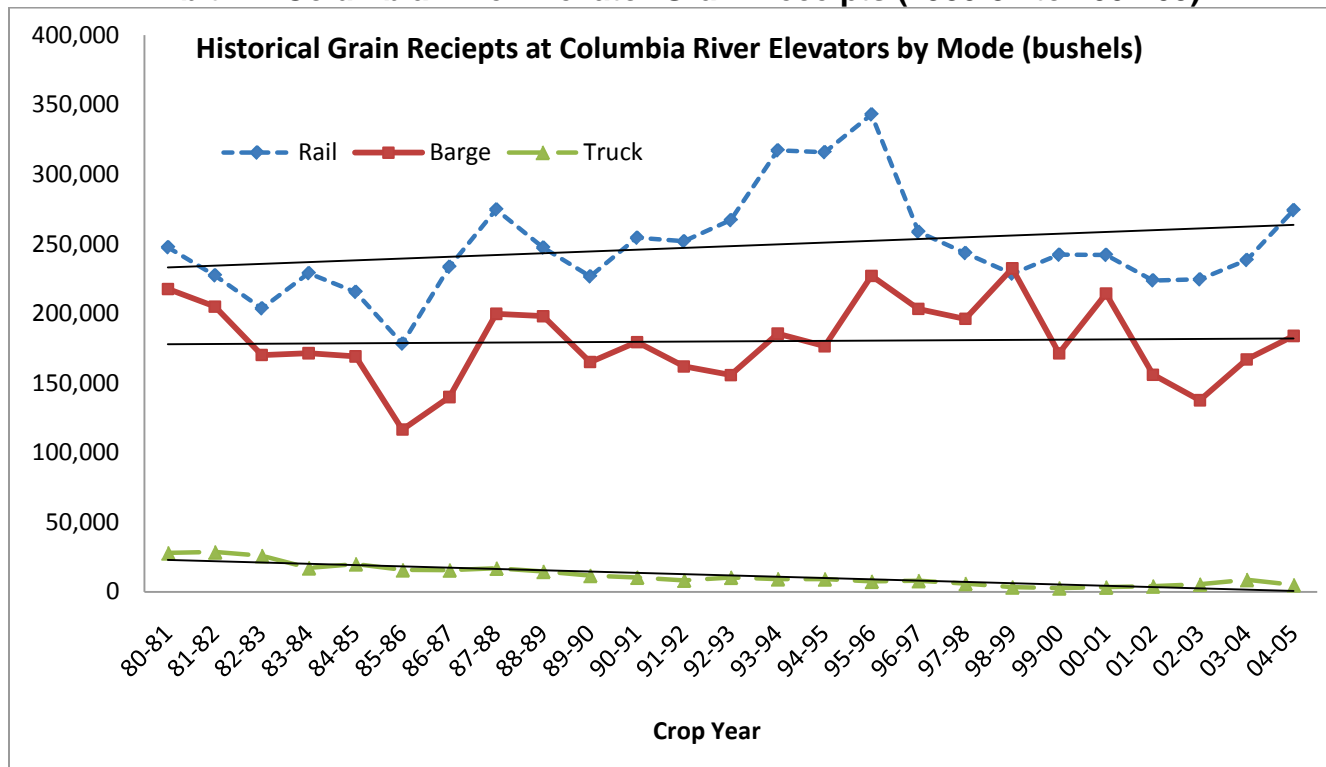
The port authorities in the IPH study area provide a crucial economic development tool, as their enabling legislation allows them to acquire property, develop industrial parks, and provide economic incentives to potential businesses. In those regions that have Ports, they are a vital tool to the economic development efforts of the region and in many cases own most if not all of the industrially developed property that could provide a location for future business and industries. In an area heavily based on natural resource industries like agriculture and timber production, water transport often provides the most efficient means of transporting heavy goods, and provides a competitive option to rail and truck transport.

New opportunities may also result from a recent project to deepen the Columbia River channel from 40 to 43 feet deep. As a result of this navigational improvement larger TEU vessels could navigate the channel to Portland, OR. If/after a vessel operator commits to using Portland as a

port of call (instead of Tacoma or Seattle) there will be more containers shipped inbound to the IPH, making more containers available for outbound transit down Lewiston to Portland for export. The barge trip is less expensive than the highway trip so it will reduce transportation costs, and interject additional competition and make containerized products originating in the IPH study area more competitive.

There are several constraints impacting future opportunities for port facilities in the IPH study area. The most notable constraint maybe the changing nature of agriculture away from bulk, raw grain movements to more value-added and specialized identity preserved shipments. Agriculture is one of the primary users of the study area's port facilities. The working paper *Economic Basis Analysis and Freight Dependent Industries* examined agriculture industry trends in the study area in greater detail. Data from a study by Washington State University suggests that over the past twenty-five years the volume of grain moving through river grain elevators has remained relatively flat (**Exhibit 47**). Rail and water shipments have however demonstrated modest positive growth over the period.

Exhibit 47: Columbia River Elevator Grain Receipts (1980-81 to 2004-05)²¹



Lower land values, cheap labor and improved transportation systems in countries such as South America will continue to challenge the traditional bulk grain market of the U.S. The trend in American agriculture production is toward more value added products such as bio-fuels, livestock and poultry and semi-finished or finished food products. Many of these products are

²¹ Ken Casavant, Marcia Gossard and Eric Jessup; *Grain Receipts at Columbia River Grain Terminals 1980-1981 to 2004-2005*. Washington State University. Nov. 2005 (Chart by WSA).

moving toward containerized transport, and to that extent the container on barge facility at Lewiston is well positioned to capture increases in this type of traffic.

Other challenges facing ports on the Columbia/Snake River system is the ability to maintain the aging infrastructure that enables commercial navigation. A lock maintenance project scheduled to begin in December of 2010 funded by the American Recovery and Reinvestment Act of 2009. While the planned lock maintenance is a beneficial investment that will benefit the long term viability of the Snake-Columbia River System, but the outage is expected to last 14 weeks which may drive away some shippers in the short term.

Environmental concerns are also likely to challenge commercial navigation on the Columbia/Snake River System. While extraordinary efforts have been made on the river system to maintain the native salmon runs, many environmentalists view salmon restoration efforts as a failure, and commercial uses of the river as an inhibitor to other forms of economic development:

"Lewiston's "port" also places a hangman's noose around the fish of Oregon's Imnaha, Grande Ronde, Wenaha, Lostine, Minam, Wallowa, and Powder rivers, Idaho's South and Main Clearwater, North, South and Middle Salmon, Selway, Rapid, Lochsa, and many more, strangling the economies of towns throughout the region, along the Columbia, and up and down the Pacific Coast. In 1993 the sport fishery for just one Snake River species—the summer steelhead—generated \$90 million and created 2,700 jobs, even with the run in semi-ruins. (The same year the Lewiston port directly employed 22 people.) The four dams' removal, according to the Army Corps, will create 12,000 new jobs. Economic studies say dam removal would generate long-term billions. Yet subsidy recipients and their political supporters have constructed a pro-dam propaganda machine that views any criticism of this deadly "port" as treason.²²

Weight limits and spring road restrictions are another infrastructure challenge facing some ports in the study area. This issue has come to light especially with the planned maintenance of the locks, which will require some ports to transport more goods via the highway system during period when load restrictions may be in place.

²² Sierra club magazine; *Second Coming*. David James Duncan. © 2008:
<http://www.sierraclub.org/sierra/200003/salmon1.asp>

OTHER OPPORTUNITIES FOR INCREASING IPH COMPETITIVENESS

The template shown in **Exhibit 48** provides specific targets for development, their related transportation and logistics factors, and the ways in which the development can be affected by each. This template is intended not only for a current assessment but as a gauge for evaluating future plans and options. For example, the factor of transit time appears in more than one targeted area. This study has addressed the regional needs for infrastructure improvement under current conditions. Both physical infrastructure and policy changes such as truck restrictions can impact transit time. This template can be used as a checklist to evaluate the impact of proposed changes. It can also be used to reassess the shifts that occur naturally over time to point out the need for updating the plan.

The factors presented include many topics from stakeholder needs and from the framework for updated interview and survey assessments to maintain the freight mobility plans. Additionally, these categories are useful in comparing the Inland Pacific Hub study area with other regions where a competitive assessment might be useful. The factors listed in the template have held over time and will continue to be the primary measures for freight and logistics productivity and the impact on areas of development such as jobs and quality of life.

How to Apply the Regional Development Template: Using the first regional development target shown on the template; *Manufacturing* as an example. The following discussion suggests how the template can be applied to impact transportation and logistics costs for manufacturing firms in the IPH study area: If, from a strategic perspective the IPH study area wishes to target job growth in the manufacturing sector, there are a number of *Transportation and Logistics Factors* that are of key importance to modern manufacturing operations:

- Transportation Cost
- Transit Time
- Capacity
- Mode Choice
- Market Access
- Market Viability
- Quality/Consistency of Service

Each of these factors has cost implications for businesses engaged in manufacturing in the IPH study area. And for each transportation and logistics factor there exist strategic policy decisions and potential infrastructure investments can influence the costs associated with a particular factor. For transportation cost, the stakeholder outreach and analysis conducted for this study suggests that the IPH study area has a cost advantage for goods being shipped to Asian markets, and that lane imbalances (more flows exiting the region than entering the region) suggest that economic development might target businesses that rely inputs coming from through Pacific Northwest gateways or population centers to the south such as Boise, ID. It is likely that the volume of empty backhauls from these areas would result in very competitive transportation rates on inbound shipments.

Exhibit 48: Targets of Regional Development

Targets of Regional Development	Transportation & Logistics Factors	Impact	Cost Effect
Jobs			
Manufacturing	Transportation Cost	Cost of Materials to Produce Products	High inbound rates increase the cost of raw materials and component parts therefore cost of goods sold.
		Cost to Reach Point of Sale	High outbound rates drive up product pricing relative to competition from areas with lower cost service
	Transit Time/Congestion	Consistent, Timely Access to Materials	Production costs rise when materials are not available to schedule, conditions also drive up cost to transport
	Capacity	On time shipping	Lack of capacity causes inconsistent levels of service to the end customer and threatens business
	Mode Choice	Cost, Market Limitations	Low cost options are unavailable or in short supply
	Market Access	Sales Volume	Geographic placement and distance affect both cost and viability to reach distant populations centers and international gateways.
	Market Viability	Commodity Choice	Geography and mode choice restrict ability to produce some commodities and reach certain target markets
	Quality, Consistency	Customer Service Quality	Inconsistent availability of capacity creates problems in meeting shipping schedules and the delivery expectations of customers.
		Sustainability of Service	Geographic location affects weather related service interruptions
		Consistency of Service	Congestion affects transit time and service Infrastructure conditions and congestion increase cost through maintenance and time delay
Service	Inbound Transportation Cost	Cost for Materials Necessary to the Service	High inbound rates for materials increase the price of offering service
	Market Access	Availability of Required Products	Certain products needed in the service may be unavailable or costly, both affecting the quality of the services offered.
	Transit Time	Replenishment Time	Stock outs on materials deters customers from shopping and increases the overall cost to provide the service
	Quality, Consistency	Materials to Provide Service	Service processes depend upon consistent access to materials without which costs will increase of services will diminish.

Targets of Regional Development	Transportation & Logistics Factors	Impact	Cost Effect
Economic Growth			
	Transportation Costs	Attractiveness to Industry	High cost transportation, inbound or outbound, detract from a region's ability to attract industry.
	Mode Choice	Industry Type	Industries desiring specific modes of transport will not locate if the preferred mode is unavailable, difficult or expensive to utilize.
	Congestion	Mobility -Local, Regional	Local and regional goods movement depends on ready access and smooth flow. If missing then costs increase.
	Market Access	Types of Industries to Attract	Transport access to markets is affected by geographic placement and by mode, also cost Market access important to industry cost.
	Capacity	Access to Transport	Consistent availability of capacity is important for cost, reliability, and quality of market delivery
	Infrastructure Quality	Cost of Transport, Particularly Local, Regional	Poor infrastructure reduces transit time and increases maintenance expense, increasing cost overall
	Freight Policy	Availability of Transport Service	Policies determine equipment type and size, labor requirements, services, facilities etc. all determinants of overall cost
	Labor and Tax Policies	Availability of Logistics Service	Asset based providers - carriers, warehouse operators, are concerned about costs created through taxes and labor rates and policy
	Labor Availability	Availability of Logistics/Regional Transport	Workforce availability with various skill sets, low to high are required in supply chain activities
	Freight Zoning	Facility Location	Policies that promote location of freight facilities in areas that provide services and ready access are attractive
Industrial Diversity and Modernization			
	Mode Choice	Access to required/preferred service	Modal limitations either limit diversity or increase the cost to a level of deterrence
	Ancillary Freight Service	Availability of specific required services	Support services - final assembly facilities, customs, etc may be necessary for a particular industry to be cost effective
	Market Access	Access to materials and point of sale	Geographic placement and modal options determine ready access to both materials and markets.
	Capacity	Requirement for types, volumes of equipment	Consistency of transport, logistics services, and types are important to maintain service levels to point of sale
	Labor	Service availability for industry requirements	Particular high tech industry may require specific warehousing and logistics support with skilled labor

Targets of Regional Development	Transportation & Logistics Factors	Impact	Cost Effect
Quality of Life			
	Infrastructure Quality	Infrastructure affects both freight and passenger	The quality of the infrastructure supports freight but it is also important to passenger travel in a region.
	Separation of Freight Areas	Mixed use roadways create safety issues	Separating freight traffic from passenger traffic improves safety, can reduce congestion, and improves public perception
	Market Access	Air Quality	Planned freight zones, routing and access reduces congestion and improves air quality
	Cost of Inbound Transportation	Access to goods from distant markets	Limited access to distant markets reduces the types and volume of products available to the consumer
		Cost of goods and services in the region	High costs for inbound transportation limits products and services and increases the costs to the consumer.
Economic Sustainability			
	Infrastructure Planning	Long range plans for connectivity and quality	Companies looking to develop recognize the value of infrastructure planning to their future costs
	Freight Mobility Planning	Long range attention to freight holds costs	
	Addressing Factors from:		
	Logistics Quotient	Promotion of population and job growth creates	Balance is critical to transportation pricing, improved balance holds costs, attracts more quality carriers and improves service
	5-Star Business Opportunity	Demand and supply balance	

Similarly, many manufacturing businesses, especially those producing “hi-tech” products market themselves based on quality and consistency of service. When service consistency declines, manufacturers and/or receivers must hold higher levels of inventory to ensure consistent production schedules. Higher inventory levels result in higher transportation and warehousing costs, which in turn make the IPH study area less attractive to potential manufacturing developments. During stakeholder outreach sessions a number of key truck routes in the region were cited as dangerous or unreliable under various climatic conditions. Improving key routes to all weather roadways is one example of a strategic infrastructure investment that could be taken to improve consistency of service.

INLAND PORT MODELS AND APPLICATION TO THE IPH STUDY AREA

One of the reasons for undertaking the IPH Transportation Study is to “*explore establishing the Inland Pacific region as a multi-modal global gateway to increase international commerce.*”²³ One opportunity toward this goal is to examine the region as an inland port – as a satellite to the Ports of Seattle/Tacoma. Inland ports have been a growing trend as a means to quickly move freight out of congested deep-water ports, to inland facilities that offer ample, uncongested transportation resources and support services.

Strategies for including distribution as a focus of future economic development efforts are important due to the projected growth in distribution services. In order to have success in developing this employment sector, the IPH study area will need to expand on logistics and transportation capabilities, which of course is the primary objective of this study and the exploration of the Inland Logistics Hub concept.

An inland port is largely thought of in the context of international trade with a site located away from the traditional land, air, and coastal borders. It can however also support domestic logistics activities. These facilities are characterized by access to multimodal transportation and promoting value-added services in the supply chain. In general they develop around specifically designated tracts of land, some encompassing existing businesses, where the zoning and other policies and regulations, the utilities, transportation connectivity, etc. are provided with the specific intent to attract freight related business, often of a specific type.

There exists a strong need for public and private relationships and regional consolidation for these facilities to succeed. Private entities must be successful in order to produce the economic benefit necessary to meet the public needs. Transportation providers must cooperate in the development of such facilities, as they play a key role in delivering goods to and from a set location. The geographic location and the market catchment area also need to fit the design concept. Land use planning is a key element – providing locations that are suitable for purpose and have ready access to infrastructure minus congestion. Another critical, but not physical, requirement is the idea of a “freight friendly” attitude fostered through policy, regulation and public awareness of the contribution of freight to the community. A summary of the requirements and gaps for the following inland port models can be seen in **Exhibit 49**.

²³ Inland Pacific Hub Transportation Study – Final Scope of Work, July 2008.

SATELLITE MARINE TERMINAL

A satellite marine terminal employs the idea that there is a benefit from moving the sorting functions of inbound cargo off the port location to an inland center where the sorting can be completed and the freight moved on to its destination. This concept has some distinct advantages. The traffic moves away from the marine terminal more quickly, improving the throughput and reducing port congestion. The sorting and re-distribution of the traffic can potentially occur at a lower cost. The effectiveness of this methodology relies on good access to suitable and low cost transportation into and out of the satellite terminal. In general, this implies good access to truck and rail intermodal along with willing partners to supply and maintain reliable service over time.

The IPH study area has good access via truck and carload rail to the Seattle/Tacoma ports. Unfortunately, the existing rail intermodal service in Spokane that is important to providing timely and cost effective shipments to and from the IPH study area over long distances is inadequate and lacks strong support from the Class I railroads.

For full truckload or container shipments over 600 miles, rail intermodal can offer comparative travel time usually at a lower cost. Lack of adequate intermodal service creates some disadvantage for shipments that would go a long distance to the east or southeast. For example, some shippers in the region are sending product by truck west to Seattle, then north to Vancouver, BC to connect to the CN intermodal service for shipment to eastern markets. To remedy this type of circuitous intermodal service, the region will need to secure a commitment from the railroads to support an intermodal terminal with adequate rail service, which in turn will require a reciprocal commitment from the IPH study area to build sufficient manufacturing and distribution volume to increase intermodal traffic to satisfy the railroads' requirements for economies of scale.

CROSSROADS

A crossroads hub is as the name indicates – a facility that takes advantage of a geographic location that is a crossroads between primary market lanes. The crossroads hub is closely related to the idea of a Trade Processing Center. The primary feature is the location at a point on a primary route. A Trade Processing Center is different in that it strives to draw traffic from all over, not just from the intersecting routes it is sited on.

To a large extent, the IPH study area has the capabilities of a Crossroads, providing overnight and same day truck access to primary cities in western Canada down into population centers in Utah and California and across the farm belt. The airport is also a supporting feature to the crossroads development. Because the IPH study area is well placed in terms of highway and air transport it makes sense that the crossroads efforts focus on commodities of a higher value such as electronics, environmental energy products, pharmaceuticals, etc. These commodities are of a sufficient value to support the more expensive transportation by truck and air. Commodities of this type exist in the area and have the opportunity for expansion. A focus on higher value products enhances the assets of the region and minimizes the effect of the reduced availability of rail intermodal service. The current effort to review and improve the north-south highways through the IPH study area is in direct support of the development of a Crossroads facility as is continuing development in air cargo service.

TRADE PROCESSING CENTER

The idea of a Trade Processing Center is similar to the Crossroads but goes beyond a regional emphasis and expands the market to products from around the country and the world. The Crossroads is directed toward a specific geographic match represented by a point of intersection, but the Trade Processing Center is intended to attract products globally and thus has a slightly different and broader focus. In general a Trade Processing Center supports export and import opportunities through consolidation of trade related services such as licensing, bonding, freight forwarding, etc. Provision of international trade expertise through consulting services can also be an element.

In the IPH study area, opportunities exist with the proximity to the Canadian border. A north-south infrastructure development is required. The east-west corridor in the IPH study area, Interstate 90, with opportunity for certain improvement needs, provides good connectivity southwest to major markets in California. The quantity and capability of the rail service in the area is a shortfall, in so far as the most efficient form of rail container movements – double stack unit trains are loaded at terminals located in coastal ports.

The capabilities within the study area are such that a trade processing center would be best developed around truck and air cargo which implies higher value and time sensitive products such as electronics, food products, environmental products, and others. For cargo of less value the area has a broad market reach in some directions moving outbound but the connection to the eastern and southeastern U.S. population centers is limited with respect to ready access to rail intermodal, the preferred price point mode for the travel distance.

LOGISTICS AIRPORT

A Logistics Airport is a facility that is focused completely on air cargo. It can exist on a stand-alone basis or in combination with a larger development with other modes of transport. Businesses located at and around a logistics airport typically deal with packing and redistribution of goods that are brought in and shipped back out. An example would be electronics companies that repair or refurbish equipment that is brought into the site, reworked, and returned to customers or remarketers.

The Spokane International Airport offers the physical facility for expanded air cargo services. However, successfully developing such a facility requires successful marketing to attract “best fit” companies to accomplish the development of a logistics airport on a scale necessary for success. But the existing business community does manage to effectively meet its air cargo needs through both the package carriers and through cargo services offered by the airlines which “hub” in other locations. Additional volume will improve service.

LOGISTICS PARK

Traditionally, a Logistics Park is built around a geographic center that creates an intersection of multiple modes of transportation in conjunction with population centers that offer a freight catchment area sufficient to promote consolidation opportunities. The largest and most successful parks have access to truck, air, and either rail intermodal or marine transport or

sometimes both. These facilities are usually located in or near a population center within an area viewed by shippers as a primary market for the distribution or end use of their products.

There are many large coastal logistics parks that are located close to the major ports. The primary inland facilities in the U.S. are at Dallas, Memphis, Atlanta, Chicago, and the Harrisburg/New Jersey area. Facilities exist in and around smaller cities but they have a more regional focus. Large logistics zones require the volume to support consolidation and also the full access to multiple modes of transportation. The ability to consolidate traffic is very important to efficient and cost effective transportation. A volume threshold is necessary to secure frequent and reliable service, particularly with the rail. Consistency and reliability are highly important to shippers. Additionally, the ability to balance equipment, drayage moves, trailers, containers, etc., is very much improved when the volume is higher. Effective balance creates transportation and logistics services that are more efficient and lower cost. Achieving this level of volume and balance requires a large and/or a much focused market area. This market requirement for volume and balance is a limitation in the study area, however, efforts to increase the size and scope of the industrial base will help move the region toward a sufficient threshold where the idea of a logistics park becomes more viable.

ECONOMIC DEVELOPMENT ZONE

An Economic Development Zone defines an area that focuses on attracting business for creation of jobs and providing conditions that support the sustainability of existing jobs as a means toward economic stability and growth. The transportation infrastructure, capacity, and service reliability are major components of the development. Land use designated and appropriate for various ranges of industry - light to heavy - is important along with the policies and awareness to promote the value of freight.

The needs and the goals of the IPH study area seem to best fit this category. A strategic element is that this foundation helps build volume and economic strength, leading to the potential for the other types of inland hub models to evolve. Successful economic development efforts, supported by improvements to transportation and freight service capabilities, are the way forward to more defined logistics facilities.

INLAND PORT MODEL IMPLICATIONS

Using the concept of the Economic Development Zone, the area can build upon initiatives and efforts already underway to develop value-added production activities. By blending in pieces of a crossroads model focused on Canada, California, and other metropolitan areas to the south, the IPH study area can develop marketing targets with geography and commodities that best suit the capabilities that currently exist. Industry and distribution can develop from this expanding base. With successful marketing, the region can draw the industries necessary to move toward the broader definitions of the Logistics Airport and Logistics Park. Reaching the volume threshold is a step-wise process. Each business expansion or new addition is a benefit to the future, moving closer to the goal of having distribution as a major component of area business.

Exhibit 49: Inland Port Model Requirements and Gaps

Model Type	Requirements	Gaps
Satellite Marine Terminal	Designated development area	Targeted land use
	Reasonable distance and good connectivity to Port	Intermodal service
	Intermodal shuttle service to and from the port which can include on-dock rail	Geographic location with respect to population density
	Good connectivity to markets via rail intermodal and truck	
	Located to service a metropolitan area of regional markets as well as those markets more distant	
	Ability to attract supply chain business to the location	
Crossroads	Designated development area	Targeted land use
	Markets and infrastructure to support a bi-directional flow of goods along a corridor(s)	Fully developed north-south trade highway corridor
	Value-added capabilities which create a need/opportunity to attract goods into the center	Developed strategy for the border crossing
		Directed economic and infrastructure development efforts toward value-added services
		Access to double-stack intermodal service requires truck drayage to the coast which may be limiting to certain commodities
		Spokane International Airport is not the origin or terminating airport for any direction international flights
Trade Processing Center	Designated development area	Targeted land use
	Markets and infrastructure to support a bi-directional flow of goods along a corridor(s)	Fully developed north-south trade highway corridor
	Value-added capabilities which create a need/opportunity to attract goods into the center	Developed strategy for the border crossing
	Emphasis on international trade capabilities through specialized businesses	Directed efforts toward value-added services
		Access to double-stack intermodal service requires truck drayage to the coast which may be limiting to certain commodities
Logistics Airport	Physical structures and support processes	Expanded markets for both products and air service
	Surrounding development area	Targeted land use with services for business development
	Developed markets for sufficient volume	
	Connectivity by highway and/or rail	
Logistics Park	Favorable geographic placement	Targeted land use
	Proximity to population and industrial centers	More centralized geography
	Modal connectivity	Volume and balance of flow
	Designated development area	Intermodal service
	Volume and balance of equipment flow	
Economic Development Zone	Designated development area	Targeted land use
	Tax incentives	High business costs (Washington)
	Freight transportation infrastructure (truck, rail, air, water)	Transportation costs due to volume and balance of flow
	Cost of doing business	
	Transportation costs	

CONCLUSIONS

CONTINUE TO SUPPORT THE TRANSPORTATION NEEDS OF TRADITIONAL INDUSTRIES

Within the Inland Pacific Hub study area, certain industries have played a critical role in shaping the economy of the area and its future. Economists refer to the industries that “drive” a region’s economy as *traded sector* businesses. Traded sector businesses produce goods or deliver services that are sold to customers outside of the region and those sales bring new money into the region that is spent within the region.²⁴ Traded sector businesses effectively export goods and services from the region, while importing revenue and income.

Traded sectors in the IPH study area include businesses in manufacturing, agriculture, forest products, and mining.²⁵ These industries have driven the development of much of the existing transportation infrastructure in the region. Traded sector businesses compete with other companies nationally and internationally and there are opportunities for public investments and public policies to enhance the ability of traded sector businesses to compete against businesses located in other geographic locations. It is generally the economic growth within traded sector businesses that will ultimately drive the economy of the IPH study area. Because of their dependence on external customers, traded sector businesses often utilize transportation assets differently than other businesses within a region.

Many of the traded sector industries in the IPH study area are also “freight-intensive” industries. Natural resource and manufacturing businesses continue to provide jobs, income, and tax revenues that are important to the economy of the region. In addition, the value of outbound commodity flows suggest that the freight-intensive sectors that play an important role in the economic vitality of the IPH study area include *Retail Trade*, *Transportation* and *Warehousing*, and *Manufacturing*. These three sectors account for over 85 percent of the total value of the outbound commodities. In 2008, these sectors represented nearly 31 percent of the total employment and about 33 percent of the total earnings of the IPH study area.

Economic forecast data applied to commodity flows generated and consumed by the IPH study area suggest that some traded sector industries in the IPH study area (agriculture and forestry industries) will diminish over time other traded sector industries (i.e., mining and manufacturing businesses) will increase in the coming years. To strengthen and grow the region’s economy, it is important to continue enhancing an environment that is supportive for traded sector businesses which will foster a positive environment for existing businesses and overall economic activity in the IPH study area. Public investments that could help to enhance the economic environment for traded sector businesses in the IPH study area might include:

²⁴ Corporation for Enterprise Development, Development Report Card for the States, 2006

²⁵ Commodities resulting from manufacturing activities include *Foods or Kindred Products*, *Primary Metal Products* and some portion of *Secondary Traffic*.

- Customized workforce training programs to support new processes and equipment
- Improvements to transportation networks and services that improve shipping reliability and drive down supply chain and inventory costs
- Incentives that help support equipment upgrades and additional equipment installation
- Tax abatements that reduce both start-up and life-cycle costs

SUPPORT EMERGING INDUSTRY TRANSPORTATION NEEDS

Within the traditional natural resource and manufacturing industries of the IPH study area there are also new niche market opportunities such as value-added or processed food products, organic farming, identity-preserved specialty crops, high-value manufacturing, and specialized wood products that can provide future employment opportunities in the region that will require competitive transportation services. The transportation needs for emerging business sectors often differ from the more traditional industries in the region. Although transportation costs are always a factor, the transportation demands of “new economy” businesses are often driven by delivery schedules, reliability, and protecting the integrity of the products (product damage).

Any sales plan will indicate that it is easier to grow from an existing base rather than find new outlets. Certainly new outlets are possible and should be sought. However, careful consideration should be given to market opportunities that are created by an existing demand and are currently satisfied by businesses outside the region. Food processing equipment is one example of this.

Food processing equipment is only one example of something that is used by area business but imported from outside the study area. There are also large markets for food processing equipment in surrounding regions and states, a demand that would support the development of one or more food processing equipment businesses within the study area. If a successful initiative were applied to draw a manufacturer of this type it would enhance economic development, add jobs, and expand market potential.

Clean technology businesses are a developing interest in the area and are beginning to progress. The consolidation of facilities and initiatives directed toward clean technology in designated zones would offer another way to grow from an existing base.

There is a strong emphasis and need in the study area to build jobs requiring higher skill levels and the application of technology. Agriculture offers a strong existing base of business in the IPH study area that can be expanded and modified to meet new market needs. It is critical to support the role of agriculture in the future and recognize the relationship between regional agricultural roots and the opportunity for higher technology processing that encourages trade development. The purpose of the study was to extend beyond agricultural based business and this paper and others have discussed the importance of developing clean technology business, pharmaceuticals and other industries and services. Marketing efforts need to develop in these directions. However, those which build on an existing capability will be most easily accomplished.

Tourism may not be directly categorized as “trade” but it certainly promotes trade in many ways, both directly through supplies and services and indirectly through exposure of the area to new people who can bring ideas and market opportunities.

The concept of trade development really centers on taking the best of what exists and using it to expand potential. The expanded development is what will lead to the higher volume of freight and goods movement in more concentrated lanes. It is this volume and density increase that will improve the opportunity for the region to develop more logistics related service entities and move toward the goal of becoming a hub.

Steps for implementing such a strategy include:

1. Nurture regional specialties such as specialized farm produce and clean technology products while seeking to develop additional opportunities for existing business and expansion into new ones.
2. Become a crossroads for north-south trade with emphasis also on the west by developing a regional plan for the north-south corridor and border crossing and improving the conditions moving to the west coast and California.
3. Examine current import/export commodities for market expansion and diversification.
4. Seek improved intermodal connections to the east through options available outside the region.
5. Develop a unified approach to improving the border crossing and regional connections
6. Address road and rail network limitations with planning, investment, and cooperation inside and outside the study area where needed.
7. Address broader bi-national issues such as trade policies and tariffs.
8. Institutionalize arrangements for ongoing cooperation in planning and project development by integrating the strategies and plans for agencies within the study area, across state lines, and in Canada. Opportunities for growth in the IPH study area cannot be isolated to that defined county area alone. It must depend on and incorporate the surrounding areas to make the best use of possible funding resources.

The emphasis on reliability and supply chain management is a crucial business strategy for companies who seek to extract value and thus competitive advantage through distribution. Efficient local and regional goods movement even for those goods being shipped to destinations across the country or for international export is important. Traffic congestion on highways and rails has been identified by many growth industries nationally and in the IPH study area as a significant transportation problem affecting economic growth and development.²⁶ Congestion in both metro counties within the IPH study area affects the entire region's ability to foster reliable and cost effective transportation services. Growth industries of the future will likely concentrate primarily in these metro counties. Thus, it will

²⁶ IPH Regional Business Interviews

be important to provide transportation linkages not only to facilitate efficient movements in and through these metro areas but also linkages to all areas of the region to allow the non-metro areas to take advantage of economic opportunities that will cluster in the metro areas.

By necessity, future investments in transportation infrastructure in the IPH study area must balance the needs of more traditional industries with the transportation requirements of new economic growth sectors in the region. From a regional perspective the importance of an efficient transportation corridor that can divert some portion of the freight traffic from city streets in Spokane or Coeur d'Alene creates benefits for businesses located in the non-metro areas. Conversely, improvements and enhancement maintenance for corridors linking workforce in non-metro areas to growing centers of employment generate economic development benefits for the metro counties as well.

SEEK TO DIVERSIFY TRADE MARKETS IN NORTH AMERICA

From a competitive perspective relative to the rest of the U.S., the Inland Pacific Hub study area is both blessed and challenged by its geography. The ports of Seattle, Tacoma, Portland and Vancouver are major “gateways” to prolific Asian trade markets, and the IPH study area is on the door step of those gateways. Similarly, counties in both Idaho and Washington in the study area border British Columbia, one of the fastest growing provinces in Canada. However, the region has second tier transportation access to Canada, and access to European market gateways is costly and/or time consuming. As a result, strategies for achieving greater trade in the study area must adapt a market focus that takes these advantages and disadvantages into consideration.

The IPH study area is a “producer region” as a result outbound trade movements far exceed inbound movements. As a result, the imbalance of trade on key lanes, especially for highway movements results in higher costs and service and equipment availability issues for some business sectors. As a producer region – shippers in the study area are looking to expand volumes to existing markets and enter new markets. The IPH study area is in an excellent geographic location to take advantage of West Coast gateways to Asian markets.

The IPH study area is at a significant disadvantage for exporting to European markets. The length of haul to the east coast suggests moving shipments to gateways via rail, but the long-haul business model and sub-national networks of major U.S. rail carriers makes shipping across country challenging from a cost, time and reliability perspective. This situation is unlikely to change significantly in the short term, but new services from the study area such as the Railex service from Wallula, WA to Albany, NY and the proposed new BNSF service from Port of Quincy are successes that should be fostered.

The opportunity for growing Canadian trade is closely tied to having better access to population bases in Calgary and Edmonton. Only 2 percent of the truck tonnage with an origin or destination in the study area is flowing out of the study area to Canada, or into the study area from Canada. The regional government agencies and economic development groups should explore strategies to better include the near provinces, but particularly the border cities in a “regional” planning effort. The requirement for better north-south connections to Canada is imperative and it must be a regional solution to be effective.

To expand the logistics horizon into the broader hub definitions, the density of traffic has to increase. In addition to recruiting new businesses, density is promoted by keeping facility development geographically concentrated. This requires that land use planning and policies be developed with the idea of creating facilities specific to freight and supply chain activities. Routes currently used for truck traffic as discussed in Technical Memorandum 1 will be reexamined in the Modal Issues working paper in this context.

The development of truck routes which avoid congestion and promote the safe and efficient flow of vehicles is important. Having these routes move between designated, consolidated freight facilities makes efficient flow easier to achieve.

The maintenance and cultivation of through-truck routes to the coast allows the higher weight limits to remain a competitive asset for some commodities. Allowing the higher weight trucks supports a volume density in the lane that benefits all commodities through improved balance and pricing. The best maintained roads which support this high weight traffic and serve concentrated freight zones will support the other development efforts.

The single most important idea is to apply regional cooperation toward a regional strategy for regional growth. Spokane and Coeur d'Alene are viewed in the national rankings as good places to live ranking high in annual "best places to live" rankings. Similar published polls that rank cities by their transportation attributes rated the study area high in terms of high-level arterial highways, rail, airport and port facility access. The same rating service ranked the IPH study area low with respect to local road systems and business activity taxes.

ECONOMIC DEVELOPMENT STRATEGIES BASED ON TRANSPORTATION

The research points to several challenges that the IPH study area must overcome in order to support and grow its industrial base. Volume and lane density are critical elements to important factors in transportation, particularly over long distances. They have a strong effect on:

- Capacity access
- Pricing
- Service reliability
- Service quality

In addition to north-south corridor transportation limitations, volume and density also affect the attractiveness of the IPH study area as a distribution point for shippers. Expanding trade with population centers north of the study area in Canada could potentially help address this issue to some extent.

There are several key observations about freight movement by mode, and commodity tonnage changes within the IPH study area. The intermodal service in the IPH study area does not support broad use in a cost effective fashion. There is limited intermodal service to Minneapolis and Chicago via the BNSF Railway and a circuitous drayage gives access to the Canadian railroads. To draw improved intermodal service to the region requires the

development of volume and vector (directional) density. One potential alternative is a less circuitous drayage to the Canadian rail system by focusing on the north-south connection in cooperation with Canadian cities and railways. Developing good highway connections that support efficient drayage to existing domestic intermodal points will improve the potential for intermodal service options for the area.

In order for intermodal rail services to produce a rate advantage, shipments typically must move a significant distance (500 miles or more) to allow rail line-haul economies to outweigh higher terminal and transaction costs. The lack of a good intermodal option that avoids circuitry and provides competitive pricing is a detriment to attracting shippers and receivers that require intermodal service to support their supply chain cost structure. Addressing the circuitry issue with regard to the most efficient intermodal services (double stack unit trains) is highly improbable given the existing business model of the west coast Class I railroads in the U.S. However, other options like Railflex and Port of Quincy are presenting themselves. Once again, the ability to consolidate load volumes around these options will likely determine the long term viability of these and future intermodal rail options in the region.

The issues that arise from truck lane balances in the study area will likely be exacerbated when the recovery begins due to the shortage of trucking capacity that will exist. Capacity will regenerate as the economic conditions improve but not necessarily to pre-recession levels. This means that truckers will be even more selective in their market choice and careful with respect to their utilization, a direct determinant on pricing. Rising fuel costs have a stronger affect on longer lengths of haul and push the shift to intermodal service down to shorter and shorter lengths of haul as the price point shifts to favor the rail service.

The needs for infrastructure development have been discussed throughout the study. In the area of competitiveness this is important, particularly where specific commodity groups place a high demand on the system. Not only must the infrastructure be physically sound, it must also be resilient in the face of interruption and secure. The competitive challenges present some hurdles to economic development in the IPH study area but they can be addressed with strategic focus.

From a highway infrastructure perspective the IPH study area is “isolated” from domestic markets to the south and from international trade with Canadian population centers to the north. The study found that no other economic region the size of the IPH study area is more distant from a north-south Interstate highway facility. Interviews with both private and public stakeholders in the IPH study area suggest a strong state of residence preference for which highway facilities and border crossings should be improved in support of increasing trade with Canada. Much of this debate centers on US-395 vs. US-95. The biggest challenge for US-395 becoming a significant international trade corridor is the lack of population centers north of Colville.

One potential opportunity that cuts across US-395, US-2 and US-95 is to view the connectivity between these three routes as a regional trade corridor. This potential corridor would take advantage of current and planned improvements to the US-395 (e.g. the North Spokane Corridor), US-95 (e.g. the Sandpoint by-pass) and U.S. and Canadian upgrades to

the Eastport/Kingsgate border crossings. Linking US-395 and US-95 via US-2 also offers the most direct route between Spokane to the Canadian population centers of Calgary and Edmonton.

INLAND HUB / INLAND PORT CONCEPTS IN THE IPH STUDY AREA

The concept of inland ports or hubs have emerged over the past several decades to relieve congestion and assist in the distribution of inland freight movements associated primarily with container volumes moving through major gateways such as a seaport, airport or major rail intermodal yard. While there is no single definition or design, inland ports can be simplistically described as: *“facilities specializing in the staging and transfer of containerized freight that has been moved to the site in any number of ways, including truckloads on the highway, as well as by air, rail and water.”*²⁷ The goal of an inland port is to create local employment, improve transport efficiency and reduce shipping costs associated with congestion around major gateways.

Research conducted for the IPH Transportation Study, examined existing inland port developments and literature. The existing literature identifies the following critical needs required for successful inland port developments:

- Modal capability
- Existing Demand
- Location advantage
- International trade facilitation
- Management plan

The IPH study area has ample modal capabilities, but the data suggests the study area is challenged by the level of “existing demand” and “location advantage” requirements. Presumably if the IPH study area developed an inland port it would be based on distributing goods coming into the study area by rail, river port or air. Outbound distribution would likely occur by truck, making existing lane imbalance issues worse. Many inland ports have developed on the west coast a short distance inland from the San Pedro Bay Ports (Los Angeles and Long Beach), primarily due to the congestion in these ports, but also because a significant portion of the goods imported through the San Pedro ports are consumed by the Southern California market. Inland port facilities in this case allow the contents of containers to be resorted for local versus mid-America consumption. In the case of the IPH study area there are no significant population centers in close proximity to the study area.

The IPH study area has geographic advantages in several primary markets and these advantages should be expanded upon. The region appears to have characteristics of the inland ports most consistent with models described as “crossroads” and “economic development.” The fit between the models and the geographic market opportunity between the study area and Canada, California, along with the areas reaching toward Phoenix, Salt Lake City, and Denver is strong. The strategic concept should be to develop the crossroads

²⁷ Dan McCue, Charleston Regional Business Journal; *Inland ports: Viable business or fantasy land?* March 2006.

trade model creating market expansion, leading to growth and continuing progress in the region. The domestic regional market is a critical element in building volume thresholds necessary for broader growth. The long range development of density creates improved opportunities by lowering cost, not only for local shippers sending product out but also in terms of the price they pay for goods received. Density and volume build accumulating benefits from the supply chain perspective.

While an inland port development concept in the IPH likely has significant hurdles, using the concept of the Economic Development Zone, the area can build upon initiatives and efforts already underway to develop value-added production activities. By blending in pieces of a crossroads model focused on Canada, California, and other metropolitan areas to the south, the IPH study area can develop marketing targets with geography and commodities that best suit the capabilities that currently exist.

The concept of trade development centers on taking the best of what exists and building upon the base to expand potential markets. Expanded development is likely to lead to the higher volumes of freight and goods movement in more concentrated lanes. It is this volume and density increase that will improve the opportunity for the region to develop more logistics related service entities and move toward the goal of becoming a hub.

OVERCOMING EXISTING STUDY AREA CHALLENGES

The competitive challenges facing the IPH study area present some hurdles to economic development in the IPH study area but they can be addressed with strategic focus. Generally, the IPH study area should investigate opportunities to consolidating freight densities around a limited number of high quality, modal and intermodal service options; consider economic development marketing efforts that can make empty inbound truck movements a positive; and engage in regional master planning to link key points of modal service offerings, and links to key markets. In the near term, some specific actions could include:

1. Select target industries and commodities that don't depend on long haul trucking or intermodal service unless they are at a price point to support the expense.
2. Focus on markets that offer volume and density at a shorter length of haul. As discussed in the Trade Opportunities paper, this would indicate California, Phoenix, Western Canada, and possibly Salt Lake City as directional targets.
3. Seek better short term intermodal container rail options by expanding on existing services that operate near the region. This issue concerns the ability of shippers in the IPH study area to ship containerized freight to export markets in Europe. Existing access to premium intermodal services is limited, and the published schedules for Class I carriers suggest that shipping a container from Seattle/Tacoma to an East Coast port takes 7-10 days. To reach the East Coast via U.S. railroads requires transloading containers between carriers in Chicago, which adds time and cost. Railx is currently operating dedicated trains of refrigerated box cars from Wallula, WA to Albany, NY. The service operates twice weekly

and the transit time is five days. The BNSF has also proposed to begin similar service to the East Coast from the Port of Quincy.

4. Intermodal service opportunities in the region could potentially be supported and enhanced by reconciling differences in cross-border truck size and weight limitations to promote efficient highway commerce corridors to support the consolidation of loads to rail facilities. For instance there are a large number of small communities just north of the U.S./Canadian border, whose businesses may benefit from better transport options in the IPH study area. Harmonizing truck size and weight across borders has been a long sought after, but difficult hurdle due to state and federal regulations. However, recently Congress has been willing to entertain pilot projects to determine the impacts of larger trucks. For instance in December 2009, Maine and Vermont were granted an exemption from federal weight limits on Interstate highways in those two states to conduct pilot studies.

5. Strategies to attract service industries, light manufacturing, and high value commodities must consider the transportation requirements of these industries. The existing system has also been adequate in serving traditional manufacturing and raw material industries like timber, mining and agriculture. However, high technology manufacturing, medical services, and other services industries such as transportation and warehousing require more agile service more dependent on efficient road and air cargo networks. Many of these businesses generate or depend on transportation service frequency where “just in time” is measured in hours or minutes. The required transportation systems also must consider policy issues such as commercial parking zones, access management, and building codes should insure modern efficient dock facilities.

6. Take steps to improve the infrastructure issues in a way that addresses the highest needs in a prioritized, regional manner including not only highway improvements but also planning for greater resiliency and recovery. As previously discussed the region faces a basic challenge from an economic area (the 19 county study area) that is artificially divided between two states, three urbanized areas and multiple smaller communities, along with an international border. The need to best utilize resources and promote development requires cooperation, planning, and a desire for change across a wide spectrum of agencies. One of the primary tenets of “freight planning” is that freight knows no boundaries. Freight moves in lanes, corridors and multimodal systems that frequently cross our legacy geo-political boundaries.

7. Promote the “softer” sides of the region’s attractiveness (recreation, culture, the arts, the universities, etc.) to improve the image of the region. The area has the features that help draw new industry, but they may need to be better marketed to the outside world and there may be a need for improved public relations regarding tourism.

If these actions are successful and promote the growth of industry and expand markets for the Inland Pacific Hub study area, the increased volume and density could help overcome some of the study areas most challenging shortfalls: 1) Unbalanced traffic lanes; and, 2) Lack of freight density at some modal interchange points. The study area has many good modal assets for moving freight. While there is a role for public agencies in advocating that

the region have reasonable access to freight services in various modes, creating service options that are not viable are likely to dilute existing services in the market. A variety of options serve to help keep transportation pricing competitive, but too many options dilute freight volumes at key service points. Most transport service pricing is based on volume discounts at both the company and market level. In addition, some of the existing modal assets in the study area are widely dispersed, and currently there is little agreement on both the means for linking these assets together, and the best corridors for linking the study area to trade markets.

Regional strategies to promote economic development through transportation should build on existing capabilities and advantages target new industries and markets, promoting a sound base for future expansion. Addressing some of the hurdles discussed in both this Technical Memorandum and the supporting working papers could bring the area closer to the realization of a focused hub, something that will be attractive to other types of business and thus foster additional growth. To some extent the “if you build it, they will come” condition may apply. The initial challenge is to create the conditions such that the “building” happens in a way that is supported by efficient and cost effective systems that provide the base level of volume and density that are required.

INLAND PACIFIC HUB

Transportation Study



Working Paper 4.1 County Profiles

STUDY AREA PROFILE AND TECHNOLOGY ASSETS

Final

April, 2010

WilburSmith
ASSOCIATES

In Association with

Halcrow

HNTB

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INTRODUCTION

The Inland Pacific Hub (IPH) study area is comprised of nineteen counties located in eastern Washington and northern Idaho. The economic interests of this region are represented in part by the IPH Advisory Board, a public-private partnership established by and consisting of representatives from both states. The Board's objective is to establish the IPH study area as a multimodal global gateway to increase international commerce.

The Board has partnered with the Washington State Department of Transportation and the Idaho Transportation Department to study the region's capacity for economic development. The IPH Transportation Study has two objectives: 1) To identify the IPH study area's capacity as a globally-connected, multimodal transportation gateway; and 2) To identify the critical infrastructure requirements needed to drive the IPH study area's future economic growth.

Report Organization and Composition of Task 4

To accomplish the objectives established by the IPH Advisory Board, Wilbur Smith Associates, in association with HNTB and Halcrow, proposed a work plan based on six tasks:

- Task 1: Analyze Existing Transportation Market
- Task 2: Profile Existing Multimodal Transportation Infrastructure (Tech Memo 1)
- Task 3: Profile Regional Economic Assets (Tech Memo 2)
- Task 4: Profile Commercial and Technology Assets (Tech Memo 3)
- Task 5: Identify Public Education and Stakeholder Involvement
- Task 6: Compile Final Report and Phase II Recommendations

Several tasks (2, 3 and 4) have Technical Memoranda as final task deliverables. Technical Memoranda 2 and 3 are each made up of several internal working papers that break the analysis associated with these tasks into discrete work elements, to allow study team members to work concurrently on sub-tasks.

This Working Paper

Working Paper 4.1 – *Study Area Profile and Technology Assets*: This working paper presents a detailed demographic and economic profile for the nineteen-county region. The profile also discusses traditional and target industries in the study area and opportunities for economic growth in the future. The last section of the report presents individual county profiles for each of the individual nineteen counties in the study area.

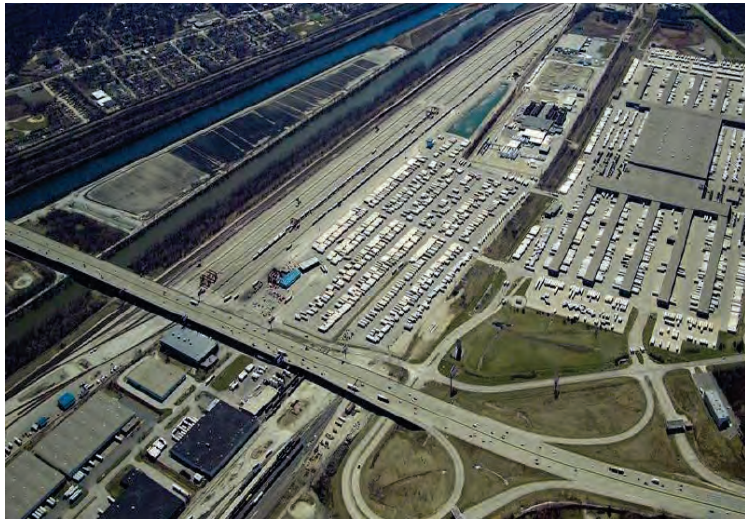
TASK 4: STUDY AREA PROFILE AND TECHNOLOGY ASSETS

The Inland Pacific Hub

The economic future of the Inland Pacific Hub (IPH) study area will be influenced by opportunities and challenges resulting from dynamic markets and competitive forces that are at work in an ever changing global marketplace. Transportation connections are vital to the economic prosperity of this study area because:

- Manufacturers, still important to the Washington and Idaho economies, need to receive raw materials (inbound freight) and send finished goods to markets around the world (outbound freight)
- Wholesale and retail trade, distribution and logistics facilities, and other businesses need to receive consumer goods and customers and employees must be able to reach these facilities
- Workers need access to jobs and employers need access to an increasingly skilled workforce
- Visitors and business travelers alike need access to regional attractions, goods and services, and regional businesses

Globalization and technology continue to change economies around the world, redefining business operations, challenging existing transportation networks, and creating international business opportunities never imagined before. Trade is driving economic growth throughout the United States and in the Inland Pacific Hub study area. Companies today



BNSF Intermodal Terminal, Willow Springs - Chicago

depend on transportation networks to move goods and people around the world as never before. We buy exotic fruits at our local market; companies receive supplies from firms around the globe to produce their products; and bulk commodities move into and out of U.S. ports every day. Americans have come to expect routine access to goods from every part of the world.

The dramatic growth of international trade has placed new competitive pressures on existing industry in the IPH study area while creating new challenges and opportunities for emerging and existing business sectors. While freight

transportation alone is not a sufficient condition to cause the economy to prosper, it is an important linkage to support more sustainable and competitive existing businesses attract high quality jobs and investment into the study area, expand tourism activities, and provide efficient access to larger customer market areas in the Northwest and Canada.

The future competitiveness and economic vitality of the IPH study area is intrinsically linked to a number of key factors:

- Efficient transportation networks
- Skilled workforce
- Competitive labor costs
- Freight movements
- Taxes that reflect the value of quality public services
- Other important features affecting the life cycle costs and profitability of business and industry

This section of the report presents an economic overview of the study area and includes fact sheets for each of the nineteen counties that compose the IPH.

There are those who believe that “*location*” no longer matters, that production and the provision of services can be accomplished anywhere in the world today. While the world has become more closely integrated and connected, there are very important differences between regions and communities that are important to future economic viability. Some routine business operations can often compete very effectively outside the U.S., but there are businesses that require access to natural resources, continual innovation, team work, and close communication with customers and suppliers to effectively compete and bring quality products and services to the marketplace. The distinctive characteristics, talents, and inventive capabilities within the Inland Pacific Hub study area will become even more important in the future as businesses seek the best locations to optimize their competitive advantages and capitalize on the unique assets, knowledge, and expertise found in specific regions.

A recent study by the U.S. Council on Competitiveness identified “regions” as a critical building block for the economy¹. “In order to compete successfully in the new global marketplace, firms must have access to the assets—human, financial, institutional, and physical—that support innovation. Although national and state policies create a platform for innovation, the focus of innovation activities is at the regional level where workers, companies, universities, and government interface most directly. Supporting dynamic firms requires that regions provide access to skilled labor, a solid transportation and communications infrastructure, and a business culture that supports

¹ Council on Competitiveness, “Guide for Effective Engagement of Business Leaders in Regional Development”

entrepreneurship and risk-taking”.² While most of the “heavy lifting” in economic development is done by the private sector, the public sector in the IPH study area plays a critical role in building an environment where the conditions for success can come together. Recommendations for investments and public strategies that are needed to enhance economic development opportunities in the study area can be found at the conclusion of this section.

The Study Area

According to the 2008 population estimates from the U.S. Census Bureau, the Inland Pacific Hub study area currently has a population of 922,132. Within the IPH there are three Metropolitan Statistical Areas (MSA): the Spokane MSA ranks 106th in population; the Coeur d’Alene MSA ranks 277th; and the Lewiston MSA which includes Nez Perce and Asotin County ranks 362 out of 363 MSA’s nationwide. Several counties within the study area have experienced very healthy population growth over the past three decades while other counties have declining populations or growth rates well below the statewide averages for the same period.

Population statistics frequently influence early stage evaluations for new business locations. Healthy population growth within a region is a positive indicator for workforce availability. Businesses considering a new location or facility expansion will evaluate population not only within the county they are assessing but also in a broader region as the workforce catchment area will include potential employees that are willing to drive to an employment destination. National and regional distribution facilities and other commercial operations will evaluate regional population data when assessing sites for new locations to characterize future demographics of the region³. Based upon population projections from Woods & Poole Economics Inc., the population of the IPH study area will reach 1,200,000 by 2030, which is a population increase of 289,347 over the next 21 years.

² Council on Competitiveness, “Guide for Effective Engagement of Business Leaders in Regional Development, page 5

³ Inbound Logistics, May 2009

Table 1: Population by County in the Inland Pacific Hub Study Area

County	Population		
	1990	2008	2030
Adams, WA	13,643	17,285	19,330
Asotin, WA	17,670	21,420	25,880
Benewah, ID	7,937	9,352	12,040
Bonner, ID	29,700	41,168	58,940
Boundary, ID	7,937	10,962	15,490
Clearwater, ID	8,480	8,176	8,330
Columbia, WA	4,024	3,990	3,840
Ferry, WA	6,295	7,353	8,630
Garfield, WA	2,248	2,060	1,920
Kootenai, ID	70,440	137,475	210,870
Latah, ID	30,617	35,906	45,410
Lewis, ID	3,516	3,594	3,840
Lincoln, WA	8,864	10,344	10,860
Nez Perce, ID	33,754	38,975	43,120
Pend Oreille, WA	8,915	12,760	16,880
Shoshone, ID	13,931	12,913	12,710
Spokane, WA	361,333	462,677	614,080
Stevens, WA	30,948	42,050	52,410
Whitman, WA	38,775	41,664	44,990
Total	699,027	920,124	1,209,570

A number of the counties within the study area will face real challenges in the future as a result of declining or stagnant population and eroding economic conditions. Columbia, Garfield, Clearwater, and Shoshone Counties lost population between 2000 and 2008 and over the past thirty years each of these counties have experienced stagnant or declining populations. Eight counties within the study area experienced positive but relatively stagnant population growth below 5 percent during the past eight years: Asotin, Ferry, Lincoln, Stevens, and Whitman Counties in Washington and Benewah, Latah, and Nez Perce Counties in Idaho.

From 2000 to 2008, Washington experienced 11.1 percent population growth statewide compared to Idaho which grew at a rate of 17.8 percent during the same period. Eighteen of the counties in the study area



experienced population growth below their statewide average during this period; Kootenai County was the only county in the study area with a population growth rate that exceeded the statewide average population growth between 2000 and 2008.⁴ Only six counties in the study area had a population growth rate above 5 percent during the past eight years: Adams County, WA with 5.2 percent; Pend Oreille County, WA with 9.6 percent; Spokane County, WA with 10.7 percent; Bonner County, ID with 11.8 percent; Boundary County, ID with 11.1 percent; and Kootenai County, ID with 26.5 percent. These six counties represent 74.16 percent of the study area population.

In those counties with declining population, employment has also been relatively stagnant or has declined as might be anticipated since employment is one of the most significant drivers of population growth. In Columbia County, WA, total employment has decreased 28 percent since 2000 while Garfield County's employment declined by 7.2 percent during the past eight years.⁵ In Clearwater County, ID, employment has declined by slightly over 7 percent and the labor force has steadily decreased since 1999.⁶ Lewis County, ID, has continued to experience modest fluctuations in employment since 2000, for example in 2008 there were 1,660 jobs compared to 1,628 in 2000. Shoshone County has also experienced continued employment fluctuations over the past eight years with 237 more jobs available in 2008 than in 2000.

If more of the counties in the study area sustained more significant population growth, then a number of positive economic effects would have been experienced throughout the region. Many businesses in the study area are engaged in providing services primarily for local populations including health care, retail and commercial services, professional services, leisure and hospitality services, and other related businesses. These types of businesses depend on customers and consumption to drive the profitability of their businesses. The slow or declining populations within the study area affect the profitability of businesses throughout the study area including the metropolitan communities where specialized services often draw customers from a broader catchment area.

An Aging Workforce

The retirement of baby-boomers will have a significant impact on the workforce in many regions of the country and the IPH study area is no exception. Certain industry sectors within the IPH have a higher percentage of older workers and several counties in the study area have aging populations, a factor that can affect existing business operations as well as companies making new location decisions. From an economic development perspective, an aging population means larger numbers of employees retiring affecting the knowledge and experience base within industries. The industries with the highest percent of their

⁴ U.S. Census Bureau, County population estimates and population changes estimates 2008

⁵ Washington State Employment Security Department, Labor Market and Economic Analysis March 2009

⁶ Idaho Department of Labor, Labor Market Information, July 2009

workforce 55 and over in Idaho and Washington include:⁷

- Educational Services
- Utilities
- Public Administration
- Real Estate and Rental and Leasing
- Mining
- Transportation and Warehousing
- Agriculture, Forestry, Fishing, and Hunting

Significant retirements in these industry sectors may create critical workforce voids in these industry sectors. Many businesses within the study area have already begun to revise their employee recruiting strategies anticipating the loss of these workers.⁸ Some companies in the IPH are developing policies and work-sharing strategies to accommodate older workers enticing them to continue working. Several workforce boards in the IPH study area are developing programs to recruit young people into industries where shortages are projected through specialized programs.

While the percentage of population over the age of 65 is lower in Spokane County when compared to most of the other Washington counties in the Inland Pacific Hub study area, Spokane County has lost population in several younger age categories in recent years which could indicate challenges for workforce availability in the future. The potential imbalance between the concentration of businesses and workers available for employment in the metro areas and aging of the population suggests the need to evaluate strategies that can enhance transportation connectivity to support workforce mobility from the surrounding counties into the larger job centers and additional transportation options for an aging workforce.

⁷ Idaho Department of Labor, "Census Report Idaho's Aging Work Force" Dec. 2008 and "2008 Washington State Labor Market Report, Chapter Five Washington's Aging Workforce"

⁸ Interviews with IPH businesses, 2009

Table 2: Median Age Inland Pacific Hub Study Area⁹

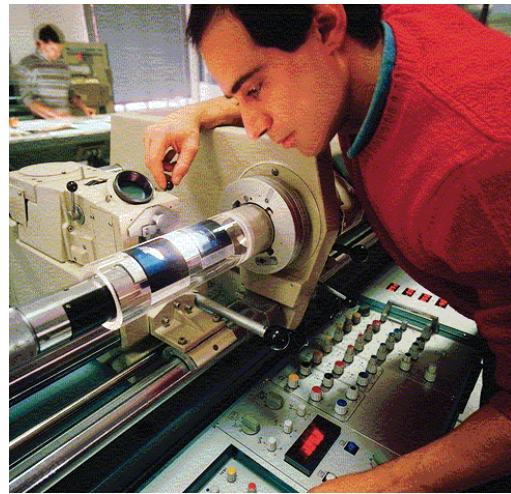
County	2008	2020	2030
	(years)	(years)	(years)
Adams, WA	29.01	28.54	28.74
Asotin, WA	39.74	42.15	46.49
Benewah, ID	42.54	44.08	45.37
Bonner, ID	42.96	43.70	45.89
Boundary, ID	39.89	40.88	42.74
Clearwater, ID	46.80	49.89	47.55
Columbia, WA	44.66	44.19	46.35
Ferry, WA	40.70	40.21	42.33
Garfield, WA	47.30	48.74	48.61
Kootenai, ID	37.47	38.85	40.35
Latah, ID	29.70	32.48	33.28
Lewis, ID	44.43	40.37	40.06
Lincoln, WA	45.32	45.46	47.29
Nez Perce, ID	40.88	42.52	44.79
Pend Oreille, WA	42.86	43.91	47.83
Shoshone, ID	45.69	49.89	51.25
Spokane, WA	36.51	38.70	40.53
Stevens, WA	41.17	40.84	45.52
Whitman, WA	26.23	32.08	32.40
Boise, ID	33.69	34.60	35.00
Seattle, WA	37.66	38.50	38.88
Idaho	34.29	35.75	36.46
Washington	37.15	38.47	39.57
United States	36.73	37.70	38.71

Enhancing the jobs-to-population balance is critical to maintaining a vibrant economy for many reasons. Increasingly, attracting and retaining skilled employees is a very serious concern for businesses. The actual or perceived imbalance between labor supply and demand will continue to shape how regions compete for jobs and will become a more significant factor in the future as the “baby boomer” generation retires and the generation that follows is smaller in terms of population. Demographic shifts in many areas around the country and the world will alter business location and growth strategies in the future as more businesses compete for fewer employees.¹⁰ As the rate of population growth slows somewhat in the IPH metro areas and the other counties continue to experience relatively low growth or declining growth coupled with an aging workforce, these population and aging factors will become a more significant consideration when businesses choose to expand facilities and locate new operations in the future.

⁹ Woods & Poole Economics Inc.

¹⁰ The Rand Corporation, World Population Shifts

Before businesses locate or expand in a region they want to be assured they can access a knowledgeable and skilled workforce now and in the future. The regional population between the ages of 18 and 55 within a 30 mile radius of sites being considered for an expanded or new business operation will definitely influence a company's consideration of potential sites for new or expanded facilities. Ultimately one of the most important workforce evaluation criteria used by many businesses and site consultants is educational attainment. While high school graduation rates may be a controversial performance benchmark in some education circles, it is routinely used by corporate real estate and economic development professionals as a reliable and consistent indicator of expected workforce skill. According to the U.S. Census Bureau, Washington has a statewide high school graduation rate of 87.1 percent compared to Idaho at 84.7 percent. Within the study area the high school graduation rate ranges from a low of 69 percent to a high of 92.8 percent.



All of the counties in the study area have high school graduation rates over 80 percent except for Adams, Shoshone, and Benewah Counties. The precise causal factors for the low graduation rates in these three counties is beyond the scope of this study, however the education attainment in these counties will affect their ability to attract business and industrial sectors that require a highly skilled workforce.

In Washington 27.7 percent of residents over the age of 25 have completed a Bachelor's degree or higher compared to 21.7 percent of the population in Idaho. Two counties within the study area have an exceptionally high college educated population: Latah County, home of the University of Idaho where 41 percent of the population over 25 have earned a Bachelor's degree or higher and Whitman County, home of Washington State University where 44 percent of the population over the age of 25 have completed one or more college degrees.

For many companies, one method of gauging a region's technical skill base is to evaluate the number of residents within the community or region who have completed a college degree and also evaluate the "output" of specific post secondary degrees from regional colleges and universities. Both Idaho and Washington are pursuing programs targeting an "Innovation Economy" to support future economic growth. In both cases a major emphasis of these efforts is focused on the education and the workforce talent required to attract and sustain technology based businesses. Those counties within the IPH study area that have a higher percentage of college educated workers represent a significant asset for the study area that can help to attract and nurture innovation businesses. The study area would be well served to consider a more detailed

assessment of the workforce to document specific educational assets particularly related to post graduate science, math, engineering and other technical graduates in the study area.

Traditional Industries in the Inland Pacific Hub Study Area

Agriculture, forest products, manufacturing, and mining have been important in the IPH study area economy for many years. These core industries helped to drive the development of much of the transportation infrastructure in the region. The IPH Regional Freight Profile shows that these industries still consume a significant volume of the region's transportation capacity. Based upon the 2007 TRANSEARCH data, lumber or wood products, nonmetallic minerals, farm and food products, and secondary traffic make up the majority of the outbound commodities from the IPH.

A recent analysis of industrial clusters in eastern Washington excluding Spokane County, found that in the remaining nine Washington counties in the study area, the two largest industrial clusters were agriculture/food products and forestry products. Two smaller industry clusters were also identified in this analysis as having a concentration of employment and growth in recent years, mining and heating equipment manufacturing.¹¹ Agriculture/food product firms are located primarily in the southern Washington counties while the forest products, mining, and heating equipment firms are clustered primarily in the northern Washington counties.

Idaho has also embarked on "Project 60;" a plan to strengthen its rural and urban economies through a comprehensive initiative designed to grow the states' GDP from \$51.5 billion to \$60 billion by nurturing existing businesses while also attracting new companies to the area.

As the economy changes, many of these traditional industries are being transformed due to off-shore competition, advances in technology, changes in market demands, international currency fluctuations, and other influences that affect the life cycle and production of these industry sectors. Many of the changes affecting these specific industry sectors are well beyond the Inland Pacific Hub study area's control but how the area prepares and responds to these changes can affect a broadly shared economic prosperity in the future.

Forest Products

Forest products continues to be a key industrial cluster in the IPH study area and this sector has developed important domestic and international business relationships that are dependent upon the regions' transportation infrastructure. A recent study by the University of Washington projects a continued slow contraction of employment in the forest products sector that will affect the IPH study area.¹² While the economic and employment outlook for the forest products

¹¹ "Industrial Cluster Analysis in the Tri-County Region of Washington State", August 2007, Chase Economics for Tri-County Economic Development District

¹² Beyers, William B., et al, "Washington State Workforce Development Areas", Nov. 2008, page 62

sector is not positive over the next several years primarily due to the decline in residential construction, continuing research by the Inland Northwest Forest Products Research Consortium has developed new technologies and processes that may enhance industry operations in the IPH study area that enable this industry to compete more effectively in the future. This research has improved wood strand composites allowing for utilization of small diameter timber, wood and plastics composites for more durable building products, and high-temperature kiln drying to reduce energy consumption.

Within the IPH study area there are vast forested areas, a substantial portion of these areas are under public ownership. In Ferry, Stevens, and Pend Oreille Counties alone over 30 percent of the land area of these counties is owned by the U.S. Forest Services. The Colville National Forest has 1.1 million acres and another million areas in this area of the IPH study area is under state and Tribal ownership.



Declines in U.S. housing construction coupled with global currency fluctuations have resulted in a decline in demand for the forest products from Washington and Idaho, thereby creating losses in employment and gross sales. While new housing starts have averaged 1.2 million per year in the past, the U.S. Department of Housing and Urban Development (HUD), estimates only 563,000 new starts for this year.¹³ Significant improvements in housing construction are not anticipated until 2011 as the market continues to absorb excess supply in some locations and responds to stricter mortgage underwriting requirements. The 12th District of the Federal Reserve Bank, which serves the IPH study area, forecasts continued decline in commercial construction and a very weak residential housing market for the next several years.¹⁴

According to a recent article in the "Spokane Journal of Business," the forest products sector has experienced significant declines in employment and the mills that are operating are not certain if existing orders will carry them through the current economic downturn.¹⁵ A study by the Inland Northwest Forest Products Research Consortium, "Idaho's Forest Products Industry: Current Conditions and Forecast 2009" estimates that sales value of primary wood and paper products for 2008 were down 9 percent from 2007 and the number of forest industry workers including those who were self-employed has declined by over 10 percent.¹⁶ According to this study the outlook for 2009 is even more dismal, anticipating further layoffs and cutbacks in production.

¹³ U.S. Census, New Residential Construction, Housing Starts

¹⁴ Federal Reserve Bank, 12th District, "Beige Book", June 2009

¹⁵ Journal of Business, "Lumber makers fight sales decay", June 18, 2009

¹⁶ "Idaho's Forest Products Industry: Current Conditions and Forecast 2009", Inland Northwest Forest Products Research Consortium, January 2009

Another significant factor affecting the forest product industry in the IPH study area was identified in a 2007 report by the University of Washington, College of Forest Resources. This study identified several concerns relative to eastern Washington forestlands including declining health conditions of the “forest structure” primarily on public lands. As a result of these conditions which are likely to continue according to Washington forestry experts, only 7 percent of timber growth is being harvested on federal lands.¹⁷ There are also concerns about the conditions of timber on private lands as disease and pest infestation spread. This study states that continued problems with forest health will create higher costs within the existing industry “reducing its competitiveness and economic contribution to the area”.¹⁸ Similar declines in forest production have been identified by the University of Idaho indicating that the availability of timber within the IPH study area may be facing challenges.

According to the Washington State Department of Natural Resources and the Idaho Department of Lands, timber harvesting in the IPH study area has been trending downward. The 2005 timber harvest was about one-third less than harvest levels in 1990. The reasons for this decline include forest health, changes in the management practices of the National forests, and increasing foreign competition. One of the most significant challenges facing this industry is access to raw materials. The reduction of timber harvests, labor supply, and transportation pose a continuing challenge for this industry sector. Work in this sector is physically demanding and seasonality makes it difficult to attract and retain workforce. Because of declines in timber harvests in the IPH, more timber is coming into the study area from adjoining states and British Columbia. This drives up the transportation costs affecting the pricing and competitiveness of forest product from the IPH study area.

Agriculture and Food Processing

Agriculture employs over 23,400 people within the Inland Pacific Hub study area and continues to be an important component of the regional economy.¹⁹ Based on a gross contribution analysis conducted by the University of Idaho, the agriculture sector, inclusive of food processing generated over \$12 billion in total sales and employed over 56,000 people statewide in Idaho in 2006.²⁰ Idaho ranks 20th in the nation in total output of agricultural products according to a study by the U.S. Department of Agriculture and the state ranks first nationally in potato production, second in barley, and third in sugar beets. Idaho’s principal agricultural products include beef, wheat, corn, and bean in addition to the products mentioned previously.

¹⁷ “The Future of Washington’s Forests and Forestry Industries”, University of Washington, College of Forest Resources Report to the Washington State Legislature, 2007

¹⁸ “Future of Washington’s Forest and Forest Industries Study”, University of Washington, Final Report 2007, page vi

¹⁹ Date includes Grant County and IPH Counties, Washington State Employment Security Department, Agricultural Labor and Employment June 2009; Idaho Department of Labor, Work Force Trends December 2008

²⁰ University of Idaho Extension, “The Contribution of Agriculture to Idaho’s Economy: 2006

Agriculture accounts for over \$28 billion of Washington State's economy according to the Washington Department of Commerce.²¹ The diversity of agriculture in Washington allows producers to adjust their mix of products as market conditions and demands change. Several counties within the IPH study area produce a significant volume of agricultural products. Adams County ranks 6th in the state in terms of the market value of crops and livestock producing \$344 million of agricultural products in 2007, primarily potatoes, wheat, and apples.²² Whitman County ranks 9th with \$254 million of agricultural products primarily dried peas and lentils, wheat, and barley. In 2007, agricultural production in Lincoln County ranks 14th in the state with over \$126 million of agricultural products, primarily wheat, barley, and hay. Spokane County ranks 17th generating \$117 million in sales in 2007 primarily from wheat, hay, and nursery and greenhouse products.

Food processing represents an important value-added industry in the IPH study area. Food processing is an important component of the economy in Washington State; however, only \$592 million of the \$15 billion generated annually from the food processing industry is processed in eastern Washington, primarily in Spokane County. Spokane County leads the IPH study area in gross sales from food processing with \$525 million in 2007 and almost 1,700 employees engaged in the food processing industry.²³ Adams County has over \$344 million in annual agricultural production but only \$59 million in gross sales from food processing and approximately 950 employees. With a substantial volume of agricultural production and a diversity of crops, there should be opportunities to attract additional value-added processing businesses to Adams, Whitman, and Lincoln Counties. Similar economic data by county for food processing in the Idaho IPH counties was not available.



In 2006 the Northwest Food Processors Association completed an economic performance analysis for food processors in three states, Idaho, Washington, and Oregon. According to this study, employment in this industrial sector experienced modest declines from 2001 through 2006 in Washington and Idaho, losing 640 jobs in Idaho and 3,655 fewer jobs in food processing in Washington.²⁴ Efficiency improvements resulting from new equipment and technologies have reduced workforce demand in some processing operations. In 2008, according to the Northwest Food Processors Association there were 72 food processing companies in Idaho and 256 processing companies in Washington primarily contracted in flour mills and commercial bakeries, dairies, fruit processing, and potatoes .

²¹ State of Washington, Department of Commerce, "Value-added Agriculture", www.chosewashington.com

²² Washington Department of Agriculture, 2007 Market Value of Crops and Livestock

²³ Washington State Department of Agriculture

²⁴ "Economic Performance of the Northwest Food Processing industry: Trends and analysis from the Benchmark Data", prepared by Globalwise Inc., July 2008

The food production and processing industry requires both unskilled and skilled workers as well as highly educated researchers to remain competitive globally. A decline in the food production and food processing workforce in Washington and Idaho continues to be a challenge. Workers are more mobile and, with increased job skills, they seek better job opportunities.²⁵ Attracting and preparing new workers with the right skills and continuing to link farm operations with ongoing research at the regional Universities can generate competitive advantages for agribusinesses within the IPH study area.

According to recent studies, there are several trends likely to impact agriculture and food processing in Washington and Idaho and these trends will affect the IPH study area. Because agricultural production in both states is exported, world agricultural supply and demand factors have a direct impact on prices received by growers and processors in the region.²⁶ International trade policies, fluctuations in foreign currency exchange rates, oil prices, and weather all affected the price of regional agricultural products and the competitiveness of these IPH goods in international markets. Wastewater treatment at food processing plants is an issue as more stringent regulatory guidelines are established by EPA and state agencies creating additional costs for these facilities. Continual investment in food production, process research to develop innovative waste treatment processes, improved products, strategies to gain pricing advantages, and implementation of new innovations in product development are vital to maintaining global competitiveness for this industry and research in these areas is being conducted in the IPH study area.²⁷ Finally, the availability of efficient, reliable, and cost effective transportation can enhance shipping of agricultural production domestically and internationally expanding market opportunities and creating pricing advantages for agribusinesses in the IPH study area.

Mining

According to the U.S. Department of Labor, Bureau of Labor Statistics, the mining industry employed over 5,100 people in the IPH study area in 2007.²⁸ The mining and mineral industries in the IPH study area include firms engaged in mineral extraction of ores, and natural gas. There are other products included in this industrial sector such as stone, clay, metals, sand, gravel, and chemical and mineral fertilizers. The mining and mineral industries primarily located in the northern IPH counties were silver, gold, zinc, magnesium, and molybdenum and are mined.²⁹ Sand, gravel, and aggregate for highways and construction make up 95 percent of the nonmetallic minerals shipped in the IPH study area.³⁰

²⁵ Washington Department of Agriculture, "Review of the Food Processing Industry in Washington, Working Paper Commissioned for the Future of Farming Project", 2008

²⁶ Washington State Employment Security Department, "2008 Agricultural Workforce in Washington State", June 2009

²⁷ Washington Department of Agriculture, "Value-Added Agriculture"

²⁸ U.S. Department of Labor, Bureau of Labor Statistics, Quarterly Census of Employment and Wages, July 2009

²⁹ Minerals Division, U.S. Geological Survey

³⁰ WSA Regional Freight Profile, August 2009

Mining employment in Washington has remained relatively stagnant for the past decade while employment from mining operations has experienced modest increases in Idaho.³¹ Employment in mining and mineral operations extends beyond just extraction; it involves exploration, mineral assessment, mine construction, environmental monitoring, and reclamation. According to a recent study of the Tri-County region of Washington (Ferry, Stevens, and Pend Oreille Counties), the average covered wages for mining workers was \$54,950 in 2006, among the highest in the state.³² According to the National Mining Association, jobs in the mining industry in Washington and Idaho are well-paying jobs, with an average wage of \$53,300.³³

A recent industrial cluster study by William B. Beyers, Paul Sommers and Andrew Wenzl, projected continued modest growth for the mining industry in the Washington counties of the IPH and review of employment projections for Idaho IPH counties projects modest employment growth as well. While mining does not represent a future growth industry for the IPH study area, sustaining existing mining operations is important to other industries both in the IPH study area and nationally so this sector will continue to provide employment within the region primarily in extraction, engineering, and environmental reclamation.

Exhibit 1 shows the existing industrial clusters in the Washington Workforce Development Districts Region 10 which includes, Asotin, Columbia, Ferry, Garfield, Lincoln, Pend Oreille, Stevens, Whitman, and Walla Walla Counties. A concentration of agriculture/food products in the southern Washington counties and forest products in the northern Washington counties with several mining and heating equipment manufactures is evident.³⁴

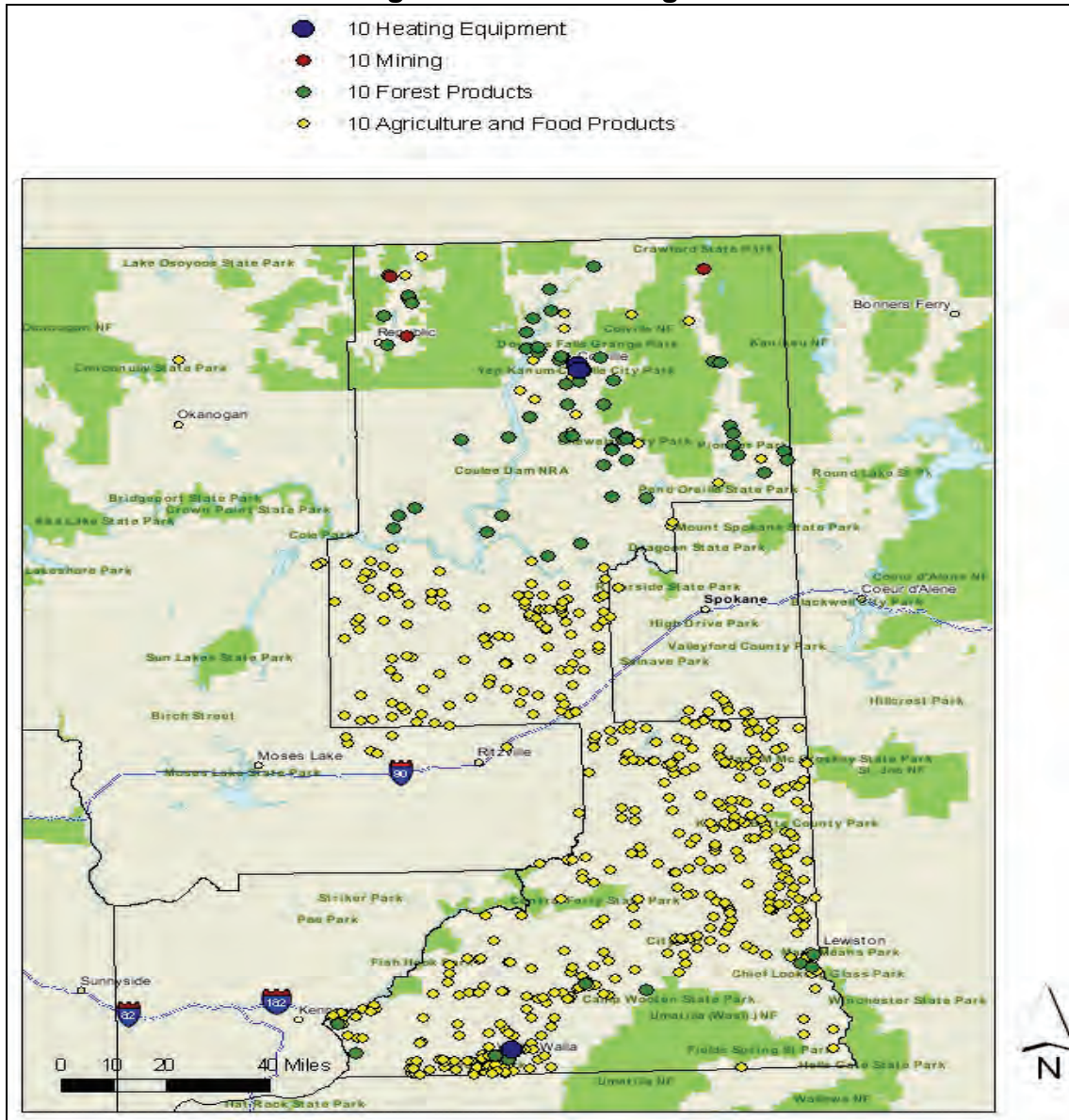
³¹ Idaho Mining Association, Mining Industry Report 2008

³² "Industrial Cluster Analysis in the Tri-County Region of Washington State, August 2007, Chase Economics for Tri-County Economic Development District

³³ Idaho Mining Association, Mining Wages

³⁴ Industrial Cluster Analysis for Washington State Workforce Development Areas, prepared for the Washington State Workforce Board, November, 2008

Exhibit 1: Washington State WDA Region 10 Cluster Firms



A unique niche industry sector has been developed in Colville, WA in the heating equipment industry. Colmac Industries founded in 1959 is nationally recognized as a leader in design and manufacture of laundry finishing equipment. The company is an innovator in this industry developing laundry products that include direct gas heating systems, high-speed hanging systems, and related equipment that sets the standard in the industry. According to the company, over 93 percent of their business is returning customers.

Quadra-Fire, also located in Colville, is a leading producer of wood and pellet inserts and stoves. This company exports their products to Europe as well as markets throughout the U.S. The company has been successful in producing clean-burning non-catalytic wood burning appliances and continues to develop new products. Local economic developers attribute the location of Colmac Industries to the founder's relationship with the community. Quadra-Fire has

been located in Colville for over 20 years and the company is very proud of their workforce but local economic developers do not recall the specific site evaluation criteria when this company located in Colville. While employment and related economic growth from this niche industry may not be significant from a state perspective, these companies are an example of the entrepreneurial ventures in the IPH that have been successful and represent a continuing economic development strategy for the study area.

Regional Job Growth Analysis

The use of shift-share analysis is a standard analytical tool that evaluates regional job growth and assesses how that job growth is affected by national trends and what portion of that growth is attributable to the competitive factors within the study area vs. national business cycles and industry growth. Through shift-share analysis it is possible to dissect the growth or decline of industry sectors within a region to determine how much of that growth or decline is the result of overall national growth, growth within the industry itself, or from regional competitiveness.

Table 3: Employment Growth in the IPH Study Area (1997–2007)³⁵

Sector	Percent Growth	Employment Change
Professional and Business Services	47.0%	10,698
Construction	47.4%	7,995
Natural Resources and Mining all sectors	-16.4%	-1,444
Manufacturing	-6.6%	-2,494
Financial Activities	28.0%	4,426
Information	9.3%	497

According to the Bureau of Labor Statistics, from 1990 to 2007, the Inland Pacific Hub study area's employment increased from a low of 265,024 in 1991 to a high of 380,113 in 2007.³⁶ During this period the 19 counties of the IPH study area experienced steady employment growth in some industrial sectors and decline in others as shown in **Table 3**.

To better understand these changes in employment within the IPH study area, the data can be dissected into three sources that contribute to employment growth or decline:

- National Growth Effect – explains how much of the industrial growth within the IPH is the result of the national economy
- Industrial Mix Effect – explains how much of the industrial growth within the IPH is the result of the growth within a specific industry or cluster at the national level

³⁵ Census of Employment and Wages, Bureau of Labor Statistics; State of Washington Workforce Explorer; State of Idaho Workforce Trends Profile, WSA analysis

³⁶ Census of Employment and Wages, Bureau of Labor Statistics; Local Area Personal Income Reports, Bureau of Economic Analysis

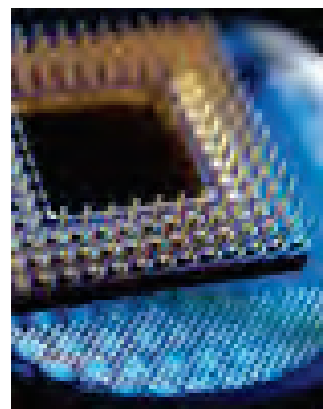
- Regional Competitiveness Effect - explains how much of the change in a specific industry sector is the result of unique competitive advantages within the study area

Those industries with high regional competitiveness underscore the study area's competitive assets or disadvantages, highlighting those industry sectors where the IPH is competing well compared to the country as a whole.

Table 4: Shift-Share Analysis for the IPH Study Area (1997–2007)³⁷

Sector	Industrial Mix Percentage	Regional Competitiveness Percentage
Professional & Business Services	13.4%	21.8%
Construction	19.4%	16.1%
Financial Activities	1.4%	14.7%
Manufacturing	-32.6%	14.1%
Information	-14.3%	11.7%
Trade, Transportation & Utilities	-3.9%	7.0%
Public Administration	-1.2%	6.2%
Education & Health Services	12.4%	3.5%
Leisure & Hospitality	10.1%	-6.5%

From 1997 to 2007, the national employment growth rate was 11.9 percent. The IPH study area has significant employment in “recession proof” businesses including government, military, and education there is normally less fluctuation in employment within the study area because those businesses are not directly related to the business cycle. The Industrial Mix Effect measures how an industry has grown outside of the influences of the national growth from business cycles. In the IPH study area there is a concentration of employment in sectors that are growing nationally in terms of employment; the largest employment growth in this segment of the shift-share analysis is in the Education and Health Services sector.



The Regional Competitive Effect accounts for the growth or decline in employment within the IPH that is not attributable to national growth or growth in the industry sector and this helps to identify unique competitive advantages or challenges within the study area. Manufacturing, professional and business services, and the trade, transportation and utilities sector represent the most significant regional competitive effects, which means the IPH study area is very competitive in these sectors and can attract additional employment because the study area has competitive assets that positively affect these sectors. It is

³⁷ Bureau of Labor Statistics, Census of Employment and Wages; U.S. Census Bureau, Local Employment Dynamics; Workforce Explorer, Washington Department of Labor; Idaho Workforce Trend Profiles, WSA analysis

particularly impressive that the IPH study area experienced 14.4 percent growth in manufacturing employment during the same period that the industry sector nationally saw a decline in employment of over 32 percent.

The IPH regional competitiveness effect indicates unique conditions and advantages within the study area that can contribute to the growth of specific industry sectors. Determining exactly what those conditions and advantages are is beyond the scope of this study. However, the IPH should consider pursuing further analysis of existing businesses within the region to identify the unique advantages and conditions that have contributed to employment growth in manufacturing, professional services, and the trade, transportation, and utilities sector specifically to identify opportunities to enhance these competitive advantages and utilize this knowledge in business recruiting efforts.

Traded Sector Businesses

Within the Inland Pacific Hub study area, certain industries have played a critical role in shaping the economy of the area and its future. Economists refer to the industries that “drive” a region’s economy as **traded sector businesses**. Traded sector businesses produce goods or deliver services that are sold to customers outside of the region and those sales bring new money into the region that is spent within the region.³⁸ These businesses effectively “import” money into the region. Traded sector businesses include most manufacturing firms and many services that are sold outside the region. These traded sector businesses compete with other companies nationally and internationally and there are opportunities for public investments and public policies to enhance the ability of traded-sector businesses to compete against businesses located in other places. It is generally the economic growth within traded-sector businesses that will ultimately drive the economy of the IPH study area. Because of their dependence on external customers, traded sector businesses often utilize transportation assets differently than non-traded sector businesses within a region.

There are also **non-traded sector businesses** within the IPH study area that are very important to the regional economy. These businesses serve the local needs of the population and enhance the quality of life in the region. The non-traded sector businesses in the IPH study area includes retail, most but not all healthcare, consumer services, most government employment, professional services, and other operations whose primary customers are local. The growth and prosperity of non-traded sector businesses is driven by population growth and consumption by the local and regional population. A significant portion of the “secondary traffic” commodity flow that moves into the study area is destined for non-traded sector businesses. “Secondary traffic” is defined as freight movement associated with a distribution center or warehouse serving as an intermediate reship facility, an example might be a Wal-Mart or similar retail distribution operation.

³⁸Corporation for Enterprise Development, Development Report Card for the States, 2006

It is difficult to maintain the economic prosperity of a region by selling more inherently local services to people within the region, particularly if the population and employment growth within the broader region is not expanding as rapidly as other areas. This challenge is reflected most clearly in those counties within the IPH study area where local services, such as gasoline stations, have very high location quotients (see county profiles). Within those counties the opportunity to sell significantly more services at the gasoline station is not an option without real population growth or increasing tourism.

Central to most economic development strategies is the concept of developing, retaining, or attracting business activity that brings a flow of revenue into the community that in turn generates income and other jobs through the multiplier effect. Traded-sector businesses bring dollars into the IPH study area and some of those funds are spent in non-traded sector businesses. To strengthen and grow the study area's economy, it is important to continue to enhance an environment that is supportive for traded-sector businesses which will foster a positive environment for existing businesses and overall economic activity in the IPH study area. Public investments that could help to enhance the economic environment for traded-sector businesses might include:

- Customized workforce training programs to support new processes and equipment
- Improvements to transportation networks and services that improve shipping and receiving and drive down transportation costs and improve reliability
- Incentives that help support equipment upgrades and additional equipment installation
- Tax abatements that reduce on-going life-cycle costs

Growth Industries in the Inland Pacific Hub Study Area

According to many economists, the current recession is not just another mid-course correction in the business cycle but a general restructuring or transformation of the economy.³⁹ The impacts of this downturn are global in scope affecting international markets as well as communities throughout the U.S. While some industries may be pushed to the brink of failure, when the economic recovery inevitably returns, surviving businesses and emerging industries will create new job opportunities. A greater emphasis on retraining workers for new careers will be needed generating additional opportunities for the education and training sector that is already a growth industry in the IPH study area.



Identifying industrial clusters and targeted businesses is a challenge for every economic development organization. There are a range of economic theories

³⁹ Wall Street Journal, The Economist, Business Week

about the functional linkages and connections influencing the interdependencies of various industry sectors, the decision-making matrixes influencing site selection, and the importance of other factors such as incentives and land availability that may drive the location choices companies make.⁴⁰

In order to identify growth clusters within the IPH study area, a number of resources were utilized, including review of industry sector data and economic data from IPH counties and a literature review of a number of resources including Bureau of Labor Statistics and other federal data sources, state workforce reports, and studies. For each of the identified clusters, the study area has comparative advantages, disadvantages, and linkages to other industries that create strategic opportunities for these business clusters. Just as in other regions of the country, conditions that support and nurture these industries are not uniform throughout the IPH study area. Available workforce and workforce skills, land and building that meet the needs of business, broadband services, and other strategic factors will be evaluated by each company considering a potential location in the IPH study area. The unique requirements of each company will determine the precise evaluation criteria and weighting that they will utilize in making their ultimate investment decisions.

Growth and Emerging Industries in the Metro Counties in the IPH Study Area

The metro IPH counties include Spokane and Kootenai Counties. Although there is a third MSA in the IPH study area, the characteristics of the Lewiston MSA are often more consistent with the other non-metro counties in the study area. A recent industrial study for the State of Washington identified a number of strategic business clusters in the state including Spokane and Kootenai Counties.⁴¹ High technology manufacturing was identified as a substantial cluster in these two metro counties. High technology manufacturing, including manufacturing of aircraft components, communications and computer equipment, and electrical signal testing and electrical equipment, were identified as strategic growth sectors for these two metro counties.⁴² This analysis went beyond the traditional concentration analysis and evaluated linkages to other industries within the study area, quality of wages, and industry size to assess the strategic importance of these clusters. Additionally, the study identified health care, educational services and construction as important growth clusters in both counties.

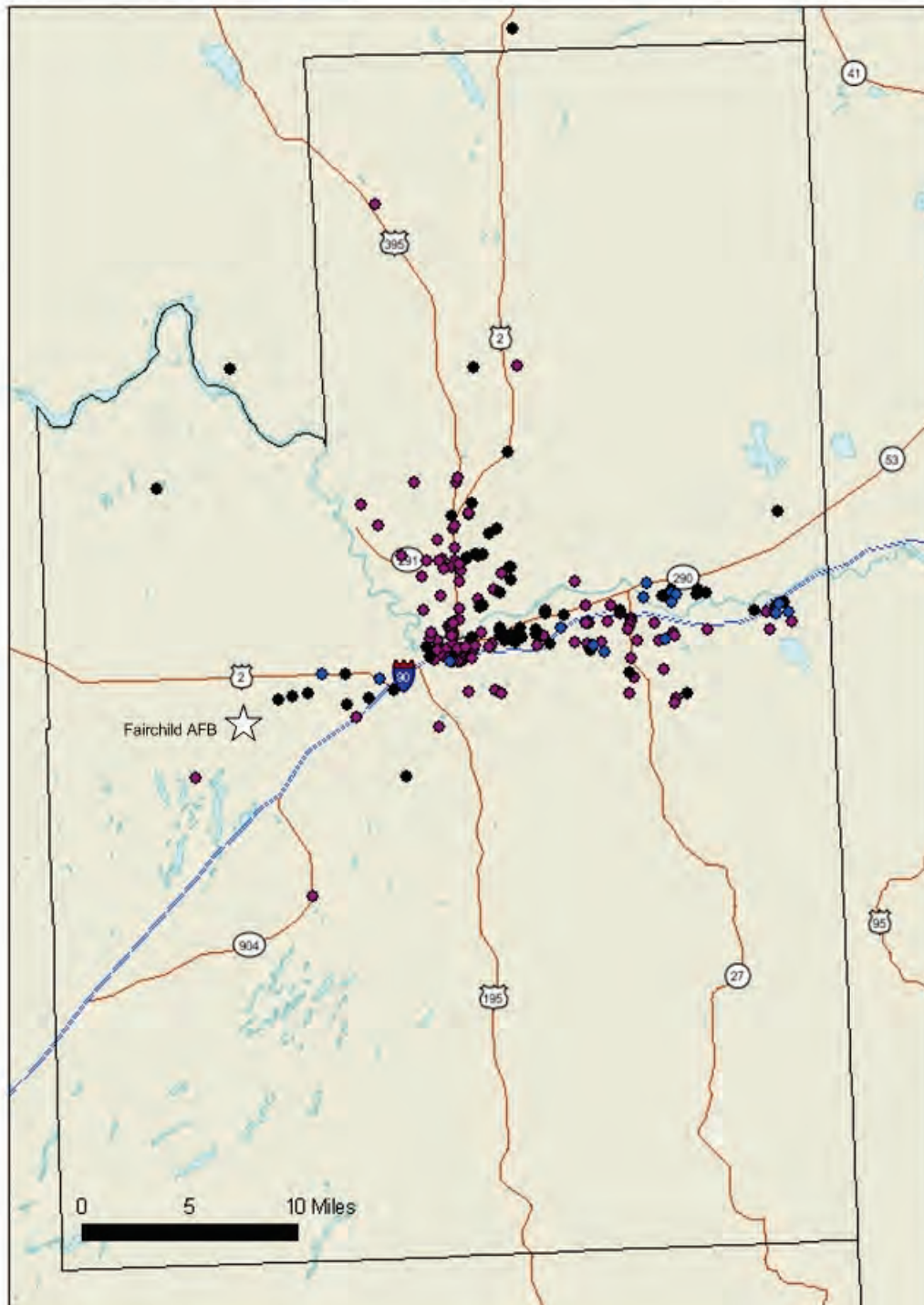
⁴⁰ "Industrial and Regional Clusters: Concepts and Comparative Applications", Bergman and Feser, 1999

⁴¹ Industrial Cluster Analysis for Washington State Workforce Development Areas, prepared for the Washington State Workforce Board, November 2008

⁴² "Industry Cluster Analysis for Washington State Workforce Development Areas, Region 12" report prepared for the Washington State Workforce Board, Nov. 2008,

Exhibit 2: Washington WDA Region 12 Cluster Firms

- 12 High Tech Manufacturing
- 12 Other Manufacturing
- 12 Services



Source: Industrial Cluster Analysis for Washington State Workforce Development Areas, prepared for the Washington State Workforce Board, November 2008

When these clusters were mapped as a part of the study, the concentrations in and around the transportation infrastructure were pronounced. With the exception of a few locations near Spokane Valley and Liberty Lake, the majority of the identified cluster firms for Spokane and Kootenai Counties in high technology, manufacturing, and services were located near major roadway corridors. This is driven to some extent by the availability of suitable buildings and available land, but also reflects the concentration of stronger growth clusters in the metro Spokane and Kootenai area and the important role accessible transportation connections play in locating these industry clusters within a broader regional workforce catchment area.

Great Spokane Incorporated (GSI) conducted a detailed industry analysis to define core industry clusters for their future economic development efforts. GSI retained Angelou Economics to analyze and validate the targeted clusters and provide additional guidance on attracting these targeted clusters to the Greater Spokane region. The target industry analysis involved an in depth assessment of industries, specific assets required for their operation, and review of their compatibility with community objectives. Six specific criteria were used in the target industry selection process including long term growth potential, wage rates, existing industry presence, local assets creating a competitive advantage for the industry, and community and industry compatibility. As a result of the analysis, six target clusters were recommended:

- Health Sciences
- Aerospace
- IT and Digital Services
- Clean Technology
- Logistics and Distribution
- Industrial Machinery and Supplies (including building materials and supplies)

Niche industries within these clusters that were identified as recommended targets for the Greater Spokane region include:

Health Science

- Medical and Diagnostic Laboratories
- Medical Equipment and Supplier
- Bioinformatics

Aerospace

- Maintenance Repair and Overhaul (MRO)
- Navigational, Measuring, Electrical, and Control Instruments Manufacturing.
- Materials and Component Manufacturing to Serve Boeing Supply

Chain

- Small Aircraft Manufacturing, Original Equipment Manufacture

IT and Digital Services

- Communications Equipment Manufacturing
- Computer and Peripheral Equipment Manufacturing
- Computer Systems Design and Related Services
- Motion Picture and Video Industries
- Software Publishers

Clean Technology

- Sustainable Building Design and Materials Manufacturing
- Solar Cell Manufacturing
- Wind Turbine Manufacturing

Logistics and Distribution

- Assembly and Distribution of Medical Equipment and Supplies
- Hub for International Import/Export and Regional Distribution

Centers

- Logistics Systems Design/Supply Chain Management Software

Industrial Machinery and Supplies

- Building Supplies and Materials Manufacturing
- Industrial Machinery Manufacturing
- Metal Working Machinery Manufacturing
- Ventilation, Heating, A/C Machine Manufacturing

Based upon the analysis developed in these two industrial cluster studies for the metro IPH counties, there are twelve specific industry clusters identified. These industry clusters are the focus of the metro counties economic development efforts and the foundation for workforce development activities in the metro counties within the IPH study area.

The twelve clusters are:

- Aerospace
- Communication Equipment
- Computer Equipment
- Electrical Signal Testing
- Electrical Equipment
- Health Care and Health Sciences
- Education Services
- Construction
- IT and Digital Services
- Clean Technology
- Logistics and Distribution
- Industrial Machinery and Supplier

Two industry clusters were common to both studies, aerospace and health sciences. Nine of the identified clusters are traded-sector businesses. Three of the clusters could be either traded-sector or non-traded sector businesses, health care/health sciences, education services, and construction. To the extent that these three industrial clusters represent a service that can be essentially “exported”, bringing revenues from external sources, they are traded-sector

businesses. For example, construction firms that work outside of the study area or health care services that draw patients from other areas of the country are functioning as traded-sector businesses.

The shift-share analysis for all of the IPH counties suggests there are competitive advantages within the study area for: Professional and Business Services, Manufacturing, and Trade and Transportation. Only three of the metro county clusters identified previously fall outside of these three competitive sectors. Those three sectors are health care, construction, and clean technologies. Generally the targeted clusters identified for the metro counties in the IPH study area are consistent with the areas of competitive advantages identified in the IPH shift-share analysis.

A recent study conducted to assess competitive factors for the aerospace industry in Washington provides some insights that may help to enhance the competitiveness for other clusters as well. The “Aerospace Industry Competitiveness Study” evaluated recent aerospace projects that chose to locate in other states and analyzed factors that influenced those decisions.⁴³ The study ranked key site selection factors and assessed how well Washington performed on each of these factors. The study found:

- Washington labor costs were among the highest in the country in the aerospace industry, which hindered competitiveness
- Washington had higher workers’ compensation costs paid by employers
- Washington has a larger existing aerospace manufacturing workforce and more engineers focused in aerospace than competitor states
- Washington’s average unemployment insurance rates were higher than in competing states
- Washington had the highest percentage of college educated adults compared to the competing states
- Facility-related costs (construction costs, electric rates, water rates) were higher at the Washington sites than other competing sites
- Overall cost of living factors were highest in Washington

There have been similar target industry cluster initiatives conducted in the IPH study area. In parallel to the GSI study conducted for Washington, Idaho has outlined an initiative called Project 60, a plan designed to foster systemic growth by focusing on business retention and expansion, workforce training, workforce recruitment, and technology transfer. The plan focuses on domestic recruitment of several industries that are synergistic with the states existing industry clusters. The Project 60 plan suggests the region should focus its investments in the following industries:

- Alternative Energy
- Recreational Technology
- Manufacturing

⁴³ “Aerospace Industry Competitiveness Study”, prepared by Deloitte Consulting, April, 2009

- Aeronautics
- Technology

Labor cost and availability, regulatory environment, workforce skill, the availability of land and suitable buildings are very important to most industrial clusters. The information contained in this study provides some important insights that can affect site location decisions within the IPH study area. Many of these factors are the result of state legislative policies and will require legislative action to change.

Growth and Emerging Industries in the Non-Metro Counties in the Inland Pacific Hub Study Area

There are differences between the growth clusters in Spokane and Kootenai Counties and those identified for the non-metro IPH counties in the study. For many years non-metro economies have faced challenges often as a result of their dependency on more traditional industry clusters such as mining, manufacturing, and agriculture. In the IPH study area, many of the non-metro counties face unique economic development challenges including a limited availability of land held in private ownership that is suitable for business and industrial development, limited marketing budgets to support business attraction strategies, constrained public tax revenues to support local economic development activities, and infrastructure needs that exceed the local financing capacity.

Rural industrial clusters are a concentration of businesses in an area that allow them to take advantage of natural resources, access significant market areas or larger labor pools, and often as a result there are lower transportation costs or labor costs for these companies than there might have if they were located elsewhere. Often in rural areas, clusters are merely similar businesses that draw on common suppliers, known as *sectoral* clusters.⁴⁴ Normally these cluster subsets consist of only a few industrial sectors. An example of a sectoral cluster in the IPH study area would be farm supply stores or grain elevators. A study conducted by the USDA found that “at the national level, when all 18 manufacturing industries are considered together, the average cluster-employed worker earns about 7 percent more than other comparable workers”.⁴⁵

The most significant concentration of rural clustering is found in and around the IPH study area, in the industrial Northeast, the Great Lakes region, and in the Southeast. Industrial clustering is very limited in the Plains and Rocky Mountain states. **Exhibit 3** shows four types of non-metro counties: 1) those without establishments in any industry clusters; 2) those with non-clustering establishments; 3) peripheral counties of clusters; and, 4) central counties in clusters with the highest concentration of businesses relative to adjoining counties. Most of the non-metro IPH counties fall into the fourth category.

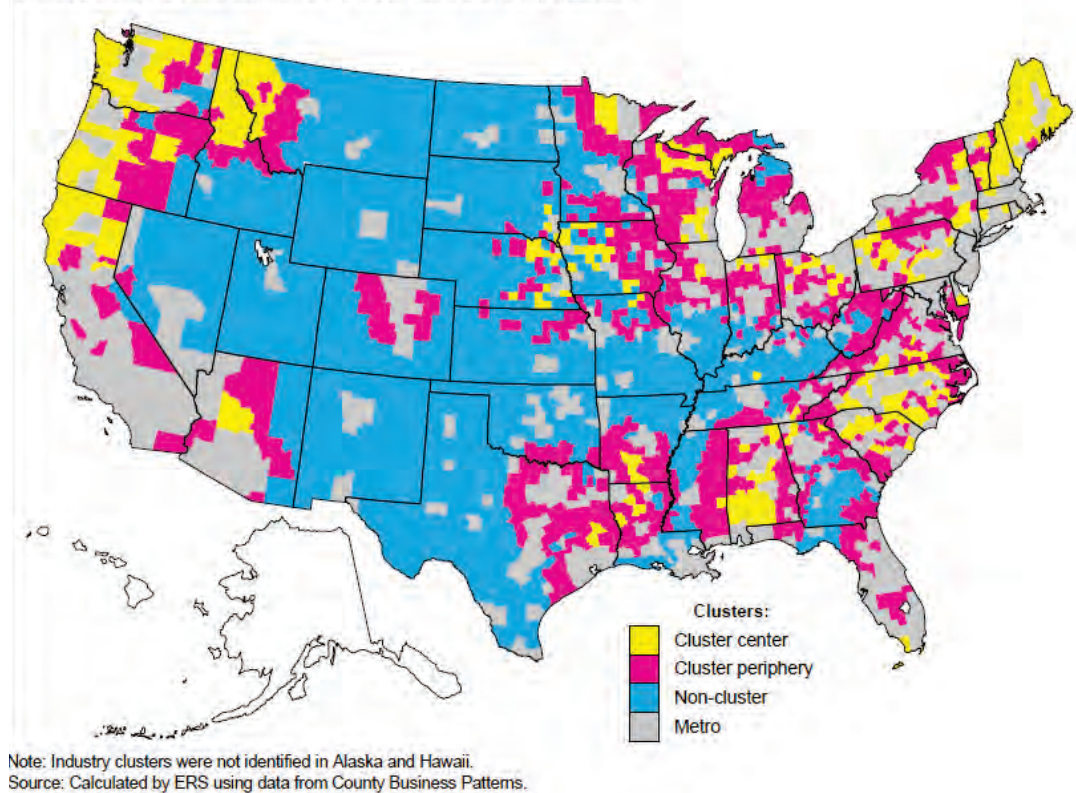
⁴⁴ “Rural Industry Clusters Raise Local Earnings”, USDA, Rural Development Perspectives, vol. 12, no. 3

⁴⁵ “Rural Industry Clusters Raise Local Earnings”, USDA, Rural Development perspectives, vol. 12, no. 3, page 22

Exhibit 3: Non-metro Manufacturing Industry Clusters

Nonmetro manufacturing industry clusters

Nonmetro clusters are less common in the Great Plains and Rocky Mountains



There are non-metro areas around the country that have successfully diversified their economies attracting new businesses, supporting entrepreneurial business activities, and facilitating the expansion of existing business operations through public policies and investments. Bonner County is an outstanding example of economic development success in the IPH study area. In spite of their location in the northern Idaho panhandle, some challenging transportation connections and winter weather issues, Bonner County has been successful attracting and retaining businesses and helping local companies achieve very impressive growth. Bonner County has an aggressive economic development program that works closely with local businesses to help them resolve problems and promotes strategic public investments that benefit businesses and the community, such as their efforts to improve broadband services in the area.

Karl Dye, Executive of the Bonner County Economic Development Corporation says, “We have found that the most successful companies in our region have one thing in common: an entrepreneurial owner or management team who has made a conscious decision to build their business in Bonner County. They have accepted the fact that they may face challenges because of our location, but it is a location they want to live in.” Successful examples of these entrepreneurial businesses include: Coldwater Creek, a national retail apparel company; Litehouse Foods, a food processing company that manufactures refrigerated salad dressings and other products distributed nationwide; Quest Aircraft, a company that manufactures bush/utility aircraft and provides missionary and

humanitarian aircraft without charge to groups around the world; and, Unicep Packaging Inc., an innovative packaging solutions firm headquartered in Sandpoint.

Growth industries are being aggressively pursued by every economic development professional in the U.S. and thus competition is fierce. The non-metro counties in the IPH study area have strategic opportunities to build on existing advantages and capture emerging business opportunities that take advantage of assets and build on regional strengths. Based upon an extensive literature review, interviews with regional economic developers and businesses, and analysis of location quotients, shift-share analysis and additional professional evaluation the following sectors offer potential for economic growth in the non-metro counties of the Inland Pacific Hub study area:

- 1) **Value-added agribusiness** – The data suggests there are niche market opportunities in food processing primarily in Adams, Lincoln, and Whitman County, Washington. These counties produce a significant volume of agricultural products but have relatively low gross sales from food processing. Food processing is a significant value-added opportunity for non-metro counties in the IPH study area. According to some studies,



there is an 80 percent value added from basic food processing.⁴⁶ Although many of the existing food processors in the IPH study area are large-scale businesses, the Departments of Agriculture in both Washington and Idaho provide services to help small businesses begin new business operations providing potential support for new niche market processing operations.

Further agricultural market opportunities within the non-metro IPH counties may be realized in wineries, livestock production, organic and specialty crops, and agri-tourism. The IPH study area is already a source for “identity preserved crops” that generate higher prices and greater revenues for growers.⁴⁷ This specialized crop production strategy can generate long-term profits for producers in both domestic and international markets.

There are a number of opportunities to expand value-added agriculture in the non-metro IPH counties. Direct marketing to customers or direct selling to restaurants generates opportunities to increase pricing and revenues from agricultural production. In central Kentucky, a group of Amish farmers have developed a unique specialty vegetable auction where regional chefs

⁴⁶ Washington State University, Extension Food Processing

⁴⁷ “White Paper-Identity Preserved Marketing: Key to Future Agricultural Viability”, Identity Preserved.com, 2003

bid on a wide variety of eatable flowers, organic fruits and vegetables, heirloom tomatoes, and some processed foods, many of which have been requested by the chefs and regional restaurants. Many growers in the IPH study area have developed relationships with local groceries and restaurants but opportunities to expand on those markets create additional value-added agriculture for the study area.

- 2) **Bio-products and green technology** – Bio-products refers to products that are manufactured using chemicals, energy, or processes produced from biological materials or biomass, which are renewable organic materials. This “green” sector offers opportunities to capture what was once considered “waste products” and produce new products that come from forestry, agricultural, and even municipal waste sources. Research and technology within the IPH study area are making significant advances in this industry, and because of the sustainable volume of “raw materials” within the study area, there is a natural linkage between the available “waste products” and producing new industrial products. Bio-product opportunities for the IPH study area include green fuels, value-added bio-products for feed and fiber, and environmentally friendly lubricants, chemicals, coatings, and fibers derived from non-petroleum sources.⁴⁸ Within the IPH study area, Washington State University, Pacific Northwest National Laboratory, and the USDA are involved in research to continue to develop new bio-products.

Inexpensive electric power and state incentives have created an opportunity to create additional “green” economic development opportunities expanding on solar panel, photovoltaic cells, and silicon production in the IPH study area. Solar Grade Silicon LLC located in Moses Lake, WA could not keep up with demands for silicon last year. Several solar panel and silicon producers are considering sites for new facilities in the IPH study area at the present time, according to local economic developers. Workforce, land availability, and wastewater treatment capacity will be key factors for companies considering IPH locations for these types of facilities.

- 3) **Tourism and Visitor Services** - Tourism is important to all of the counties within the IPH study area. The combined visitor expenditures for all of the IPH counties totaled over \$1.6 billion.⁴⁹ Visitor expenditures, excluding Spokane and Kootenai Counties, were \$505,485,000. Bonner, Nez Perce, Stevens, and Whitman Counties have the most significant tourism revenues of all the non-metro counties. There are a number of tourism assets within the non-metro IPH counties that represent opportunities for future growth in the tourism industry. Niche market tourism sectors

⁴⁸ “Creating a Bioeconomy in Washington State”, Washington State University, 2008

⁴⁹ “Washington State County Travel Impacts 1991-2007”, prepared by Dean Runyan Associates, “The Economic Impact of Travel & Tourism in Idaho”, prepared by Global Insight and D.K. Shifflet. Note – dates for data collection do not coincide between the two state, Idaho reflects 2004 data collection and Washington reflects 2006 data collection, the most recent available data

including adventure tourism, agri-tourism, eco-tourism, and heritage tourism experienced steady growth prior to the recession and are expected to continue to play an important role in the tourism industry when the economy stabilizes.⁵⁰ Tourism is an important traded-sector business for the more rural areas as it attracts both people and revenues most often from outside the IPH study area.

Successful tourism also offers a high-value business development opportunity for the IPH study area. There are many examples of business leaders who have visited an area and subsequently decided to make a business investment there, including the CEO of Trex in Reno, Nevada or the CEO of Coldwater Creek in Idaho. A number of non-metro IPH communities have been successful in developing their tourism industry but significant opportunities for growth in this sector remain, particularly if more visitor services can be developed within the study area to support the tourism assets that already exist in this area. These visitor services include lodging in a range of price points, restaurants and catering, and enhancing services related to arts, entertainment, and recreation.

While wages in the tourism sector are low and work is seasonal, there are many small business owners in this sector that earn more than the regional average income. Some of the tourism assets in the non-metro IPH study area include:

- Access to 2010 Olympic Games and associated Paralympics
- Many scenic byways including Panhandle Historic River passage, Coulee Corridor, The Mullan Road, the Lewis and Clark Trail, and the International Selkirk Loop
- Several ski areas
- Numerous historic sites
- Rivers and wildlife areas
- National Forests and State Parks
- Friends of the Coeur d'Alene Trails

Transportation access and wayfinding programs along with marketing and advertising funds to attract more visitors to these areas are vital to building additional tourism revenues in the non-metro IPH counties. The availability of appropriate visitor services will be a constraint as well, until more of these services are readily available in the non-metro counties but for many of these counties, the growth of tourism represents an important revenue source for the future.

- 4) Forest Products** - Within the non-metro counties of the IPH there are millions of acres of forestland. The northern counties in the IPH study area represent a significant forest resource and are challenged by the threats facing this industry and by the limited availability of privately owned land that

⁵⁰ Travel Industry Association of America, 2009 research

could support the growth of other industries in this area. There are some growth opportunities within this sector building upon recent research, new technologies and processes that have been developed at regional Universities that represent strategic potential for this sector in the non-metro IPH counties.

The increased demand for kiln-dried dimension lumber and veneer that is due in part to concerns about mold and related health concerns represents one of these sector growth opportunities.⁵¹ There are also value-added market opportunities to be developed expanding upon international markets, providing specialized woods to craftsmen furniture makers and building upon that small but growing niche in the IPH study area, and linking residual forest waste products to biomass and bio- fuel opportunities.

5) Manufacturing – The shift-share analysis for the IPH clearly shows regional competitive advantages for manufacturing in the IPH study area. Although manufacturing employment has decreased nationally, improvements in technology and productivity account for some of those job losses and new opportunities exist in advanced and high-value manufacturing. There are a diverse range of manufacturers in the non-metro IPH counties including:

- Food processing
- Primary metal manufacturing, including manufacture of metal alloys and related products
- Fabricated metal manufacturing, including machining, tool making, welding, coatings, and small arms manufacturing
- Power electronics testing equipment
- Farm and mining machinery manufacturing
- Heating equipment, including warm air furnaces and commercial laundry finishing equipment
- Boat building

The public sector plays an important role in enhancing the manufacturing sector within the IPH study area through their efforts to support an environment where the manufacturing sector can be competitive and prosper. Workforce training is critical to this industry and community colleges and technical schools, customized on-the-job training services, and upgrade training services are critical to the success of this sector in the non-metro IPH. It is important for the public sector to realize that manufacturers today compete with other similar businesses around the world. The public sectors efforts that help these manufacturing firms maintain or improve their competitiveness, both in terms of cost and quality of their products will help them to continue to create jobs in the IPH study area. Public sector investments that can help to enhance competitiveness include:

- Improved transportation facilities and networks

⁵¹ Northwest Forest Products Research Consortium, newsletter 2008

- Focusing on the cost of utilities services and insuring timely availability of treatment and collection/distribution services
- Assessment of proposed regulations to evaluate both the cost and consequences of regulations on local businesses balanced with the expected good to be realized from regulatory changes.

Most of the non-metro counties in the IPH study area have manufacturing operations. Some of the manufacturing businesses in the study area, such as Schweitzer Engineering Laboratory (SEL), were started by entrepreneurs with personal ties to the region. SEL designs and manufacturers embedded systems to monitor, control, and meter electric power systems. The company began in 1982 as the result of a PhD project at Washington State University. Today the company sells their products and research around the world from their headquarters and manufacturing facility in Pullman, WA.

Several states have developed successful “cross match” programs that provide information about key inputs used by manufacturers around the state. These programs enable smaller businesses to identify potential customers for their products. As an example, Quest Aircraft currently purchases aviation parts from companies in Seattle but there may be opportunities within the study area to find a firm with machine tooling and heat treat capabilities that could fabricate parts that meet Quest’s requirements.

Economic Development and Regional Competitiveness

Understanding the critical factors that influence a company’s decision in selecting a location for a new operation or business expansion is a quintessential economic development activity. The economic prosperity of the IPH study area depends upon the business and industry in the region and their requirements for labor, transportation, utilities, and other services. Many unique factors influence a business’s decision to locate or expand a facility in one location over another. Over the years industrial site evaluation factors have evolved to meet the changing demands of businesses in an increasingly global marketplace.

To help business leaders, economic developers, real estate investors, and local and state governments better understand these site location trends, a corporate site location survey has been conducted annually for the past 23 years by the Area Development Site and Facility Planning Journal.⁵² This study of key factors driving business location decisions has reviewed a range of operational factors, financial considerations, and site issues to identify the primary considerations for private companies engaged in the site selection decision-making process.

The Corporate Site Survey covers companies in a broad range of sectors including primary metals, electrical equipment and components, food, warehouse and distribution, and pharmaceuticals. A significant percentage of the 2008

⁵² “23rd Annual Corporate Survey” Area Development Journal Site and Facilities Planning, January, 2009

respondents represented manufacturing and distribution operations. Data from the 2008 survey indicates that:

- 1) Cost is the primary differentiator as global competition continues to require businesses to reduce costs to compete
- 2) Decision-makers want to implement their location decisions in a more expeditious manner and those requirements are being factored into the site evaluation process, which drives the need for a “state of readiness” in business recruiting
- 3) Availability of a qualified workforce is crucial to businesses and their ability to retain that workforce is an important evaluation factor
- 4) Incentives, although not as important as previous years, are still important but the focus is on more customized incentive packages with flexibility to respond to a business’s specific needs
- 5) Quality of life is not a significant differentiator in most location decisions today because a smaller percentage of the workforce is being relocated from other places; however, quality of life issues influence a company’s ability to retain employees long term

The number one factor impacting site selection decisions in the 2008 Corporate Site Survey was highway accessibility. Rising concern over higher fuel costs, overall transportation costs, and the ability to schedule timely deliveries is evidenced by three major site selection factors: highway accessibility, proximity to suppliers, and railroad services increasing significantly over last years rankings. The key corporate site selection factors identified in the survey and factor rankings based upon the percentage of respondents who identified each factor as “very important” or “important” to their site decisions are shown in **Table 5**.

Table 5: 2008 Corporate Site Selection Factors

Ranking	Factor	2007 %	2008%
1	Highway Accessibility	90.0%	96.9%
2	Labor Costs	95.0%	92.3%
3	Energy Availability and Costs	82.4%	89.0%
4	Available Skilled Labor	85.1%	88.7%
5	Occupancy or Construction Cost	85.5%	88.2%
6	Available Land	73.3%	85.4%
7	Corporate Taxes	90.8%	83.8%
8	Incentives	88.6%	83.4%
9	Environmental Regulations	68.9%	83.2%
10	Proximity to Major Markets	76.9%	82.8%
15	Proximity to Suppliers	49.3%	71.8%
22	Railroad Services	20.8%	38.1%

These factors, along with other unique competitive conditions, will affect the viability and competitiveness of business investment in the IPH study area and will significantly influence the site decisions that businesses make in the future about locating new business operations or expanding existing facilities. Transportation alone will not foster economic growth; however, improved transportation connections linked with an available skilled workforce, sites with the required utilities that allow building construction to begin immediately, “one-stop permitting” assistance, and multimodal transportation services can be significant differentiators improving the IPH study area’s ability to attract and retain businesses in the future.

Another recent study of corporate real estate executives identified a slightly different set of factors that were the most important issues in influencing location decisions.⁵³

- Ease of Permitting and Regulatory Procedures
- Transportation Infrastructure
- Existing Workforce Skills
- State and Local Tax Structure
- Utility Infrastructure
- Land/Building Prices and Supply
- Workers’ Comp. Rates
- Flexibility of Incentive Programs
- Higher Education Resources
- Availability of Incentives

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ASSOCIATES

Economic development is a very competitive business. Companies continually assess their operations to evaluate profitability and determine where to invest revenues to position their business for the future. There are strategic assets

⁵³ Site Selection Journal, November 2008

within the IPH study area that can play an even greater role in the region's economic future that include natural resources, workforce skills, entrepreneurial strengths, and transportation assets. There are also weaknesses and challenges within the study area that can serve to limit the prosperity of the region going forward. The SWOT analysis that was a part of the stakeholder meetings will provide greater insights into these issues.

Inland Pacific Hub Study Area County Profiles

The individual county profiles that follow were developed to evaluate economic activity to better understand how improved freight transportation connectivity may affect the county's economic future. Each of these county profiles assesses population and workforce trends, existing major industries, primary import and export commodities, and the existing transportation infrastructure.

Understanding Location Quotients:

Location quotients (LQ) are used to measure economic specialization in a community or region compared to a larger geographic or economic region. They are a measure of relative concentration of private industry within a specific area and are often used to indicate a specific industry's export orientation and self-sufficiency. Location quotients are utilized in research to quantify and compare concentration of industries and they are a useful tool to better understand the economic strengths and weaknesses of a community or region.

Within accepted economic theory, a location quotient greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. Usually a LQ of greater than 1.25 is used to classify an area industry as an "exporter". Economic development professionals often use LQ to identify industries within an area where there may be competitive advantages creating opportunities for additional growth within the defined or related industries. The competitive advantages may be the presence of a major supplier, skilled workforce, transportation infrastructure, or other key resources. High LQ may also indicate economic vulnerability within a community particularly when concentrations are within industrial sectors where there is little or no growth.

The LQ may indicate that the local economy is a net importer of the goods and services of the particular industry being measured. Location Quotients were generated for each of the Counties in the IPH study area to provide additional insight into the comparable industry concentrations in each county.

County Commodity Flow Data

The commodity flow tables contained in each of the county profiles was developed from the TRANSEARCH data purchased for this study. This data is developed using various models, predictive analysis, trends research, and other information and is considered to be the best available database for commodity

flow information. How TRANSEARCH data is created is explained in detail in Appendix A: Data Sources and Processes Used to Create TRANSEARCH; in the Regional Freight Profile working paper.

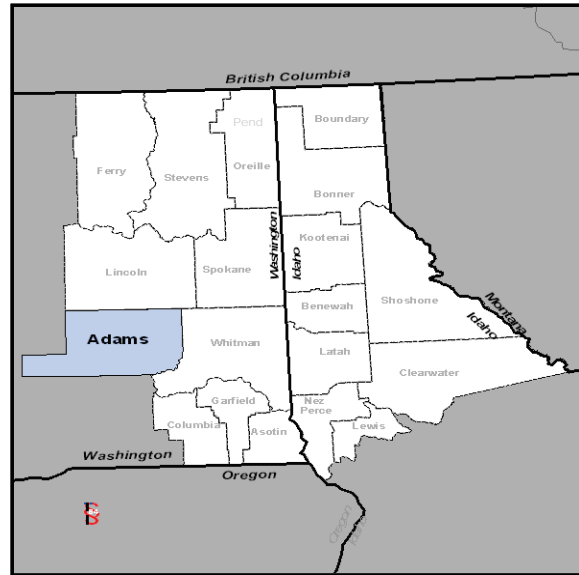
In general, the data is assembled at a national level for the U.S., Canada and Mexico from a wide variety of historic data sources which are then modeled to produce forecasts for future freight flows. Like all modeling based on economic indices, the further into the future the forecast, the more variability there is in the precision of the results. Also, since the model is created at the macro level, there is the possibility that disaggregating the national totals into regional portions, then state portions and then further into county portions may cause some of the commodity tonnages to be overstated or understated at the finest granular levels due to assumptions about demographic and other economic modeling criteria. By and large, most commodity projections can be considered to be sound judgments. However, when data anomalies are spotted, TRANSEARCH is contacted to validate and explain the modeling assumptions or to correct the database.

County Profiles

Adams County, WA
Asotin County, WA
Benewah County, ID
Bonner County, ID
Boundary County, ID
Clearwater County, ID
Columbia County, WA
Ferry County, WA
Garfield County, WA
Kootenai County, ID
Latah County, ID
Lewis County, ID
Lincoln County, WA
Nez Perce County, ID
Pend Oreille County, WA
Shoshone County, ID
Spokane County, WA
Stevens County, WA
Whitman County, WA

ADAMS COUNTY, WASHINGTON

Adams County is part of the Columbia Basin that has become one of the state's premier agricultural centers. According to the USDA, Adams County is the 3rd largest wheat producer in the state and 17th in the U.S. generating over 12.7 million bushels in 2007. Most of the business activity within the county is related to the processing of vegetables and fruit including several processing operations and cold storage facilities. More than 60 different crops are grown in Adams County. Half of the nation's French fries are made from potatoes grown in this area. The area also has a growing wine industry.



Nonfarm employment is expected to grow over the next ten years in Adams County, increasing by 1.1 percent.⁵⁴ Some of the largest manufacturers in the county include frozen specialty good manufacturer McClain Foods and JR Simplot Co. Food Group. Service industries in Adams County include several transportation companies, professional services particularly related to the agribusiness section, and financial services.

POPULATION TRENDS

Although population in Adams County has increased by 3,682 since 1990, Adams County's population growth was substantially lower than the State of Washington as a whole from 2000 to 2008 with Adams County experiencing a 5.2 percent population change compared to an 11.1 percent population growth for the state as a whole during this period. The population growth in Adams County over the past 36 years is less than half of the statewide population growth during that same period. Between 1969 and 2006 the population of Washington increased by 91 percent while Adams County's population increased by only 48 percent.

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Thirty-four percent of the population of Adams County is under 18 years of age compared with 23 percent below the age of 18 statewide. Adams County has the lowest median age of all the counties in the IPH study area. The Hispanic community represents over 53 percent of the Adams County population and 43.4 percent of the population over the age of five speak a language other than English at home. Over 18 percent of the population in Adams County lives below

⁵⁴ Washington State Employment Security Department, Labor Market and Economic Analysis 2009

the poverty level and the 2007 median household income of \$38,463 is significantly below the state median income of \$55,628.⁵⁵.

Table 6: Population Data for Adams County

Year	Population
1990 ⁵⁶	13,643
2000	16,450
2008 ⁵⁷	17,285
2015	17,740
2020	18,250
2030	19,330

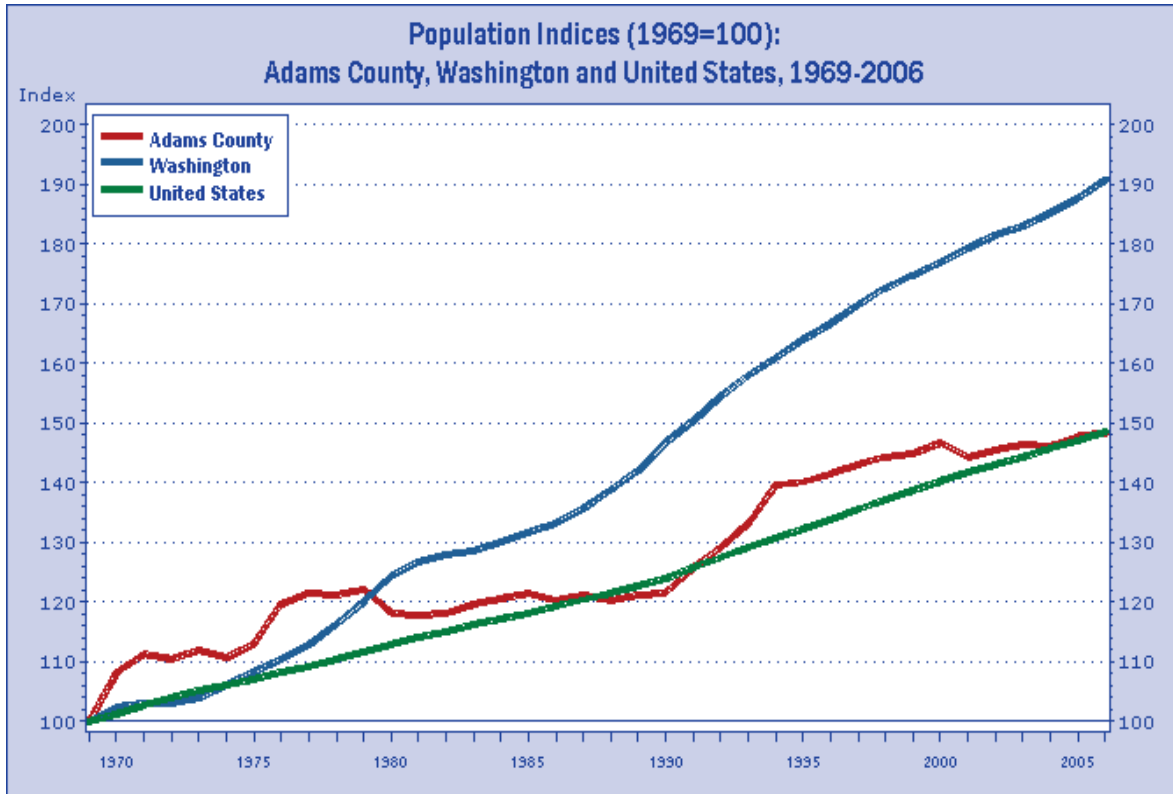
Exhibit 4 shows the population growth of Adams County compared with the growth in the State of Washington and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969, and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. This exhibit compares the differences in population growth in these three geographic areas even though they vary in size. The population growth in Adams County during this period grew 50.5 percent, well behind Washington's growth at 92.9 percent but on par with the national population growth rate.

⁵⁵ U.S. Census Bureau and State of Washington

⁵⁶ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

⁵⁷ U.S. Census Bureau 2008 Population Estimates

Exhibit 4: Population Indices for Adams County



INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Unemployment in Adams County increased from December 2007 to December 2008 primarily as a result of jobs lost in farming, crop production, nursery, and greenhouse employment. Unemployment increased to 10.4 percent by the end of 2008, which was a two percent increase over the jobless rate in 2007. There were some employment gains during 2008 in manufacturing and government, although modest in terms of total employment. The largest employers in Adams County include McCain Foods, a processor of frozen potato products with 450 employees, JR Simplot Co., a potato processor with 350 employees, and Columbia Cold Storage with 40 employees.

Table 7: Industry Sectors by Employment in Adams County⁵⁸

Industry	Employment
Agriculture, Forestry, and Fishing	1,389
Manufacturing	1,032
Food Manufacturing	944
Crop Production	812
Retail Trade	572

Agri-business is the largest employer in Adams County which is consistent with the volume of agricultural products grown in the county. Adams County ranks 6th in the state in terms of market value of crops and livestock producing \$344 million of agriculture products in 2007, primarily potatoes, wheat, and apples.⁵⁹ Food processing generates \$59 million in gross sales in Adams County and is included as part of the manufacturing sector.

According to the most recent economic impact study for tourism expenditures in Washington State, tourism in Adams County generated \$27.5 million in travel spending in 2007 creating 310 jobs and \$1.9 million in state and local tax revenues.⁶⁰ Travel spending has increased by 4.8 percent over the past seven years in Adams County.

Exhibit 5 compares employment growth in Adams County for the past 37 years to employment growth in the State of Washington and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Adams County's employment increasing by 30.7 percent during the period, well below Washington at 156.6 percent and the nation at 98.7 percent.⁶¹

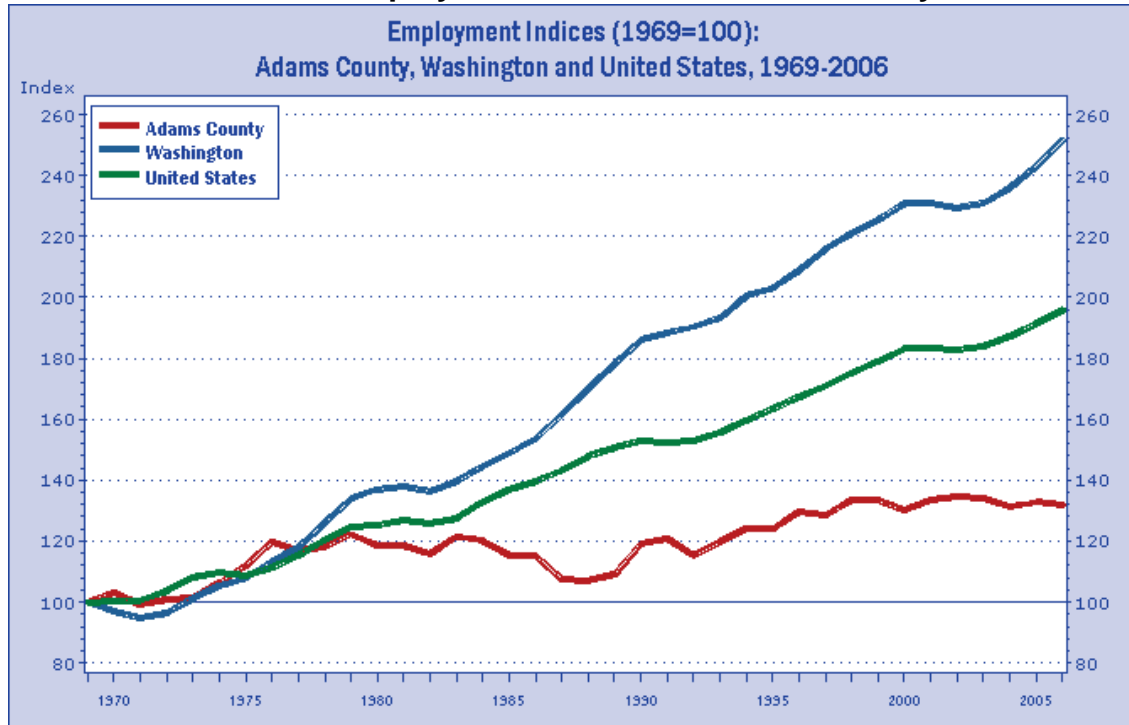
⁵⁸ Bureau of Economic Analysis, Employment Statistics

⁵⁹ Washington Department of Agriculture, "2007 Market Value of Crops and Livestock"

⁶⁰ "Washington State County Travel Impacts 1991 – 2007" Washington State Department of Community, Trade, Economic Development

⁶¹ Pacific Northwest Regional Economic Analysis

Exhibit 5: Employment Indices for Adams County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. Workforce availability and skill is a critical factor in retaining and attracting new investments and employment. Education attainment is frequently used to assess workforce skill based in a community. According to the U.S. Census Bureau, 63.3 percent of the residents of Adams County over the age of 25 graduated from high school.⁶² This is one of the lowest high school graduate rates in the IPH study area. Only 17.6 percent of local residents have an Associate's Degree or higher and slightly over 12 percent have a Bachelors or Graduate degree. Based on education attainment, many companies would not consider Adams County as a potential location if their operations require a high level of skill or technology applications.

In 2008, employment in Adams County expanded at a slower rate than in 2007 with the addition of 120 jobs. Government employment, which makes up 30 percent of the employment base in the county, increased by 3.1 percent during 2008 representing 1,640 workers out of a total civilian labor force of 8,020.⁶³

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is exported outside the local area. The location quotients shown in **Table 8**

⁶² U.S. Census Bureau Comparative Community Profiles, 2008

⁶³ Labor Area Summary, June 2009, Washington State Employment Security Department

compare employment concentration in Adams County to the State of Washington as a whole. Adams County has a substantially higher employment concentration in crop production than the state as a whole and there is a high degree of economic specialization within the county in agri-business. There are competitive advantages for agri-business in Adams and opportunities for additional growth in food processing, identity preserved crops, organic food production, and other value-added agri-businesses.

Table 8: Location Quotients for Adams County

Industry	Location Quotient	2007 Employment
Crop Production	33.2	812
Agriculture and Forestry support activities	26.8	403
Agriculture, Forestry, Fishing, and Hunting	26.2	1,389
Animal Production	17.1	173
Food Manufacturing	14.1	944

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people as never before. Consumers buy fruits at our local market, companies receive supplies from international firms to produce their products, and bulk commodities like grain, coal, or oil move into and out of U.S. ports every day. We expect constant access to the goods available from the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

Interstate 90 runs through northern Adams County linking the county to Spokane and Seattle. The county is also served by US 395 and Highway 26. A BNSF line runs through Ritzville and a Union Pacific line is located to the east approximately 70 miles from Othello.⁶⁴ According to the Washington Department of Commerce, the closest intermodal facility serving Adams County is the BNSF facility in Spokane that is classified as a “non-daily intermodal service” facility.⁶⁵ The airport closest to Adams County is the Tri-Cities Regional Airport located 47 miles from Othello; the Spokane International Airport is 120 miles away. The Port of Othello is located in the panhandle of Adams County and encompasses 182 square miles of property.

⁶⁴ Washington DOT, Transportation Map

⁶⁵ BNSF Intermodal Network Map

MAJOR COMMODITIES⁶⁶

The commodity flows shown in **Tables 9** and **10** identify the top imports and exports for Adams County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the County. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, transloading, warehousing, and value-added inventory handling.

Adams County's most significant export in 2007 was farm products and food or kindred products accounting for the vast majority of the goods shipped out of the county. The TRANSEARCH data projects exports of these products from Adams County to decline significantly between 2007 and 2027 by over 46 percent for farm products alone. The decline in exports also mirrors a projected decrease in farm employment projected through 2030 by Woods and Poole Economics. The decline in farm exports is consistent with predicted trends nationally for agriculture as more crops are consumed locally for value-added activities such as livestock production, locally based food processing and production of ethanol and other bio-fuels. U.S. farmers are also facing increasing foreign competition, fluctuations in the value of the U.S. dollar and greater environmental regulations, all of which can impact price competitiveness of U.S. agriculture exports. These national trends however may not hold true for the IPH study area due to its diverse agricultural production capabilities, access to low cost transportation by rail and barge, and close proximity to major export gateways such as Seattle, Tacoma and Portland.

Imported commodities into Adams County have substantially lower volumes than the goods being exported. The primary goods being imported into the county were food or kindred products and farm products. These goods primarily represent consumable food products used by the community for personal and livestock consumption. These goods are sold in grocery stores, feed stores, and restaurants. The commodity data shows a decline in food and farm products over the next 20 years in Adams County. Although the population growth in Adams County is very modest, the population of the county is not projected to decline during the next 20 year period.

⁶⁶ Commodity data (TRANSEARCH) was purchased from Global Insight

Table 9: Inbound Commodities for Adams County

Top 10 Commodities Shipped Into Adams County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Food or Kindred Products	Tons	162,818	93,964	(42.3%)	102,088	97,002	(5.0%)							264,906	190,965	(27.9%)
	Value/Ton	\$895	\$948	5.9%	\$1,900	\$2,063	8.6%							\$1,283	\$1,515	18.1%
Farm Products	Tons	121,970	63,154	(48.2%)	32,204	18,451	(42.7%)							154,174	81,605	(47.1%)
	Value/Ton	\$326	\$451	38.1%	\$163	\$197	21.4%							\$292	\$393	34.7%
Chemicals or Allied Products	Tons	4,730	6,862	45.1%	78,272	103,425	32.1%							83,002	110,287	32.9%
	Value/Ton	\$1,761	\$1,378	(21.8%)	\$560	\$639	14.0%							\$629	\$685	8.9%
Lumber or Wood Products	Tons	81,791	150,132	83.6%										81,791	150,132	83.6%
	Value/Ton	\$270	\$247	(8.5%)										\$270	\$247	(8.5%)
Clay, Concrete, Glass or Stone	Tons	28,189	32,907	16.7%										28,189	32,907	16.7%
	Value/Ton	\$510	\$538	5.5%										\$510	\$538	5.5%
Petroleum or Coal Products	Tons	11,294	18,467	63.5%	16,080	17,092	6.3%							27,374	35,558	29.9%
	Value/Ton	\$429	\$431	0.6%	\$762	\$762	(0.0%)							\$624	\$590	(5.5%)
Pulp, Paper or Allied Products	Tons	17,022	14,727	(13.5%)										17,022	14,727	(13.5%)
	Value/Ton	\$1,170	\$1,138	(2.7%)										\$1,170	\$1,138	(2.7%)
Nonmetallic Minerals	Tons	16,604	19,188	15.6%										16,604	19,188	15.6%
	Value/Ton	\$20	\$20	(0.9%)										\$20	\$20	(0.9%)
Fabricated Metal Products	Tons	5,104												5,104		
	Value/Ton	\$3,573												\$3,573		
Transportation Equipment	Tons		\$12,072												12,072	
	Value/Ton		\$15,803												\$15,803	
Primary Metal Products	Tons	3,862	9,397	143.3%										3,862	9,397	143.3%
	Value/Ton	\$1,985	\$1,814	(8.6%)										\$1,985	\$1,814	(8.6%)
All Commodities In Adams County, WA	Tons	462,739	440,330	(4.8%)	228,644	235,969	3.2%							691,383	676,299	(2.2%)
	Value/Ton	\$780	\$1,196	53.4%	\$1,117	\$1,199	7.3%							\$891	\$1,197	34.3%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

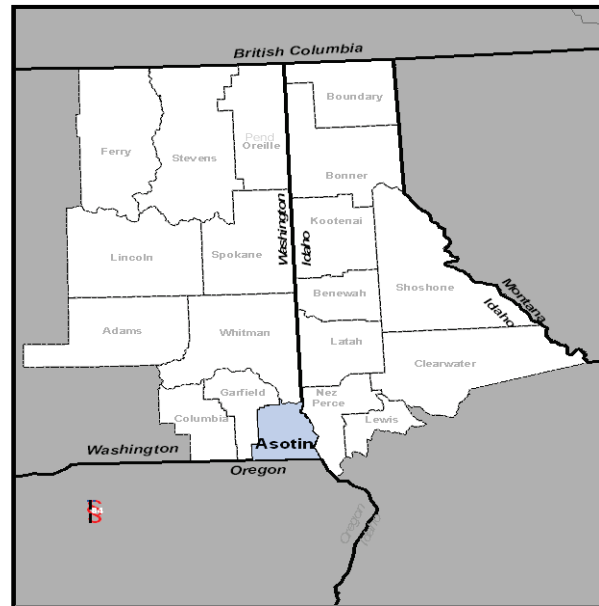
Table 10: Outbound Commodities for Adams County

Top 10 Commodities Shipped Out Of Adams County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Farm Products	Tons	1,247,488	928,585	(25.6%)	1,011,116	285,835	(71.7%)							2,258,604	1,214,419	(46.2%)
	Value/Ton	\$664	\$630	(5.1%)	\$151	\$151	0.0%							\$434		(100.0%)
Food or Kindred Products	Tons	226,984	166,278	(26.7%)	143,960	81,032	(43.7%)							370,944	247,310	(33.3%)
	Value/Ton	\$652	\$658	0.9%	\$832	\$832	0.0%							\$722	\$715	(0.9%)
Waste or Scrap Materials	Tons	1,229	2,474	101.3%	3,800	3,484	(8.3%)							5,029	5,959	18.5%
	Value/Ton	\$179	\$199	11.7%	\$192	\$192	0.0%							\$189	\$195	3.3%
Chemicals or Allied Products	Tons	460	598	30.0%	3,960	4,579	15.6%							4,420	5,177	17.1%
	Value/Ton	\$437	\$560	27.9%	\$257	\$257	0.0%							\$276	\$292	5.9%
Clay, Concrete, Glass or Stone	Tons	2,751	4,300	56.3%										2,751	4,300	56.3%
	Value/Ton	\$196	\$193	(1.4%)										\$196	\$193	(1.4%)
Metallic Ores	Tons	626	336	(46.3%)										626	336	(46.3%)
	Value/Ton	\$421	\$421	(0.0%)										\$421	\$421	(0.0%)
Printed Matter	Tons	193	219	13.8%										193	219	13.8%
	Value/Ton	\$1,837	\$1,837	(0.0%)										\$1,837	\$1,837	(0.0%)
Fresh Fish or Marine Products	Tons	186	269	44.9%										186	269	44.9%
	Value/Ton	\$5,865	\$5,865	0.0%										\$5,865	\$5,865	0.0%
Pulp, Paper or Allied Products	Tons	143	168	17.6%										143	168	17.6%
	Value/Ton	\$291	\$325	11.7%										\$291	\$325	11.7%
Machinery	Tons	86	159	84.2%										86	159	84.2%
	Value/Ton	\$2,889	\$2,955	2.3%										\$2,889	\$2,955	2.3%
All Commodities In Adams County, WA	Tons	1,480,243	1,103,576	(25.4%)	1,162,836	374,930	(67.8%)							2,643,079	1,478,506	(44.1%)
	Value/Ton	\$662	\$634	(4.2%)	\$236	\$300	27.2%							\$474	\$549	15.8%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

ASOTIN COUNTY, WASHINGTON

Asotin County is a rural county located near the confluence of the Snake and Clearwater Rivers. The Port of Clarkson in Asotin County provides navigable river access to the West Coast supporting shipments of agricultural and forestry products, boats, and other regional goods. The county is an access point to North America's deepest gorge, Hells Canyon, and is also home to a diverse manufacturing sector including jet boats, wine, and wood processing. Tourism is also an important component of the county's economic base. Over 53,797 acres in Asotin County are within the Umatilla National Forest representing almost 17 percent of the total land base of the county. According to the Palouse Economic Development Council, revenues from tourism in 2005 exceeded \$24 million and generated over 390 jobs for Asotin County.



POPULATION TRENDS

The population of Asotin County was 21,420 in 2008, increasing by 3,815 since 1990. The county's population growth was substantially lower than the State of Washington as a whole from 2000 to 2008 with Asotin County experiencing a 4.2 percent population increase compared to an 11.1 percent population growth for the state as a whole during this period.

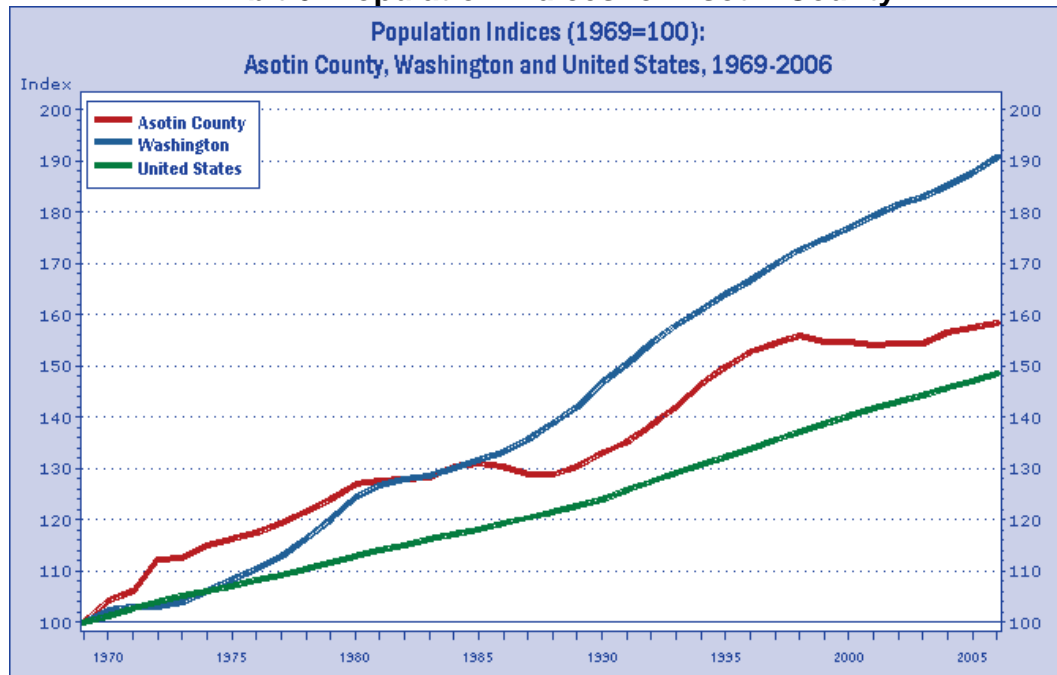
Twenty-two percent of the population in Asotin County is under 18 years of age similar to the statewide population under the age of 18 at 23.8 percent. Fourteen percent of the population in Asotin County lives below the poverty level and the 2007 median household income of \$42,665 are substantially below the state median income of \$55,628.

Table 11: Population Data for Asotin County

Year	Population
1990 ⁶⁷	17,670
2000	20,551
2008 ⁶⁸	21,420
2015	22,690
2020	23,730
2030 ⁶⁹	25,880

Exhibit 6 shows the population growth of Asotin County compared to the growth in the State of Washington and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. This exhibit compares the differences in population growth in these three geographic areas even though they vary substantially in size. The population growth in Asotin County during this period grew 56.7 percent below Washington's growth at 92.9 percent but ahead of the national population growth rate at 49.7 percent.

Exhibit 6: Population Indices for Asotin County



⁶⁷ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

⁶⁸ U.S. Census Bureau 2008 Population Estimates

⁶⁹ 2030 population estimate Woods and Poole Economics

INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Employment growth in Asotin County increased by 170.4 percent from 1969 to 2006 exceeding employment growth statewide which increased 151 percent during this period. Employment growth in Asotin County significantly outpaced the national employment growth which was 95.8 percent. In 2008, employment in Asotin County expanded at a slower rate than in 2007 with the addition of 110 jobs. Government employment which made up 12 percent of the employment base in the county increased by 2.5 percent during 2008 representing 1,230 employees out of a total civilian labor force of 10,660. The largest public employers in Asotin County include the Clarkston School District with 447 employees, the Tri-State Memorial Hospital with 358 employees and Asotin County with 293 employees. The largest private sector employers include M.A. DeAtley Construction a heavy construction firm with over 200 seasonal employees, Costco a retail operation with 175 employees, Albertson's a retail operation with 115 employees, and Renaissance Marine Group a boat builder with 80 employees.

Unemployment in Asotin County in January 2009 was 8.9 percent, up from 7.8 percent in December, 2008. According to the Bureau of Labor Statistics, the statewide unemployment rate in January 2009 was 9.5 percent; slightly more than the rate in Asotin County. The number of nonfarm jobs actually grew by 1.9 percent in 2008 with a net increase of 110 jobs. This employment growth occurred in the trade, transportation and utilities sector, natural resources and mining sector, and in the governmental sector.

Table 12: Industry Sectors by Employment Asotin County⁷⁰

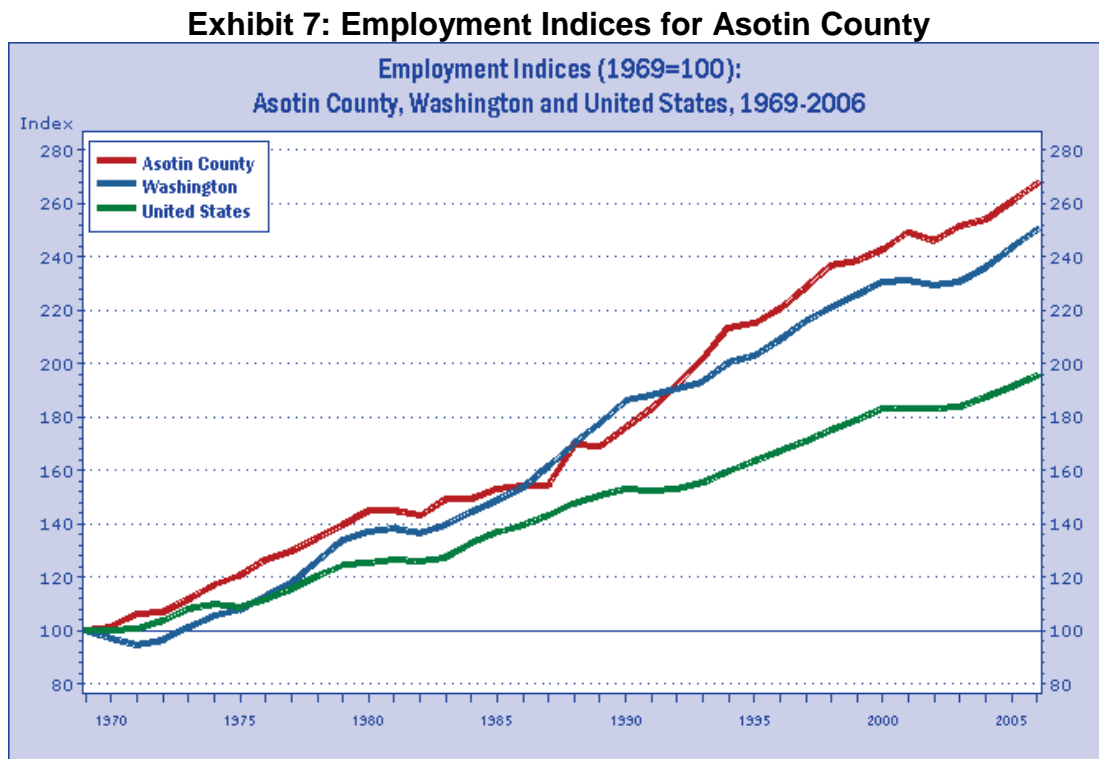
Industry	Employment
Government	964
Retail Trade	712
Manufacturing	472
Construction	434
Finance and Insurance	134
Agriculture, Forestry, and Fishing	67

Government is the largest employer in Asotin County. This sector includes the local school district as well as city and county governments. The largest private employers in the county include Renaissance Marine Group, Costco, and Albertson's. Both Costco and Albertson's are retail businesses while Renaissance Marine is the largest manufacturing employer in the county.

⁷⁰ Bureau of Economic Analysis, Employment Statistics

According to the most recent economic impact study for tourism expenditures in Washington State, tourism generated \$26.6 million in travel spending in 2007 in Asotin County creating 370 jobs and \$1.7 million in state and local tax revenues.⁷¹ Travel spending has increased by 3.9 percent over the past seven years in Asotin County.

Exhibit 7 compares employment growth in Asotin County for the past 37 years to employment growth in the State of Washington and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Asotin County's employment increasing by 170.9 percent exceeding Washington at 156.6 percent and far outpacing the national employment growth which grew 98.7 percent during this period.⁷²



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce is a critical factor in retaining and attracting corporate investments and new employment. Education attainment is frequently used by

⁷¹ “Washington State County Travel Impacts 1991 – 2007” Washington State Department of Community, trade, Economic Development

⁷² Pacific Northwest Regional Economic Analysis

many companies and site location consultants as an indicator of the available workforce skills within a community.

Almost 86 percent of the population of Asotin County completed high school slightly below the statewide average. Over 35 percent of the population over the age of 25 continued their studies after high school with 6.7 percent completing an Associate's Degree and eighteen percent completing a Bachelor's degree or higher compared with 27.7 percent of the population statewide. Certain industries that require a substantial pool of technically educated workers might exclude Asotin County from consideration because of their college graduation rate, however the community's high school graduation rate is favorable and would support many of the industrial clusters identified in the non-metro sector of the regional profile.

Table 13: Location Quotients for Asotin County

Industry	Location Quotient	2007 Employment
Heavy Construction and Civil Engineering	4.29	162
Transportation Equipment Manufacturing	2.57	168
Amusements, Gambling, Recreation	2.41	131
Crop Production	2.28	47
Arts, Entertainment, Recreation	1.98	148
Food and Beverage Stores	1.80	196

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents. The location quotients, shown in **Table 13**, compare Asotin County to the State of Washington as a whole. Asotin County has a substantially higher employment concentration in heavy construction, transportation equipment manufacturing, and gambling than the state as a whole. M. A. DeAtley Construction, Inc. is a heavy construction company that operates throughout the northwest. With over 200 seasonal employees and a fleet of heavy construction equipment the firm is involved in highway construction, excavation, and earthen construction. This employment concentration may reflect the location decisions of this third generation construction firm as opposed to specific economic specialization within the county.

American Turbine is a major supporter of the county's most valuable export commodity, transportation equipment. The company fabricates jets, shouldered wear rings, high-performance intakes, and stainless steel impellers for boat manufacturers. Boat manufacturers such as Renaissance Marine and American Turbine are included in the Transportation Equipment Manufacturing sector and the high LQ of this sector represents a niche specialization where additional economic opportunities could be developed.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market; companies receive supplies from international firms to produce their products; and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

U.S. Highway 12 runs through northern Asotin County linking the county to Nez Perce County to the east. U.S. Highway 195, just north of Asotin County, provides a link to Spokane County. There is limited Interstate access in Asotin County. Access to I-90 via Highway 12 is approximately 150 miles, and access to I-90 via US 195 is approximately 140 miles. The only rail service available in



Asotin County is through the Great Northwest Railroad, a short line operating out of Lewiston, Idaho. Rogersburg State Airport, a short turf strip, is located in the southeastern corner of the county. The closest commercial airport is the Lewiston-Nez Perce County Airport in Idaho. In addition to the Lewiston-Nez Perce County Airport, the Pullman-Moscow Regional Airport is located

approximately 32 miles northwest in Whitman County. The closest Class I railroad intermodal facility serving Asotin County is the BNSF intermodal facility in Spokane that is classified as a “non-daily intermodal services” facility.⁷³ However, the Port of Lewiston is nearby and offers container-loading services on barge and truck. The Port of Clarkston is located on the Snake River on a 120 acre site. Port facilities include a 140-ton crane for loading barges, a 570 foot dock, a hotel/convention center, and recreational facilities. Existing development on the port property has consumed most of the available acreage and the Port Authority is currently developing an additional 120 acre site for future industrial development in the county. The Port of Lewiston is located two miles across the Idaho border near the intersection of US highways 12 and 95. Port facilities include 150,000 sq. feet of warehouse space and a 240-ton mobile crane with three 35-ton container ship lifts.

⁷³ BNSF Intermodal Network Map, Washington DOT Transportation Map

MAJOR COMMODITIES

Tables 14 and 15 identify the top commodity imports and exports for Asotin County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

Asotin County's most significant export in 2007 was lumber or wood products and because there is no rail service in the county all of these products were shipped by truck. The TRANSEARCH™ data projects a 15.4 percent increase in the export of lumber and wood products between 2007 and 2027 however, the price per ton is projected to decrease by 15.4 percent. Farm products represent an important commodity for Asotin County and these products are primarily shipped via water from the Port of Clarkston. The data projects a decrease in farm product exports moving through the port over the next 20 years from Asotin County. This decline in farm product is consistent with agricultural trends affecting the IPH study area that result from foreign competition, fluctuation in international currencies that affect price competitiveness of products grown in the U.S., and environmental regulations that affect growers.

The export of nonmetallic minerals and transportation equipment is projected to increase significantly between 2007 and 2027. Nonmetallic minerals include sand, gravel, stone, clay, and refractory materials. The export of transportation equipment, which includes boats and component parts for boat manufacturers, is projected to increase by almost 32 percent during this period. This represents a strategic economic opportunity to support the expansion of the existing transportation equipment businesses that are already in the county and evaluate investment opportunities that could support additional growth within this niche in Asotin County.

Commodity		2001	2003	% Change	2001	2003	% Change	2001	2003	% Change	2001	2003	% Change	2001	2003	% Change
Food or Kindred Products	Value/Ton	\$1,012	\$885	(3.5%)							\$1,012	\$885	(3.5%)			
	Tons	58,582	43,201	23.3%							58,582	43,201	23.3%			
Lumber or Wood Products	Value/Ton	\$308	\$322	12.3%							\$308	\$322	12.3%			
	Tons	103,511	18,104	(56.3%)							103,511	18,104	(56.3%)			
Commodity	Data	2001	2003	% Change	2001	2003	% Change	2001	2003	% Change	2001	2003	% Change	2001	2003	% Change
		Truck			Rail			Water			Air			Cumulative		

Top 10 Commodities Shipped into Asotin County, WA in 2003 Compared to 2001

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

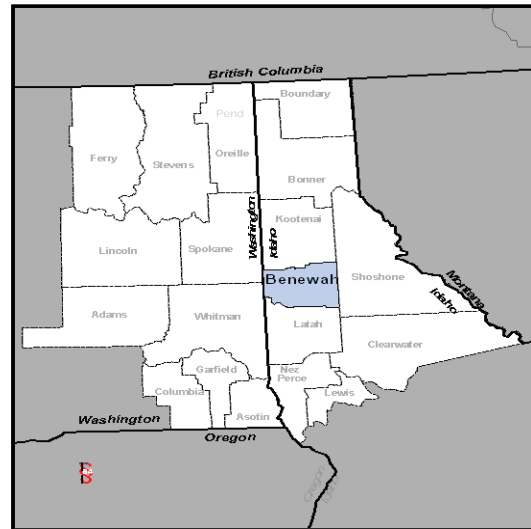
Table 15: Outbound Commodities for Asotin County

Top 10 Commodities Shipped Out Of Asotin County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	75,332	100,289	33.1%										75,332	100,289	33.1%
	Value/Ton	\$316	\$267	(15.4%)										\$316	\$267	(15.4%)
Farm Products	Tons	11,559	11,010	(4.7%)				41,966	32,661	(22.2%)				53,524	43,671	(18.4%)
	Value/Ton	\$659	\$644	(2.2%)				\$294	\$282	(4.3%)				\$373	\$373	0.0%
Nonmetallic Minerals	Tons	31,205	188,260	503.3%										31,205	188,260	503.3%
	Value/Ton	\$10	\$10	(4.2%)										\$10	\$10	(4.2%)
Transportation Equipment	Tons	23,523	31,025	31.9%										23,523	31,025	31.9%
	Value/Ton	\$10,578	\$8,182	(22.6%)										\$10,578	\$8,182	(22.6%)
Clay, Concrete, Glass or Stone	Tons	8,058	36,130	348.4%										8,058	36,130	348.4%
	Value/Ton	\$133	\$129	(3.0%)										\$133	\$129	(3.0%)
Fabricated Metal Products	Tons	3,867	12,176	214.9%										3,867	12,176	214.9%
	Value/Ton	\$3,532	\$3,534	0.0%										\$3,532	\$3,534	0.0%
Waste or Scrap Materials	Tons	509	1,036	103.5%										509	1,036	103.5%
	Value/Ton	\$181	\$201	11.3%										\$181	\$201	11.3%
Fresh Fish or Marine Products	Tons	78	113	44.9%										78	113	44.9%
	Value/Ton	\$5,833	\$5,833	0.0%										\$5,833	\$5,833	0.0%
Machinery	Tons		60												60	
	Value/Ton		\$3,595												\$3,595	
Metallic Ores	Tons	38												38		
	Value/Ton	\$3,739												\$3,739		
Food or Kindred Products	Tons		47												47	
	Value/Ton		\$1,946												\$1,946	
Pulp, Paper or Allied Products	Tons	35												35		
	Value/Ton	\$157												\$157		
All Commodities In Asotin County, WA	Tons	154,297	380,241	146.4%				41,966	32,661	(22.2%)				196,262	412,902	110.4%
	Value/Ton	\$1,920	\$891	(53.6%)				\$294	\$282	(4.3%)				\$1,573	\$843	(46.4%)

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

BENEWAH COUNTY, IDAHO

Benewah County, Idaho was formed in 1915 from Kootenai County. St. Maries is the largest city in the county with a population of 2,644 and serves as the county seat. The county's economy is heavily dependent on forest products and more than 25 percent of the jobs in this county are in the forest products industry. Tourism represents an important growth industry for the county due in part to the investments made by the Coeur d'Alene Tribe whose reservation extends into western Benewah County. The scenic St. Joe River, bird watching, garnet mining, and riverboats in the Heyburn State Park offer visitors a variety of outdoor recreational activities and the availability of tourism support services such as lodging. The casino, available in Worley just inside Kootenai County, can leverage additional tourism revenues for Benewah County in the future. The county is also the gateway to the St. Joe National Forest.



POPULATION TRENDS

According to the U.S. Census Bureau, the population of Benewah County was 9,352 in 2008 increasing by only 1,415 since 1990. From 2000 to 2008 the county's population increased by only 2 percent compared to statewide growth of 17.8 percent during the same period. Nine percent of the population in Benewah County is American Indian. The Coeur d'Alene Tribal reservation extends into western Benewah County. The county's population growth of 48.7 percent from 1969 to 2006 was significantly lower than the 107.1 percent population growth for the State of Idaho during this period and mirrored the national growth rate of 48.8 percent. The county's population is projected to increase to over 12,000 by 2030, still well below the state's anticipated growth rate.

Table 16: Population Data for Benewah County

Year	Population
1990 ⁷⁴	7,937
2000	9,191
2008 ⁷⁵	9,352
2015	10,190
2020	10,800
2030	12,040

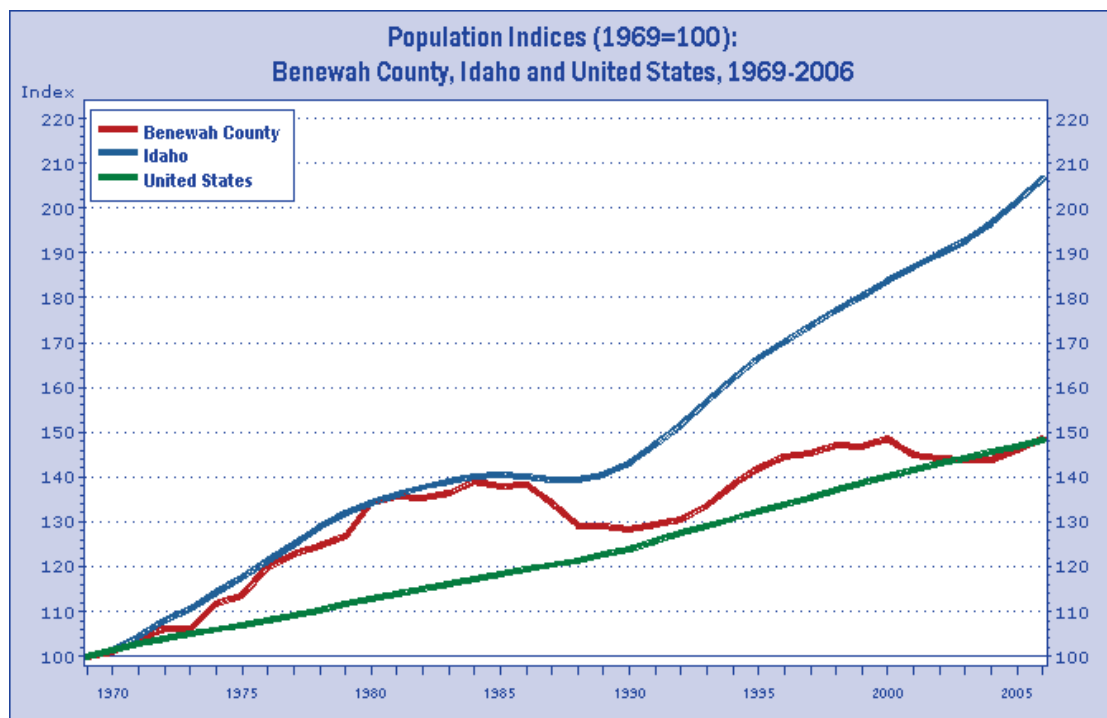
⁷⁴ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

⁷⁵ U.S. Census Bureau Population 2008 Estimates

Twenty-four percent of the population in Benewah County is under 18 years of age, slightly below the statewide population in this age group. Over 15.2 percent of the population in Benewah County lives below the poverty level and the 2007 median household income of \$38,402 well below the state median income of \$46,136.

Exhibit 8 shows the population growth of Benewah County compared with the growth in the State of Idaho and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. This exhibit compares the differences in population growth in these three geographic areas even though they vary considerably in size. The population growth in Benewah County during this period increased 48.9 percent, well behind Idaho's growth at 111.6 percent, but on par with the national population growth rate of 49.9 percent.⁷⁶

Exhibit 8: Population Indices for Benewah County



INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Employment in Benewah County is very dependent on the forest products sector and many factors have influenced employment and the industry itself in Benewah County and in the study area. According to a 2009 report on Idaho's forest

⁷⁶ Pacific Northwest Regional Economic Analysis

products industry, the decline of housing construction and the international recession have significantly affected the Idaho forest products industry in 2008.⁷⁷ Unemployment in the county increased from 5.6 percent in June 2008 to 8.6 percent in June 2009, largely as a result of declines in this industry.

Because of the concentration of employment in forestry products and agriculture, there is significant seasonality in employment in Benewah County. In 2007, unemployment peaked at 9.4 percent in March and declined to 3.1 percent in September reflecting the increase in employment during the harvest season. The unemployment rate in June of 2009 was 8.6 percent, slightly higher than the state and lower than the national unemployment rate of 9.5 percent.

A survey of wood products manufacturers in late 2008 indicated that major wood products manufacturers were experiencing serious declines in revenues and reduction in employment with sixty-three percent of those surveyed reporting reductions in production.⁷⁸ As a result of the concentration of employment in forest products, the county's economy is very vulnerable to fluctuations in housing construction. Declining lumber prices and significant slowdowns in housing construction have contributed to the rising unemployment rate in Benewah County that reached 15.6 percent in early 2009.

Table 17: Industry Sectors by Employment in Benewah County⁷⁹

Industry	Employment
Local Government	710
Trade and Transportation	598
Manufacturing	633
Agriculture	334
Education & Health Services	300

Thirty-nine percent of the jobs in Benewah County are in local government which includes the county, school district, and city governments.⁸⁰ Other major employers in the county include the Benewah Community Hospital, and Berg Integrated Systems, a company owned by the Coeur d'Alene Tribe. This firm specializes in remote site systems for military, disaster relief, fire-fighter and exploration camps infrastructure needs. The company has 80 employees and has developed specialized shelter systems used for traveling medical units, forensic labs, emergency housing, and other related purposes. Other employers include the Coeur d'Alene Tribe, Jack Buell Trucking, Peet Shoe Dryer a manufacturer of shoe trees, Potlatch Corporation, Stimson Lumber, and Valley Vista Care, a nursing home operation.

⁷⁷ Federal Reserve Bank, 12th District, "Beige Book", June 2009

⁷⁸ "Idaho's Forest Products Industry: Current conditions and Forecast 2009". Inland Northwest Forest Products Research Consortium, January 2009

⁷⁹ Bureau of Economic Analysis, Employment Statistics

⁸⁰ Idaho Department of Labor, "Work Force Trends, June 2009"

The Coeur d'Alene Tribe is a significant economic engine for Benewah County, employing over 540 people at its headquarters, retail stores, farm, and medical clinic and an additional 1,000 are employed at their casino, hotel, and golf course in nearby Worley just inside Kootenai County. The Tribe purchased Berg Integrated Systems several years ago in an effort to retain this employer in the community.

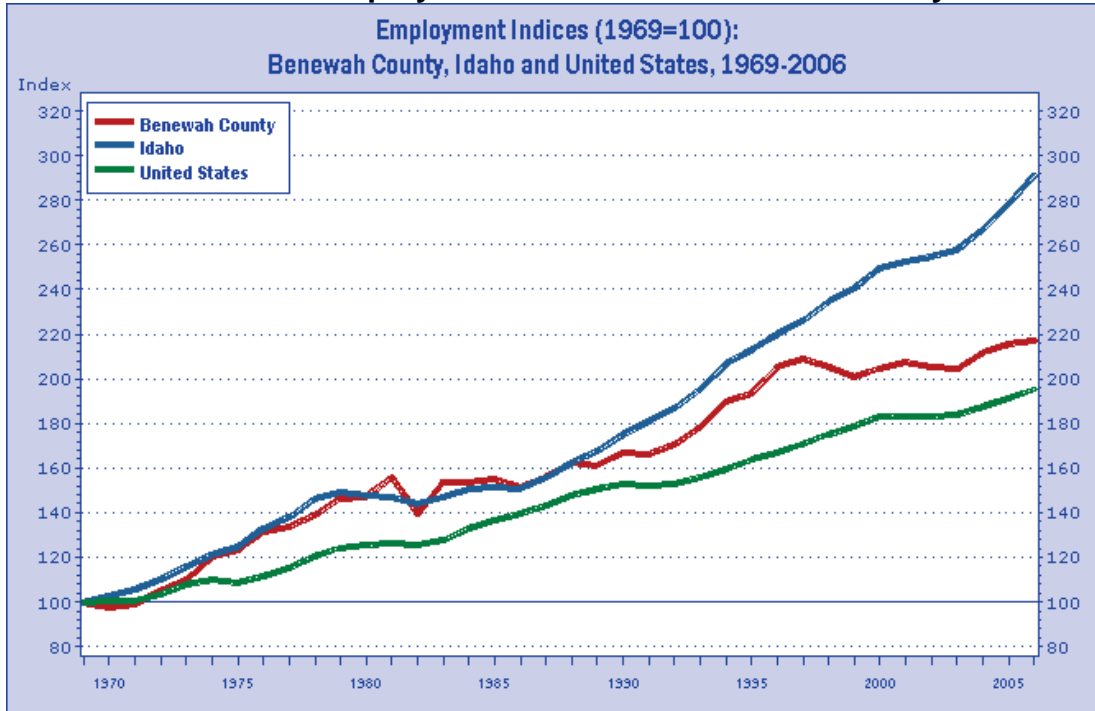
According to the most recent economic impact study for tourism and travel expenditures in Idaho, tourism generated \$17.49 million in visitor spending in 2005 creating 406 jobs and over \$2.5 million in tax revenues.⁸¹ Although Benewah County has a number of tourism assets, the county lacks the tourism resources to effectively market and advertise these destinations.

Exhibit 9 compares employment growth in Benewah County for the past 37 years to employment growth in Idaho and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Benewah County's employment increasing by an impressive 121.3 percent during the period, compared to Idaho's employment growth at 200.5 percent and the nation a 98.7 percent.⁸²

⁸¹ "The Economic Impact of Travel & Tourism in Idaho", Idaho Division of Tourism, September 2005

⁸² Pacific Northwest Regional Economic Analysis

Exhibit 9: Employment Indices for Benewah County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skill are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. According to the U.S. Census Bureau, 79.8 percent of the residents of Benewah County over the age of 25 graduated from high school, compared to the statewide graduation rate of 84.7 percent.⁸³ Only 11.4 percent of the population over the age of 25 have completed a Bachelor’s degree or higher compared with 21.7 percent statewide. Certain industry sectors would not consider Benewah County as a potential location due to the limited availability of a college educated workforce.

Table 18: Location Quotients for Benewah County

Industry	Location Quotient	2007 Employment
Forestry and Logging	166.46	226
Wood Product Manufacturing	50.83	541
Agriculture, Forestry, and Fishing	11.14	269
Gasoline Stations	3.87	69
Transportation and warehousing	3.21	285
Manufacturing	2.17	622

⁸³ U.S. Census Bureau Comparative Community Profiles, 2008

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. Location quotients, shown in **Table 18**, compare Benewah County to the State of Idaho as a whole. Benewah County has a substantially higher employment concentration in forestry and logging and wood product manufacturing than the state as a whole and there is a high degree of economic specialization within the county in these two sectors. There are competitive advantages for forestry and wood products in Benewah County and although this industry is facing a number of challenges as a result of the depressed housing construction industry and trends in the forest industry, there are opportunities to help this industry remain as competitive as possible by utilizing the technologies being developed in the region.⁸⁴

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people as never before. Consumers buy fruits at our local market, companies receive supplies from international firms to produce their products, and bulk commodities like grain, coal, or oil move into and out of U.S. ports every day. We expect constant access to the goods available from the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide efficient access to a larger market area in the future.

U.S. Highway 95 runs through Benewah County north to Sandpoint and Canada and to the south to Payette and Oregon. Highway 5 links St. Maries to U.S. Highway 95 at Plummer and Highway 6 in the southern part of the county links cities in Latah County to the City of Santa in Benewah County. The county is connected to I-90 via US 95 and it is approximately 45 miles to the interstate. The Union Pacific Railroad connects to the St. Maries River Railroad that runs from Plummer in Benewah County to Bovill in Latah County. The closest rail intermodal facility serving Benewah County is the BNSF facility in Spokane. There is a municipal general aviation airport at St. Maries. The closest commercial airport is in Spokane.

MAJOR COMMODITIES

Tables 19 and 20 identify the top commodity imports and exports for Benewah County in 2007 and 2027. Amounts shown include tonnage and value of commodities shipped into (imports) or out of (exports) the County. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments

⁸⁴ "Idaho's Forest Products Industry", Inland Northwest Forest Products Research Consortium, January 2009

that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick-up and deliveries, trans-loading, warehousing, and value added inventory handling.

Benewah County's most significant export in 2007 was lumber or wood products which accounted for almost 60 percent of the goods shipped out of the county. The TRANSEARCH™ data projects exports of lumber and wood products to decline by 17 percent between 2007 and 2027. This decline in lumber and wood products is consistent with regional and statewide trends in the forestry industry. Development of new residential and supporting commercial areas have affected some of the timber availability in Benewah County, however other factors including foreign competition, declines in demand due to the housing marketing, and health of the timber stands contribute to the decline in this sector. The vast majority of the lumber and wood products exported from Benewah County are transported by truck and the data shows a decline in the rail shipments over the next twenty years.

The growth in miscellaneous manufacturing products over the next twenty years represents a significant economic opportunity for the county. The value of this commodity and the increase in volume may be tied in part to Berg Integrated Systems.

The largest volume commodity being shipped into Benewah County is lumber or wood products. This likely represents the transportation of raw timber into Benewah County for further processing. This commodity shows a slight increase in volume over the next twenty years which is consistent with declines in timber harvests and the importation of timber from adjoining states and British Columbia.⁸⁵

⁸⁵ University of Idaho Extension, Forestry

Table 19: Inbound Commodities for Benewah County

Top 10 Commodities Shipped Into Benewah County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	62,022	99,759	60.8%										62,022	99,759	60.8%
	Value/Ton	\$246	\$122	(50.2%)										\$246	\$122	(50.2%)
Clay, Concrete, Glass or Stone	Tons	5,321	8,001	50.4%										5,321	8,001	50.4%
	Value/Ton	\$235	\$258	9.7%										\$235	\$258	9.7%
Misc Manufacturing Products	Tons	3,977	8,493	113.6%										3,977	8,493	113.6%
	Value/Ton	\$20,100	\$16,847	(16.2%)										\$20,100	\$16,847	(16.2%)
Primary Metal Products	Tons	3,324	5,603	68.6%										3,324	5,603	68.6%
	Value/Ton	\$2,505	\$2,515	0.4%										\$2,505	\$2,515	0.4%
Petroleum or Coal Products	Tons	3,043	2,888	(5.1%)										3,043	2,888	(5.1%)
	Value/Ton	\$309	\$314	1.7%										\$309	\$314	1.7%
Food or Kindred Products	Tons	2,635	3,305	25.4%										2,635	3,305	25.4%
	Value/Ton	\$1,128	\$1,094	(3.0%)										\$1,128	\$1,094	(3.0%)
Transportation Equipment	Tons	1,413	1,349	(4.5%)										1,413	1,349	(4.5%)
	Value/Ton	\$8,629	\$8,110	(6.0%)										\$8,629	\$8,110	(6.0%)
Furniture or Fixtures	Tons	1,178	894	(24.1%)										1,178	894	(24.1%)
	Value/Ton	\$6,016	\$6,295	4.6%										\$6,016	\$6,295	4.6%
Electrical Equipment	Tons	1,156	1,600	38.4%										1,156	1,600	38.4%
	Value/Ton	\$14,149	\$14,642	3.5%										\$14,149	\$14,642	3.5%
Pulp, Paper or Allied Products	Tons	987	1,029	4.3%										987	1,029	4.3%
	Value/Ton	\$1,286	\$1,239	(3.7%)										\$1,286	\$1,239	(3.7%)
All Commodities In Benewah County, WA	Tons	86,238	134,892	56.4%										86,238	134,892	56.4%
	Value/Ton	\$1,712	\$1,639	(4.3%)										\$1,712	\$1,639	(4.3%)

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

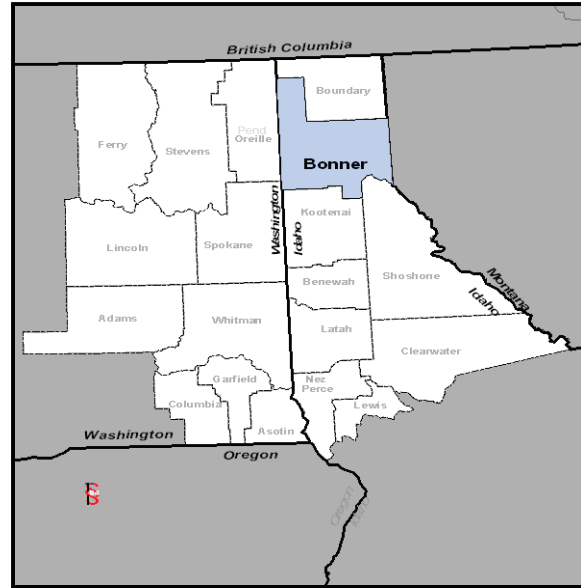
Table 20: Outbound Commodities for Benewah County

Top 10 Commodities Shipped Out Of Benewah County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	616,815	530,520	(14.0%)	90,280	54,400	(39.7%)							707,095	584,920	(17.3%)
	Value/Ton	\$194	\$173	(10.8%)	\$1,304	\$1,303	(0.1%)							\$336		(100.0%)
Nonmetallic Minerals	Tons	492,337	295,125	(40.1%)										492,337	295,125	(40.1%)
	Value/Ton	\$5	\$5	(0.3%)										\$5	\$5	(0.3%)
Misc Manufacturing Products	Tons	11,472	137,739	1100.6%										11,472	137,739	1100.6%
	Value/Ton	\$12,899	\$12,968	0.5%										\$12,899	\$12,968	0.5%
Clay, Concrete, Glass or Stone	Tons	6,886	23,576	242.4%										6,886	23,576	242.4%
	Value/Ton	\$54	\$50	(6.8%)										\$54	\$50	(6.8%)
Farm Products	Tons	985	991	0.6%										985	991	0.6%
	Value/Ton	\$278	\$371	33.6%										\$278	\$371	33.6%
Metallic Ores	Tons	801	430	(46.3%)										801	430	(46.3%)
	Value/Ton	\$1,860	\$1,860	0.0%										\$1,860	\$1,860	0.0%
Food or Kindred Products	Tons	359	569	58.6%										359	569	58.6%
	Value/Ton	\$1,121	\$1,115	(0.6%)										\$1,121	\$1,115	(0.6%)
Pulp, Paper or Allied Products	Tons	321	676	110.7%										321	676	110.7%
	Value/Ton	\$160	\$160	(0.0%)										\$160	\$160	(0.0%)
Transportation Equipment	Tons	64	133	108.2%										64	133	108.2%
	Value/Ton	\$541	\$541	(0.0%)										\$541	\$541	(0.0%)
Chemicals or Allied Products	Tons	24	59	146.4%										24	59	146.4%
	Value/Ton	\$1,236	\$1,155	(6.6%)										\$1,236	\$1,155	(6.6%)
All Commodities In Benewah County, WA	Tons	1,130,106	989,902	(12.4%)	90,280	54,400	(39.7%)							1,220,386	1,044,302	(14.4%)
	Value/Ton	\$242	\$1,903	686.5%	\$1,304	\$1,303	(0.1%)							\$320	\$1,871	483.9%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

BONNER COUNTY, IDAHO

Located in the northern panhandle of Idaho, Bonner County is home to Schweitzer Mountain Resort, one of the Pacific Northwest's largest ski areas with beautiful views of the lakes and surrounding mountain ranges. The largest lake in the state, Lake Pend Oreille, lies in the center of Bonner County. This county has successfully developed a diverse economic base, a thriving arts community, and the population continues to increase. Entrepreneurial ventures in Bonner County have helped to create a strong employment base in the community with companies such as Coldwater Creek, Quest Aircraft, and Litehouse Foods. Employment is concentrated in the trade, transportation, and utility sector and government. Sandpoint is the county seat of Bonner County and serves as the retail, healthcare, cultural, and business hub of the region.



POPULATION TRENDS

According to the U.S. Census Bureau the population of Bonner County was 41,168 in 2008. The county has experienced very rapid population growth in the past eight years growing by 11.8 percent between 2000 and 2008 primarily due to the natural beauty, recreational opportunities, and quality of life in the county that attracted many new residents. Between 1969 and 2006, the population of Bonner County increased by 161.1 percent exceeding the statewide population growth of 107 percent and significant outpacing the national population growth during this period of 48 percent.

Table 21: Population Data for Bonner County

Year	Population
1990 ⁸⁶	26,700
2000	37,105
2008 ⁸⁷	41,168
2015	47,120
2020	51,020
2030	58,940

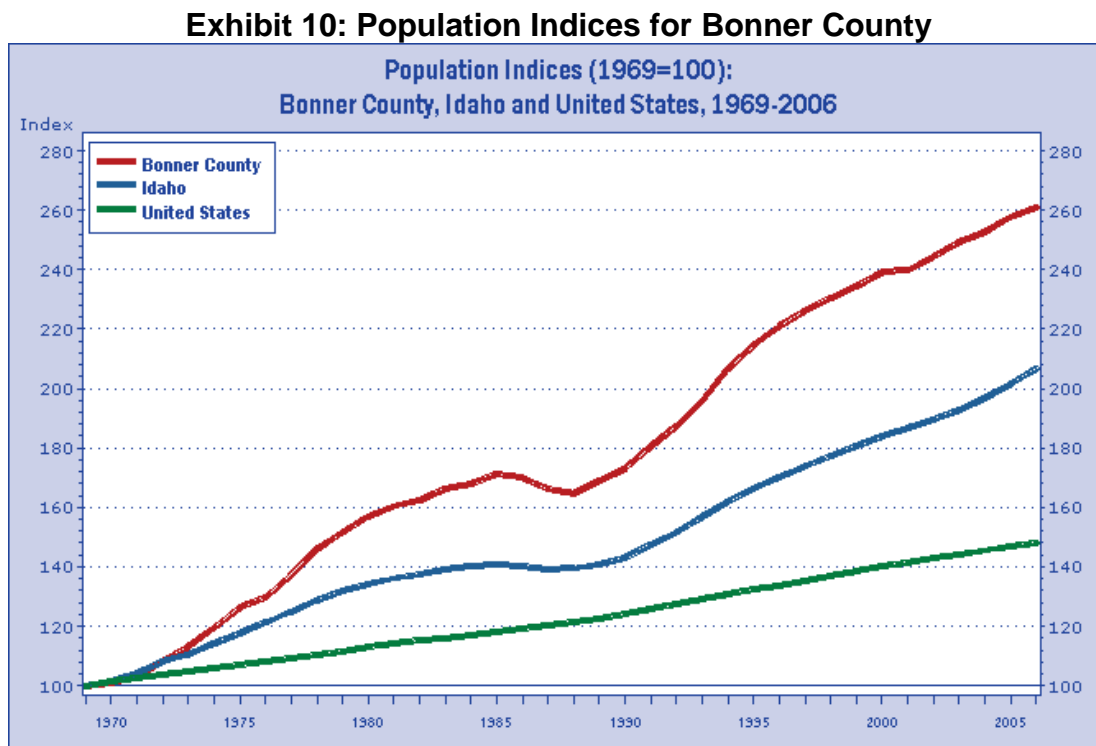
Only 21 percent of the population in Bonner County is under 18 years of age below the statewide population in this age group at 27.2 percent. Less than 15

⁸⁶ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

⁸⁷ U.S. Census Bureau 2008 Population Estimates

percent of the population in Bonner County lives below the poverty level and the 2007 median household income of \$42,420 are below the state median income of \$46,136.

Exhibit 10 below shows the population growth of Bonner County compared with the growth in Idaho and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. This exhibit compares the differences in population growth in these three geographic areas even though they vary in size. The population growth in Bonner County during this period grew a very impressive 165 percent during this period ahead of Idaho's growth at 111.6 percent and significantly exceeding the national population growth rate of 49.7 percent.⁸⁸



INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Unemployment in Bonner County increased from 5.6 percent in June 2008 to 8.9 percent in June 2009 primarily as a result of jobs lost in forestry manufacturing and construction. More than 600 sawmill and logging jobs have been lost in the Priest River area since 2006.⁸⁹

⁸⁸ Pacific Northwest Regional Economic Analysis

⁸⁹ Idaho Department of Labor, Workforce Statistics 2009

Bonner County has successfully diversified their economic base often through entrepreneurial activities of local residents or visitors who have chosen to move to the community permanently. Manufacturing jobs in Bonner County have increased by an impressive 81 percent in the past ten years from 1,285 in 1997 to 2,322 in 2007. Significant manufacturers include Litehouse Foods the largest producer of blue cheese in the U.S. who also produces salad dressings for Wal-Mart and Sam's Club, Quest Aircraft who manufactures specialized bush and utility aircraft for humanitarian missions, Unicep Packaging a specialty packaging firm, and Deidrich Manufacturing makers of coffee roasting machines. Other major employers in the county include Bonner General Hospital, Idaho Forest Group a wood products firm, Panhandle State Bank, and Schweitzer Mountain Resort.

Table 22: Industry Sectors by Employment in Bonner County⁹⁰

Industry	Employment
Trade, Transportation, & Utilities	3,010
Local Government	2,345
Manufacturing	2,206
Education and Health Services	1,070
Professional & Business Services	857

Trade and transportation is the largest employer in Bonner County. Firms in this sector include over 38 motor freight transportation businesses, local utility companies, wholesale and retail trade businesses, and Quest Aircraft.⁹¹ Government is also a significant employer in Bonner County and includes local schools, public agencies, and local governments.

The largest private employer in the county is Coldwater Creek, a national women's clothing retailer headquartered in Sandpoint. The firm recently closed their Sandpoint distribution facility concentrating this operation in West Virginia. The company maintained their headquarters in Sandpoint and customer service operation in Coeur d'Alene. The resulting job loss inspired the firm to create the Bonner County Economic Development Corporation whose primary mission is to attract new jobs and private investment to the community.

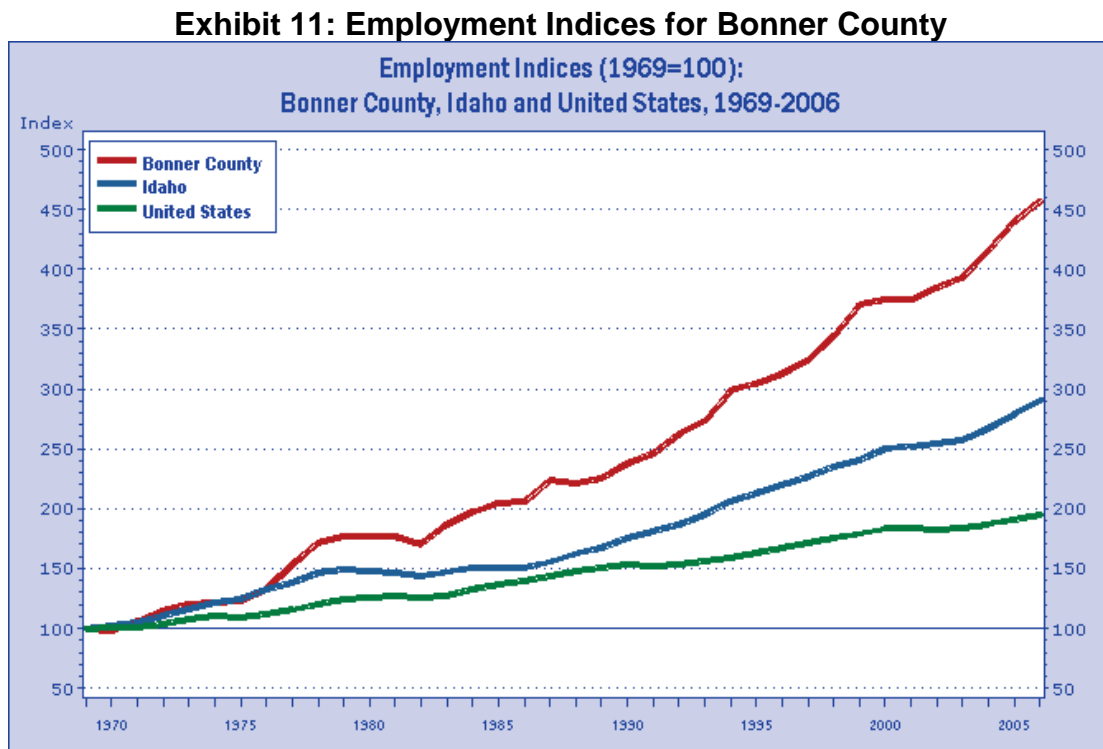
According to the most recent economic impact study for tourism expenditures in Idaho, tourism generated over \$68 million in visitor spending in 2005 creating almost 1,600 jobs and over \$11 million in tax revenues.⁹² The tourism sector has grown as a result of the Schweitzer Mountain Resort, additional hotel and restaurant development, expansion of arts activities, and retail development.

⁹⁰ Bureau of Economic Analysis, Employment Statistics

⁹¹ Dun & Bradstreet Business Directory, Idaho 2009

⁹² "The Economic Impact of Travel & Tourism in Idaho", Idaho Division of Tourism, September 2005

Exhibit 11 compares employment growth in Bonner County for the past 37 years to employment growth in Idaho and the nation as a whole during this same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Bonner County's employment increasing by 373.6 percent well ahead of the state's employment growth at 200.5 percent and the nation at 98.7 percent.⁹³



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skill are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. Eighty-six percent of the population in Bonner County over the age of 25 has completed high school compared to the statewide average of 84.7 percent and only 17 percent of the population over the age of 25 have completed a Bachelor's degree or higher compared with 21.7 percent statewide.⁹⁴

⁹³ Pacific Regional Northwest Regional Economic Analysis

⁹⁴ U.S. Census Bureau Comparative Community Profile, 2008

Table 23: Location Quotients for Bonner County

Industry	Location Quotient	2007 Employment
Forestry and Logging	23.46	167
Wood Product Manufacturing	14.98	836
Mining, Except oil and gas	5.02	120
Amusements, Gambling, Recreation	3.08	475
Construction	2.88	552

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotients, shown in **Table 23**, compare Bonner County to the State of Idaho as a whole. Bonner County has a substantially higher employment concentration in forestry and logging than the state as a whole and there is a high degree of economic specialization within the county in forestry and wood products. While there are competitive advantages for these two industrial sectors in Bonner County, this is not a sector that will foster economic growth for the county going forward. Efforts to diversify the county's economic base have been very successful and additional employment in manufacturing; business services, aerospace, and food processing have improved the county's economic diversification.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people as never before. Consumers buy fruits at local markets; companies receive supplies from international firms to produce their products; and bulk commodities including grain, coal, and oil move into and out of U.S. ports every day. We expect constant access to the goods available from around the world. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

U.S. Highway 95 runs through Bonner County linking the county to Coeur d'Alene, Canada, and to I-90. U.S. Highway 2 provides access to Washington to the west and parallels U.S. Highway 95 to Bonners Ferry. The county is also served by BNSF and Union Pacific railroads, plus the Port of Pend Oreille Railroad and the Montana Rail Link. The closest intermodal facility serving Bonner County is the BNSF facility in Spokane. There are four airports in Bonner County: Priest Lake, a federal facility; Cavanaugh Bay, a state owned facility; and two municipal general aviation airports Sandpoint and Priest River. The closest commercial service airport is in Spokane.

MAJOR COMMODITIES

Tables 24 and 25 identify the top ten commodity imports and exports for Bonner County in 2007 and 2027. Amounts shown indicate tonnage and value of commodities shipped into (imports) or out of (exports) the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

Bonner County's most significant export in 2007 was lumber or wood products followed by food products accounting for the vast majority of the goods shipped out of the county. Although there are two Class I railroads in Bonner County, rail is not used to ship outbound goods and is currently used to import timber from other areas. The TRANSEARCH™ data projects exports of lumber and wood products from Bonner County to decline over the next 20 years by almost 35 percent. The food products sector is projected to decline by only 10 percent during this period. The decline in lumber and wood products is consistent with forest product trends in the IPH study area. The growth in other sectors including electrical equipment, machinery, and primary metal products reflects the economic diversification efforts within Bonner County that have attracted new businesses and helped several existing businesses to grow. These growth projections, along with the lack of outbound rail shipments in the county, will continue the existing and projected dependency on the regional highway network in this region.

Table 24: Inbound Commodities for Bonner County

Top 10 Commodities Shipped Into Bonner County, ID In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	135,590	88,324	(34.9%)										135,590	88,324	(34.9%)
	Value/Ton	\$281	\$209	(25.5%)										\$281	\$209	(25.5%)
Food or Kindred Products	Tons	30,684	27,593	(10.1%)										30,684	27,593	(10.1%)
	Value/Ton	\$1,254	\$1,185	(5.5%)										\$1,254	\$1,185	(5.5%)
Farm Products	Tons	27,951	24,449	(12.5%)										27,951	24,449	(12.5%)
	Value/Ton	\$959	\$956	(0.3%)										\$959	\$956	(0.3%)
Electrical Equipment	Tons	16,979	30,605	80.3%										16,979	30,605	80.3%
	Value/Ton	\$21,804	\$21,692	(0.5%)										\$21,804	\$21,692	(0.5%)
Clay, Concrete, Glass or Stone	Tons	13,569	22,317	64.5%										13,569	22,317	64.5%
	Value/Ton	\$220	\$236	7.1%										\$220	\$236	7.1%
Primary Metal Products	Tons	10,962	15,621	42.5%										10,962	15,621	42.5%
	Value/Ton	\$2,374	\$2,310	(2.7%)										\$2,374	\$2,310	(2.7%)
Petroleum or Coal Products	Tons	8,852	14,491	63.7%										8,852	14,491	63.7%
	Value/Ton	\$220	\$222	0.9%										\$220	\$222	0.9%
Pulp, Paper or Allied Products	Tons	6,121	6,477	5.8%										6,121	6,477	5.8%
	Value/Ton	\$267	\$287	7.5%										\$267	\$287	7.5%
Machinery	Tons	5,900	14,193	140.6%										5,900	14,193	140.6%
	Value/Ton	\$22,739	\$22,342	(1.7%)										\$22,739	\$22,342	(1.7%)
Chemicals or Allied Products	Tons	5,281												5,281		
	Value/Ton	\$2,311												\$2,311		
Transportation Equipment	Tons		5,057												5,057	
	Value/Ton		\$8,730												\$8,730	
All Commodities In Bonner County, ID	Tons	269,003	260,389	(3.2%)										269,003	260,389	(3.2%)
	Value/Ton	\$2,635	\$4,601	74.6%										\$2,635	\$4,601	74.6%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

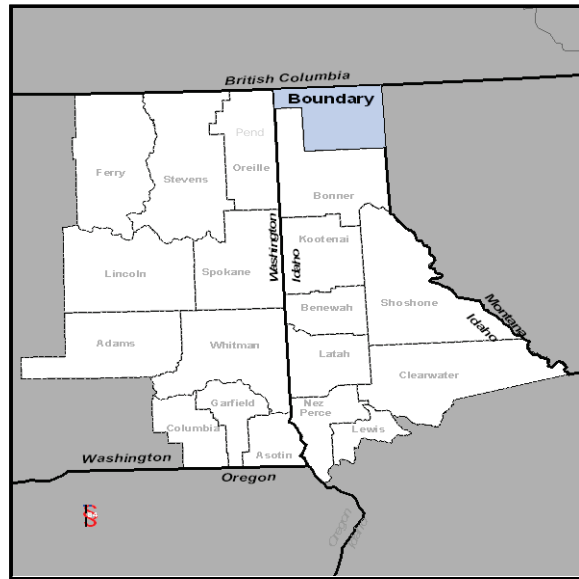
Table 25: Outbound Commodities for Bonner County

Top 10 Commodities Shipped Out Of Bonner County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	1,082,967	496,095	(54.2%)	320,720	213,204	(33.5%)							1,403,687	709,298	(49.5%)
	Value/Ton	\$272	\$366	34.6%	\$1,368	\$1,368	0.0%							\$523		(100.0%)
Nonmetallic Minerals	Tons	297,516	530,972	78.5%										297,516	530,972	78.5%
	Value/Ton	\$5	\$5	0.1%										\$5	\$5	0.1%
Furniture or Fixtures	Tons	64,613	154,439	139.0%										64,613	154,439	139.0%
	Value/Ton	\$7,366	\$7,364	(0.0%)										\$7,366	\$7,364	(0.0%)
Electrical Equipment	Tons	23,545	40,366	71.4%										23,545	40,366	71.4%
	Value/Ton	\$9,032	\$8,966	(0.7%)										\$9,032	\$8,966	(0.7%)
Clay, Concrete, Glass or Stone	Tons	19,228	25,870	34.5%										19,228	25,870	34.5%
	Value/Ton	\$157	\$186	18.8%										\$157	\$186	18.8%
Food or Kindred Products	Tons	14,992	17,994	20.0%										14,992	17,994	20.0%
	Value/Ton	\$1,060	\$972	(8.3%)										\$1,060	\$972	(8.3%)
Farm Products	Tons	13,326	19,085	43.2%										13,326	19,085	43.2%
	Value/Ton	\$964	\$964	0.0%										\$964	\$964	0.0%
Primary Metal Products	Tons	2,981	1,649	(44.7%)										2,981	1,649	(44.7%)
	Value/Ton	\$4,304	\$4,289	(0.3%)										\$4,304	\$4,289	(0.3%)
Pulp, Paper or Allied Products	Tons	1,820	3,835	110.7%										1,820	3,835	110.7%
	Value/Ton	\$116	\$116	0.0%										\$116	\$116	0.0%
Printed Matter	Tons	1,385	2,480	79.1%										1,385	2,480	79.1%
	Value/Ton	\$1,959	\$1,958	(0.1%)										\$1,959	\$1,958	(0.1%)
All Commodities In Bonner County, WA	Tons	1,523,834	1,294,467	(15.1%)	320,720	213,204	(33.5%)							1,844,554	1,507,671	(18.3%)
	Value/Ton	\$679	\$1,343	97.9%	\$1,368	\$1,368	0.0%							\$799	\$1,347	68.6%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

BOUNDARY COUNTY, IDAHO

Boundary County is Idaho's northern most county, adjacent to Canada to the north, Washington to the west, and Montana to the east. Over 60 percent of the county is owned by the federal government creating a challenge for the county's economic future because of limited land available to support economic development. Although forestry and agriculture have been primary economic drivers in the past, lower lumber prices and mill closings have reduced employment in these sectors. Anheuser-Busch owns a large hops farm in the county and several ornamental tree nurseries have improved agri-business employment.



With an abundance of forested land, mountains, and rivers, the county attracts many outdoor recreation enthusiasts that support almost 700 employees in the tourism industry.⁹⁵ The Kootenai Tribe owns the Kootenai River Inn in Bonners Ferry providing lodging to support the growing tourism industry.

POPULATION TRENDS

The population of Boundary County grew by 1,791 from 2000 to 2008 an increase of 11.1 percent.⁹⁶ Population growth in the county was lower than the growth statewide during this period which increased by 17.8 percent. Boundary County's population growth over the past 30 years was 95.9 percent, below the statewide increase of 107 percent and substantially higher than the national population growth rate during that period of 48.4 percent.

Twenty-five percent of the population in Boundary County is under 18 years of age slightly below the statewide population in this age group at 27.2 percent. Over 15.6 percent of the population in Boundary County lives below the poverty level and the 2007 median household income of \$37,653 is below the state median income of \$46,136.

⁹⁵ "The Economic Impact of Travel and Tourism in Idaho", Idaho Division of Tourism, Sept. 2005

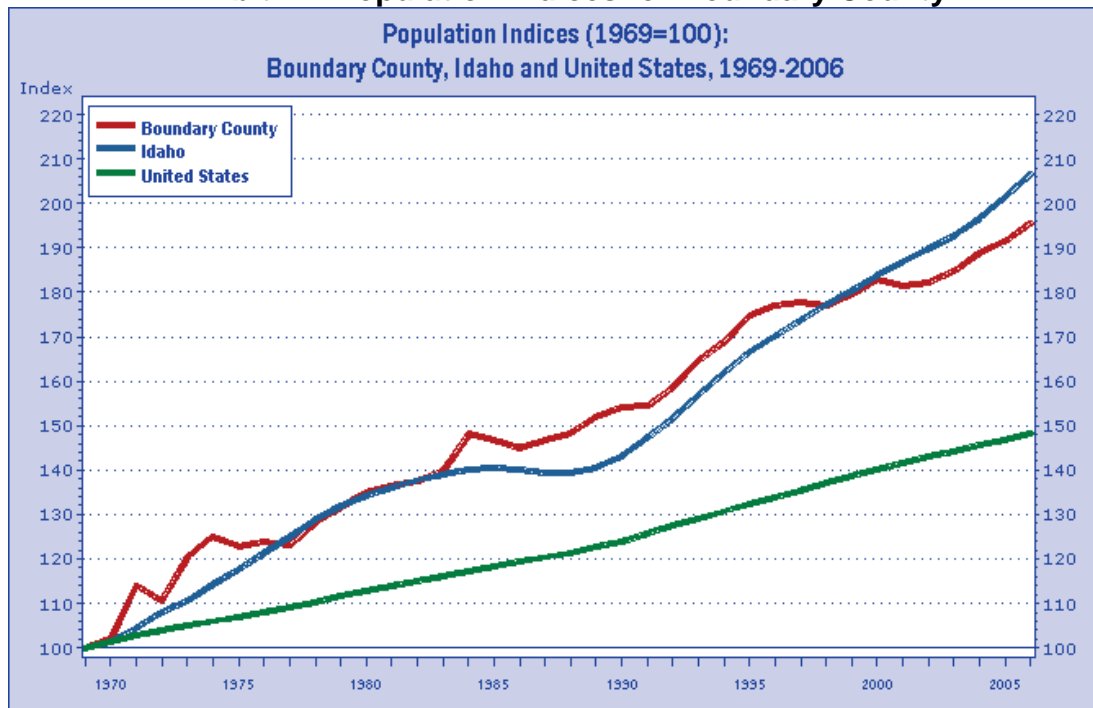
⁹⁶ U.S. Census Bureau 2008 projections

Table 26: Population Data for Boundary County

Year	Population
1990 ⁹⁷	7,937
2000	9,171
2008 ⁹⁸	10,962
2015	12,440
2020	13,450
2030 ⁹⁹	15,490

Exhibit 12 shows the population growth of Boundary County compared with the growth in the State of Idaho and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. This exhibit compares the differences in population growth in these three geographic areas over this period when Boundary County's population grew by 100.2 percent slight behind Idaho's population growth at 111.6 percent and well ahead of the national population growth at 49.7 percent.¹⁰⁰

Exhibit 12: Population Indices for Boundary County



⁹⁷ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

⁹⁸ U.S. Census Bureau Population Estimates 2008

⁹⁹ 2015, 2020, and 2030 population estimates were gathered from Woods and Poole projections.

¹⁰⁰ Pacific Northwest Regional Economic Analysis

INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Unemployment in Boundary County increased from 5.6 percent in June 2008 to 9.5 percent in June 2009 primarily as a result of jobs lost in forestry manufacturing and tourism as lumber prices continued to decline and the recession continues to take a toll on tourism. On the positive side the number of private businesses in Boundary County has increased by 33 percent in the past 10 years. Additional jobs and employment have been created in construction, professional and business services, education, healthcare, and transportation.

Table 27: Industry Sectors by Employment in Boundary County¹⁰¹

Industry	Employment
Government	1,040
Trade, Utilities, & Transportation	548
Professional & Business Services	412
Construction	336
Manufacturing	303

Government is the largest employer in Boundary County including the local school district and hospital, as well as the local city and county government employees. There are 26 motor freight and transportation firms¹⁰² in the county that are part of the trade and transportation sector the second largest employment sector in the county that also includes wholesale and retail trade. The largest employers in Boundary County are Boundary Community Hospital, Boundary Trading Company food and drug stores, Elk Mountain Farms, a hops producer owned by Anheuser-Busch, Idaho Education Services, a school for troubled youth, Idaho Forest Group lumber mill, and Kootenai River Inn & Casino.

According to the most recent economic impact study for tourism expenditures in Idaho, tourism generated almost \$30 million in travel spending in 2005, creating almost 700 jobs and over \$4 million in taxes from tourism. Travel spending in Boundary County has increased by 5 percent from 2004 to 2005. This may be due in part to the opening of the Kootenai River Inn and casino in Bonners Ferry. The casino is operated by the Kootenai tribe and has successfully stimulated the county's relatively small tourism industry.

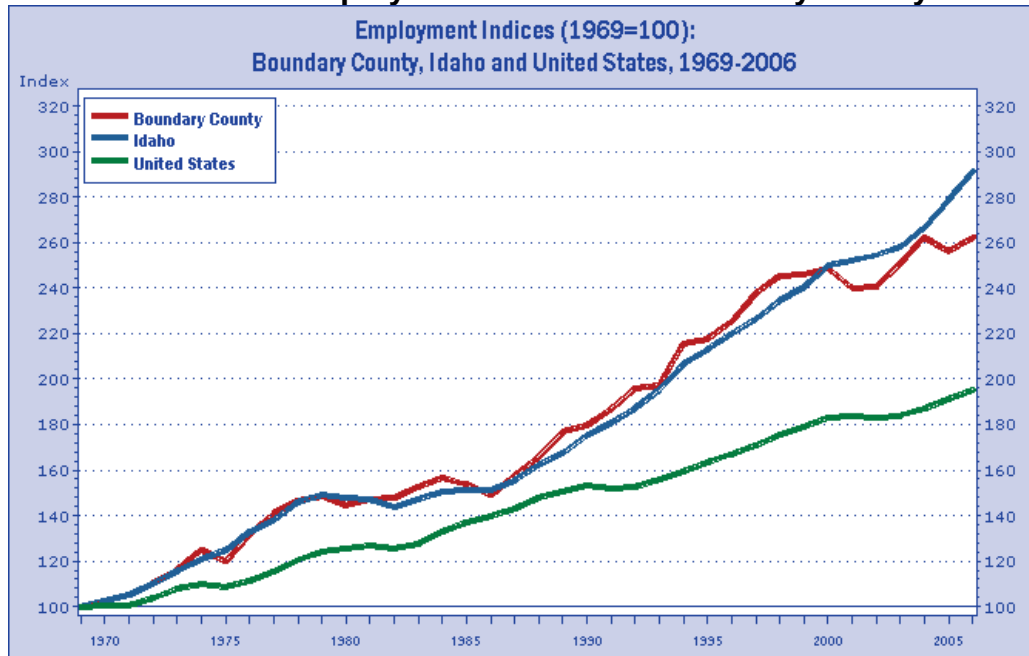
Exhibit 13 compares employment growth in Boundary County for the past 37 years to employment growth in Idaho and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic

¹⁰¹ Bureau of Economic Analysis, Employment Statistics

¹⁰² Dun & Bradstreet Business Directory, Idaho

areas with Boundary County's employment increasing by 167.2 percent during the period, below Idaho at 200.5 percent and the nation at 98.7 percent.¹⁰³

Exhibit 13: Employment Indices for Boundary County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the "Corporate Site Survey" allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skill are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. Eighty percent of the population of Boundary County over the age of 25 completed high school compared to the statewide average of 84.7 percent. However, only 14.7 percent of the population over the age of 25 have completed a Bachelor's degree or higher compared with 21.7 percent statewide. Certain industry sectors would not consider Boundary County as a potential location due to the limited availability of a college educated workforce.

Table 28: Location Quotients for Boundary County

Industry	Location Quotient	2007 Employment
Forestry and Logging	90.36	131
Crop Production	23.26	277
Wood Product Manufacturing	21.31	241
Gasoline Stores	4.78	91
Heavy and Civil Engineering	3.39	74

¹⁰³ Pacific Regional Northwest Regional Economic Analysis

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotients, shown in **Table 28**, compare employment concentration in Boundary County to Idaho as a whole. Boundary County has a substantially higher employment concentration in forestry production and logging, as well as crop production, than the rest of the state as a whole. This would indicate that there is a high degree of economic specialization within the county in forestry and agri-business and as a result there should be competitive advantages for these industries within Boundary County. However, in the case of Boundary County, this significant concentration of employment in these sectors indicates vulnerability within the economy as these sectors are declining overall in the IPH study area. Continuing efforts to diversify the economy are important to this community to create a more stable economic base in the future.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market, companies receive supplies from international firms to produce their products, and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

Boundary County is served by U.S. Highway 95 which runs north to Eastport and crosses into Canada. Highway 95 also provides access to Interstate 90, approximately 80 miles to the southwest. U.S. Highway 2 provides access to Montana to the east and parallels U.S. Highway 95 to Sandpoint. Two Class I railroads move through the county, the BNSF main line from Seattle to Chicago and a Union Pacific line that runs northward into Canada from Spokane. There is a municipal general aviation airport in Bonners Ferry and the closest commercial air services are in Spokane.

MAJOR COMMODITIES

Tables 29 and **30** identify the top commodity imports and exports for Boundary County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the County. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus, a single product

may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

Boundary County's most significant export in 2007 was lumber or wood products which accounted for almost 82 percent of the goods shipped out of the county. The TRANSEARCH™ data projects exports of lumber and wood products to decline by nearly 40 percent between 2007 and 2027. This decline in lumber and wood products is consistent with regional and statewide trends in the forestry industry. Shipments of timber from Canada, smaller diameter trees, and other trends affecting this industry are projected to impact the industry and other factors including slower recovery in the construction sector will continue to contribute to the decline in this sector.

Rail transportation currently carries almost 40 percent of the lumber and wood products exported from Boundary County. However, over the next 20 years, that volume is projected to decline by 37.5 percent. Rail transport of farm products is expected to increase by 19 percent over the next 20 years but this increase will not compensate for the loss of lumber and wood products exports.

Table 29: Inbound Commodities for Boundary County

Top 10 Commodities Shipped Into Boundary County, ID In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	34,190	33,650	(1.6%)	21,440	16,776	(21.8%)							55,630	50,426	(9.4%)
	Value/Ton	\$191	\$144	(24.7%)	\$415	\$423	1.9%							\$277	\$236	(14.6%)
Clay, Concrete, Glass or Stone	Tons	2,669	3,207	20.1%	48,600	45,962	(5.4%)							51,269	49,169	(4.1%)
	Value/Ton	\$195	\$213	8.8%	\$224	\$229	2.4%							\$222	\$228	2.6%
Chemicals or Allied Products	Tons	326	555	70.0%	22,520	20,479	(9.1%)							22,846	21,034	(7.9%)
	Value/Ton	\$753	\$721	(4.3%)	\$458	\$521	13.7%							\$462	\$526	13.8%
Farm Products	Tons	869	1,012	16.5%	7,720	13,608	76.3%							8,589	14,620	70.2%
	Value/Ton	\$162	\$169	4.7%	\$153	\$152	(0.3%)							\$154	\$153	(0.2%)
Transportation Equipment	Tons	74	87	17.5%	6,080	4,770	(21.5%)							6,154	4,857	(21.1%)
	Value/Ton	\$3,891	\$3,798	(2.4%)	\$2,104	\$2,157	2.5%							\$2,126	\$2,186	2.8%
Misc Manufacturing Products	Tons	5,930	20,190	240.5%										5,930	20,190	240.5%
	Value/Ton	\$20,034	\$16,818	(16.1%)										\$20,034	\$16,818	(16.1%)
Rubber or Misc Plastics	Tons	53	134	153.4%	4,080	5,182	27.0%							4,133	5,315	28.6%
	Value/Ton	\$3,211	\$3,210	(0.0%)	\$2,596	\$2,596	0.0%							\$2,604	\$2,611	0.3%
Food or Kindred Products	Tons	3,003	4,181	39.2%										3,003	4,181	39.2%
	Value/Ton	\$902	\$900	(0.2%)										\$902	\$900	(0.2%)
Petroleum or Coal Products	Tons	2,699	3,187	18.1%										2,699	3,187	18.1%
	Value/Ton	\$263	\$268	2.0%										\$263	\$268	2.0%
Primary Metal Products	Tons	577	1,191	106.4%										577	1,191	452.6%
	Value/Ton	\$2,430	\$2,169	(10.7%)										\$2,430	\$2,169	31.2%
All Commodities In Adams County, WA	Tons	51,313	69,507	35.5%	110,440	106,776	(3.3%)							161,753	176,283	9.0%
	Value/Ton	\$2,801	\$5,754	105.5%	\$495	\$507	2.4%							\$1,226	\$2,576	110.0%

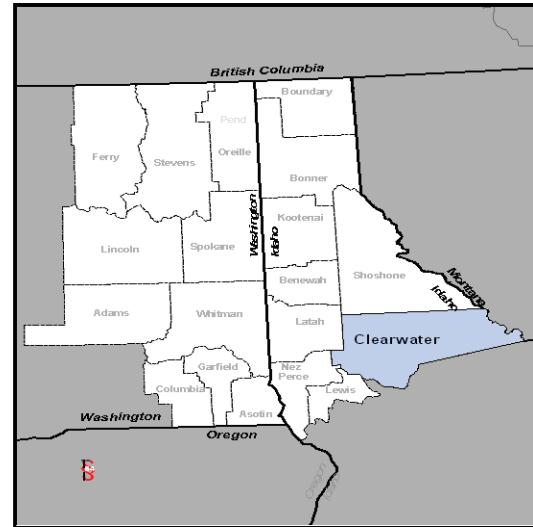
Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

Table 30: Outbound Commodities for Boundary County

Top 10 Commodities Shipped Out Of Boundary County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	980,479	593,521	(39.5%)	575,880	360,110	(37.5%)							1,556,359	953,632	(38.7%)
	Value/Ton	\$214	\$227	6.1%	\$904	\$926	2.5%							\$469		(100.0%)
Farm Products	Tons	30,624	36,032	17.7%	104,342	124,708	19.5%							134,966	160,740	19.1%
	Value/Ton	\$967	\$967	0.0%	\$257	\$257	(0.2%)							\$418	\$416	(0.5%)
Waste or Scrap Materials	Tons	6	7	24.9%	68,520	80,606	17.6%							68,526	80,612	17.6%
	Value/Ton	\$264	\$264	(0.0%)	\$533	\$533	(0.0%)							\$533	\$533	(0.0%)
Chemicals or Allied Products	Tons	8	15	85.6%	67,640	77,656	14.8%							67,648	77,671	14.8%
	Value/Ton	\$588	\$482	(18.0%)	\$1,828	\$1,830	0.1%							\$1,827	\$1,830	0.1%
Clay, Concrete, Glass or Stone	Tons				26,560	47,008	77.0%							26,560	47,008	77.0%
	Value/Ton				\$113	\$113	0.0%							\$113	\$113	0.0%
Pulp, Paper or Allied Products	Tons	13,214	87,270	560.4%	3,720	4,048	8.8%							16,934	91,318	439.3%
	Value/Ton	\$1,208	\$1,222	1.1%	\$669	\$669	0.0%							\$1,090	\$1,197	9.9%
Transportation Equipment	Tons	38	79	108.2%	11,120	24,687	122.0%							11,158	24,766	122.0%
	Value/Ton	\$554	\$554	0.0%	\$2,161	\$2,161	0.0%							\$2,155	\$2,155	0.0%
Food or Kindred Products	Tons	342	557	62.7%	6,880	7,670	11.5%							7,222	8,227	13.9%
	Value/Ton	\$1,260	\$1,274	1.1%	\$588	\$588	(0.0%)							\$620	\$635	2.3%
Rubber or Misc Plastics	Tons	1	1	77.2%	3,880	7,788	100.7%							3,881	7,789	100.7%
	Value/Ton	\$4,897	\$4,897	(0.0%)	\$5,587	\$5,587	0.0%							\$5,587	\$5,587	0.0%
Primary Metal Products	Tons	10	17	73.2%	3,600	5,761	60.0%							3,610	5,778	60.1%
	Value/Ton	\$202	\$202	0.0%	\$1,856	\$1,856	0.0%							\$1,852	\$1,851	(0.0%)
All Commodities In Boundary County, WA	Tons	1,026,090	719,058	(29.9%)	872,142	740,042	(15.1%)							1,898,232	1,459,100	(23.1%)
	Value/Ton	\$252	\$393	55.8%	\$882	\$906	2.7%							\$542	\$653	20.6%

CLEARWATER COUNTY, IDAHO

Located in north central Idaho, Clearwater County has diversified their economy based on attracting a number of outdoor recreation companies including Black Dog Tackle and Custom Rods specializing in custom built fishing rods, Nightforce Optics a manufacturer of high precision riflescopes, and Phantom Jet Boats a manufacturer of heavy-duty, light weight aluminum welded boats. Nearly 70 percent of the total land area within the county is held in public ownership, including Clearwater National Forest. With the Clearwater River Canyon and the Bitterroot Mountains the county is also



working to expand its tourism industry by focusing on hunting, fishing, skiing, and backcountry air strips. The county seat is the City of Orofino.

POPULATION TRENDS

According to the U.S. Census Bureau the population of Clearwater County was 8,176 in 2008. The county lost more than eight percent of their population from 2000 to 2008 compared with state population growth during this same period of almost 16 percent. From 1969 to 2006 the population of Clearwater County declined by 23 percent compared to the statewide population growth during the same period of 107 percent and a national population growth of 48.4 percent.

Eighteen percent of the population in Clearwater County is under 18 years of age compared to the statewide population in this age group at 27.2 percent. Within Clearwater County 15 percent of the population lives below the poverty level compared to 12.1 percent statewide. The 2007 median household income of \$38,785 is below the state median income of \$46,136.

Table 31: Population Data for Clearwater County

Year	Population
1990 ¹⁰⁴	8,480
2000	8,890
2008 ¹⁰⁵	8,176
2015	8,230
2020	8,270
2030 ¹⁰⁶	8,330

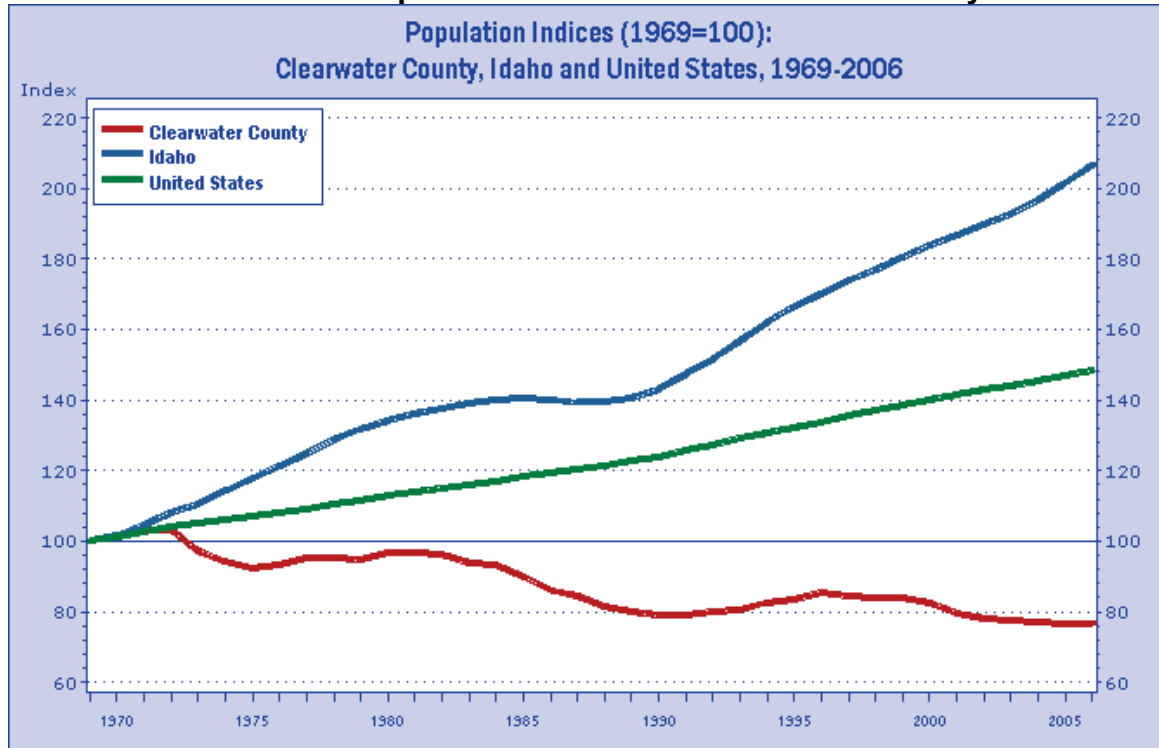
¹⁰⁴ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

¹⁰⁵ U.S. Census Bureau 2008 Population estimates

¹⁰⁶ 2015, 2020, and 2030 population estimates were gathered from Woods and Poole projections.

Exhibit 14 shows the population growth of Clearwater County compared with the growth in Idaho and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. The population in Clearwater declined by 23.6 percent during this period compared to 111.6 percent population growth in Idaho and 49.7 percent growth nationally.

Exhibit 14: Population Indices for Clearwater County



INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Unemployment in Clearwater County increased from 7.7 percent in June 2008 to 9.4 percent in June 2009. Declines in forest products and tourism have impacted employment in the county along with decreased employment in agriculture and government. The closure of the Potlatch mill at Jaype in the 1990s began to erode forestry employment in Clearwater County ultimately affecting not only the lumber industry but almost every sector of the economy. Economic development organizations in the region including the Clearwater Economic Development Association are working to diversify the county's economy. An industrial park developed in Orofino attracted Architectural Signs and Engraving Inc. to the community and Phantom Jet Boat opened a manufacturing operation in Clearwater in June 2008.

Table 32: Industry Sectors by Employment in Clearwater County¹⁰⁷

Industry	Employment
Government	1,094
Education and Health	449
Trade and Transportation	424
Agriculture	222

Government is the largest employer in Clearwater County, which includes the city and county governments, the local school district, the Idaho Department of Health & Welfare, and the U.S. Forest Service and U.S. Fish & Wildlife Service, employ 125 people in the county. The Idaho State Penitentiary in Clearwater employs 230 people. There are two healthcare facilities in the county Clearwater Healthcare LLC and Clearwater Valley Hospital & Clinic. Other private employers include: Black Dog Tackle and Custom Rods, designers and manufacturers of customized fishing rods; Night Force Optics, manufacturers of high precision rifle scopes; Phantom Jet Boats, manufacturers of heavy-duty, light weight aluminum welded boats; and the Lodge at River's Edge.

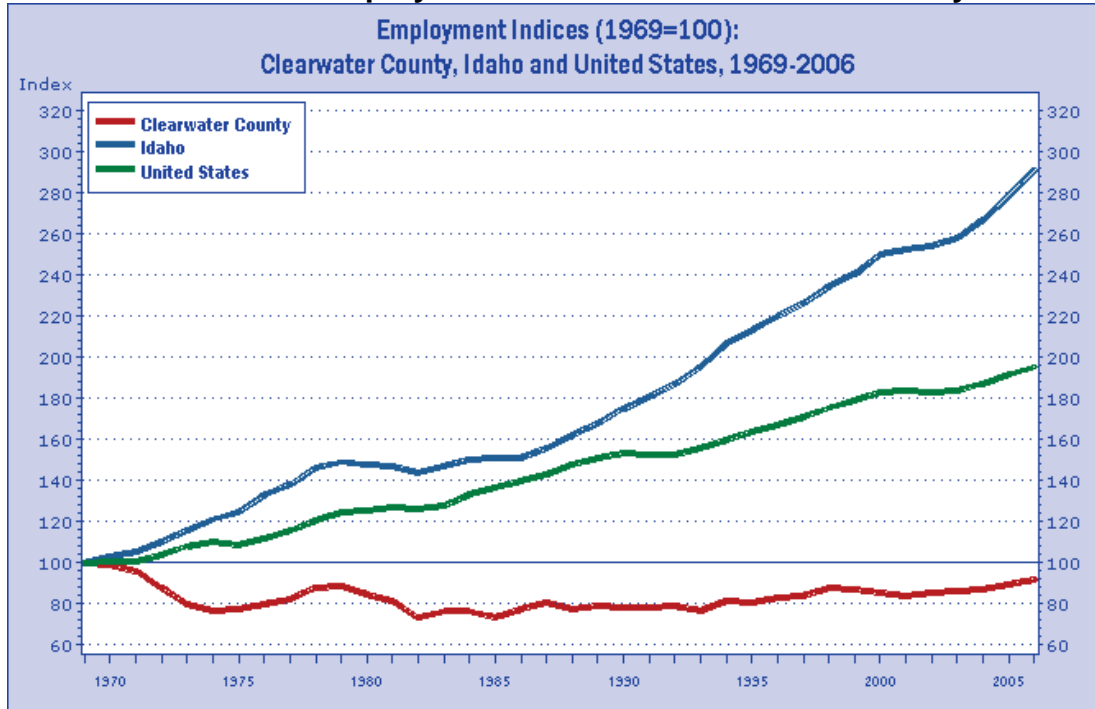
According to the most recent economic impact study for tourism expenditures in Idaho, tourism generated \$9.6 million in travel spending in 2005 creating a total of 223 jobs in the county. Tourism represents only 7 percent of the county's total employment, but it is an economic opportunity for Clearwater County as the Lodge at River's Edge in Orofino now provides upscale lodging to attract more visitors to the area. The Lewis and Clark Expedition anniversary attracted additional tourists to the area and the attraction of excellent hunting, fishing, and boating in the county can continue to draw visitors to the community. Building the tourism industry in Clearwater County will require development of additional visitor services including lodging and restaurants to promote more overnight visitors, a key requirement for increasing revenues from tourism.

Exhibit 15 compares employment growth in Clearwater County for the past 37 years to employment growth in Idaho and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Clearwater County's employment declining 9.1 percent during the period, substantially below the 200.5 percent growth in Idaho and well below the nation at 98.7 percent.¹⁰⁸

¹⁰⁷ Bureau of Economic Analysis, Employment Statistics

¹⁰⁸ Pacific Northwest Regional Economic Analysis

Exhibit 15: Employment Indices for Clearwater County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skill are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. Eighty percent of the population in Clearwater County over the age of 25 completed high school compared to the statewide average of 84.7 percent. However, only 13.4 percent of the population over the age of 25 have completed a Bachelor’s degree or higher compared with 21.7 percent statewide.

Table 33: Location Quotients for Clearwater County

Industry	Location Quotient	2007 Employment
Forestry and Logging	183.84	207
Agriculture and Forestry Support	11.78	67
Wood Product Manufacturing	10.99	97
Miscellaneous Manufacturing	5.36	59
Civil Engineering and Construction	4.37	74

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotients, shown in **Table 33**, compare Clearwater County's employment concentration to the State of Idaho and the nation as a whole. Clearwater County has a substantially higher employment concentration in forestry and logging than the state indicating there is a high degree of economic specialization within the county in this industry sector. Generally this indicates competitive advantages for forestry products within the county and opportunities for additional growth. However, in this instance, the significant employment concentration in forestry and logging indicates the economic vulnerability of this county. Downturns in this industry over almost 20 years have contributed to the declining population and economic growth in Clearwater and industry trends indicate that this industry will not produce future job growth that could lead to improvement in population or employment growth.

Potential opportunities exist in the specialized manufacturing niche that has emerged related to the fishing and hunting industry in Clearwater County. Black Dog Tackle, Night Force Optics, and Phantom Jet Boats represent excellent examples of unique industries that were drawn to Clearwater County because of the available recreational opportunities. The Clearwater Economic Development Association has developed a small business loan fund and is pursuing other resources to assist other small companies that could locate in the area.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market, companies receive supplies from international firms to produce their products, and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

Clearwater County has very few transportation assets. According to the State railroad map, the Great Northwest Railroad runs to Orofino east to Pierce with a segment that runs south to Kooskia. There is a municipal general aviation airport in Orofino and a federal facility at Cayuse Creek primarily used for firefighting and forestry management activities. The closest commercial airport is in Lewiston. U.S. Highway 12 links Orofino to Lewiston to the west and Missoula, Montana to the east. The county has poor access to Interstate 90, which is approximately 150 miles via US Highways 12 and 95. There are a few county roads and the few remaining roads in Clearwater are primarily unpaved and impassable during certain weather conditions.

MAJOR COMMODITIES

Tables 34 and 35 identify the top commodity imports and exports for Clearwater County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such, as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

Clearwater County's most significant export in 2007 was lumber or wood products, representing 92 percent of all commodities exported from the county. The TRANSEARCH™ data projects exports of these products from Clearwater County to decline by over 50 percent from 2007 to 2027. Similar declines are projected for nonmetallic minerals however the volume of those products is nominal. Less than 2 percent of the lumber and wood products exported out of the county move by rail.

Table 34: Inbound Commodities for Clearwater County

Top 10 Commodities Shipped Into Clearwater County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	44,057	29,135	(33.9%)										44,057	29,135	(33.9%)
	Value/Ton	\$213	\$170	(20.1%)										\$213	\$170	(20.1%)
Primary Metal Products	Tons	7,522	15,705	108.8%										7,522	15,705	108.8%
	Value/Ton	\$2,162	\$2,166	0.2%										\$2,162	\$2,166	0.2%
Petroleum or Coal Products	Tons	3,203	5,110	59.5%										3,203	5,110	59.5%
	Value/Ton	\$322	\$326	1.3%										\$322	\$326	1.3%
Clay, Concrete, Glass or Stone	Tons	2,932	4,401	50.1%										2,932	4,401	50.1%
	Value/Ton	\$218	\$238	9.4%										\$218	\$238	9.4%
Food or Kindred Products	Tons	2,702	3,263	20.8%										2,702	3,263	20.8%
	Value/Ton	\$1,892	\$2,021	6.8%										\$1,892	\$2,021	6.8%
Transportation Equipment	Tons	763	1,112	45.8%	1,840	2,142	16.4%							2,603	3,254	25.0%
	Value/Ton	\$8,126	\$7,896	(2.8%)	\$1,996	\$1,996	0.0%							\$3,793	\$4,013	5.8%
Nonmetallic Minerals	Tons		1,992												1,992	
	Value/Ton		\$175												\$175	
Chemicals or Allied Products	Tons	994	1,116	12.3%										994	1,116	12.3%
	Value/Ton	\$2,236	\$1,978	(11.5%)										\$2,236	\$1,978	(11.5%)
Farm Products	Tons	901	1,178	30.7%										901	1,178	30.7%
	Value/Ton	\$166	\$175	5.0%										\$166	\$175	5.0%
Electrical Equipment	Tons	380	1,045	174.7%										380	1,045	174.7%
	Value/Ton	\$13,309	\$13,357	0.4%										\$13,309	\$13,357	0.4%
Pulp, Paper or Allied Products	Tons	293												293		
	Value/Ton	\$725												\$725		
All Commodities In Clearwater County, WA	Tons	64,330	64,949	1.0%	1,840	2,142	16.4%							66,170	67,091	1.4%
	Value/Ton	\$739	\$1,167	57.9%	\$1,996	\$1,996	0.0%							\$774	\$1,194	54.2%

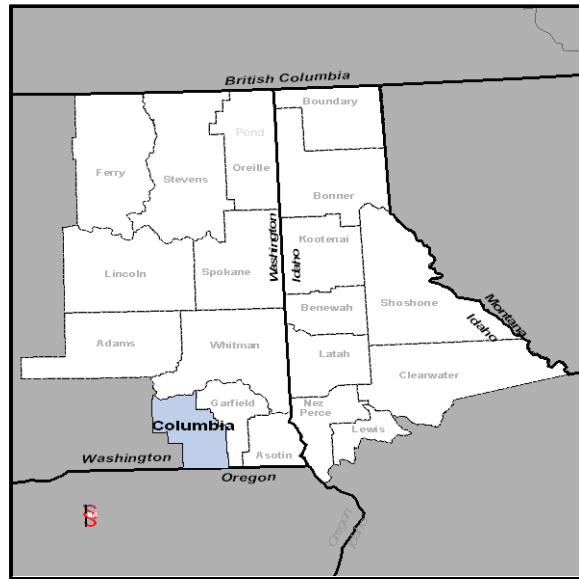
Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

Table 35: Outbound Commodities for Clearwater County

Top 10 Commodities Shipped Out Of Clearwater County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	306,076	144,594	(52.8%)	6,480	6,694	3.3%							312,556	151,288	(51.6%)
	Value/Ton	\$438	\$622	41.9%	\$1,368	\$1,368	0.0%							\$457		(100.0%)
Nonmetallic Minerals	Tons	15,690	7,817	(50.2%)										15,690	7,817	(50.2%)
	Value/Ton	\$5	\$5	0.0%										\$5	\$5	0.0%
Farm Products	Tons	6,459	8,371	29.6%										6,459	8,371	29.6%
	Value/Ton	\$964	\$964	0.0%										\$964	\$964	0.0%
Clay, Concrete, Glass or Stone	Tons	4,021	9,540	137.3%										4,021	9,540	137.3%
	Value/Ton	\$48	\$48	(0.9%)										\$48	\$48	(0.9%)
Metallic Ores	Tons	327	176	(46.3%)										327	176	(46.3%)
	Value/Ton	\$1,860	\$1,860	(0.0%)										\$1,860	\$1,860	(0.0%)
Transportation Equipment	Tons	116	259	123.2%										116	259	123.2%
	Value/Ton	\$5,197	\$5,401	3.9%										\$5,197	\$5,401	3.9%
Food or Kindred Products	Tons	73	110	51.6%										73	110	51.6%
	Value/Ton	\$1,443	\$1,447	0.3%										\$1,443	\$1,447	0.3%
Misc Manufacturing Products	Tons	49	120	143.5%										49	120	143.5%
	Value/Ton	\$70	\$57	(18.4%)										\$70	\$57	(18.4%)
Pulp, Paper or Allied Products	Tons	4	9	110.7%										4	9	110.7%
	Value/Ton	\$1,275	\$1,275	0.0%										\$1,275	\$1,275	0.0%
Fresh Fish or Marine Products	Tons	4	6	44.9%										4	6	44.9%
	Value/Ton	\$3,811	\$3,811	(0.0%)										\$3,811	\$3,811	(0.0%)
All Commodities In Clearwater County, WA	Tons	332,824	171,013	(48.6%)	6,480	6,694	3.3%							339,304	177,707	(47.6%)
	Value/Ton	\$426	\$587	37.7%	\$1,368	\$1,368	0.0%							\$444	\$617	38.7%

COLUMBIA COUNTY, WASHINGTON

Columbia County has worked aggressively to diversify their economy since the early 1980s when the loss of a local food processing industry resulted in significant local unemployment. The county's employment has increased as the result of new investments in tourism, wind energy, and custom food manufacturing industries. Located on the Snake River, the Port of Columbia connects Columbia County with the coast. The port is adjacent to Highway 12 and currently houses 13 companies including: Gemmell's Machine Works, Dayton Tractor and Machine providing service and parts for all types of machinery and vehicles, Coyote Engineering an export management company, and Vestas a wind turbine maintenance shop. The Blue Mountain Railroad links the largest city, Dayton to the hump yards of two major railroads.



The county's economy is dominated by agriculture, although employment in construction and support services for wind farms represents a new source of employment opportunity as new projects continue to be planned. There is a growing wine cluster in Columbia County and custom food processing is projected to grow according to the Washington Department of Agriculture as a result of increasing recognition of the wine and agricultural products industry in adjoining Walla Walla County.

POPULATION TRENDS

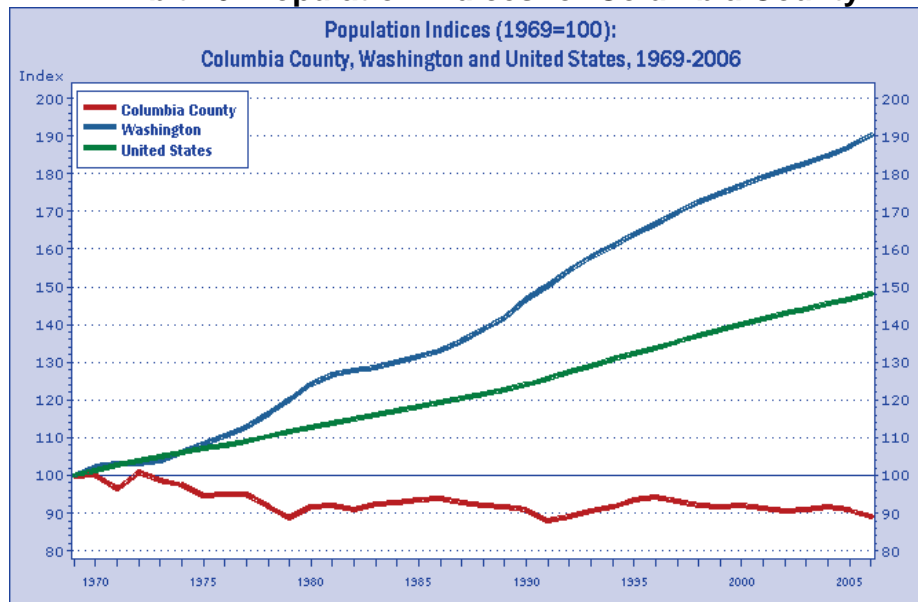
The population of Columbia County has remained almost unchanged for the past 18 years. Between 2000 and 2008 the population of Columbia County declined by 1.8 percent. In 2008 the population was 3,990 and is projected to decline slightly over the next 22 years. Slightly over nineteen percent of the population of Columbia County is under the age of 18 compared to 23.8 percent of the population statewide. Over 14.3 percent of the population lives below the poverty level and the 2007 median household income was \$39,699 compared to the state median income of \$55,628.

Table 36: Population Data for Columbia County

Year	Population
1990 ¹⁰⁹	4,024
2000	4,064
2008 ¹¹⁰	3,990
2015	3,920
2020	3,900
2030	3,840

Exhibit 16 shows the population growth of Columbia County compared with the growth in Washington and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. The population of Columbia County declined 10.5 percent during this period compared to 92.9 percent population growth statewide and 49.7 percent growth nationally.¹¹¹

Exhibit 16: Population Indices for Columbia County



INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Total employment in Columbia County has decreased by 28 percent since 2000.¹¹² Columbia County continues to have one of the highest unemployment rates in the state with 11.7 percent of the workforce unemployed in January, 2009. According to the Washington Department of Employment Security the

¹⁰⁹ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

¹¹⁰ U.S. Census Bureau Population Estimates 2008

¹¹¹ Pacific Northwest Regional Economic Analysis

¹¹² Washington Labor Market and Economic Analysis, Columbia County, March 2009

population decline in Columbia County will continue to impact job growth particularly given the employment concentration in government and retail trade. The aging population and the percentage of the population over the age of 65 will also affect employment in the health care sector. Forty-eight percent of those employed in Columbia County work in the governmental sector. The retail and wholesale trade sector employees 12.1 percent of the workforce and eight percent of the workforce is employed in the construction industry.

Employment is not increasing in Columbia County. Seneca Foods Corporation formerly a large asparagus canning operation in Columbia County has closed and the building is available for lease. Although construction employment has increased over the past 3 years as a result of construction of large wind farms and the renovation of a local hospital, these jobs are primarily seasonal and decreased in late 2008.

Table 37: Industry Sectors by Employment in Columbia County¹¹³

Industry	Employment
Government	442
Retail and Wholesale Trade	161
Construction	126
Agriculture, Forestry, and Fishing	113

Government is the largest employer in Columbia County however the overall employment in this sector has remained virtually unchanged over the past 10 years.¹¹⁴ In 2007 approximately 37 percent of the total employment in the county was in the government sector which includes local and county government, schools, and state and federal government. The largest private employers in Columbia County is Ski Bluewood with 125 employees, Vestas Americas a company servicing area wind farm operations with 36 employees, and Dayton General Hospital with 135 employees.

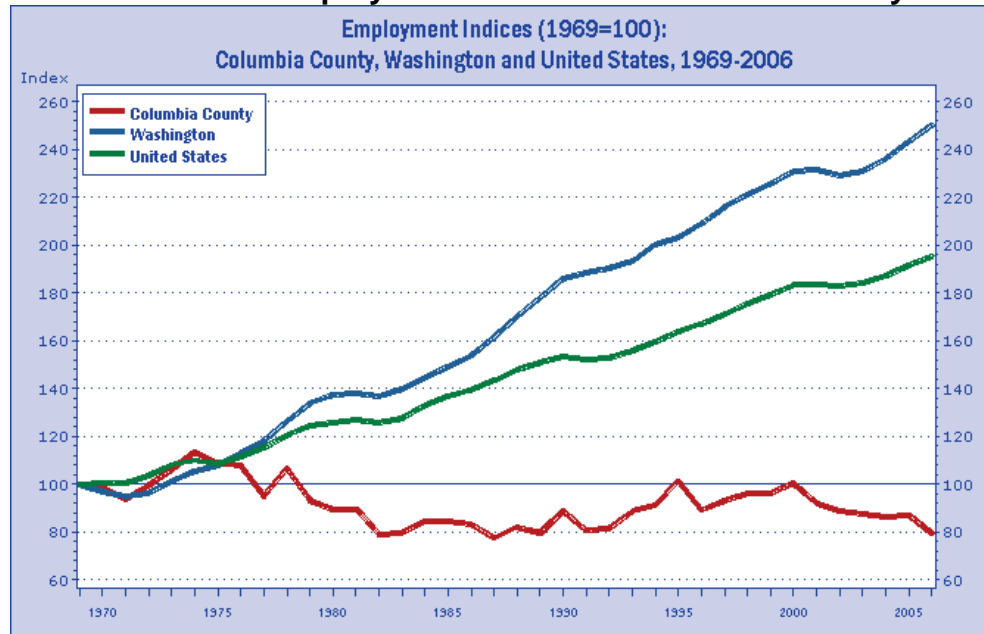
Exhibit 17 compares employment growth in Columbia County for the past 37 years to employment growth in Washington and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Columbia County's employment decreasing by 18.4 percent during the period compared to Washington growth at 156.6 percent and the nation at 98.7percent.¹¹⁵

¹¹³ Bureau of Economic Analysis, Employment Statistics

¹¹⁴ Washington Labor Market and Economic Analysis, 2009

¹¹⁵ Pacific Northwest Regional Economic Analysis

Exhibit 17: Employment Indices for Columbia County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporation location decisions. Workforce availability and skill are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. Almost eighty-three percent of the population over the age of 25 graduated from high school in Columbia County. Those with a Bachelor’s degree or higher is substantially below the statewide rate of 27.7 percent; with only 17.5 percent of the population completing a college education.

Table 38: Location Quotients for Columbia County

Industry	Location Quotient	2007 Employment
Crop Production	28.64	112
Heavy Construction and Civil Engineering	10.88	78
Animal Production	5.57	9
Gasoline Stations	5.44	34
Merchant Wholesalers, non-durable goods	3.36	50

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is

available for sale or export beyond the local area. The location quotient, shown in **Table 38**, compares Columbia County to the State of Washington as a whole. Columbia County has a substantially higher employment concentration in crop production than the state as a whole and there is a relatively high degree of economic specialization within the county in crop production. Generally this would indicate competitive advantages for agri-business in Columbia County and opportunities for additional growth in this sector; however given the relatively small employment in this sector and the dominance of governmental employment in this county the location quotient does not provide evidence of specific competitive opportunities in the county.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market; companies receive supplies from international firms to produce their products; and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

U.S. Highway 12 runs through Columbia County linking the county to Lewiston to the east and to Walla Walla to the south. Columbia County has fair access to Interstate 90 via State Highway 261, which is approximately a 100 mile drive to the Interstate. The Port of Columbia County owns several industrial buildings at their industrial park on Highway 12. There are no Class I railroads operating in the county, but the Union Pacific line run 22 miles north of the county. There is one short line railroad operating in the county, the Palouse River & Coulee City Railroad.¹¹⁶ The Lewiston Regional Airport is 32 miles east of Dayton and the Walla Walla Regional Airport is 32 miles southwest. The closest rail intermodal facility is located in Spokane.

MAJOR COMMODITIES

Tables 39 and **40** identify the top commodity imports and exports for Columbia County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

¹¹⁶ Washington Department of Transportation Rail System Map

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

The vast majority of Columbia County's agricultural exports are shipped via water from the Port of Columbia County. Declines in farm product volumes from 2007 to 2027 are somewhat offset by the increased volumes in nonmetallic minerals. Rail shipments of farm products are projected to increase over the next 20 years by 19.1 percent however the actual volume of goods shipped is very small. The significant increase in electrical equipment may be the result of Vestas Americas, a wind farm operation. Over the next 20 years the commodity volumes being exported from Columbia County are projected to increase by only 4.0 percent.

Table 39: Inbound Commodities for Columbia County

Top 10 Commodities Shipped Into Columbia County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Chemicals or Allied Products	Tons	21,422	40,710	90.0%										21,422	40,710	90.0%
	Value/Ton	\$468	\$473	1.0%										\$468	\$473	1.0%
Lumber or Wood Products	Tons	21,038	19,323	(8.1%)										21,038	19,323	(8.1%)
	Value/Ton	\$252	\$281	11.5%										\$252	\$281	11.5%
Food or Kindred Products	Tons	19,099	29,999	57.1%										19,099	29,999	57.1%
	Value/Ton	\$827	\$796	(3.8%)										\$827	\$796	(3.8%)
Clay, Concrete, Glass or Stone	Tons	12,003	16,993	41.6%										12,003	16,993	41.6%
	Value/Ton	\$278	\$280	0.6%										\$278	\$280	0.6%
Pulp, Paper or Allied Products	Tons	7,358	7,928	7.7%										7,358	7,928	7.7%
	Value/Ton	\$552	\$584	5.9%										\$552	\$584	5.9%
Nonmetallic Minerals	Tons	3,909	4,760	21.8%										3,909	4,760	21.8%
	Value/Ton	\$9	\$10	14.8%										\$9	\$10	14.8%
Petroleum or Coal Products	Tons	2,449	5,590	128.2%										2,449	5,590	128.2%
	Value/Ton	\$259	\$241	(7.0%)										\$259	\$241	(7.0%)
Primary Metal Products	Tons	1,867	5,364	187.3%										1,867	5,364	187.3%
	Value/Ton	\$2,022	\$1,844	(8.8%)										\$2,022	\$1,844	(8.8%)
Waste or Scrap Materials	Tons	1,765	2,743	55.5%										1,765	2,743	55.5%
	Value/Ton	\$265	\$261	(1.7%)										\$265	\$261	(1.7%)
Fabricated Metal Products	Tons	1,613	4,246	163.3%										1,613	4,246	163.3%
	Value/Ton	\$4,906	\$5,018	2.3%										\$4,906	\$5,018	2.3%
All Commodities In Columbia County, WA	Tons	94,338	140,840	49.3%										94,338	140,840	49.3%
	Value/Ton	\$678	\$807	19.1%										\$678	\$807	19.1%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

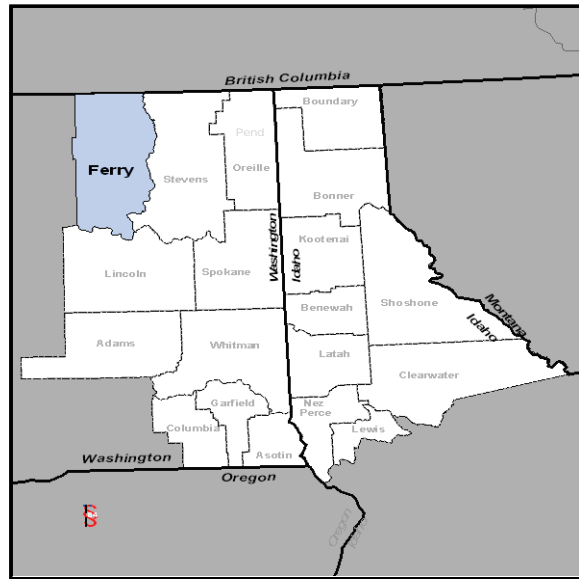
Table 40: Outbound Commodities for Columbia County

Top 10 Commodities Shipped Out Of Columbia County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Farm Products	Tons	85,064	60,461	(28.9%)	3,440	4,096	19.1%	349,587	332,513	(4.9%)				438,091	397,070	(9.4%)
	Value/Ton	\$268	\$301	12.3%	\$148	\$148	0.0%	\$295	\$282	(4.2%)				\$288		(100.0%)
Nonmetallic Minerals	Tons	128,657	146,012	13.5%										128,657	146,012	13.5%
	Value/Ton	\$6	\$6	0.1%										\$6	\$6	0.1%
Chemicals or Allied Products	Tons	925	1,204	30.2%										925	1,204	30.2%
	Value/Ton	\$53	\$68	26.9%										\$53	\$68	26.9%
Lumber or Wood Products	Tons	644	878	36.5%										644	878	36.5%
	Value/Ton	\$477	\$579	21.5%										\$477	\$579	21.5%
Waste or Scrap Materials	Tons	197	400	102.9%										197	400	102.9%
	Value/Ton	\$180	\$201	11.4%										\$180	\$201	11.4%
Food or Kindred Products	Tons	170	323	89.6%										170	323	89.6%
	Value/Ton	\$922	\$787	(14.6%)										\$922	\$787	(14.6%)
Metallic Ores	Tons	50	27	(46.3%)										50	27	(46.3%)
	Value/Ton	\$387	\$387	0.0%										\$387	\$387	0.0%
Fresh Fish or Marine Products	Tons	31	44	44.9%										31	44	44.9%
	Value/Ton	\$5,833	\$5,833	0.0%										\$5,833	\$5,833	0.0%
Electrical Equipment	Tons	15	29	95.2%										15	29	95.2%
	Value/Ton	\$10,411	\$10,411	(0.0%)										\$10,411	\$10,411	(0.0%)
Machinery	Tons	6	11	83.8%										6	11	83.8%
	Value/Ton	\$1,404	\$1,404	(0.0%)										\$1,404	\$1,404	(0.0%)
All Commodities In Columbia County, WA	Tons	215,760	209,394	(3.0%)	3,440	4,096	19.1%	349,587	332,513	(4.9%)				568,788	546,003	(4.0%)
	Value/Ton	\$114	\$99	(13.3%)	\$148	\$148	0.0%	\$295	\$282	(4.2%)				\$225	\$211	(6.3%)

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

FERRY COUNTY, WASHINGTON

Access to Ferry County requires passage over the highest year-round mountain pass in Washington, a ferry ride, or travel into Canada. The county covers 2,200 square miles of mountainous territory, a portion of which is in the Colville National Forest. Ferry County has the lowest population density in Washington.¹¹⁷ Less than 18 percent of the land in Ferry County is privately owned. The southern portion of the county is owned by the Colville Confederated Tribe. The county is home to the internationally known Stonerose Fossil site. With limited access into the area and an abundance of outdoor recreational opportunities, tourism is an important part of the county's economy. The largest employer in the county is the Colville Confederated Tribes whose tribal business employs over 921.



In 2008 the Buckhorn Mountain Gold Mine reopened and is projected to create up to 200 new jobs when the mine is fully operational. In January 2009, unemployment in Ferry County had reached 13.8 percent. The limited availability of infrastructure and the isolation will continue to affect employment and population within the county. As a result in Ferry County a higher proportion of the community's total income is generated from home-based businesses than average in the state. Home-based businesses are an important component of many family incomes in Ferry County.

POPULATION TRENDS

The population of Ferry County was 7,353 in 2008 increasing by only 1.3 percent since 2000. The county's population growth was substantially lower than the State of Washington which grew by 11.1 percent between 2000 and 2008. Between 1990 and 2008 the population of Ferry County grew by only increased by 1,058 people.

Twenty-two percent of the population in Ferry County is under 18 years of age, similar to the statewide population under the age of 18 at 23.8 percent. Almost 21 percent of the population lives below the poverty level, almost twice the rate statewide and substantially higher than the national rate of 13 percent. The county's median household income was \$35,121 in 2007. American Indians compose 18 percent of the county's population.¹¹⁸

¹¹⁷ Ferry County Conservation District

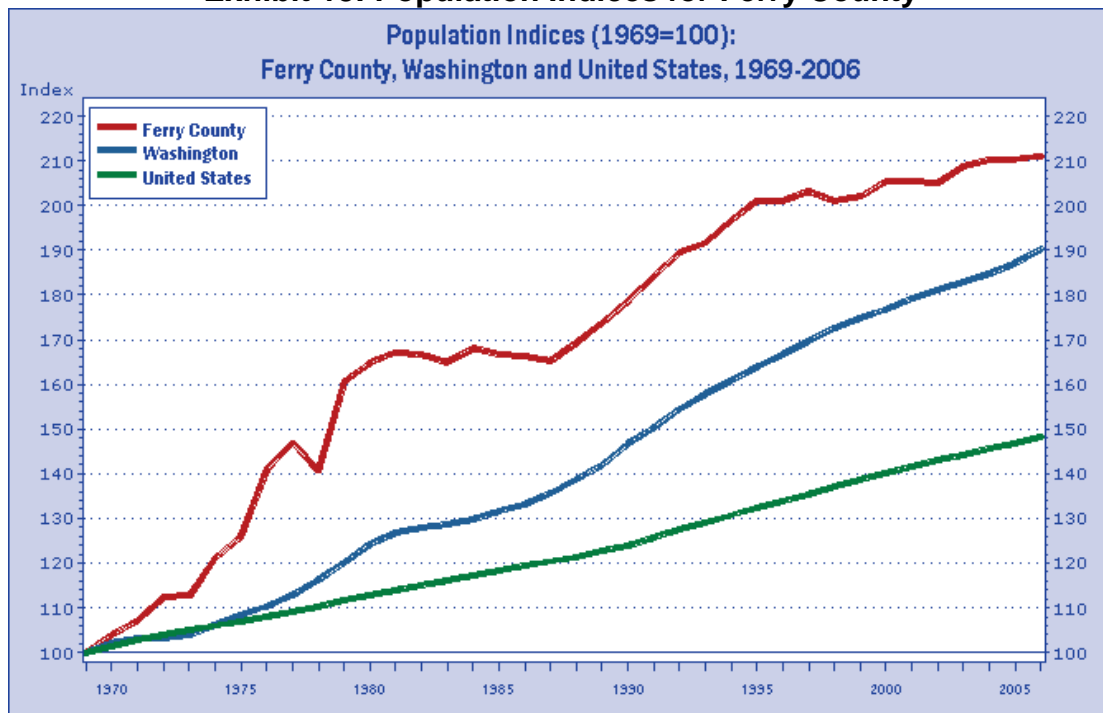
¹¹⁸ U.S. Census Bureau Community Data 2008

Table 41: Population Data for Ferry County

Year	Population
1990 ¹¹⁹	6,295
2000	7,260
2008 ¹²⁰	7,353
2015	7,790
2020	8,070
2030	8,630

Exhibit 18 shows the population growth of Ferry County compared with the growth in Idaho and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population of Ferry County was 3,543 in 1969 and had increased to 7,344 in 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. The population of Ferry County increased by 107.3 percent during this period compared to 92.9 percent population growth statewide and 49.7 percent growth nationally.

Exhibit 18: Population Indices for Ferry County



¹¹⁹ Population data for 1990, 2000, 12015, 2020, 2030 Woods and Poole Economics

¹²⁰ U.S. Census Bureau Population Estimates 2008

INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Unemployment in Ferry County increased over the past year primarily as a result of declines in mining, forestry, and manufacturing jobs within the county. Unemployment in Ferry County was 13.8 percent in January 2009 up from 10.7 percent in December 2008. While unemployment increased in 2008 there were some employment gains primarily in support of mining activities in the region. Retail sales actually increased 21.6 percent in the third quarter of 2008 compared to 2007.

Employment in the county has become heavily dependent upon government operations and retail trade as the economy has shifted from natural resources to more service jobs. There are no existing industrial or business parks in the county and most investments to support economic development are focused on outdoor recreation and other tourism related operations. The largest employers in Ferry County are: Colville Confederated Tribes with 921 employees, other government employment including the U.S. Border Patrol, the school district, and county government, Columbia Cedar a timber company with 96 employees, Kinross Gold a mining operation with 92 employees, and Ferry County Memorial Hospital with 139 employees.

Table 42: Industry Sectors by Employment in Ferry County¹²¹

Industry	Employment
Government	1190
Retail Trade	135
Agriculture, Forestry, and Fishing	108
Construction	59
Finance and Insurance	43

Government employment includes the employees of the Colville Confederated Tribes as well as other federal, state, and local government employees.¹²² According to the most recent economic impact study for tourism expenditures in Washington State, tourism generated \$14.8 million in travel spending in 2007 creating 250 jobs throughout a number of sectors including retail.¹²³ Within Ferry County the majority of the travel spending occurred in food and beverage services and accommodations accounting for almost 50 percent of tourism spending in the county.

Exhibit 19 compares employment growth in Ferry County for the past 37 years to employment growth in Idaho and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a

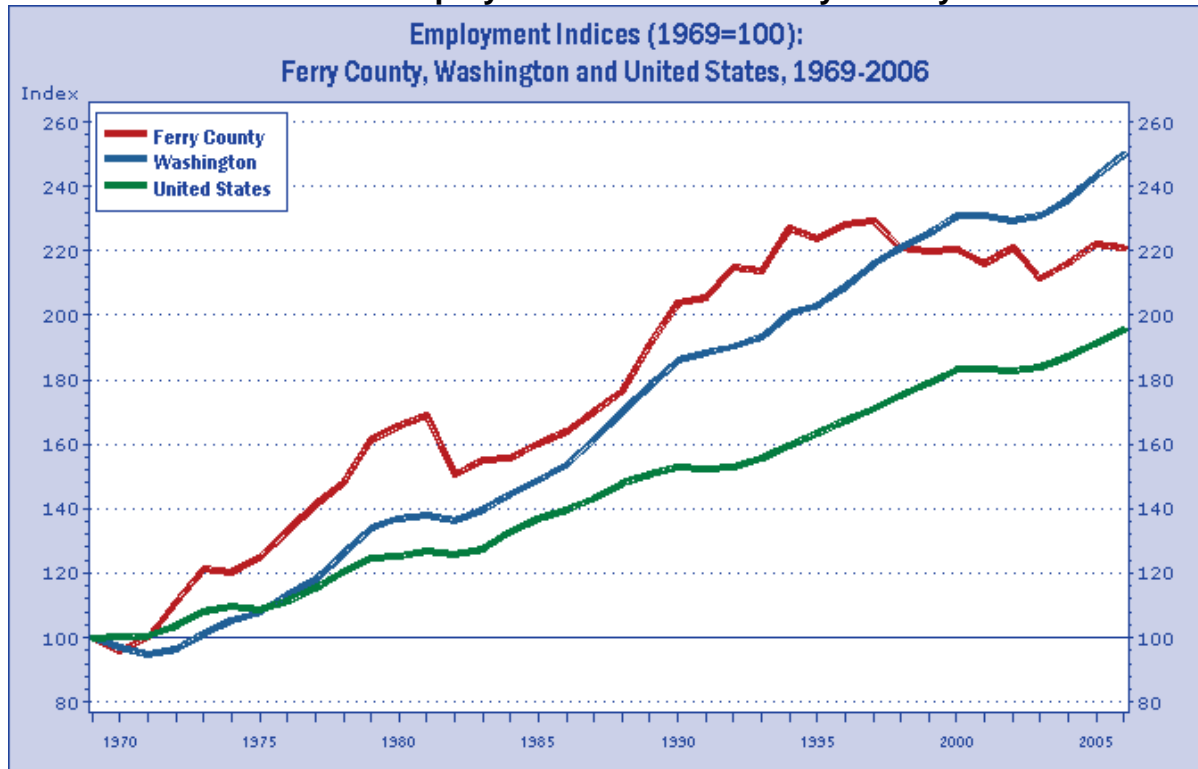
¹²¹ Bureau of Economic Analysis, Employment Statistics

¹²² Washington Department Employment Security, Labor Market and Economic Analysis Oct. 2008

¹²³ Washington State County Travel Impacts 1991 – 2007, Washington Division of Tourism

comparison of long-term employment growth between these three geographic areas with Ferry County's employment increasing by 121.6 percent during the period below the 156.9 percent employment growth in Washington and above the nation's employment growth at 98.7 percent.¹²⁴

Exhibit 19: Employment Indices for Ferry County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skill are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. Eighty-three percent of the population of Ferry County over the age of 25 has completed high school but only 13.5 percent of the population completed a Bachelor’s degree or higher. Education attainment in this county is significantly lower than the statewide college graduation rate which approaches 30 percent. Those businesses that require a significant number of technical or college educated employees would not consider Ferry County has a potential business location because of the limited availability of this type of workforce.

¹²⁴ Pacific Northwest Regional Economic Analysis

Table 43: Location Quotients for Ferry County

Industry	Location Quotient	2007 Employment
Forestry and Logging	173.21	76
Gasoline Stations	5.38	31
Construction	1.86	22
Services	1.75	52
Specialty Trade Contractors	1.62	52
Retail Trade	1.38	143

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotient, shown in **Table 43**, compares Ferry County to the State of Washington as a whole. Ferry County has substantially higher employment concentration in forestry and logging than the state as a whole and there is a high degree of economic specialization within the county in this sector. While there may be some additional opportunities for growth within this sector, declines in forest products and logging due to current conditions in the housing industry, imports of timber from other states and Canada, and health conditions in eastern Washington forests do not bode well for the future of this industry. This high location quotient actually demonstrates the vulnerability of the economy in Ferry County when compared to the state as a whole. Forestry and logging represent almost 6.5 percent of the total employment in the county while government represents over 55 percent of total employment.¹²⁵

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market; companies receive supplies from international firms to produce their products; and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

U.S. Highway 395 runs along the eastern boundary of Ferry County from Kettle Falls into Cascade, Canada. Highway 20 bisects the county and runs east through Stevens and Pend Oreille Counties. Highway 21 runs north into Canada and to the south it links Republic with the Tri-Cities. Ferry County is not well-

¹²⁵ State of Washington Average Monthly Employment and Wages, Office of Financial Management

positioned for access to Interstate 90. Via US 395, the distance to I-90 is approximately 120 miles. There are no railroads in Ferry County. The closest rail line is the Kettle Falls International Railroad, a short-line railroad runs just east of Ferry County in Stevens County. There are no general aviation airports in the county; the closest commercial airport is the Spokane International Airport approximately 120 miles south of Republic. The nearest rail intermodal facility according to the Washington Department of Commerce is the BNSF facility in Spokane, approximately 120 miles.

MAJOR COMMODITIES

Tables 44 and 45 identify the top commodity imports and exports for Ferry County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

The export of lumber and wood products from Ferry County is projected to increase 341.1 percent over the next twenty years. To some extent the forecasted increases may be driven by the vast, but hard to access timberlands in the county. However, due to the outlier nature of the forecast, the consultant team contacted a representative of U.S. Timber knowledgeable with the area.¹²⁶ While some mills in the county have recently retooled to produce plywood, which will likely increase tonnages in the future, the forecast appears to be overly optimistic.

The lack of rail service does not seem to be an issue; mainly because trucks are the dominant mode of transporting the County's major commodities. Other commodities produced within the county show minimal growth in volume. The isolation, lack of multimodal transportation assets, and limited privately owned land will continue to constrain economic growth and diversification in this county.

¹²⁶ Phone contact with Mike Ebert, US Timber and Eagle Forest Products, Boise, ID

Table 44: Inbound Commodities for Ferry County

Top 10 Commodities Shipped Into Ferry County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	53,859	55,178	2.4%										53,859	55,178	2.4%
	Value/Ton	\$275	\$319	15.9%										\$275	\$319	15.9%
Furniture or Fixtures	Tons	35,486	69,674	96.3%										35,486	69,674	96.3%
	Value/Ton	\$4,209	\$4,214	0.1%										\$4,209	\$4,214	0.1%
Clay, Concrete, Glass or Stone	Tons	17,931	26,741	49.1%										17,931	26,741	49.1%
	Value/Ton	\$230	\$231	0.4%										\$230	\$231	0.4%
Food or Kindred Products	Tons	10,767	14,295	32.8%										10,767	14,295	32.8%
	Value/Ton	\$905	\$907	0.3%										\$905	\$907	0.3%
Petroleum or Coal Products	Tons	5,092	7,000	37.5%										5,092	7,000	37.5%
	Value/Ton	\$417	\$372	(10.9%)										\$417	\$372	(10.9%)
Waste or Scrap Materials	Tons	3,358	5,184	54.4%										3,358	5,184	54.4%
	Value/Ton	\$277	\$273	(1.5%)										\$277	\$273	(1.5%)
Chemicals or Allied Products	Tons	2,345	4,304	83.5%										2,345	4,304	83.5%
	Value/Ton	\$773	\$833	7.8%										\$773	\$833	7.8%
Farm Products	Tons	2,185	2,226	1.9%										2,185	2,226	1.9%
	Value/Ton	\$2,192	\$2,365	7.9%										\$2,192	\$2,365	7.9%
Transportation Equipment	Tons	393	1,710	335.4%	1,080	1,257	16.4%							1,473	1,794	21.8%
	Value/Ton	\$11,367	\$1,255	(89.0%)	\$2,161	\$2,161	0.0%							\$4,616	\$4,638	0.5%
Pulp, Paper or Allied Products	Tons	1,180	537	(54.5%)										1,180	1,710	44.9%
	Value/Ton	\$1,040	\$10,441	903.9%										\$1,040	\$1,255	20.6%
All Commodities In Ferry County, WA	Tons	135,488	192,303	41.9%	1,080	1,257	16.4%							136,568	193,560	41.7%
	Value/Ton	\$1,507	\$1,944	29.0%	\$2,161	\$2,161	0.0%							\$1,512	\$1,946	28.7%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

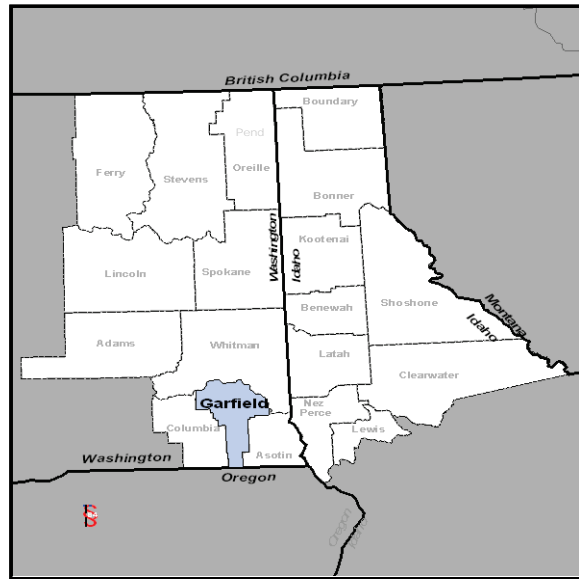
Table 45: Outbound Commodities for Ferry County

Top 10 Commodities Shipped Out Of Ferry County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	407,705	1,798,474	341.1%										407,705	1,798,474	341.1%
	Value/Ton	\$576	\$636	10.3%										\$576		(100.0%)
Farm Products	Tons	22,163	21,900	(1.2%)										22,163	21,900	(1.2%)
	Value/Ton	\$702	\$695	(1.1%)										\$702	\$695	(1.1%)
Nonmetallic Minerals	Tons	276	359	29.7%										276	359	29.7%
	Value/Ton	\$34	\$34	(0.0%)										\$34	\$34	(0.0%)
Waste or Scrap Materials	Tons	260	528	102.9%										260	528	102.9%
	Value/Ton	\$180	\$201	11.4%										\$180	\$201	11.4%
Fresh Fish or Marine Products	Tons	40	58	44.9%										40	58	44.9%
	Value/Ton	\$5,833	\$5,833	(0.0%)										\$5,833	\$5,833	(0.0%)
Metallic Ores	Tons	32	17	(46.3%)										32	17	(46.3%)
	Value/Ton	\$633	\$633	0.0%										\$633	\$633	0.0%
Pulp, Paper or Allied Products	Tons	24	19	(22.7%)										24	19	(22.7%)
	Value/Ton	\$157	\$157	0.0%										\$157	\$157	0.0%
Food or Kindred Products	Tons	17	26	51.9%										17	26	51.9%
	Value/Ton	\$1,886	\$1,905	1.0%										\$1,886	\$1,905	1.0%
Machinery	Tons	14	25	81.4%										14	25	81.4%
	Value/Ton	\$2,215	\$2,193	(1.0%)										\$2,215	\$2,193	(1.0%)
Chemicals or Allied Products	Tons	5	7	43.3%										5	7	43.3%
	Value/Ton	\$1,524	\$1,524	0.0%										\$1,524	\$1,524	0.0%
All Commodities In Ferry County, WA	Tons	430,537	1,821,413	323.1%										430,537	1,821,413	323.1%
	Value/Ton	\$583	\$636	9.2%										\$583	\$636	9.2%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

GARFIELD COUNTY, WASHINGTON

Garfield County is the least populated county in the state. Located between the Snake River and the Blue Mountains, farms still dominate two-thirds of the county. In the past agriculture was the primary economic driver, today the governmental sector is the largest employer with over 60 percent of the total non-farm employment. Agriculture employment has declined as more grain-production tends to need fewer people each year to secure maximum results.¹²⁷ Wheat is the primary crop but other grains and seeds are also grown including barley and bluegrass. In 2007 Garfield County's total agricultural production was over \$26.4 million.



The lower Snake River energy project could generate almost 100 jobs in Garfield County with over 50 percent of the turbines to be located within this county. Employment from construction, retail sales, and recreational employment will result in temporary job opportunities and approximately 100 permanent jobs will be created.

POPULATION TRENDS

According to the U. S. Census the population of Garfield County was 2,060 in 2008 a 14.1 percent decline from the population of 2,397 in 2000. Between 1990 and 2007 the county's population increased by only 802 people and projections for future years assume a relatively flat or declining population rate in this county. Population growth will impact job growth in agriculture, retail trade, government, and the service industry, with virtually no population growth these non-traded sector industries will experience little or no growth as well.

Over 23 percent of the county population is over the age of 65 compared with 11.7 percent statewide. Eighteen percent of the county's population is under the age of 18. The median household income in Garfield County is \$39,649 compared with the state's median income of \$55,628 and 14 percent of those living in the county have incomes below the poverty level.

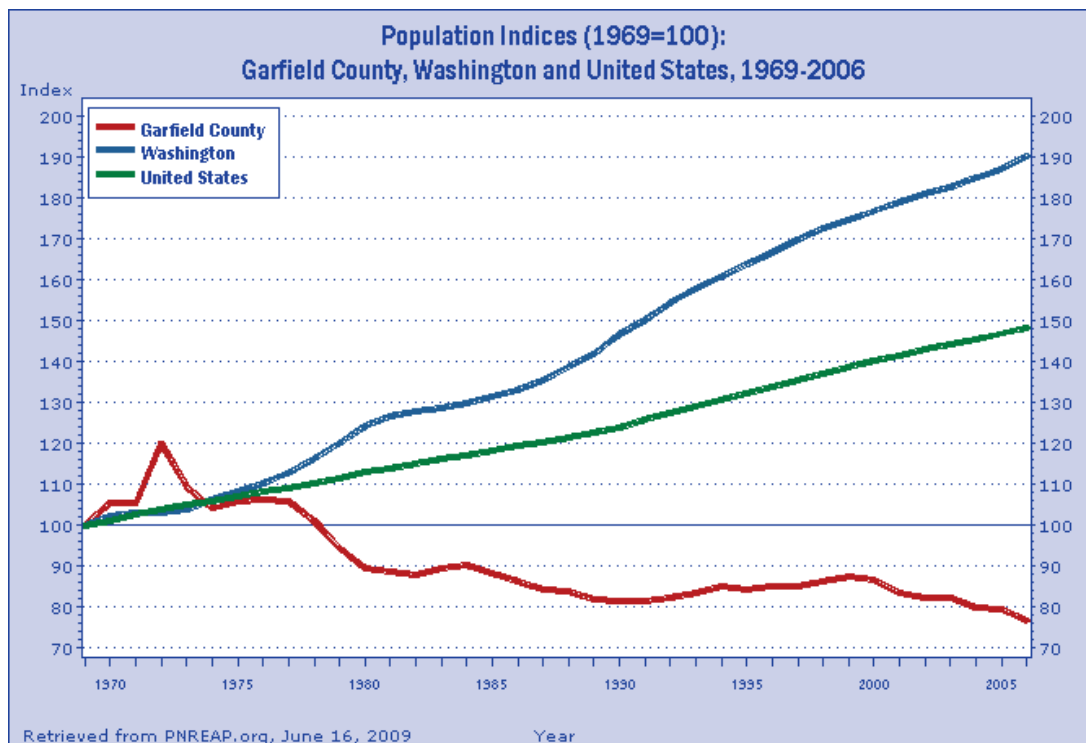
¹²⁷ Washington State Employment Security, Labor Market and Economic Analysis, July 2009

Table 46: Population Data for Garfield County

Year	Population
1990 ¹²⁸	2,248
2000	2,397
2008	2,060
2015	2,012
2020	1,970
2030	1,920

Exhibit 20 shows the population growth of Garfield County compared with the growth in Washington and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. The population of Garfield County increased by 25.8 percent during this period compared to 92.9 percent population growth statewide and 49.7 percent growth nationally.¹²⁹

Exhibit 20: Population Indices for Garfield County



¹²⁸ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

¹²⁹ Pacific Northwest Regional Economic Analysis

INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Unemployment in Garfield County was 7.8 percent in January 2009 up slightly from 6.4 percent in December 2008. Garfield County however, has a lower unemployment rate than Washington State as a whole (9.5 percent in January 2009). Total nonfarm industry employment remained unchanged for 2008. The civilian labor force of 980 declined by 6.5 percent between December 2007 and December 2008, losses were primarily in the goods producing sector. Over the past 40 years, Garfield County has experienced a 15.9 percent loss of employment compared to the employment growth in Washington of 151.4 percent and 95 percent nationally. According to the Bureau of Labor Statistics,

A substantially percentage of the Garfield population leave the county each day for work outside the county. In 2006, 33.6 percent of the county's income was earned by residents who worked in adjoining counties.¹³⁰

Table 47: Industry Sector by Employment in Garfield County¹³¹

Industry	Employment
Government	458
Wholesale Trade	127
Retail Trade	57
Agriculture, Forestry, & Fishing	43
Finance & Insurance	16

The economy of Garfield County is heavily dependent upon government and agricultural related operations. The largest employers in the county include federal and local governments with 350 employees, Dye Seed Ranch an agricultural processing operation, and several small banks. There are no industrial or business parks in the community and given the primary nature of the economy, the focus of investments for economic development are centered on crop production and support services.

According to the most recent economic impact study for tourism expenditures in Washington State, tourism generated \$1.7 million in travel spending in 2007 creating 20 jobs and approximately \$100,000 in tax revenues. Garfield County has the lowest volume of travel spending of any county in the state in 2007.¹³²

Exhibit 21 compares employment growth in Garfield County for the past 37 years to employment growth in Washington and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allow for a comparison of long-term employment growth between these three geographic areas with Garfield County's employment increasing by a modest 19.6 percent

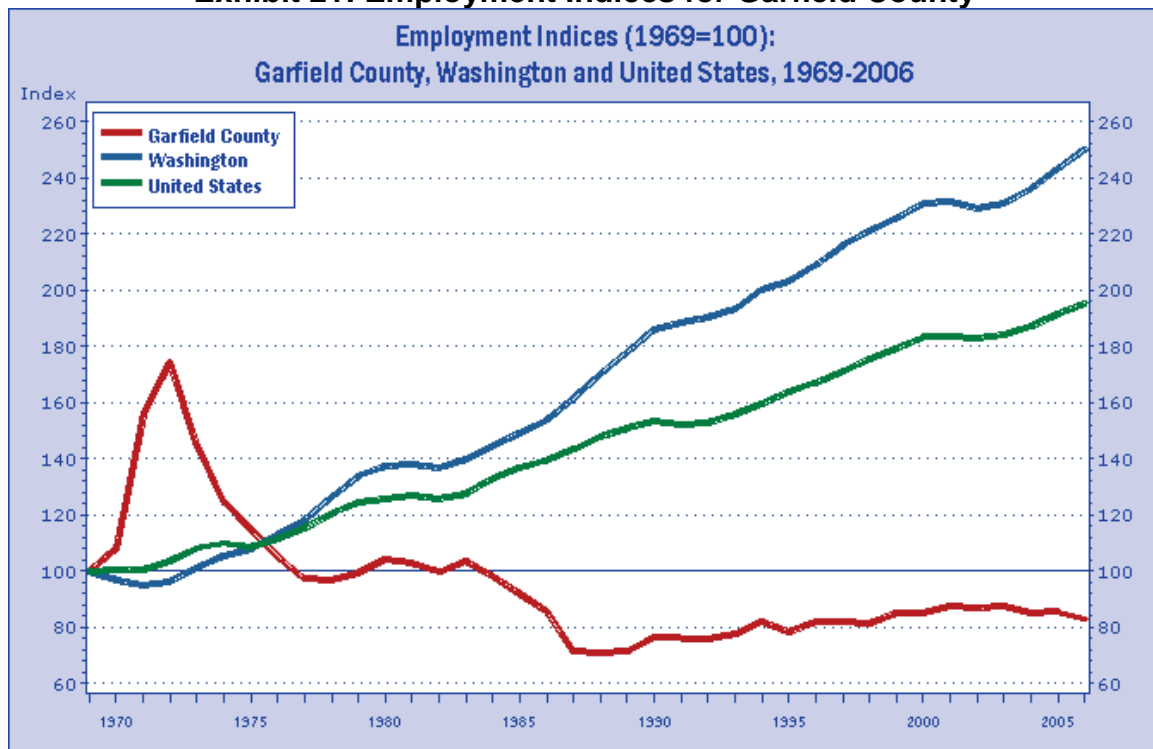
¹³⁰ Washington State Employment Security, Labor Market and Economic Analysis, 2009.

¹³¹ Bureau of Economic Analysis, Employment Statistics

¹³² Washington State County Travel Impacts 1991 – 2007, Washington Division of Tourism

during the period substantially below the 156.7 percent growth in Washington and well below the nation at 98.7 percent.¹³³

Exhibit 21: Employment Indices for Garfield County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skills are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. While only 17 percent of the population of Garfield County completed a college degree, almost 85 percent of the population over the age of 25 graduated from high school compared with the statewide rate of 87 percent.

¹³³ Pacific Northwest Regional Economic Analysis

Table 48: Location Quotients for Garfield County

Industry	Location Quotient	2007 Employment
Crop Production	29.61	47
Merchant Non-durable Goods	16.88	102
Agriculture, Forestry, and Fishing	14.26	49
Wholesale Trade	7.14	126
Building Material and Garden Supply	3.38	29
Construction	3.08	16

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotient, shown in **Table 48**, compares Garfield County to the State of Washington as a whole. Garfield County has a substantially higher employment concentration in crop production than the state as a whole and there is a relatively high degree of economic specialization within the county in agriculture and related businesses. Competitive advantages for crop products result from the availability of suitable land and access to a river port facility to move grains cheaply. Additional agricultural opportunities for value-added businesses include identify-preserved grains, organic food production, food processing, and additional employment from energy operations.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market; companies receive supplies from international firms to produce their products; and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

U.S. Highway 12 bisects Garfield County running east from Pomeroy to Clarkston and Lewiston and to the west to Walla Walla. Highway 12 connects to U.S. Highway 95 at Lewiston approximately 30 miles east of Pomeroy. It also connects to US 195 approximately 30 miles west of Pomeroy. The county is connected to Interstate 90 via State Highway 261 (approximately 90 miles) and via US 195 (approximately 140 miles). The Great Northwest Railroad, a short-line railroad, connects to the Union Pacific west of Garfield County and is the only rail line in the county according to the Washington State Department of Transportation Rail System map. A small state-owned general aviation airport is located in Garfield, Lower Granite State Airport. The closest commercial airport

is the Lewiston Regional Airport 35 miles to the east and Pullman/Moscow Airport located approximately 70 miles from Pomeroy. The Walla Walla Regional Airport is approximately 63 miles from Pomeroy. The Port of Garfield plays a major role in the transportation of goods into and out of the county and the port is also served by overland truck transportation. The Port of Columbia is approximately 37 miles from Pomeroy.

MAJOR COMMODITIES

Tables 49 and 50 identify the top ten commodity imports and exports for Garfield County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

Consistent with other counties in the IPH, farm products, the largest export from Garfield County, is projected to decline by 28.7 percent over the next twenty years. The majority of farm products are shipped by water through the Port of Garfield. These commodities are projected to decline by nearly 30 percent over the next twenty years. As noted previously for some other agriculture dependent counties, the decline in farm exports is consistent with predicted trends nationally for agriculture as more crops are consumed locally for value-added activities such as livestock production, locally based food processing and production of ethanol and other bio-fuels. U.S. farmers are also facing increasing foreign competition, fluctuations in the value of the U.S. dollar and greater environmental regulations, all of which can impact price competitiveness of U.S. agriculture exports. These national trends however may not hold true for the IPH study area due to its diverse agricultural production capabilities, access to low cost transportation by rail and barge, and close proximity to major export gateways such as Seattle, Tacoma and Portland.

Table 49: Inbound Commodities for Garfield County

Top 10 Commodities Shipped Into Garfield County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Chemicals or Allied Products	Tons	2,817	5,384	91.2%	100,800	161,347	60.1%							103,617	166,731	60.9%
	Value/Ton	\$624	\$602	(3.5%)	\$615	\$633	2.9%							\$615	\$632	2.7%
Lumber or Wood Products	Tons	10,996	24,861	126.1%										10,996	24,861	126.1%
	Value/Ton	\$371	\$312	(16.0%)										\$371	\$312	(16.0%)
Primary Metal Products	Tons	5,757	9,369	62.7%										5,757	9,369	62.7%
	Value/Ton	\$2,184	\$2,184	0.0%										\$2,184	\$2,184	0.0%
Food or Kindred Products	Tons	4,137	7,344	77.5%										4,137	7,344	77.5%
	Value/Ton	\$982	\$893	(9.0%)										\$982	\$893	(9.0%)
Clay, Concrete, Glass or Stone	Tons	3,230	5,505	70.4%										3,230	5,505	70.4%
	Value/Ton	\$343	\$333	(2.7%)										\$343	\$333	(2.7%)
Petroleum or Coal Products	Tons	2,079	3,822	83.9%										2,079	3,822	83.9%
	Value/Ton	\$467	\$379	(18.8%)										\$467	\$379	(18.8%)
Pulp, Paper or Allied Products	Tons	1,582	1,705	7.8%										1,582	1,705	7.8%
	Value/Ton	\$671	\$703	4.9%										\$671	\$703	4.9%
Waste or Scrap Materials	Tons	1,506	2,323	54.2%										1,506	2,323	54.2%
	Value/Ton	\$261	\$257	(1.4%)										\$261	\$257	(1.4%)
Transportation Equipment	Tons	380	513	34.9%										380	513	34.9%
	Value/Ton	\$11,867	\$10,989	(7.4%)										\$11,867	\$10,989	(7.4%)
Fabricated Metal Products	Tons		384												384	
	Value/Ton		\$3,429												\$3,429	
Crude Petrol. or Natural Gas	Tons	206												206		
	Value/Ton	\$496												\$496		
All Commodities In Garfield County, WA	Tons	33,409	62,615	87.4%	100,800	161,347	60.1%							134,209	223,962	66.9%
	Value/Ton	\$1,068	\$951	(10.9%)	\$615	\$633	2.9%							\$728	\$722	(0.8%)

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

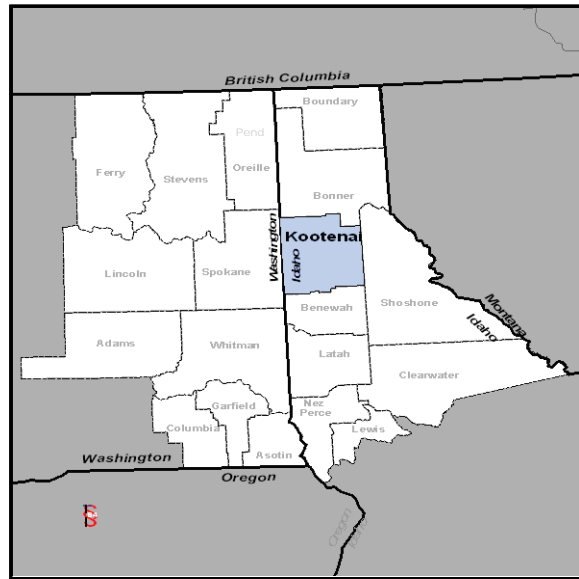
Table 50: Outbound Commodities for Garfield County

Top 10 Commodities Shipped Out Of Garfield County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Farm Products	Tons	19,983	18,075	(9.5%)				296,700	207,811	(30.0%)				316,683	225,885	(28.7%)
	Value/Ton	\$421	\$412	(2.0%)				\$295	\$282	(4.2%)				\$303		(100.0%)
Rail Intermodal Drayage to Ram	Tons	1,789	3,279	83.3%										1,789	3,279	83.3%
	Value/Ton	\$4,619	\$4,619	0.0%										\$4,619	\$4,619	0.0%
Chemicals or Allied Products	Tons	885	1,322	49.4%										885	1,322	49.4%
	Value/Ton	\$515	\$647	25.7%										\$515	\$647	25.7%
Nonmetallic Minerals	Tons	275	356	29.7%										275	356	29.7%
	Value/Ton	\$34	\$34	(0.0%)										\$34	\$34	(0.0%)
Waste or Scrap Materials	Tons	152	309	102.9%										152	309	102.9%
	Value/Ton	\$180	\$201	11.4%										\$180	\$201	11.4%
Metallic Ores	Tons	40	22	(46.3%)										40	22	(46.3%)
	Value/Ton	\$348	\$348	(0.0%)										\$348	\$348	(0.0%)
Fresh Fish or Marine Products	Tons	17	25	44.9%										17	25	44.9%
	Value/Ton	\$5,833	\$5,833	(0.0%)										\$5,833	\$5,833	(0.0%)
Machinery	Tons	1	2	83.8%										1	2	83.8%
	Value/Ton	\$2,087	\$2,087	0.0%										\$2,087	\$2,087	0.0%
All Commodities In Garfield County, WA	Tons	23,142	23,389	1.1%				296,700	207,811	(30.0%)				319,842	231,200	(27.7%)
	Value/Ton	\$747	\$1,013	35.6%				\$295	\$282	(4.2%)				\$327	\$356	8.8%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

KOOTENAI COUNTY, IDAHO

Kootenai County is located in the northern panhandle of Idaho and is surrounded by Bonner, Shoshone, Benewah and Spokane counties. Beautiful Lake Coeur d'Alene continues to serve as the central focus of Kootenai County just as it did many years ago when the Coeur d'Alene Tribe settled in the area. In the 1890's Coeur d'Alene was a rail and steamboat transfer point between the mining operations and the processing operations to the east. A boom in the timber industry stimulated significant population growth in the early 1900s when the population of the county increased significantly.



For the past thirty years Kootenai County has experienced remarkable population growth due in part to the many retirees who moved to the county to enjoy the scenery, quality of life, and proximity to Spokane's cultural amenities and health care. With the opening of the Coeur d'Alene Resort in the late 1980's the tourism industry in Kootenai County expanded dramatically. For the past thirty years the economy of the county has expanded and been diversified to include manufacturing, business operations, healthcare, and construction as well as tourism.

Companies including Buck Knives, Center Partners (a call center operation), and Esterline Advanced Input Systems (a designer and manufacturer of advanced input systems applications) have helped to diversify the Kootenai economy. Tourism and call centers continue to be an important employer in the community with six call centers employing nearly 2,000 people.

POPULATION TRENDS

According to the U.S. Census Bureau the population of Kootenai County was 137,475 in 2008. The county experienced significant population growth in the past thirty years and in the past eight years alone grew by 26.5 percent. During the same period the population of the state as a whole grew by 17.8 percent and the national population increased 11 percent.

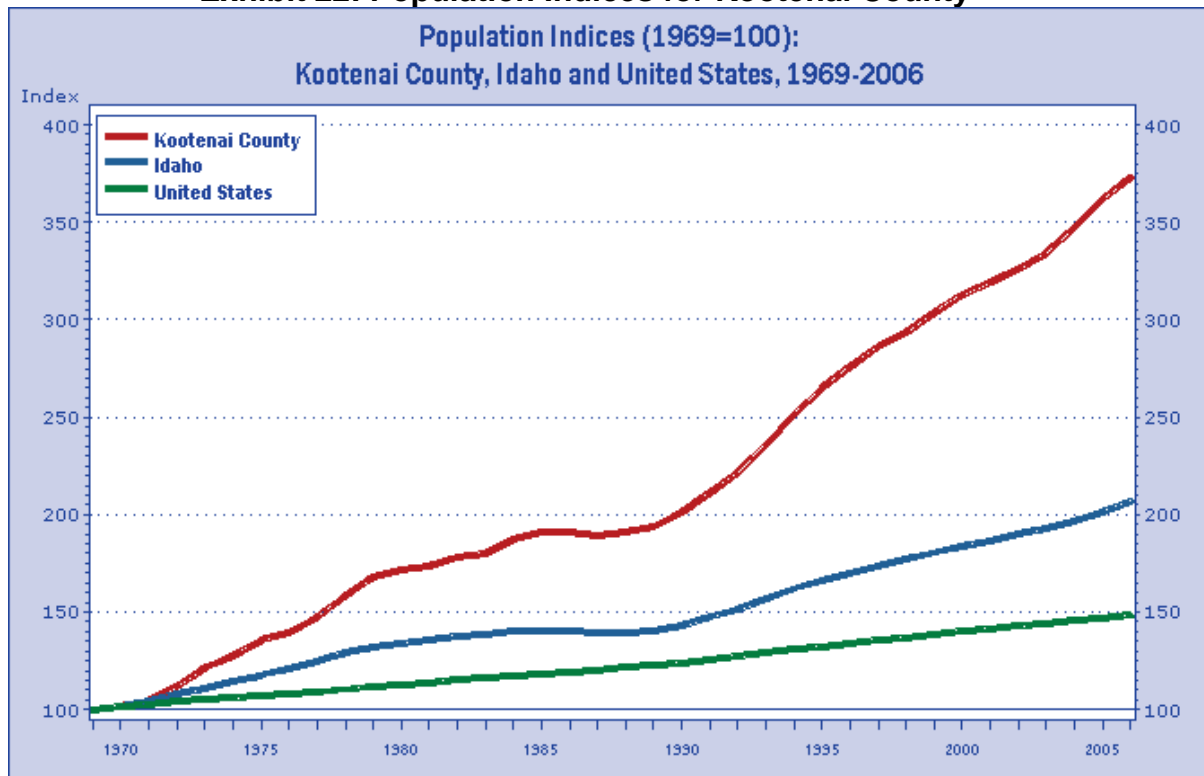
Almost twenty-five percent of the population of Kootenai County is below the age of 18 compared to the statewide average of 27 percent. Only 11.3 percent of the population lives below the poverty level, slightly below the statewide rate of 12.1 percent and the median household income in 2007 for Kootenai County was \$46,724, slightly above the statewide rate of \$46,136.

Table 51: Population Data for Kootenai County

Year	Population
1990 ¹³⁴	70,440
2000	108,685
2008 ¹³⁵	137,475
2015	167,920
2020	189,280
2030	210,870

Exhibit 22 shows the population growth of Kootenai County compared with the growth in Idaho and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. The population of Kootenai County increased by 283.4 percent during this period compared to 111.6 percent population growth statewide and 49.7 percent growth nationally.¹³⁶

Exhibit 22: Population Indices for Kootenai County



¹³⁴ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

¹³⁵ U.S. Census Bureau Population Estimates 2008

¹³⁶ Pacific Northwest Regional Economic Analysis

INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Kootenai County is creating jobs faster than almost anywhere else in the country. In 2004 and 2005, Kootenai County was in the top 5 fastest job creating metro areas in the country. The county has successfully diversified their economic base in the past 20 years through manufacturing, expansion of the tourism sector, and professional and business services. The tourism and population growth generated significant growth in construction, retail, healthcare, services, and government sectors. Kootenai County's employment growth increased 496 percent over the past thirty years. The county's unemployment rate increased from June 2008 with 4.8 percent unemployment to 8.6 percent unemployment in June 2009. The Statewide unemployment in December 2009 was 9.1 percent.

The Coeur d'Alene Tribe opened a casino in the county in 1994, and further development of a hotel and golf course by the Tribe along with the expansion of the Coeur d'Alene Resort has created a tourist destination that employs over 8,800 people in the county. Kootenai County has become a year-round tourist destination in part due to the diversity of their tourism assets and outdoor recreational opportunities in the surrounding region.

Table 52: Industry Sectors by Employment in Kootenai County¹³⁷

Industry	Employment
Trade, Transportation, & Utilities	10,937
Government	9,529
Leisure and Hospitality	8,141
Professional and Business Services	5,994
Construction	5,220

The trade and transportation sector includes all wholesale and retail trade in the county whose growth and prosperity is tied to "rooftops" and the significant population and employment growth within the county in recent years. Other major employers include: the government sector with U.S. Forest Service, school districts, and local governments; Kimball Office and furniture manufacturer, the Coeur d'Alene Resort and other tourism operations that employ almost 9,000 people, various manufacturers who employ 4,500 in the county and Buck Knives with more than 200 employees. Sysco Systems opened a distribution center in 2005 serving the food service industry that employs 180 people and U.S. Bank has located a customer service center in the county that employs 500.

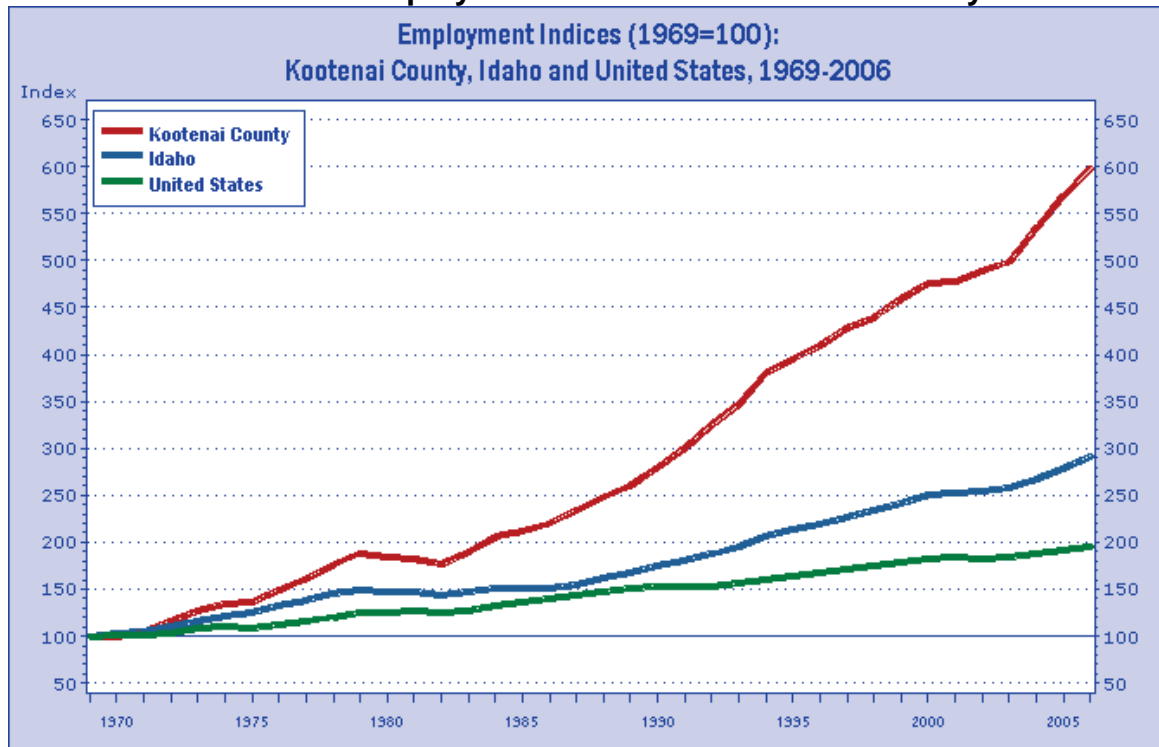
According to the most recent economic impact study for tourism expenditures in Idaho, tourism generated \$287.6 million in travel spending in 2005 creating over 8,800 jobs and over \$42 million in tourism taxes. Travel spending has increased by 12.8 percent over the past 5 years.¹³⁸

¹³⁷ Bureau of Economic Analysis, Employment Statistics

¹³⁸ "The Economic Impacts of Travel & Tourism in Idaho", Idaho Department of Tourism, Sept. 2005

Exhibit 23 compares employment growth in Kootenai County for the past 37 years to employment growth in Idaho and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Kootenai County's employment increased by 522.1 percent during the period compared to Idaho's growth at 200.5 percent and the nation at 98.7 percent.¹³⁹

Exhibit 23: Employment Indices for Kootenai County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skills are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. Eighty- seven percent of the population in Kootenai County over the age of 25 graduated from high school compared to the statewide average of 84.7 percent. Nineteen percent of the population over the age of 25 completed a Bachelor’s degree or higher compared with 21.7 percent statewide. The workforce skill in Kootenai County is an important factor in the county’s impressive employment growth.

¹³⁹ Pacific Northwest Regional Economic Analysis

Table 53: Location Quotients for Kootenai County

Industry	Location Quotient	2007 Employment
Logging & Forestry	8.40	214
Wood Products Manufacture	4.36	819
Furniture Manufacture	2.81	557
Amusement, Gambling, recreation	2.63	1563
Arts, Entertainment, Recreation	1.99	1628

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotients, shown in **Table 53**, compare Kootenai County to the State of Idaho as a whole. Kootenai County has a substantially higher employment concentration in logging and forestry, wood products manufacture, and furniture manufacture than the state as a whole and there is a high degree of economic specialization within the county. There may be competitive advantages for amusements and gambling as well as arts and entertainment in Kootenai County, however the county has a significant number of location quotients over 1.0 within the county including construction, retail trade, specialty trade construction, accommodations and food, primary metals manufacturing, and heavy construction which indicates a very strong and diversified economic base.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market; companies receive supplies from international firms to produce their products; and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

Interstate 90 runs through Kootenai County linking the county to Spokane and Seattle to the west and Butte, Montana to the east. The county is also served by Highway 95 that runs north to Canada and south to Moscow. BNSF and Union Pacific, both Class I railroads, run through Kootenai County with service north to Canada and west to the west coast ports and east to Chicago. Coeur d'Alene Airport provides air cargo facilities. Commercial air service is available at Spokane International Airport. According to the BNSF and Union Pacific web sites, the closest intermodal facilities servicing Kootenai County is in Spokane.

MAJOR COMMODITIES

Tables 54 and 55 identify the top commodity imports and exports for Kootenai County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

The decline in exports of lumber and wood products from Kootenai County mirrors similar declines throughout the IPH study area. A number of trends discussed in this report are influencing these declines; some of the trends such as the slowdown in housing construction are beyond the study area's control. Other trends affecting lumber and forest products particularly in Kootenai County may be the result of greater economic diversification within the county where other employment opportunities are now available that provide year-round income and other benefits.

Table 54: Inbound Commodities for Kootenai County

Top 10 Commodities Shipped Into Kootenai County, ID In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Primary Metal Products	Tons	342,137	523,111	52.9%										342,137	523,111	52.9%
	Value/Ton	\$2,233	\$2,114	(5.3%)										\$2,233	\$2,114	(5.3%)
Lumber or Wood Products	Tons	283,623	196,844	(30.6%)	6,880	2,343	(65.9%)							290,503	199,187	(31.4%)
	Value/Ton	\$356	\$237	(33.3%)	\$1,089	\$1,124	3.2%							\$373	\$248	(33.6%)
Petroleum or Coal Products	Tons	138,236	195,284	41.3%	75,268	68,742	(8.7%)							213,504	264,026	23.7%
	Value/Ton	\$716	\$714	(0.2%)	\$772	\$773	0.1%							\$736	\$730	(0.8%)
Clay, Concrete, Glass or Stone	Tons	183,421	160,110	(12.7%)										183,421	160,110	(12.7%)
	Value/Ton	\$340	\$312	(8.1%)										\$340	\$312	(8.1%)
Chemicals or Allied Products	Tons	137,990	170,614	23.6%	27,040	43,119	59.5%							165,030	213,734	29.5%
	Value/Ton	\$4,431	\$4,001	(9.7%)	\$884	\$1,051	18.9%							\$3,850	\$3,406	(11.5%)
Food or Kindred Products	Tons	92,852	138,544	49.2%										92,852	138,544	49.2%
	Value/Ton	\$1,131	\$1,172	3.6%										\$1,131	\$1,172	3.6%
Electrical Equipment	Tons	46,884	107,269	128.8%										46,884	107,269	128.8%
	Value/Ton	\$29,920	\$32,636	9.1%										\$29,920	\$32,636	9.1%
Transportation Equipment	Tons	40,409	76,298	88.8%										40,409	76,298	88.8%
	Value/Ton	\$6,600	\$5,718	(13.4%)										\$6,600	\$5,718	(13.4%)
Machinery	Tons	32,161	68,559	113.2%										32,161	68,559	113.2%
	Value/Ton	\$16,244	\$19,380	19.3%										\$16,244	\$19,380	19.3%
Fabricated Metal Products	Tons	20,756	27,145	30.8%										20,756	27,145	30.8%
	Value/Ton	\$3,512	\$3,487	(0.7%)										\$3,512	\$3,487	(0.7%)
All Commodities In Kootenai County, WA	Tons	1,342,741	1,694,092	26.2%	117,028	122,149	4.4%							1,459,769	1,816,240	24.4%
	Value/Ton	\$3,174	\$4,610	45.3%	\$775	\$837	8.0%							\$2,981	\$4,356	46.1%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

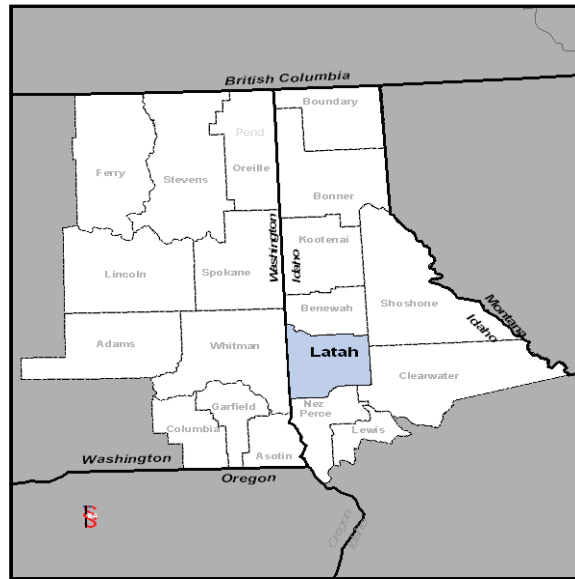
Table 55: Outbound Commodities for Kootenai County

Top 10 Commodities Shipped Out Of Kootenai County, ID In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	929,622	522,140	(43.8%)	328,520	245,289	(25.3%)							1,258,142	767,429	(39.0%)
	Value/Ton	\$450	\$510	13.4%	\$1,238	\$1,257	1.5%							\$656	\$749	14.2%
Chemicals or Allied Products	Tons	364,773	769,493	111.0%										364,773	769,493	111.0%
	Value/Ton	\$2,636	\$2,625	(0.4%)										\$2,636	\$2,625	(0.4%)
Clay, Concrete, Glass or Stone	Tons	313,506	434,256	38.5%										313,506	434,256	38.5%
	Value/Ton	\$234	\$255	8.7%										\$234	\$255	8.7%
Primary Metal Products	Tons	119,293	146,273	22.6%										119,293	146,273	22.6%
	Value/Ton	\$402	\$403	0.3%										\$402	\$403	0.3%
Machinery	Tons	56,265	151,604	169.4%										56,265	151,604	169.4%
	Value/Ton	\$6,308	\$9,033	43.2%										\$6,308	\$9,033	43.2%
Food or Kindred Products	Tons	28,741	74,381	158.8%										28,741	74,381	158.8%
	Value/Ton	\$644	\$652	1.2%										\$644	\$652	1.2%
Fabricated Metal Products	Tons	28,580	74,439	160.5%										28,580	74,439	160.5%
	Value/Ton	\$4,613	\$4,607	(0.1%)										\$4,613	\$4,607	(0.1%)
Misc Manufacturing Products	Tons		28,045												28,045	
	Value/Ton		\$10,736												\$10,736	
Electrical Equipment	Tons	26,540	70,202	164.5%										26,540	70,202	164.5%
	Value/Ton	\$8,645	\$8,499	(1.7%)										\$8,645	\$8,499	(1.7%)
Farm Products	Tons	20,160												20,160		
	Value/Ton	\$1,110												\$1,110		
Rubber or Misc Plastics	Tons	19,276	26,756	38.8%										19,276	26,756	38.8%
	Value/Ton	\$5,563	\$5,547	(0.3%)										\$5,563	\$5,547	(0.3%)
All Commodities In Kootenai County, WA	Tons	1,955,237	2,369,192	21.2%	331,800	253,803	(23.5%)							2,287,037	2,622,995	14.7%
	Value/Ton	\$1,348	\$2,310	71.4%	\$1,227	\$1,220	(0.6%)							\$1,330	\$2,204	65.7%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

LATAH COUNTY, IDAHO

The University of Idaho employs fully one-third of the workforce in Latah County today. The presence of the University of Idaho, with student enrollment approaching 12,000, is the major economic driver in the county. The University is an important research institution in the northwest and technology transfer activities centered around the university have helped to create new technology based businesses such as Comtech AHA Corporation, a microelectronics company focused on technologies for improving data transfer and storage, Amplicon Express, a DNA sequencing laboratory, and Digilent Inc., an electronic engineering design and manufacturing firm for microcontroller technologies.



The county is located in the northern panhandle of Idaho east of Whitman County, WA. These two counties are the heart of a region encompassing parts of southeastern Washington and north central Idaho known as “the Palouse”. Together for their size they produce a significant share of the wheat, lentils, peas, oats, and barley consumed in the United States and exported to Asia. Moscow is the county seat and the largest city in Latah County.

POPULATION TRENDS

The population of Latah County was 35,906 in 2008 and 23,200 of those residents lived in the City of Moscow.¹⁴⁰ The county experienced significantly lower population growth in the past eight years than the state as a whole with only 2.8 percent growth in Latah County compared to 17.8 percent statewide. In the past 30 years Latah County’s population has only increased 48 percent. Based upon driver’s license registration, it appears that 6 percent of the new residents of Latah County are from foreign countries.

Slightly over nineteen percent of the population of Latah County is below the age of 18 compared to the statewide average of 27 percent. Seventeen percent of the population lives below the poverty level which is significantly higher than the average statewide of 12.1 percent. This is due in part to the fact that students at the University of Idaho represent approximately one third of the county’s population. The median household income in 2007 in Latah County was \$42,031, below the statewide rate of \$46,136.

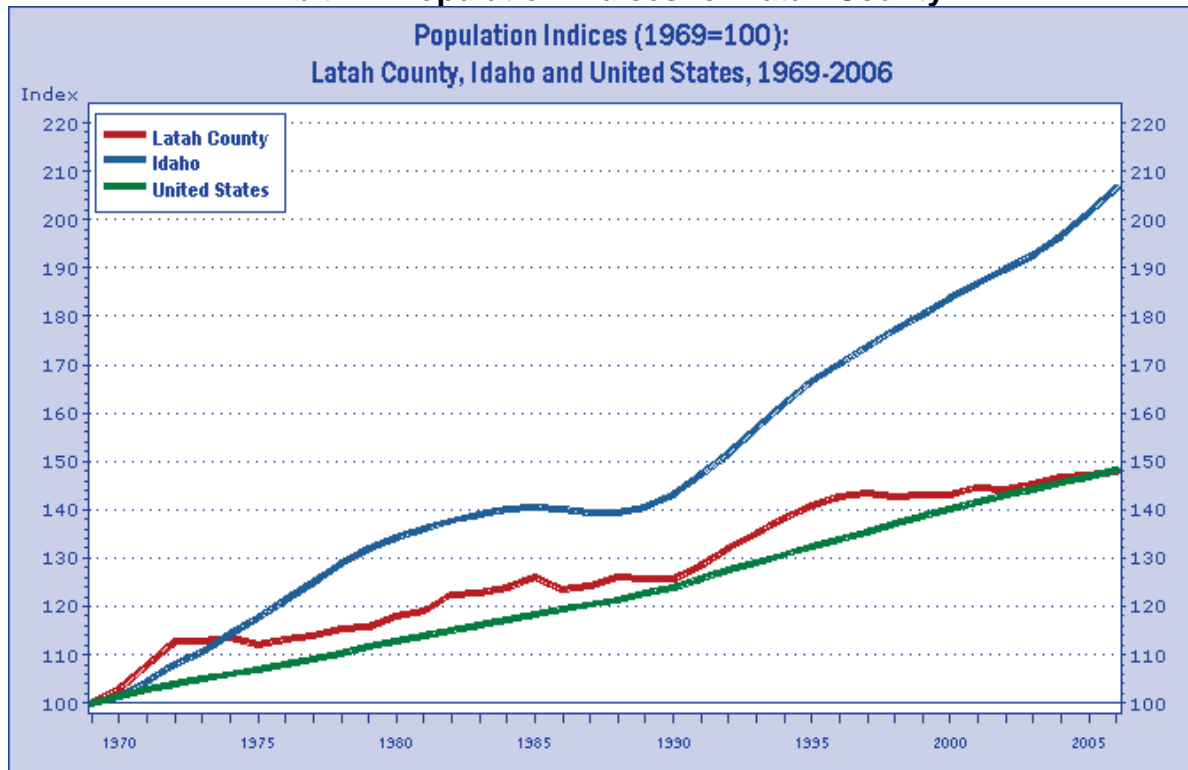
¹⁴⁰ U.S. Census Bureau, Population Estimates 2008

Table 56: Population Data for Latah County

Year	Population
1990 ¹⁴¹	30,617
2000	34,935
2008 ¹⁴²	35,906
2015	39,360
2020	41,350
2030	45,410

Exhibit 24 shows the population growth of Latah County compared with the growth in Idaho and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. The population of Latah County increased by 46.5 percent during this period compared to 111.6 percent in Idaho and 49.7 percent growth nationally.

Exhibit 24: Population Indices for Latah County



¹⁴¹ Population data for 1990, 2000, 12015, 2020, 2030 Woods and Poole Economics

¹⁴² U.S. Census Bureau Population Estimates 2008

INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Unemployment in Latah County has increased over the past twelve months from 3.9 percent to 5.5 percent, substantially lower than the state unemployment rate of 8.3 percent and the national unemployment at 9.5 percent. The presence of the University of Idaho insulates Latah County to some degree from downturns in the economic cycle and continues to provide relatively stable employment in the region. The county's efforts to diversify their economy have met with some success in recent years as several new manufacturing and technology firms have chosen to locate in Latah County. The Alturas Technology Park a technology based business incubator affiliated with the university has outgrown their facility and moved into larger quarters.

Non-traded sector businesses benefit from the student enrollment at University of Idaho and Washington State University (WSU) in Whitman County, WA due west of Latah County in Pullman. WSU has an enrollment of 18,000 students bringing the total student population in these two counties to over 30,000, a significant economic force with strong buying power for retail trade, restaurants, and other services.

Table 57: Industry Sectors by Employment in Latah County¹⁴³

Industry	Employment
Government	5,229
Trade, Transportation, & Utilities	2,251
Leisure and Hospitality	1,835
Education and Health Services	1,525
Professional and Business Services	682

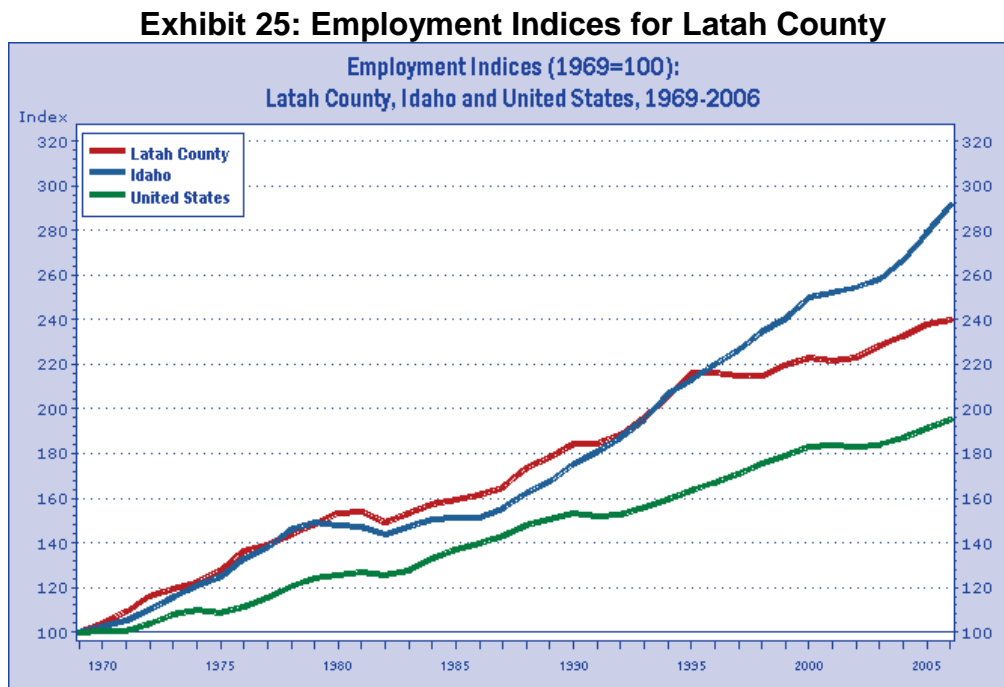
The University of Idaho is the largest employer in Latah County with over 3,000 employees. Government employment includes the university staff, local governments, school districts, and the U.S. Forest Services. Other significant employers in Latah County include Gritman Medical Center with 450 employees, Wal-Mart with 200 employees, Bennett Lumber Products, Rosauers Super Markets, and Winco Foods. Manufacturing, construction, health services, and retail trade have generated new job opportunities in the county in recent years. Manufacturing is projected to increase in the future as computer software and hardware companies in Alturas Technology Park's business incubator continue to expand and move out of the incubator into market rate space.

According to the most recent economic impact study for tourism expenditures in Idaho, tourism generated \$35 million in travel spending in 2005 creating 812 jobs and over \$5 million in tax revenues.¹⁴⁴ Tourism spending in Latah County increased 11.3 percent from 2001 to 2005.

¹⁴³ Bureau of Economic Analysis, Employment Statistics

¹⁴⁴ "The Economic Impact of Travel & Tourism in Idaho" Idaho Division of Tourism, September 2005

Exhibit 25 compares employment growth in Latah County for the past 37 years to employment growth in Idaho and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Latah County's employment increasing by 141.9 percent during the period compared to Idaho's growth at 200.5 percent and the nation at 98.7 percent.¹⁴⁵



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skills are critical factor in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. Ninety-one percent of the population in Latah County over the age of 25 completed high school compared to the statewide average of 84.7 percent and 41 percent of the population over the age of 25 completed a Bachelor's degree or higher compared with 21.7 percent statewide.

The Palouse Knowledge Corridor is a partnership of Latah and Palouse Economic Development Councils to build upon the resources of the two major research institutions located only eight miles apart. This partnership between

¹⁴⁵ Pacific Northwest Regional Economic Analysis

Washington State University and the University of Idaho has defined five industry clusters including electronics, biotech, environmental services, advanced materials, and information services that are linked to research and development programs within the universities. In these two counties over 53 percent of the population has at least an Associate's degree or higher compared to 38 percent of the population in Washington and Idaho and 24 percent nationally. Many of the technology businesses located in this area have ties to these universities, yet another example of the entrepreneurial linkages that are helping to diversify the economy of the IPH study area.

Table 58: Location Quotients for Latah County

Industry	Location Quotient	2007 Employment
Forestry and Logging	50.73	255
Sporting Goods, Hobby, Book Stores	3.72	190
Accommodations	2.38	1,394
Social Assistance	2.27	395
Electronics and Appliance Stores	2.20	92

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotients, shown in **Table 58**, compare Latah County to the State of Idaho as a whole. Latah County has a substantially higher private employment concentration in forestry and logging and books stores than the state as a whole. Given the presence of the University of Idaho the employment concentration in books stores is to be expected and the employment concentration in forestry and logging is the result of over 402,300 acres of forest land in the county. Many of the service sector location quotients are the result of the large student population in the region.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market; companies receive supplies from international firms to produce their products; and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

U.S. Highway 95, a principal arterial highway that runs from north to south in western Latah County from Canada and Coeur d'Alene to Moscow and south to Lewiston and southern Idaho. There are two minor arterial roads serving Latah County, Highway 3 linking U.S. Highway 12 north to I-90 and Highway 8 linking

Moscow to Deary, ID. The Palouse River and Coulee City Railroad, a short line rail operation run through Moscow west to Pullman linking to the Washington & Idaho Railroad that runs north to Spokane. (The rail line into Moscow has recently been approved for abandonment by the STB.) The closest commercial airport is the Pullman/Moscow Airport located in Pullman, Washington just west of Latah County.

MAJOR COMMODITIES

Tables 59 and 60 identify the top commodity imports and exports for Latah County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

The decline in exports of lumber and wood products from Latah County over the next twenty years reflects significant changes in the county economic base as well as trends in the forestry sector. Lumber and wood products exports are projected to decline by 62.4 percent off set to some degree by increases in chemicals or allied products. Chemical and allied products refer to firms producing basic chemicals and manufacturing products that are created predominately by chemical processes. There are three primary classes of products included in this category: basic chemicals including acids, salts, and organic chemicals; chemical products used in further manufacture such as plastics materials, pigments, and synthetic fibers; and, finished chemical products for consumption such as drugs, soaps, or cosmetics.

Table 59: Inbound Commodities for Latah County

Top 10 Commodities Shipped Into Latah County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Primary Metal Products	Tons	127,173	216,891	70.5%										127,173	216,891	70.5%
	Value/Ton	\$2,162	\$2,162	(0.0%)										\$2,162	\$2,162	(0.0%)
Lumber or Wood Products	Tons	107,991	70,022	(35.2%)										107,991	70,022	(35.2%)
	Value/Ton	\$291	\$181	(37.7%)										\$291	\$181	(37.7%)
Electrical Equipment	Tons	85,801	260,954	204.1%										85,801	260,954	204.1%
	Value/Ton	\$41,282	\$44,242	7.2%										\$41,282	\$44,242	7.2%
Food or Kindred Products	Tons	26,635	40,431	51.8%										26,635	40,431	51.8%
	Value/Ton	\$1,126	\$1,178	4.6%										\$1,126	\$1,178	4.6%
Clay, Concrete, Glass or Stone	Tons	17,294	16,808	(2.8%)										17,294	16,808	(2.8%)
	Value/Ton	\$567	\$501	(11.8%)										\$567	\$501	(11.8%)
Printed Matter	Tons	14,548	17,433	19.8%										14,548	17,433	19.8%
	Value/Ton	\$6,307	\$6,315	0.1%										\$6,307	\$6,315	0.1%
Transportation Equipment	Tons	13,843	33,873	144.7%										13,843	33,873	144.7%
	Value/Ton	\$10,441	\$10,117	(3.1%)										\$10,441	\$10,117	(3.1%)
Petroleum or Coal Products	Tons	9,444	13,247	40.3%										9,444	13,247	40.3%
	Value/Ton	\$214	\$216	0.8%										\$214	\$216	0.8%
Machinery	Tons	4,947	12,608	154.9%										4,947	12,608	154.9%
	Value/Ton	\$20,207	\$22,968	13.7%										\$20,207	\$22,968	13.7%
Chemicals or Allied Products	Tons	4,434	6,535	47.4%										4,434	6,535	47.4%
	Value/Ton	\$2,468	\$2,461	(0.3%)										\$2,468	\$2,461	(0.3%)
All Commodities In Latah County, WA	Tons	426,913	711,918	66.8%										426,913	711,918	66.8%
	Value/Ton	\$10,154	\$18,268	79.9%										\$10,154	\$18,268	79.9%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

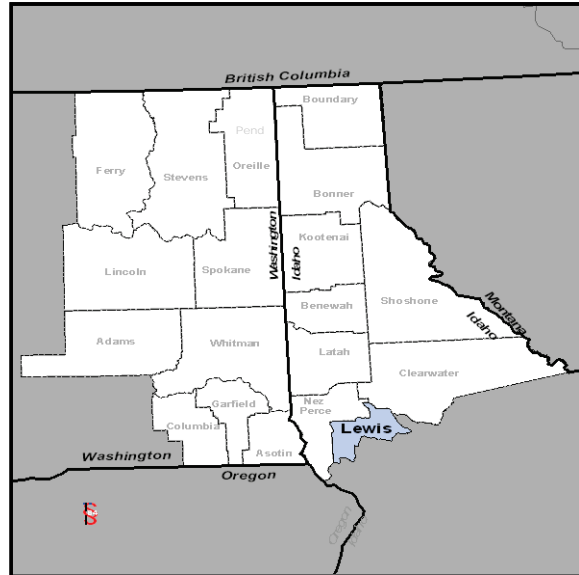
Table 60: Outbound Commodities for Latah County

Top 10 Commodities Shipped Out Of Latah County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	213,696	71,559	(66.5%)	32,360	20,922	(35.3%)							246,056	92,481	(62.4%)
	Value/Ton	\$364	\$499	37.0%	\$1,368	\$1,368	(0.0%)							\$496	\$696	40.2%
Chemicals or Allied Products	Tons	35,560	278,138	682.2%										35,560	278,138	682.2%
	Value/Ton	\$19,045	\$19,065	0.1%										\$19,045		
Nonmetallic Minerals	Tons	29,185	48,669	66.8%										29,185	48,669	66.8%
	Value/Ton	\$5	\$5	(0.0%)										\$5	\$5	(0.0%)
Misc Manufacturing Products	Tons	14,583	27,508	88.6%										14,583	27,508	88.6%
	Value/Ton	\$12,986	\$12,986	(0.0%)										\$12,986	\$12,986	(0.0%)
Farm Products	Tons	13,076	11,787	(9.9%)										13,076	11,787	(9.9%)
	Value/Ton	\$892	\$887	(0.6%)										\$892	\$887	(0.6%)
Printed Matter	Tons	11,532	26,701	131.5%										11,532	26,701	131.5%
	Value/Ton	\$4,228	\$4,221	(0.2%)										\$4,228	\$4,221	(0.2%)
Food or Kindred Products	Tons	5,200	8,947	72.1%										5,200	8,947	72.1%
	Value/Ton	\$1,147	\$1,157	0.9%										\$1,147	\$1,157	0.9%
Machinery	Tons	524	804	53.6%										524	804	53.6%
	Value/Ton	\$20,868	\$20,775	(0.4%)										\$20,868	\$20,775	(0.4%)
Metallic Ores	Tons	455	245	(46.3%)										455	245	(46.3%)
	Value/Ton	\$1,860	\$1,860	0.0%										\$1,860	\$1,860	0.0%
Furniture or Fixtures	Tons	292	1,061	263.4%										292	1,061	263.4%
	Value/Ton	\$6,425	\$6,593	2.6%										\$6,425	\$6,593	2.6%
All Commodities In Latah County, WA	Tons	324,173	475,552	46.7%	32,360	20,922	(35.3%)							356,533	496,474	39.3%
	Value/Ton	\$3,161	\$12,309	289.4%	\$1,368	\$1,368	(0.0%)							\$2,998	\$11,848	295.2%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

LEWIS COUNTY, IDAHO

Lewis County is located in the north central panhandle of Idaho, north and west of Idaho County, and east of Nez Perce County. Lewis County is heavily dependent upon natural resource industries primarily agriculture and forestry products. The county has lost significant employment since the 1980's as a result of sawmills closing, which caused a number of families to leave the area. The recent decline nationally in housing construction has further eroded forestry employment in Lewis County. Because of the scenic beauty of the area and the availability of land for development, Lewis County has become something of a bedroom community for Lewiston.



POPULATION TRENDS

According to the U.S. Census Bureau the population of Lewis County was 3,594 in 2008. The population of the county peaked in 1997 at 3,856 and for the next ten years the population of the county declined by seven percent. In the past eight years this county has lost 4.1 percent of its population base. During this period the statewide population grew by 17.8 percent. In the past thirty years the population of Lewis County increased by 28 percent while the statewide population growth grew at 190 percent.

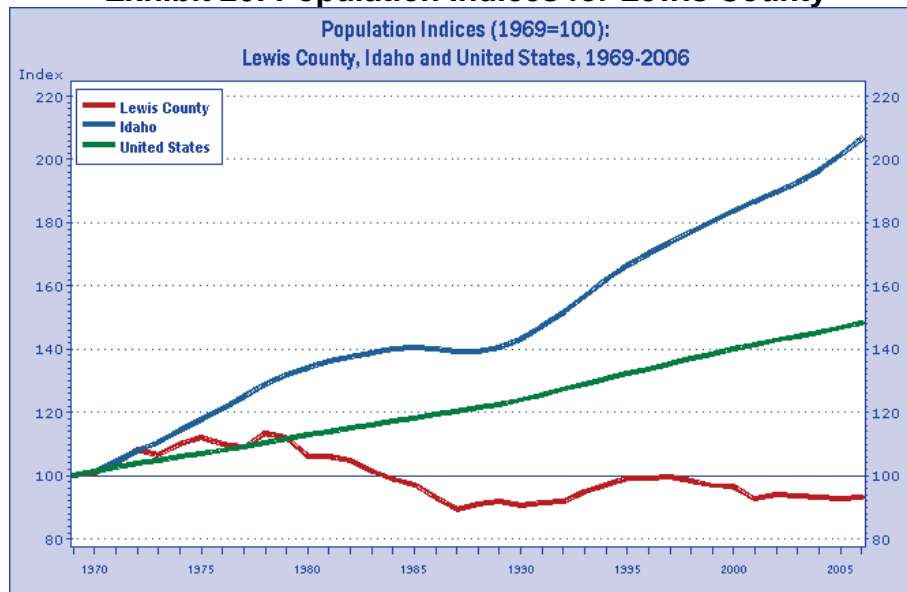
Thirteen percent of the population in Lewis County lives below the poverty level and the median household income of \$36,089 is substantially below the statewide median income of \$46,136. The community is aging faster than the balance of the state as 22.5 percent of the population is over the age of 65 and statewide the population over 65 only makes up 11.7 percent of the population.

Table 61: Population Data for Lewis County

Year	Population
1990 ¹⁴⁶	3,516
2000	3,747
2008 ¹⁴⁷	3,594
2015	3,660
2020	3,720
2030	3,840

Exhibit 26 shows the population growth of Lewis County compared with the growth in Idaho and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. The population of Lewis County declined 8.0 percent during this period compared to Idaho's 111.6 percent population growth statewide and 49.7 percent growth nationally.

Exhibit 26: Population Indices for Lewis County



INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Unemployment in Lewis County increased from 3.7 percent in June 2008 to 4.6 percent in June 2009 significantly below the statewide unemployment of 8.3 percent and the national unemployment rate of 9.5 percent.¹⁴⁸ Employment declined in mining, financial activities, and “other services” and increased in

¹⁴⁶ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

¹⁴⁷ U.S. Census Bureau Population Estimates 2008

¹⁴⁸ Idaho Department of Labor

manufacturing, trade and transportation, and education and health services. Manufacturing in Lewis County is primarily concentrated in forest products and sawmills.

Table 62: Industry Sectors by Employment for Lewis County¹⁴⁹

Industry	Employment
Government	448
Trade, transportation, & utilities	359
Manufacturing	156
Education & health services	142
Agriculture	102

The dependence on agriculture and forestry in Lewis County has created significant volatility and seasonality in employment over the years. Agriculture jobs have decreased by a third in the past 30 years but in recent years higher prices for wheat and other grains have enabled farms to add some additional jobs. The forest products sector has remained a source of employment in Lewis County but the recent declines in the housing industry have depressed lumber prices and several mills in the county have reduced jobs and the hours for remaining employees.

The largest non-forestry manufacturing firm in Lewis County is Hillco Technologies which makes an instrument to keep farm combines level while in operation. Seeds Inc. is a green pea and snap bean seed company. This company was originally a small regional supplier started in Moscow that has grown and now ships seed products throughout the U.S and to 26 countries. Other employers in the county include the Flying B Ranch (an Orvis endorsed hunting and fishing lodge located on the Clearwater River), It'se-Ye-Casino owned by the Nez Perce Tribe, and Kamiah Mills.

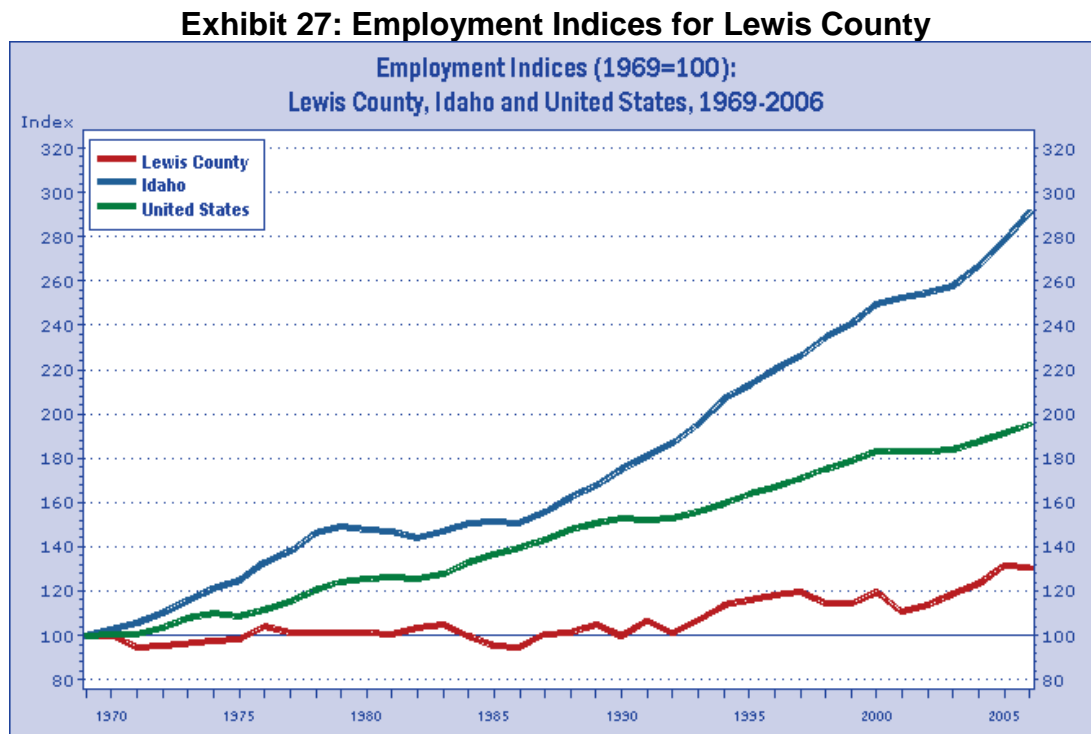
Tourism currently represents a small part of the county's economy and there are few existing businesses that could support the tourism sector in the near term. According to the most recent economic impact study for tourism expenditures in Idaho, tourism generated \$3.4 million in travel spending in 2005 creating 83 jobs and \$526,000 in state and local tax revenues.¹⁵⁰ Tourism declined significantly in Lewis County, decreasing by 24.3 percent, the largest decline in tourism spending in the state during this period. The Nez Perce Tribe is investing in Lewis County to enhance the tourism opportunities in the county and plays an important role in the economic and community development activities of Lewis, Clearwater, and Nez Perce Counties.

Exhibit 27 compares employment growth in Lewis County for the past 37 years to employment growth in Idaho and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment

¹⁴⁹ Bureau of Economic Analysis, Employment Statistics

¹⁵⁰ "The Economic Impact of Travel and Tourism in Idaho", Division of Tourism, September 2005

growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Lewis County's employment decreasing by 29.8 percent during the period compared to Idaho's growth at 200.5 percent and the nation at 98.7percent.¹⁵¹



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skills are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. Eighty-four percent of the population in Lewis County over the age of 25 completed high school compared to the statewide average of 84.7 percent, while only 15 percent of the population over the age of 25 completed a Bachelor's degree or higher compared with 21.7 percent statewide.

Employment and population in Lewis County are significant challenges in the county. There are few job opportunities in the county that require a college education outside of those in local government and the school district. Per capita income in the county is not significantly lower than the state average largely as a result of the average wages reported in the agricultural sector.¹⁵²

¹⁵¹ Pacific Northwest Regional Economic Analysis

¹⁵² Idaho Department of Labor, Workforce Trends, July 2009

Table 63: Location Quotients for Lewis County

Industry	Location Quotient	2007 Employment
Forestry and Logging	74.97	41
Wood Product Manufacturing	26.17	112
Wholesale and Non-durable Goods	4.33	74
Food and Beverage	4.09	97

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotient, shown in **Table 63**, compares Lewis County to the State of Idaho as a whole. Lewis County has a substantially higher employment concentration in forestry and logging than the state as a whole. This employment concentration in forestry and logging highlights the vulnerability of this county as declines in this industry resulting from foreign competition, slow recovery in the housing industry, and related trends will most certainly affect employment in this county.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market; companies receive supplies from international firms to produce their products; and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

U.S. Highway 95 runs through Lewis County north to Coeur d'Alene and Canada and south to Payette and southern Idaho. U.S. 95 is the county's major connection to Interstate 90, approximately 180 miles. A major rural collector Highway 62/162 runs from east to west through the county linking Kamiah to U.S. 95. A short line railroad bisects the county north to Craigmont and south to Cottonwood. The Bountiful Grain & Craig Mountain (BG&CM) railroad links to the Great Northwest Railroad, another short line, but the BG&CM line to Craigmont is not in service at this time, although the BG&CM does serve Kamiah. There are three municipal general aviation airports in Lewis County in Craigmont, Nez Perce, and Kamiah. The closest commercial airport is the Lewiston-Nez Perce County Regional Airport in Lewiston.

MAJOR COMMODITIES

The commodities in **Tables 64** and **65** identify the top imports and exports for Lewis County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into or out of the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

The decline in exports of lumber and wood products from Lewis County over the next twenty years reflects significant changes in the county economic base as well as trends in the forestry sector. Lumber and wood products exports are projected to decline by 59.2 percent. The export of primary metal products and metallic ores are also expected to decline significantly in the next 20 years; 45 percent, and 46.3 percent respectively. In contrast, machinery exports are expected to nearly double in Lewis County over the next 20 year period.

Table 64: Inbound Commodities for Lewis County

Top 10 Commodities Shipped Into Lewis County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	21,222	28,576	34.7%										21,222	28,576	34.7%
	Value/Ton	\$265	\$177	(33.3%)										\$265	\$177	(33.3%)
Transportation Equipment	Tons	15,674	38,289	144.3%										15,674	38,289	144.3%
	Value/Ton	\$9,460	\$9,136	(3.4%)										\$9,460	\$9,136	(3.4%)
Petroleum or Coal Products	Tons	1,041	1,929	85.4%	5,160	5,485	6.3%							6,201	7,414	19.6%
	Value/Ton	\$213	\$214	0.5%	\$762	\$762	(0.0%)							\$670	\$619	(7.5%)
Primary Metal Products	Tons	2,022	3,238	60.1%										2,022	3,238	60.1%
	Value/Ton	\$2,407	\$2,414	0.3%										\$2,407	\$2,414	0.3%
Clay, Concrete, Glass or Stone	Tons	1,642	4,706	186.6%										1,642	4,706	186.6%
	Value/Ton	\$224	\$246	10.0%										\$224	\$246	10.0%
Nonmetallic Minerals	Tons		1,176												1,176	
	Value/Ton		\$174												\$174	
Chemicals or Allied Products	Tons	982	1,860	89.4%										982	1,860	89.4%
	Value/Ton	\$2,385	\$2,170	(9.0%)										\$2,385	\$2,170	(9.0%)
Farm Products	Tons	832	1,074	29.2%										832	1,074	29.2%
	Value/Ton	\$166	\$174	5.0%										\$166	\$174	5.0%
Food or Kindred Products	Tons	630	840	33.4%										630	840	33.4%
	Value/Ton	\$804	\$793	(1.5%)										\$804	\$793	(1.5%)
Instrum, Photo, Optical Equip	Tons	191	485	153.4%										191	485	153.4%
	Value/Ton	\$40,297	\$40,285	(0.0%)										\$40,297	\$40,285	(0.0%)
Pulp, Paper or Allied Products	Tons	191												191		
	Value/Ton	\$847												\$847		
All Commodities In Lewis County, WA	Tons	44,909	82,921	84.6%	5,160	5,485	6.3%							50,069	88,405	76.6%
	Value/Ton	\$3,806	\$4,709	23.7%	\$762	\$762	(0.0%)							\$3,492	\$4,464	27.8%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

Table 65: Outbound Commodities for Lewis County

Top 10 Commodities Shipped Out Of Lewis County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	165,266	69,272	(58.1%)	14,400	3,960	(72.5%)							179,666	73,232	(59.2%)
	Value/Ton	\$458	\$287	(37.3%)	\$1,368	\$1,368	0.0%							\$531		
Farm Products	Tons	18,681	22,259	19.2%										18,681	22,259	19.2%
	Value/Ton	\$951	\$961	1.0%										\$951	\$961	1.0%
Primary Metal Products	Tons	988	543	(45.0%)										988	543	(45.0%)
	Value/Ton	\$4,311	\$4,311	0.0%										\$4,311	\$4,311	0.0%
Metallic Ores	Tons	204	110	(46.3%)										204	110	(46.3%)
	Value/Ton	\$1,860	\$1,860	(0.0%)										\$1,860	\$1,860	(0.0%)
Machinery	Tons	33	67	102.1%										33	67	102.1%
	Value/Ton	\$653	\$658	0.8%										\$653	\$658	0.8%
Food or Kindred Products	Tons	25	37	49.5%										25	37	49.5%
	Value/Ton	\$1,498	\$1,498	(0.0%)										\$1,498	\$1,498	(0.0%)
Transportation Equipment	Tons	9	18	108.2%										9	18	108.2%
	Value/Ton	\$555	\$555	0.0%										\$555	\$555	0.0%
Fresh Fish or Marine Products	Tons	2	3	44.9%										2	3	44.9%
	Value/Ton	\$3,811	\$3,811	0.0%										\$3,811	\$3,811	0.0%
All Commodities In Lewis County, WA	Tons	185,208	92,309	(50.2%)	14,400	3,960	(72.5%)							199,608	96,269	(51.8%)
	Value/Ton	\$530	\$476	(10.2%)	\$1,368	\$1,368	0.0%							\$591	\$513	(13.2%)

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

LINCOLN COUNTY, WASHINGTON

Lincoln County is a rural county that continues to try and diversify their economic base, capitalizing on biotechnology, agricultural processing, proximity to Spokane, and logistics and distribution. The county's agricultural production includes some of the highest soft white wheat yields in the country and a number of agricultural enterprises and support operations that have located in the county as a result. Lincoln County produces the second highest quantity of wheat (after Whitman County) in Washington. Eighty percent of the county's land area is farmland and thirty percent of that land is planted in wheat.



POPULATION TRENDS

The population of Lincoln County was 10,344 in 2008.¹⁵³ The county's population growth was substantially lower than the State of Washington as a whole from 2000 to 2008 with Lincoln County experiencing population growth of only a 1.6 percent population compared to 11.1 percent population growth for the state. During the past 30 years, the population of Lincoln County has been virtually stagnant and in the last 10 years the population has only increased 0.7 percent.¹⁵⁴

Nearly 21 percent of the population of Lincoln County is under the age of 18 compared with nearly 24 percent statewide. The county's population over the age of 65 is nearly 21 percent which is substantially higher than the state's at 11.7 percent. This aging population will impact workforce availability and the need for health care and supportive services in the county. The percent of the population living below the poverty level in Lincoln County is 11.7 percent compared to a statewide rate of 11.4 percent.

¹⁵³ U.S. Census Bureau Population Estimates 2008

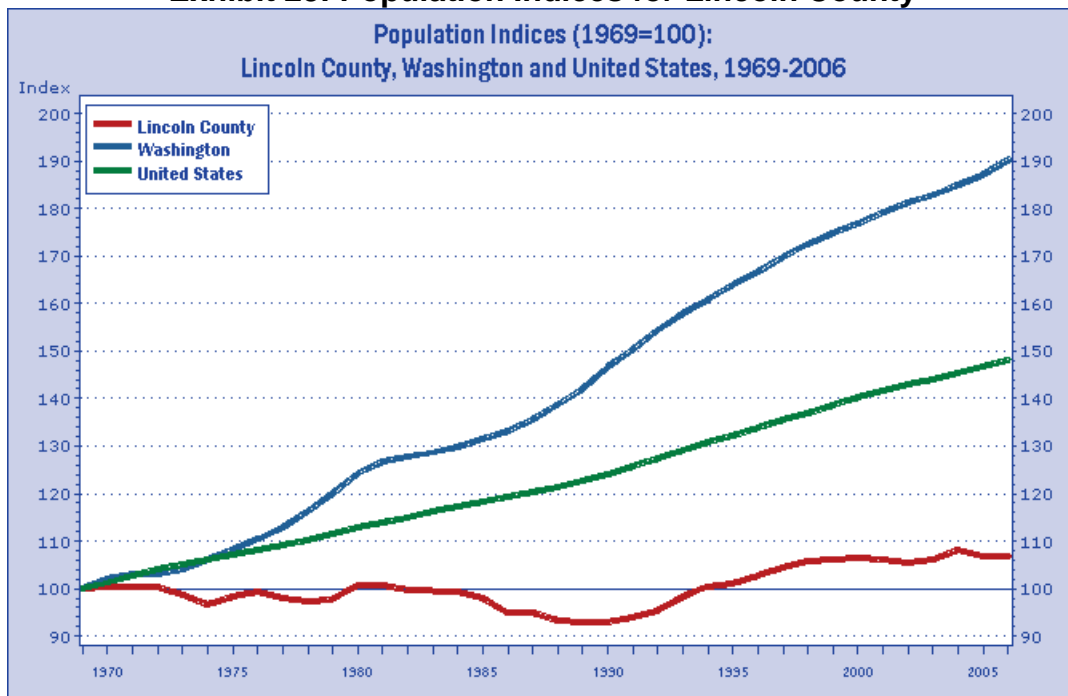
¹⁵⁴ Washington State Office of Financial Management, 2008

Table 66: Population Data for Lincoln County

Year	Population
1990 ¹⁵⁵	8,864
2000	10,184
2008 ¹⁵⁶	10,344
2015	10,440
2020	10,580
2030	10,860

Exhibit 28 show the population growth of Lincoln County compared with the growth in Washington and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. The population of Lincoln County increased a modest 7.3 percent during this period compared to 92.9 percent population growth statewide and 49.7 percent growth nationally.

Exhibit 28: Population Indices for Lincoln County



INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Unemployment in Lincoln County increased from 5.1 percent in June of 2008 to 8.1 percent in June 2009. In December 2009, the Washington State unemployment rate was 9.5 percent. Most of the decline in employment was the

¹⁵⁵ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

¹⁵⁶ U.S. Census Bureau Population Estimates 2008

result of job losses in construction and government. The Lincoln County economy is tied to agriculture, more specifically to wheat. Serious challenges in 2008 affecting the wheat industry included high input costs, rising fuel costs, and record prices for wheat which should translate into better returns for farmers but in today's global marketplace often means increased foreign competition. Although Lincoln County's unemployment is lower than a number of other eastern Washington counties, the county experienced a decline in virtually every employment sector in 2008 except for trade, transportation, and utilities. Today 30 percent of those employed in the county work for either the federal or local government.

Two new industrial parks have been developed one in Odessa and one in Creston and a biodiesel fuel operation has located in Creston. The largest employers in Lincoln County includes the federal, state, and local governments, Odessa Trading a farm machinery company with 26 employees, Rainier Seed and seed clearing company with 25 employees, Leffel, Ottis, & Warwick a CPA firm with 33 employees, Western Farmer a fertilizer and chemical company with 14 employees, and Columbia Bio Energy a feed supplement company with 10 employees.

Table 67: Industry Sectors by Employment in Lincoln County¹⁵⁷

Industry	Employment
Government	1,384
Retail Trade	248
Agriculture, Forestry, and Fishing	247
Wholesale Trade	194
Construction	134
Finance and Insurance	85
Manufacturing	33

The area around Lake Roosevelt is continuing to realize growth from increased tourism and construction of homes for retirees. According to the most recent economic impact study for tourism expenditure in Washington, tourism generated only \$16.7 million in travel spending in 2007 creating 170 jobs and \$1,1 million in state and local tax revenues.¹⁵⁸

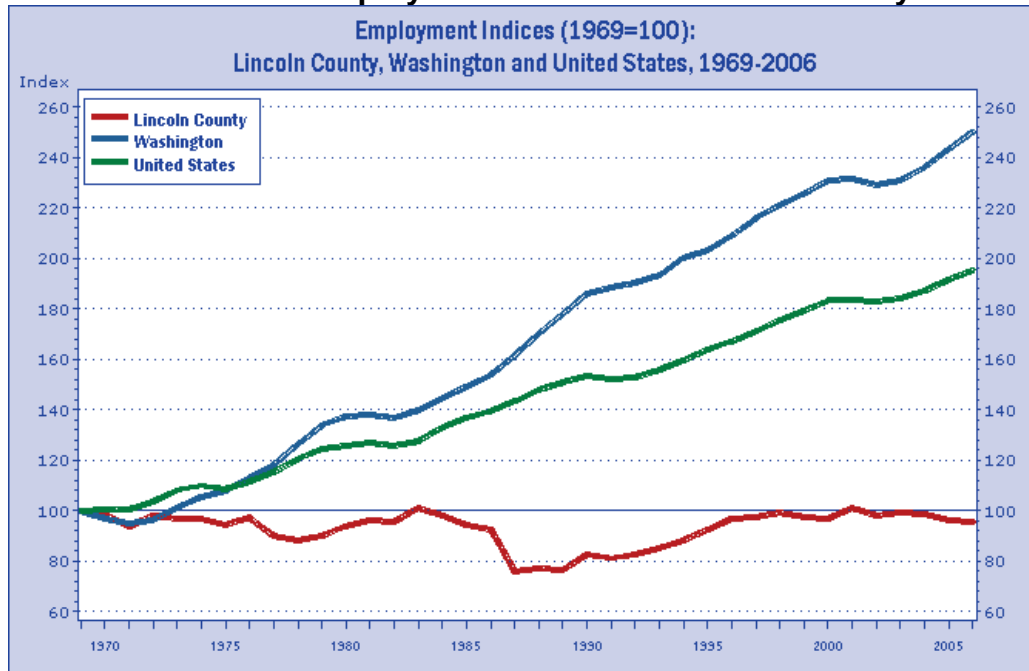
Exhibit 29 compares employment growth in Lincoln County for the past 37 years to employment growth in Washington and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Lincoln County's employment decreasing by 3.7percent during the

¹⁵⁷ Bureau of Economic Analysis, Employment Statistics

¹⁵⁸ "Washington State County Travel Impacts 1991 – 2007", Washington State Tourism Office, September 2008

period compared to Washington growth at 156.6 percent and the nation at 98.7 percent.¹⁵⁹

Exhibit 29: Employment Indices for Lincoln County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skill are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. The percentage of high school graduates in Lincoln County mirrors the statewide rate, however only 19 percent of the population over 25 years of age have received a Bachelor’s degree or higher compared to 28 percent of the population statewide.

Table 68: Location Quotients for Lincoln County

Industry	Location Quotient	2007 Employment
Crop Production	29.86	221
Merchant Non-durable Goods	6.57	185
Agriculture, Forestry, and Fishing	6.15	28
Health and Professional Care Stores	3.07	42
Food and Beverage Stores	2.86	112

¹⁵⁹ Pacific Northwest Regional Economic Analysis

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotient, shown in **Table 68**, compares Lincoln County to the State of Washington as a whole. Lincoln County has a substantially higher employment concentration in crop production than the state as a whole and there is a high degree of economic specialization within the county in agri-business. To optimize the value of this economic specialization, the county should identify value-added agricultural businesses such as identity-preserved grains for foreign markets, processing opportunities, and the potential for organics to increase revenues from agriculture.

Lincoln County ranks 14th in agricultural production in the state with over \$126 million in crops and livestock sold in 2007, however there was only \$400,000 generated from food processing in the county in 2007. There may be competitive advantages in Lincoln County to realize additional revenues from identity preserved crops, diversification of crop to include some organic or alternative products, and efforts to identify other value-added agri-businesses to help support the county's economy.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market; companies receive supplies from international firms to produce their products; and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

Interstate 90 runs through the southeast corner of the county at Sprague. U. S. Highway 2 runs east to Spokane and links the county to the Columbia River and to Everett to the west. Highway 28 links Davenport to Ephrata northwest of Moses Lake. The county is served by BNSF Railway, a Class I rail line that links Odessa to Spokane. The Eastern Washington Gateway, a short line railroad, runs from Coulee City west of Lincoln through Davenport to Chesney.¹⁶⁰ The closest commercial airport serving Lincoln County is the Spokane International Airport 36 miles to the east of Davenport.

¹⁶⁰ Washington Department of Transportation Rail System Map

MAJOR COMMODITIES

The commodities in **Tables 69** and **70** identify the top imports and exports for Lincoln County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

The decline in exports of farm products from Lincoln County over the next twenty years reflects significant changes in the county economic base as well as trends in the agricultural sector. Farm product exports are projected to decline by 22.7 percent off set to some degree by very large increases in exports of machinery products, which are projected to increase by more than 400 percent over the next 20 years. Lincoln County's largest import is food and kindred products which are expected to grow by more than 40 percent over the next 20 years. The county's next largest import, lumber or wood products, is expected to increase by more than 225 percent over the same period.

Table 69: Inbound Commodities for Lincoln County

Top 10 Commodities Shipped Into Lincoln County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Food or Kindred Products	Tons	236,430	333,821	41.2%										236,430	333,821	41.2%
	Value/Ton	\$1,155	\$1,120	(3.0%)										\$1,155	\$1,120	(3.0%)
Lumber or Wood Products	Tons	152,418	497,121	226.2%										152,418	497,121	226.2%
	Value/Ton	\$241	\$189	(21.5%)										\$241	\$189	(21.5%)
Farm Products	Tons	69,195	110,029	59.0%										69,195	110,029	59.0%
	Value/Ton	\$367	\$365	(0.6%)										\$367	\$365	(0.6%)
Primary Metal Products	Tons	28,678	94,579	229.8%										28,678	94,579	229.8%
	Value/Ton	\$2,101	\$1,848	(12.1%)										\$2,101	\$1,848	(12.1%)
Chemicals or Allied Products	Tons	6,660	8,114	21.8%	7,080	11,073	56.4%							13,740	19,187	39.6%
	Value/Ton	\$1,881	\$1,784	(5.2%)	\$393	\$393	(0.0%)							\$1,114	\$981	(12.0%)
Petroleum or Coal Products	Tons	13,593	26,708	96.5%										13,593	26,708	96.5%
	Value/Ton	\$505	\$466	(7.7%)										\$505	\$466	(7.7%)
Nonmetallic Minerals	Tons	12,118	33,397	175.6%										12,118	33,397	175.6%
	Value/Ton	\$66	\$88	33.2%										\$66	\$88	33.2%
Rubber or Misc Plastics	Tons	11,086	24,850	124.2%										11,086	24,850	124.2%
	Value/Ton	\$4,432	\$4,441	0.2%										\$4,432	\$4,441	0.2%
Clay, Concrete, Glass or Stone	Tons	11,026	17,592	59.6%										11,026	17,592	59.6%
	Value/Ton	\$1,270	\$1,464	15.2%										\$1,270	\$1,464	15.2%
Transportation Equipment	Tons	9,318	52,615	464.7%										9,318	52,615	464.7%
	Value/Ton	\$12,920	\$12,316	(4.7%)										\$12,920	\$12,316	(4.7%)
All Commodities In Lincoln County, WA	Tons	572,503	1,238,624	116.4%	7,080	11,073	56.4%							579,583	1,249,697	115.6%
	Value/Ton	\$1,248	\$1,427	14.4%	\$393	\$393	(0.0%)							\$1,237	\$1,418	14.6%

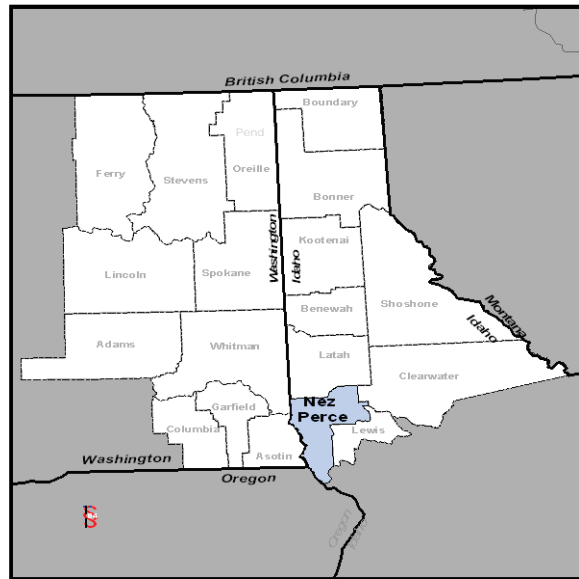
Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

Table 70: Outbound Commodities for Lincoln County

Top 10 Commodities Shipped Out Of Lincoln County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Farm Products	Tons	326,768	307,711	(5.8%)	198,204	97,937	(50.6%)							524,972	405,648	(22.7%)
	Value/Ton	\$648	\$615	(5.1%)	\$151	\$151	0.0%							\$461	\$503	9.3%
Machinery	Tons	88,516	469,932	430.9%										88,516	469,932	430.9%
	Value/Ton	\$3,419	\$3,398	(0.6%)										\$3,419	\$3,398	(0.6%)
Food or Kindred Products	Tons	1,741	2,680	53.9%										1,741	2,680	53.9%
	Value/Ton	\$1,388	\$1,364	(1.7%)										\$1,388	\$1,364	(1.7%)
Clay, Concrete, Glass or Stone	Tons	1,415	2,515	77.8%										1,415	2,515	77.8%
	Value/Ton	\$399	\$399	0.0%										\$399	\$399	0.0%
Waste or Scrap Materials	Tons	947	1,906	101.4%										947	1,906	101.4%
	Value/Ton	\$180	\$200	11.4%										\$180	\$200	11.4%
Metallic Ores	Tons	310												310		
	Value/Ton	\$448												\$448		
Lumber or Wood Products	Tons	287	288	0.1%										287	288	0.1%
	Value/Ton	\$106	\$115	9.1%										\$106	\$115	9.1%
Nonmetallic Minerals	Tons	276	359	29.7%										276	359	29.7%
	Value/Ton	\$34	\$34	(0.0%)										\$34	\$34	(0.0%)
Chemicals or Allied Products	Tons		190												190	
	Value/Ton		\$1,964												\$1,964	
Printed Matter	Tons	154	268	74.4%										154	268	74.4%
	Value/Ton	\$1,837	\$1,837	0.0%										\$1,837	\$1,837	0.0%
Fresh Fish or Marine Products	Tons	146	212	44.9%										146	212	44.9%
	Value/Ton	\$5,949	\$5,949	(0.0%)										\$5,949	\$5,949	(0.0%)
All Commodities In Lincoln County, WA	Tons	420,767	786,363	86.9%	198,204	97,937	(50.6%)							618,971	884,300	42.9%
	Value/Ton	\$1,234	\$2,281	84.9%	\$151	\$151	0.0%							\$887	\$2,045	130.5%

NEZ PERCE COUNTY, IDAHO

Nez Perce County is located in north central Idaho and serves as a regional hub for retail, health care, media, transportation, and government. Lewiston, the county seat, is located at the confluence of the Snake and Clearwater Rivers and offers commercial air service to north central Idaho and nearby areas of Washington. U.S. Highway 12 links Nez Perce County to Asotin County, Washington to the west and Lewiston collaborates with Clarkston, WA on a variety of projects. Many residents from Asotin County work in Lewiston. Lewiston is home to Lewis-Clark State College with an enrollment of almost 3,400 students.



Recreational opportunities abound in this region including whitewater rafting, fishing, hunting, as well as the Lewis and Clark trail. The tourism industry employs over 1,800 people in Nez Perce County. Clearwater Paper employs over 1,700 making tissue, paperboard, and wood products. The Ports of Lewiston and nearby Clarkston and Wilma offer important transportation links for grain shippers and manufacturers to the west coast.

POPULATION TRENDS

According to the U.S. Census Bureau the population of Nez Perce County was 38,975 in 2008.¹⁶¹ The population grew by 4.2 percent in the past eight years compared to Idaho's population growth in the same period of 17.8 percent. Slightly over 22 percent of the population of Nez Perce County is below the age of 18 compared to the statewide average of 27 percent. Almost 18 percent of the county is over the age of 65 compared to 12 percent statewide. Almost 13 percent of the population lives below the poverty level compared to the statewide rate of 12.1 percent. The median household income in 2007 for Nez Perce County was \$40,726, which is below the statewide rate of \$46,136.

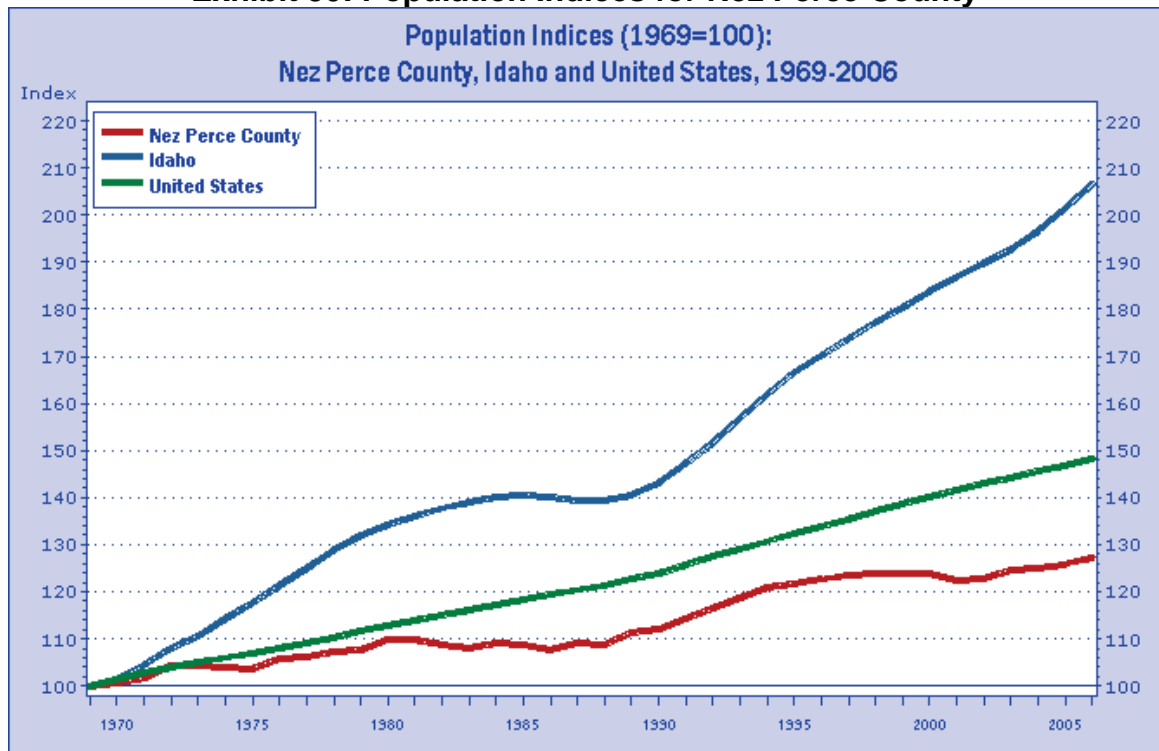
¹⁶¹ U.S. Census Bureau Population Estimates 2008

Table 71: Population Data for Nez Perce County

Year	Population
1990 ¹⁶²	33,754
2000	37,410
2008 ¹⁶³	38,975
2015	40,270
2020	41,190
2030	43,120

Exhibit 30 show the population growth of Nez Perce County compared with the growth in Idaho and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. The population of Nez Perce County declined 8.0 percent during this period compared to Idaho's 111.6 percent population growth statewide and 49.7 percent growth nationally.¹⁶⁴

Exhibit 30: Population Indices for Nez Perce County



¹⁶² Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

¹⁶³ U.S. Census Population Estimates 2008

¹⁶⁴ Pacific Northwest Regional Economic Analysis

INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Unemployment in Nez Perce County increased from 4.3 percent in June 2008 to 5.8 percent in June 2009. The overall unemployment rate in Idaho in December 2009 was 9.1 percent. The decline in employment was primarily the result of job losses in construction, trade and transportation, and information technology. There were some employment gains in 2008 in manufacturing, education and health services, and leisure and hospitality. The largest employers in Nez Perce County are ATK ammunition manufacturer, Lewis-Clark State College, the Nez Perce Tribe with over 500 employees at their headquarters and 220 employees at the casino and resort near Lewiston, Clearwater Paper Inc., and Swift Transportation Company with 430 employees

Table 72: Industry Sectors by Employment in Nez Perce County¹⁶⁵

Industry	Employment
Trade and Transportation	4,587
Government	3,726
Education and Health Services	3,302
Manufacturing	2,793
Leisure and Hospitality	1,839

Clearwater Paper is the largest employer in Nez Perce County with 1,700 employees. The company manufactures paper tissue, paperboard, and lumber. Other employers in Nez Perce County include Nez Perce County, Regence Blue Shield insurance, St. Joseph Regional Medical Center, and Tribune Publishing Co. Several jet boat manufacturers in the county also offer employment. An important player in the economic development of Nez Perce County is the 3,500 member Nez Perce Tribe headquartered in Lapwai.

The Lewiston area is a major gateway to Hells Canyon, the deepest river gorge in North America. According to the most recent economic impact study for tourism expenditures in Idaho, tourism generated \$102.5 million in travel spending in 2005 creating over 400 jobs and \$15 million in tourism taxes.¹⁶⁶ Traveling spending has increased by 3.8 percent in Nez Perce County over the past few years.

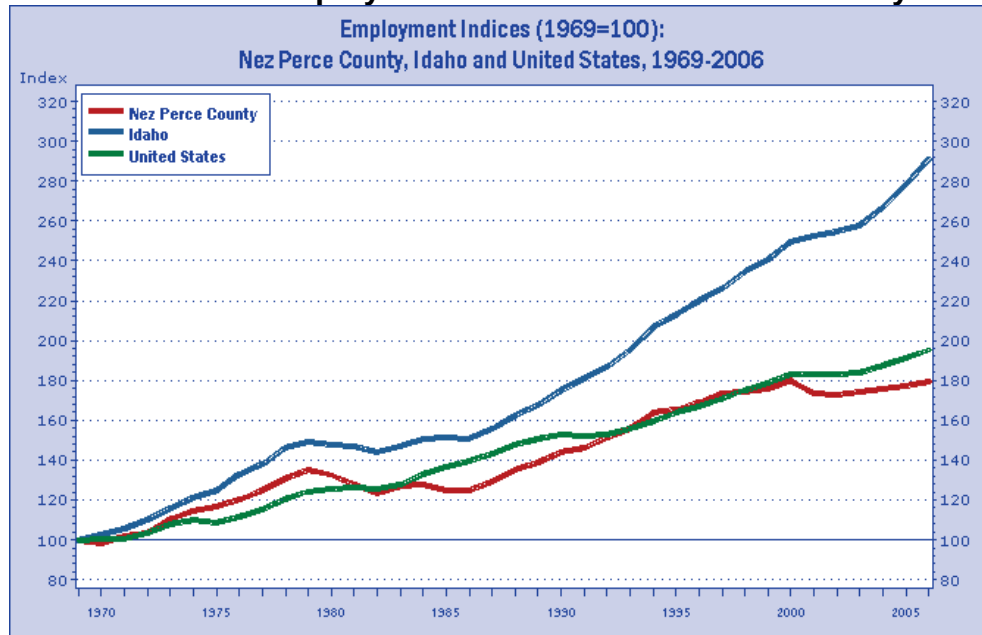
Exhibit 31 compares employment growth in Nez Perce County for the past 37 years to employment growth in Idaho and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Nez Perce County's employment increasing by 29.8 percent during

¹⁶⁵ Bureau of Economic Analysis, Employment Statistics

¹⁶⁶ "The Economic Impact of Travel & Tourism in Idaho", Idaho Division of Tourism, September 2005

the period compared to Idaho's employment growth at 200.5 percent and the nation at 98.7 percent.¹⁶⁷

Exhibit 31: Employment Indices for Nez Perce County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skill are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. Eighty-five percent of the population in Nez Perce County over the age of 25 completed high school compared to the statewide average of 84.7 percent. Nearly 19 percent of the population over the age of 25 completed a Bachelor's degree or higher compared with 21.7 percent statewide.

Table 73: Location Quotients for Nez Perce County

Industry	Location Quotient	2007 Employment
Forestry and Logging	12.01	120
Wood Product Manufacturing	5.16	404
Fabricated Metal Products	4.40	1,043
Broadcasting except Internet	3.21	160
Truck Transportation	3.02	663

¹⁶⁷ Pacific Northwest Regional Economic Analysis

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotient, shown in **Table 73**, compares Nez Perce County to the State of Idaho as a whole. Nez Perce County has a substantially higher employment concentration in forestry and logging than the state as a whole. The manufacturing sector in Nez Perce County has a location quotient of 1.32 and represents over 16 percent of employment in the county. Clearwater Paper is included in this sector and as a result the concentration of manufacturing employment in Nez Perce is relatively consistent with the employment concentration statewide. However, this company is strongly tied to the forestry industry and the other location quotients in forestry and wood product manufacture indicate a strong linkage and vulnerability for this county's economy as lumber and forestry face many challenges.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market; companies receive supplies from international firms to produce their products; and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

U.S. Highway 95 links Nez Perce County to Payette and Oregon to the south and to Sandpoint and Canada to the north. The county has access to Interstate 90 through U.S. Highway 95, approximately 100 miles north of Lewiston. U.S. Highway 12 links Lewiston to Clarkston and Walla Walla to the west and Missoula, Montana to the east. Two short line railroads serve Nez Perce County, the Great Northwest Railroad and the Bountiful Grain & Craig Mountain Railroad (BG&CM)¹⁶⁸, but the BG&CM is not in service at this time to Craigmont. The Lewiston/Nez Perce County Regional Airport provides commercial air service and there is a federal airport facility at the Snake River. The Port of Lewiston is Idaho's only seaport, an 85 acre facility on the Columbia/Snake River system with barge and rail service to the Port of Portland and other west coast ports. This port has warehousing and distribution facilities, grain elevator dock, mobile crane and three 35-ton lifts.

¹⁶⁸ Idaho Railroad Location Map

MAJOR COMMODITIES

Tables 74 and 75 identify the top commodity imports and exports for Nez Perce County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

According to the TRANSEARCH data Nez Perce County's largest import and export is lumber or wood products. Imports of lumber and wood products are expected to total nearly 300,000 tons by 2027, while exports from the local industry are forecast to decline by nearly 23 percent by volume, to approximately 723,000 tons. The county's next largest import, chemicals or allied products, is expected to increase almost 14 percent over the next 20 years to more than 120,000 tons. The decline in exports of lumber or wood products from Nez Perce County over the next twenty years will significantly change the major export commodities in the county. By 2027, non-metallic minerals are expected to become the county's dominant export, totaling more than 1 million exported tons annually.

As previously noted Nez Perce County is home to the Port of Lewiston, a major commerce center in the southern region of the study area. Comparisons of shipment data from the Port of Lewiston with the information presented by TRANSEARCH suggests that agricultural commodity movements in Nez Perce County are not fully captured. **Exhibit 32** displays historical wheat shipments from the Port of Lewiston which have fluctuated from a high of over 900,000 tons in 1995 to just under 400,000 tons in 2008. Farm product shipments shown in **Tables 74 and 75** suggest imports and exports of approximately 329,000 tons for all crops. While it appears that TRANSEARCH has under-estimated the total magnitude of farm product exports from the region, the forecast of declining volumes seems to be supported by recent historical data.

Exhibit 32: Port of Lewiston Wheat and Container Volumes 1990 - 2009

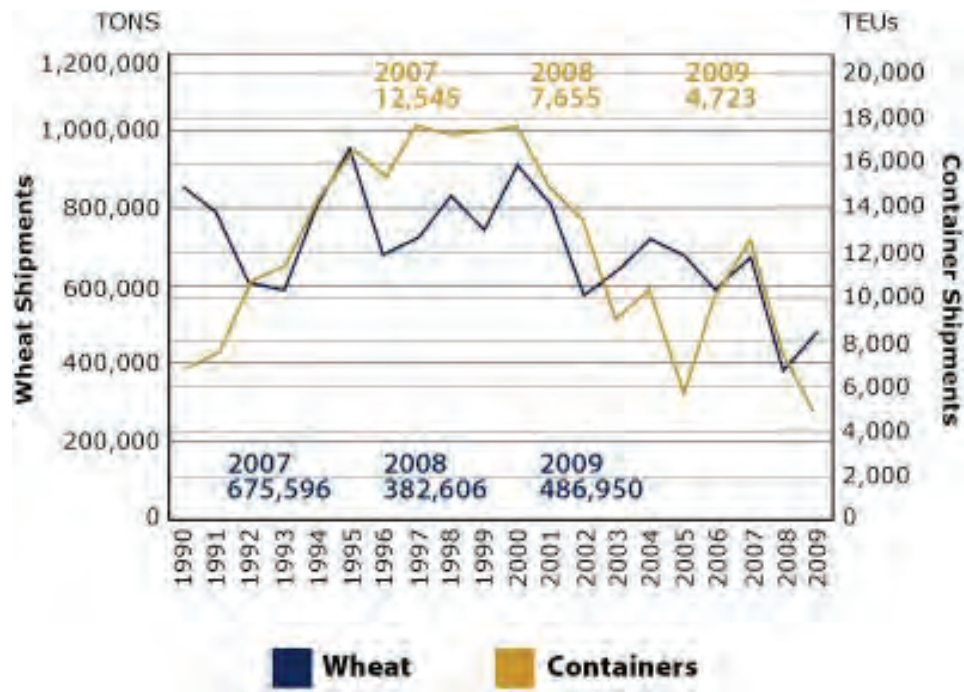


Table 74: Inbound Commodities for Nez Perce County

Top 10 Commodities Shipped Into Nez Perce County, ID In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	276,750	299,311	8.2%										276,750	299,311	8.2%
	Value/Ton	\$590	\$353	(40.2%)										\$590	\$353	(40.2%)
Chemicals or Allied Products	Tons	9,356	12,542	34.1%	97,520	109,127	11.9%				1	1	10.4%	106,877	121,670	13.8%
	Value/Ton	\$2,559	\$2,314	(9.6%)	\$1,314	\$1,014	(22.8%)				\$4,180	\$3,305	(20.9%)	\$1,423	\$1,148	(19.3%)
Pulp, Paper or Allied Products	Tons	509	610	19.7%	92,768	98,282	5.9%							93,277	98,892	6.0%
	Value/Ton	\$1,754	\$1,672	(4.7%)	\$593	\$591	(0.4%)							\$599	\$597	(0.3%)
Waste or Scrap Materials	Tons	62	114	83.1%	12,600	16,244	28.9%	63,830	100,544	57.5%				76,492	116,902	52.8%
	Value/Ton	\$953	\$813	(14.6%)	\$169	\$169		\$143	\$144	0.3%				\$148	\$148	(0.2%)
Farm Products	Tons	63,694	86,579	35.9%							0	0	20.4%	63,694	86,579	35.9%
	Value/Ton	\$815	\$815	0.0%										\$815	\$815	0.0%
Food or Kindred Products	Tons	33,640	54,699	62.6%	10,000	12,052	20.5%							43,640	66,751	53.0%
	Value/Ton	\$1,054	\$1,052	(0.1%)	\$515	\$520	1.0%							\$930	\$956	2.8%
Clay, Concrete, Glass or Stone	Tons	4,902	4,266	(13.0%)	35,560	47,354	33.2%							40,462	51,620	27.6%
	Value/Ton	\$147	\$142	(3.3%)	\$295	\$279	(5.5%)							\$277	\$268	(3.4%)
Petroleum or Coal Products	Tons	11,840	15,548	31.3%	19,800	20,737	4.7%							31,640	36,285	14.7%
	Value/Ton	\$213	\$215	1.1%	\$673	\$674	0.1%							\$501	\$477	(4.7%)
Transportation Equipment	Tons	27,578	40,079	45.3%	2,480	2,887	16.4%				0	0	54.0%	30,058	42,966	42.9%
	Value/Ton	\$8,432	\$7,722	(8.4%)	\$1,996	\$1,996					\$18,022	\$18,022		\$7,901	\$7,338	(7.1%)
Primary Metal Products	Tons	26,492	52,191	97.0%										26,492	52,191	97.0%
	Value/Ton	\$3,428	\$3,467	1.1%										\$3,428	\$3,467	1.1%
All Commodities In Nez Perce County, ID	Tons	502,526	659,303	31.2%	270,728	306,682	13.3%	64,581	101,976	57.9%	13	19	45.3%	837,848	1,067,981	27.5%
	Value/Ton	\$2,737	\$3,757	37.2%	\$810	\$687	(15.2%)	\$172	\$178	3.7%	\$4,852	\$6,900	42.2%	\$1,917	\$2,534	32.2%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

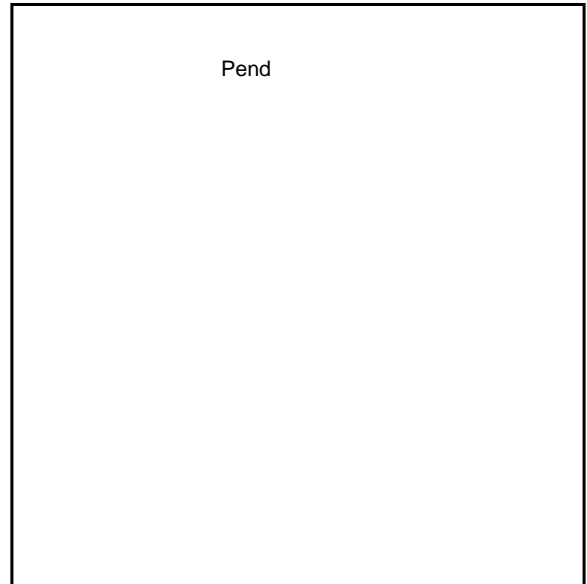
Table 75: Outbound Commodities for Nez Perce County

Top 10 Commodities Shipped Out Of Nez Perce County, ID In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	933,499	722,973	(22.6%)	103,000	65,503	(36.4%)							1,036,499	788,476	(23.9%)
	Value/Ton	\$451	\$444	(1.6%)	\$1,368	\$1,368	(0.0%)							\$542	\$521	(4.0%)
Nonmetallic Minerals	Tons	1,023,194	1,194,537	16.7%										1,023,194	1,194,537	16.7%
	Value/Ton	\$5	\$5	0.0%										\$5		
Waste or Scrap Materials	Tons	114	156	36.5%	18,640	29,668	59.2%	419,788	661,244	57.5%				438,542	691,067	57.6%
	Value/Ton	\$123	\$117	(5.2%)	\$376	\$435	15.6%	\$143	\$144	0.3%				\$153	\$156	2.0%
Farm Products	Tons	15,213	17,796	17.0%	6,960	4,904	(29.5%)	243,138	205,225	(15.6%)				265,312	227,925	(14.1%)
	Value/Ton	\$880	\$894	1.6%	\$395	\$575	45.7%	\$228	\$219	(3.8%)				\$269	\$279	3.7%
Pulp, Paper or Allied Products	Tons	13,897	18,029	29.7%	164,400	151,124	(8.1%)							178,297	169,153	(5.1%)
	Value/Ton	\$1,323	\$1,312	(0.8%)	\$769	\$808	5.1%							\$812	\$862	6.1%
Food or Kindred Products	Tons	14,823	52,351	253.2%	7,280	17,004	133.6%	71,148	182,803	156.9%				93,251	252,158	170.4%
	Value/Ton	\$1,028	\$1,180	14.8%	\$1,022	\$1,022	(0.0%)	\$675	\$661	(2.0%)				\$758	\$793	4.6%
Clay, Concrete, Glass or Stone	Tons	21,568	37,328	73.1%										21,568	37,328	73.1%
	Value/Ton	\$48	\$48	0.1%										\$48	\$48	0.1%
Fabricated Metal Products	Tons	7,031	16,021	127.9%										7,031	16,021	127.9%
	Value/Ton	\$4,785	\$4,890	2.2%										\$4,785	\$4,890	2.2%
Machinery	Tons	6,310	13,109	107.8%										6,310	13,109	107.8%
	Value/Ton	\$5,229	\$5,123	(2.0%)										\$5,229	\$5,123	(2.0%)
Fresh Fish or Marine Products	Tons	23	33	44.9%				6,276	13,537	115.7%				6,299	13,570	115.4%
	Value/Ton	\$3,811	\$3,811	0.0%				\$3,666	\$3,644	(0.6%)				\$3,667	\$3,645	(0.6%)
All Commodities In Nez Perce County, WA	Tons	2,039,616	2,077,587	1.9%	300,280	268,203	(10.7%)	740,351	1,062,809	43.6%				3,080,246	3,408,598	10.7%
	Value/Ton	\$272	\$287	5.4%	\$948	\$913	(3.7%)	\$252	\$292	15.8%				\$333	\$338	1.4%

PEND OREILLE COUNTY, WASHINGTON

Located in the northeastern corner of Washington adjacent to British Columbia, Canada Pend Oreille County was formed in part due to the lack of transportation connections. The county was created in 1911 because of the 4-day round trip train ride that was required to travel to the county seat in then Stevens County, thus creating a need for a new county that allowed for better access to the seat of local government for local citizens.

The majority of the land in Pend Oreille County is owned by the federal government who own 58 percent of the county's land mass. Less than 37 percent of land in the county is held in private ownership. Pend Oreille County is the home of the Kalispell Indian Reservation. Residents and visitors to Pend Oreille County enjoy beautiful scenery and an abundance of outdoor recreational opportunities. Pend Oreille County has grown faster than the state and the nation primarily from increased employment in natural resources, mining, construction, and government. Light manufacturing, wood products, and recreational products provide additional employment opportunities within the region.



POPULATION TRENDS

According to the U.S. Census Bureau the population of Pend Oreille County was 12,760 in 2008, increasing by almost 3,700 since 1990.¹⁶⁹ The county's population growth was slightly lower than the State of Washington as a whole from 2000 to 2007, with Pend Oreille County experiencing 8.8 percent population growth compared to a 9.7 percent population growth for the state as a whole. The county's population is projected to continue to grow in the future.

Twenty-one percent of the population in Pend Oreille County is under 18 years of age, similar to the statewide population. Nearly 16 percent of the population in Pend Oreille County lives below the poverty level, and the 2007 median household income of \$39,352 is substantially below the state median income of \$55,628.

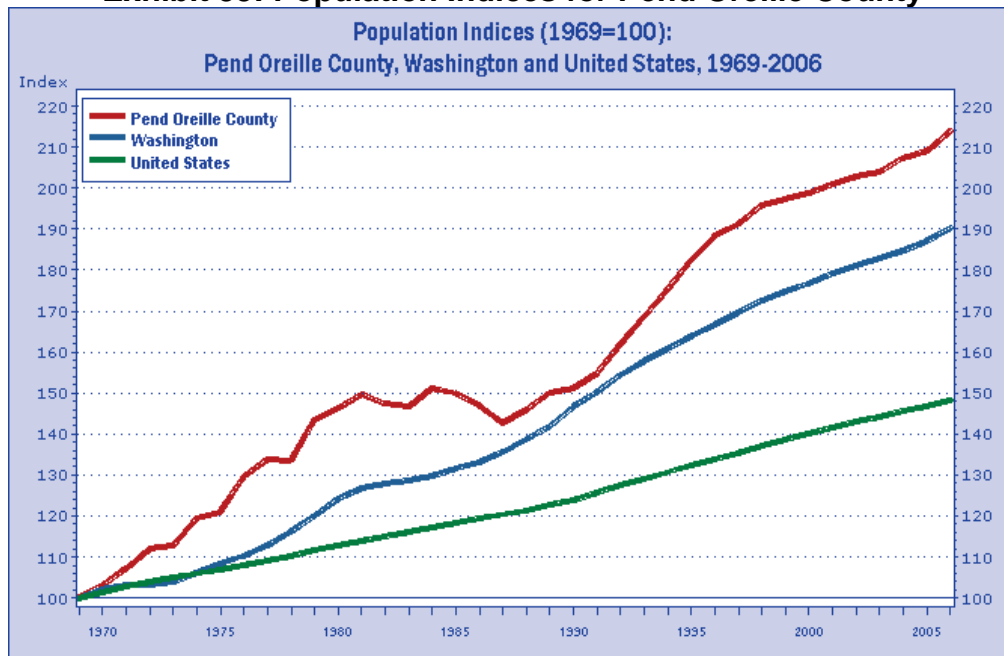
¹⁶⁹ U.S. Census Bureau Population Estimates 2008

Table 76: Population Data for Pend Oreille County

Year	Population
1990 ¹⁷⁰	8,915
2000	11,732
2008 ¹⁷¹	12,760
2015	14,150
2020	15,050
2030	16,880

Exhibit 33 shows the population growth of Pend Oreille County compared with the growth in Washington and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. The population of Pend Oreille County increased 115.5 percent during this period compared to Washington's 92.9 percent population growth statewide and 49.7 percent growth nationally.¹⁷²

Exhibit 33: Population Indices for Pend Oreille County



INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Unemployment in Pend Oreille County was the highest in the state in June 2009 at 13.4 percent, up from 7.3 percent in June 2008, primarily as a result of jobs lost from the closure of a mine.¹⁷³ The statewide unemployment rate is 9.5

¹⁷⁰ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

¹⁷¹ U.S. Census Bureau 2008 population estimates

¹⁷² Pacific Northwest Regional Economic Analysis

¹⁷³ Washington Department of Employment Security

percent. A zinc mining operation in the county owned by Canadian company Teck Cominco announced in January 2009, that it was laying off 165 people, and temporarily closing the mine, due to the lack of demand for zinc. These layoffs are the result of increased competition from both domestic and foreign mines and the resulting price volatility. Forest related industries continue to experience slow growth, affecting availability job opportunities in this sector. Limited infrastructure and isolated geography will continue to limit job growth in this county.

The in-migration of retirees has helped to create job opportunities in construction and health care. The largest employers in Pend Oreille County include C & D Zodiac, an aerospace components company with 50 employees, Ponderay Newsprint Co., a company that fabricates newsprint with 194 employees, Ponderay Valley Fiber, who fabricates fiber products and has 75 employees, Seattle City Light, an electric utility company with 64 employees.

Table 77: Industry Sectors by Employment in Pend Oreille County¹⁷⁴

Industry	Employment
Government	1,273
Manufacturing	333
Retail Trade	230
Transportation and Warehousing	54
Finance and Insurance	61

The Kalispell Tribal Reservation is located 55 miles north of Spokane. The Tribe owns over 4,600 acres along The Pend Oreille River near Usk and over 3,500 acres of Tribal Trust Land. The Tribe also owns 300 acre in Airway Heights including 40 acres for the Northern Quest Casino. The tribe employs over 1,600 people, some of whom work at the Casino in Spokane. The government sector includes local school districts, the county government, city governments, and federal government employees.

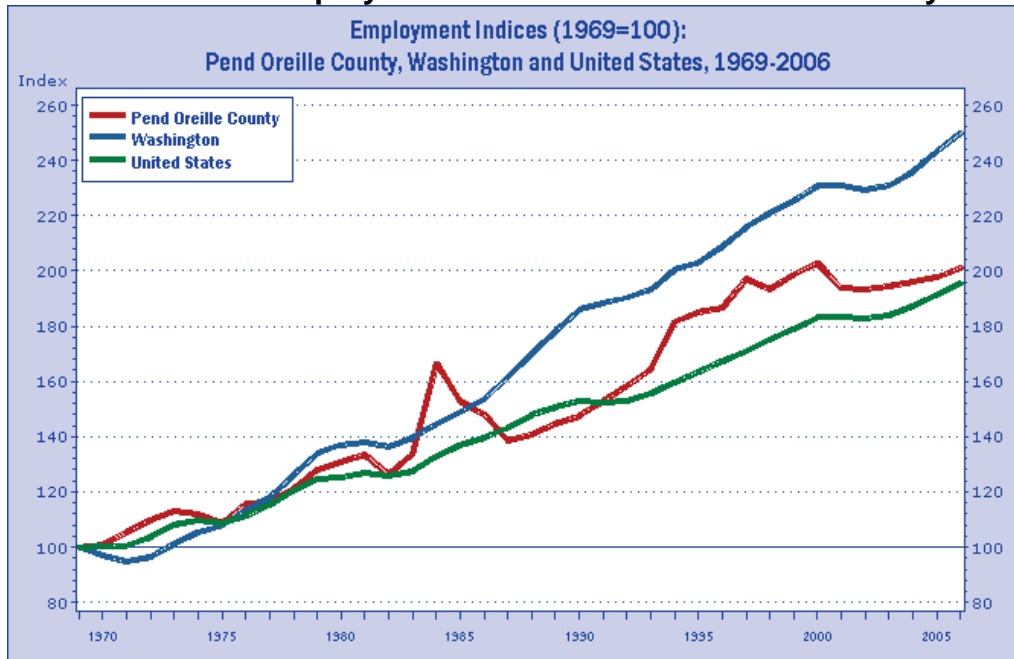
According to the most recent economic impact study for tourism expenditures in Washington, tourism generated \$22.4 million in travel spending in 2007 creating 320 jobs and \$1.2 million in state and local tourism taxes.¹⁷⁵ Travel spending has increased 3.6 percent over the past seven years.

Exhibit 34 compares employment growth in Pend Oreille County for the past 37 years to employment growth in Washington and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Pend Oreille County's employment increasing by 105 percent during the period compared to Washington's employment growth at 156.6 percent and the nations at 98.7 percent.

¹⁷⁴ Bureau of Economic Analysis, Employment Statistics

¹⁷⁵ Washington State County Travel Impacts 1991 – 2007, Washington State Tourism Office

Exhibit 34: Employment Indices for Pend Oreille County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skill are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. Almost 81 percent of the population of Pend Oreille County has completed high school compared to the statewide average of 87.1 percent. Only 12.3 percent of the population over the age of 25 have completed a Bachelor’s degree or higher compared with 27.7 percent statewide. An initiative begun by the Kalispell Indian Tribe is focused on improving higher education for all people in the community.

Table 78: Location Quotients for Pend Oreille County

Industry	Location Quotient	2007 Employment
Mining, except oil and gas	68.99	241
Forestry and Logging	45.13	47
Food and Beverage Stores	3.07	139
Gasoline Stores	2.63	36

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotient, shown in

Table 78, compares Pend Oreille County to the state of Washington as a whole. Pend Oreille County has a substantially higher employment concentration in mining and forestry than the state as a whole. Mining provides a smaller portion of the state's overall employment accounting for this employment concentration in Pend Oreille County. Some additional employment from mining may be possible but is highly dependent upon the price of metals mined in the county. The isolation and limited availability of infrastructure will continue to limit the types of employment opportunities available in this county. Approximately 280 residents of Pend Oreille County drive to Bonner County, Idaho to work each day and almost 450 residents of Bonner County drive to Pend Oreille County to work.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market; companies receive supplies from international firms to produce their products; and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

Highway 20/Highway 31 runs north into Canada and south to Highway 202/U.S. Highway 2 to Spokane linking Pend Oreille County. Much of Pend Oreille County north of Cusick is contained in national forests, wilderness areas, and the Kalispell Tribal Reservation Lands. The highway follows a narrow corridor along the Pend Oreille River with little private held land available outside of this narrow valley until the City of Cusick. According to the Washington Department of Commerce the closest active intermodal facility serving Pend Oreille County is in Spokane. There are two airports serving the county, a state owned facility at Sullivan Lake and a general aviation strip between Lone and Tiger. Commercial air service is available at Spokane International Airport. The Pend Oreille Valley Railroad is owned by the Port of Pend Oreille and was purchased by the citizens of the county to save the railroad and the two mills that were dependent on it for rail service at that time. This short line operates between Metaline Falls and Newport Washington. The companies that precipitated the rail line's purchase have now closed; however the Port has leased trackage rights on a segment of BNSF track that runs to Sandpoint, ID in order to interchange with BNSF. The port currently serves 10 companies and several weeks each year the Lions Club runs scenic rail excursions on this line.

MAJOR COMMODITIES

Tables 79 and 80 identify the top commodity imports and exports for Pend Oreille County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the county. The tables exclude internal traffic that circulates within the IPH study area. It also

excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

Pend Oreille County's largest import is lumber or wood products (56,000 tons annually), but are expected to decrease by 24 percent to 42,000 tons by 2027. In 2007 the gap between the County's largest and second largest commodities was more than 35,000 tons, but by 2027 this gap is expected to decrease significantly due to a 428 percent growth in the import of primary metal products. In 2007, Pend Oreille County's largest export was lumber or wood products with more than 200,000 tons shipped annually. This tonnage is projected to remain nearly constant over the next 20 years, with approximately 209,000 tons exported in 2027. The county's next largest exports are nonmetallic minerals and pulp, paper, and allied products; both of which are expected to decline over the next 20 years (12 and 18 percent respectively).

Table 79: Inbound Commodities for Pend Oreille County

Top 10 Commodities Shipped Into Pend Oreille County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	55,653	42,274	(24.0%)										55,653	42,274	(24.0%)
	Value/Ton	\$401	\$428	6.7%										\$401	\$428	6.7%
Primary Metal Products	Tons	20,406	30,252	48.3%										20,406	30,252	48.3%
	Value/Ton	\$1,960	\$1,800	(8.1%)										\$1,960	\$1,800	(8.1%)
Food or Kindred Products	Tons	13,095	13,726	4.8%										13,095	13,726	4.8%
	Value/Ton	\$869	\$925	6.4%										\$869	\$925	6.4%
Pulp, Paper or Allied Products	Tons	11,265	10,867	(3.5%)										11,265	10,867	(3.5%)
	Value/Ton	\$976	\$960	(1.6%)										\$976	\$960	(1.6%)
Petroleum or Coal Products	Tons	4,540	6,474	42.6%	5,040	4,648	(7.8%)							9,580	11,122	16.1%
	Value/Ton	\$268	\$260	(3.0%)	\$748	\$751	0.3%							\$521	\$465	(10.7%)
Clay, Concrete, Glass or Stone	Tons	9,442	13,636	44.4%										9,442	13,636	44.4%
	Value/Ton	\$258	\$264	2.4%										\$258	\$264	2.4%
Waste or Scrap Materials	Tons	4,008	6,218	55.1%	2,840	2,023	(28.8%)							6,848	8,241	20.3%
	Value/Ton	\$274	\$270	(1.3%)	\$98	\$98	0.0%							\$201	\$228	13.5%
Nonmetallic Minerals	Tons	6,384	14,084	120.6%										6,384	14,084	120.6%
	Value/Ton	\$47	\$42	(10.6%)										\$47	\$42	(10.6%)
Chemicals or Allied Products	Tons	3,647	6,440	76.6%										3,647	6,440	76.6%
	Value/Ton	\$1,652	\$1,826	10.5%										\$1,652	\$1,826	10.5%
Transportation Equipment	Tons		2,496												2,496	
	Value/Ton		\$16,776												\$16,776	
Farm Products	Tons	733												733		
	Value/Ton	\$2,930												\$2,930		
All Commodities In Pend Oreille County, WA	Tons	132,838	153,322	15.4%	7,880	6,671	(15.3%)							140,718	159,992	13.7%
	Value/Ton	\$961	\$1,384	44.0%	\$514	\$553	7.5%							\$936	\$1,349	44.2%

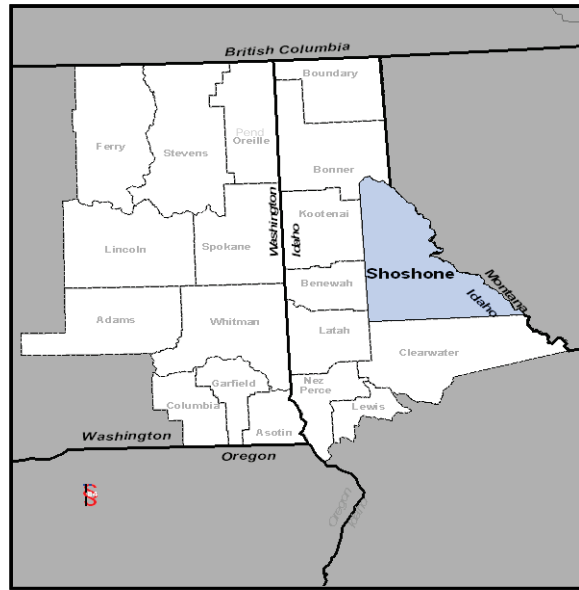
Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

Table 80: Outbound Commodities for Pend Oreille County

Top 10 Commodities Shipped Out Of Pend Oreille County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	204,137	209,007	2.4%										204,137	209,007	2.4%
	Value/Ton	\$70	\$68	(2.7%)										\$70		
Nonmetallic Minerals	Tons	163,257	143,339	(12.2%)										163,257	143,339	(12.2%)
	Value/Ton	\$6	\$6	0.4%										\$6	\$6	0.4%
Pulp, Paper or Allied Products	Tons	91,944	77,721	(15.5%)	69,760	53,914	(22.7%)							161,704	131,634	(18.6%)
	Value/Ton	\$1,841	\$1,821	(1.1%)	\$1,869	\$1,869	0.0%							\$1,853	\$1,841	(0.7%)
Farm Products	Tons	22,915	24,396	6.5%										22,915	24,396	6.5%
	Value/Ton	\$710	\$715	0.7%										\$710	\$715	0.7%
Rubber or Misc Plastics	Tons	3,873	3,241	(16.3%)										3,873	3,241	(16.3%)
	Value/Ton	\$4,354	\$4,313	(1.0%)										\$4,354	\$4,313	(1.0%)
Waste or Scrap Materials	Tons	579	1,178	103.5%										579	1,178	103.5%
	Value/Ton	\$181	\$201	11.3%										\$181	\$201	11.3%
Printed Matter	Tons	263	1,733	559.6%										263	1,733	559.6%
	Value/Ton	\$1,891	\$1,847	(2.4%)										\$1,891	\$1,847	(2.4%)
Fresh Fish or Marine Products	Tons	89	129	44.9%										89	129	44.9%
	Value/Ton	\$5,833	\$5,833	(0.0%)										\$5,833	\$5,833	(0.0%)
Food or Kindred Products	Tons	72	110	52.3%										72	110	52.3%
	Value/Ton	\$1,959	\$1,979	1.0%										\$1,959	\$1,979	1.0%
Transportation Equipment	Tons	67	122	80.2%										67	122	80.2%
	Value/Ton	\$3,477	\$3,480	0.1%										\$3,477	\$3,480	0.1%
All Commodities In Pend Oreille County, WA	Tons	487,338	461,178	(5.4%)	69,760	53,914	(22.7%)							557,098	515,091	(7.5%)
	Value/Ton	\$450	\$419	(6.9%)	\$1,869	\$1,869	0.0%							\$628	\$571	(9.1%)

SHOSHONE COUNTY, IDAHO

Shoshone County is located in the northern panhandle of Idaho on its eastern border with Montana. It shares its western border with Bonner, Kootenai, Benewah, and Latah Counties, and its southern border with Clearwater County. Shoshone County lost over 28 percent of their population after mine and smelter closures in the 1980s. Over 4,200 employees worked in the mines at their peak in the early 1980s. In the past ten years the county has experienced further population loss as its population declined by nine percent while statewide population increased by 22 percent. Rising prices for silver have recently recreated an increased interest in silver mining in the county. Exploration efforts are ongoing and new technologies may make several mines closed in recent years economically feasible to reopen.



The recreational opportunities in the county have stimulated a small but growing tourism industry in Shoshone County. The world's longest gondola opened here in 1990 linking Kellogg to the Silver Mountain Ski area. The Silver Mountain Resort attracts over 100,000 people annually and the new Silver Rapids Indoor Water Park creates additional year-round tourism venues. The new Galena Ridge Championship Golf Course and the expansion of Lookout Pass Ski Resort will further enhance tourism in the county. Another recreation activity driving tourism growth in the county is the Trail of the Coeur d'Alene's bike path. The Trail of the Coeur d'Alene's follows the Union Pacific Railroad right-of-way from Mullan, ID to Plummer, ID. The more than 72 miles of paved bike trail winds through picturesque mountain areas and the historic Silver Valley area of Shoshone County.

The economy in Shoshone County is largely dependent upon government employment, tourism, mining, and the trade and transportation sector, the latter partially due to a major automobile dealership in Kellogg, Dave Smith Motors, who employs more than 300 people and is the county's largest employer.

POPULATION TRENDS

The population of Shoshone County was 12,913 in 2008.¹⁷⁶ In the past eight years the population of Shoshone County decreased 6.2 percent from 13,771 to 12,913. As the economic outlook for the county improves and additional job opportunities are created, the county's population should increase in the next few

¹⁷⁶ U.S. Census Bureau Population Estimates 2008

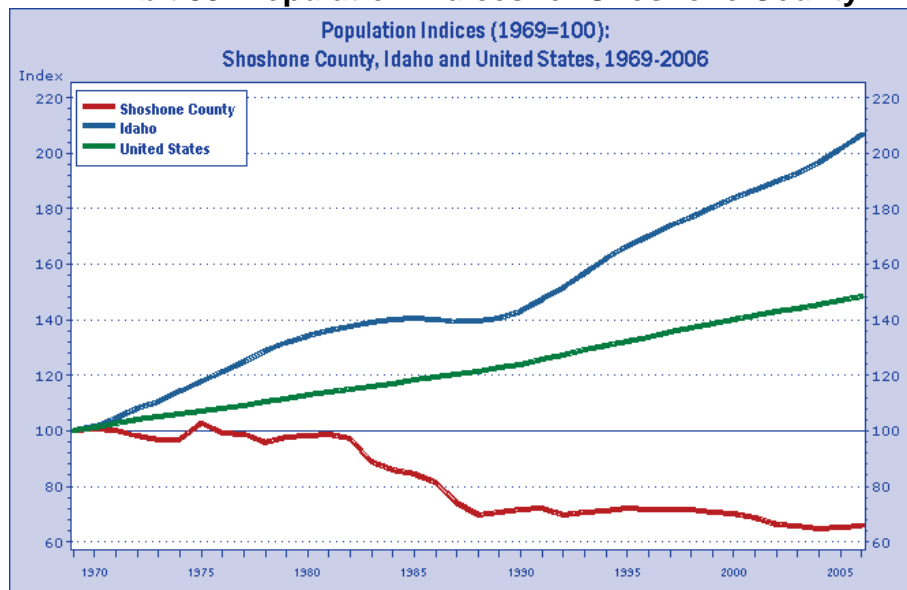
years. In the past 30 years the county's population has declined by 34 percent compared to statewide population growth of 111 percent during the same period. Slightly over 20 percent of the population of Shoshone County is below the age of 18 compared to the statewide average of 27 percent. Over 17 percent of the population lives below the poverty level compared to the statewide rate of 12.1 percent. The median household income in 2007 for Shoshone County is \$35,095, which is below the statewide rate of \$46,136.

Table 81: Population Data for Shoshone County

Year	Population
1990 ¹⁷⁷	13,931
2000	13,771
2008 ¹⁷⁸	12,913
2015	12,770
2020	12,750
2030	12,710

Exhibit 35 show the population growth of Shoshone County compared with the growth in Idaho and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each area's population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. The population of Shoshone County declined 34.5 percent during this period compared to Idaho's 111.6 percent population growth statewide and the 49.7 percent growth nationally.¹⁷⁹

Exhibit 35: Population Indices for Shoshone County



¹⁷⁷ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

¹⁷⁸ U.S. Census Bureau Population Estimates 2008

¹⁷⁹ Pacific Northwest Regional Economic Analysis

INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Unemployment in Shoshone County increased from 6.3 percent in June 2008 to 11.6 percent in June 2009, eclipsing the statewide rate of 9.1 percent, primarily as a result of jobs lost when the Sunshine Mine shutdown and the Galena Mine laid off workers in late 2008. Jobs also declined in agriculture and education and health services. During 2008 employment increased in several sector including tourism, government, construction, and professional and business services. The largest employer in Shoshone County is Dave Smith Motors. Other large employers in the county include the Galena Mine, Lucky Friday mine, the Shoshone Medical Center, and Wal-Mart.

Table 82: Industry Sectors by Employment in Shoshone County¹⁸⁰

Industry	Employment
Trade and Transportation	1,282
Government	1,032
Mining	711
Leisure and Hospitality	480
Education and Health Services	358

Higher silver prices have stimulated increased employment in the existing silver mines including the Galena Mine and the Lucky Friday Mine which were the only major mines that remained open and today employ twice as many people as they did three years ago. Several other mines have reopened and additional exploration efforts are underway. At the present time mining operations employ over 700 people with average annual wages of \$59,789.¹⁸¹

A developing tourism sector has helped to diversify the county's economy. The Lookout Pass ski area near Montana has doubled its employment in the past few years. Hikers, cyclists, and snowmobiling are attracting more visitors to the region and additional tourism facilities including lodges, restaurants, and bars help to enhance tourism and bring additional employment. According to the most recent economic impact study for tourism expenditures in Idaho, tourism generated \$41 million in travel spending in 2005 creating almost 200 jobs at that time and \$6 million in tax revenues from tourism.¹⁸² Travel spending increased by 4.4 percent from 2000 to 2005 in Shoshone County.

Exhibit 36 compares employment growth in Shoshone County for the past 37 years to employment growth in Idaho and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic

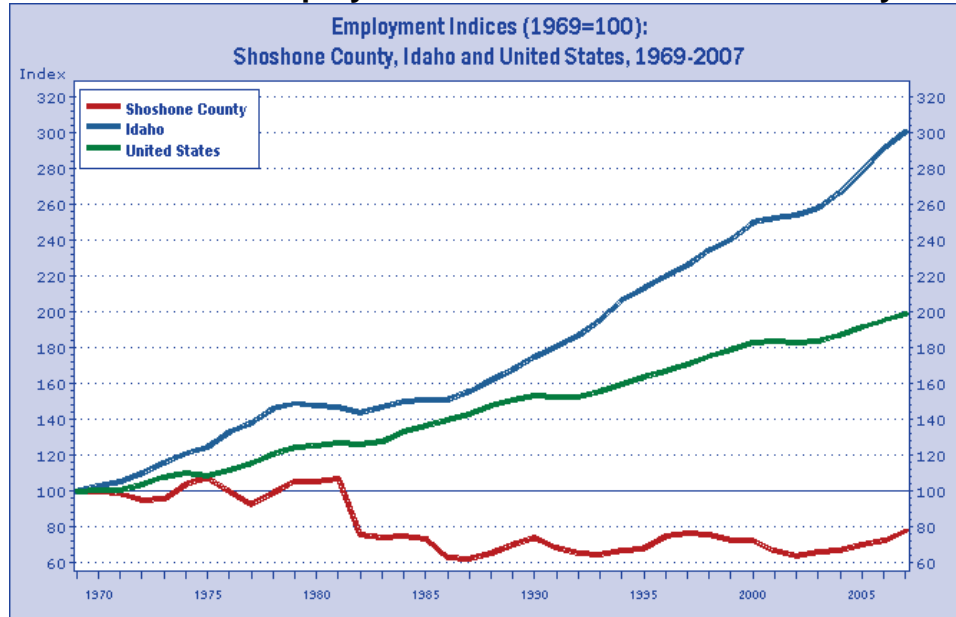
¹⁸⁰ Bureau of Economic Analysis, Employment Statistics

¹⁸¹ Idaho Department of Labor, Workforce Trends June 2009

¹⁸² "The Economic Impact of Travel & Tourism in Idaho", Idaho Division of Tourism, September 2005

areas with Shoshone County's employment decreasing by 22.3 percent during the period compared to Idaho's growth at 200.5 percent and the nation employment growth at 98.7 percent.¹⁸³

Exhibit 36: Employment Indices for Shoshone County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skill are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. Seventy-eight percent of the population in Shoshone County over the age of 25 completed high school compared to the statewide average of 84.7 percent and slightly over ten percent of the population over the age of 25 have completed a Bachelor’s degree or higher compared with 21.7 percent statewide.

¹⁸³ Pacific Northwest Regional Economic Analysis

Table 83: Location Quotients for Shoshone County¹⁸⁴

Industry	Location Quotient	2007 Employment
Mining	26.24	569
Forestry and Logging	10.68	23
Motor and Parts Dealers	7.35	460
Agriculture and Forest support services	5.79	63
Waste Management and remediation	3.70	43

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotient, shown in **Table 83**, compares Shoshone County to the State of Idaho as a whole. Shoshone County has a substantially higher employment concentration in mining than the state as a whole and there is a high degree of economic specialization within the county in this industry. The stability of this employment sector is largely dependent upon the price of metals and foreign competition as efficiencies from technology and productivity have already been instituted. While this employment sector pays well and will continue to play a role in Shoshone's economy, the county is wise to diversify their economic base as price fluctuations in metals will certainly affect future employment.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market; companies receive supplies from international firms to produce their products; and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

Interstate 90 runs through Shoshone County linking the county to Spokane and Seattle to the west and Missoula, Montana and points east. With the exception of the interstate and numerous forest service roads, some of the remaining roadways in the county are local and unpaved roads of varying conditions and some are not passable during winter months. The only rail line in the county is located in the southwestern corner of the county, where there is a small section of the St. Maries River Railroad, a short line linking the City of Bovill in Latah County to the City of Plummer in Benewah County, but it is out of service. The

¹⁸⁴ 2007 employment data, U.S. Department of Labor, Bureau of Labor Statistics

City of Kellogg operates a municipal airport and the closest commercial airport is in Spokane.

MAJOR COMMODITIES

Tables 84 and 85 identify the top commodity imports and exports for Shoshone County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

Shoshone County's largest import is lumber or wood products (nearly 60,000 tons annually), and is expected to increase slightly over the next 20 years to 67,000 tons. The county's second largest import in 2007, transportation equipment with more than 20,000 tons, is projected to grow by more than 272 percent to become the county's largest import in 2027, with more than 80,000 tons. The County's largest exports in 2007 were nonmetallic minerals and lumber or wood products, exporting 159,000 and 156,000 tons respectively. These commodities are projected to decline significantly by 2027 however, and are the major contributors to the reduction in future export opportunities in the county. Overall, Shoshone County's total exports are expected to decrease by more than 40 percent over the next 20 years.

Table 84: Inbound Commodities for Shoshone County

Top 10 Commodities Shipped Into Shoshone County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	59,945	67,394	12.4%										59,945	67,394	12.4%
	Value/Ton	\$296	\$229	(22.8%)										\$296	\$229	(22.8%)
Transportation Equipment	Tons	21,727	81,030	272.9%										21,727	81,030	272.9%
	Value/Ton	\$10,137	\$9,824	(3.1%)										\$10,137	\$9,824	(3.1%)
Primary Metal Products	Tons	19,126	46,714	144.2%										19,126	46,714	144.2%
	Value/Ton	\$2,221	\$2,201	(0.9%)										\$2,221	\$2,201	(0.9%)
Food or Kindred Products	Tons	17,458	18,540	6.2%										17,458	18,540	6.2%
	Value/Ton	\$2,057	\$2,200	7.0%										\$2,057	\$2,200	7.0%
Clay, Concrete, Glass or Stone	Tons	7,358	17,153	133.1%										7,358	17,153	133.1%
	Value/Ton	\$307	\$285	(6.9%)										\$307	\$285	(6.9%)
Electrical Equipment	Tons	6,181	23,014	272.3%										6,181	23,014	272.3%
	Value/Ton	\$12,917	\$13,204	2.2%										\$12,917	\$13,204	2.2%
Petroleum or Coal Products	Tons	5,426	9,340	72.1%										5,426	9,340	72.1%
	Value/Ton	\$365	\$9,340	2459.9%										\$365	\$372	1.9%
Rubber or Misc Plastics	Tons	4,505	9,717	115.7%										4,505	9,717	115.7%
	Value/Ton	\$4,092	\$4,122	0.7%										\$4,092	\$4,122	0.7%
Fabricated Metal Products	Tons		4,012											4,012		
	Value/Ton		\$4,164											\$4,164		
Machinery	Tons	2,883	4,012	39.2%										2,883	10,505	264.4%
	Value/Ton	\$20,642	\$4,164	(79.8%)										\$20,642	\$22,160	7.4%
Chemicals or Allied Products	Tons	2,555												2,555		
	Value/Ton	\$3,407												\$3,407		
All Commodities In Shoshone County, WA	Tons	150,605	294,291	95.4%										150,605	294,291	95.4%
	Value/Ton	\$3,431	\$5,429	58.2%										\$3,431	\$5,429	58.2%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

Table 85: Outbound Commodities for Shoshone County

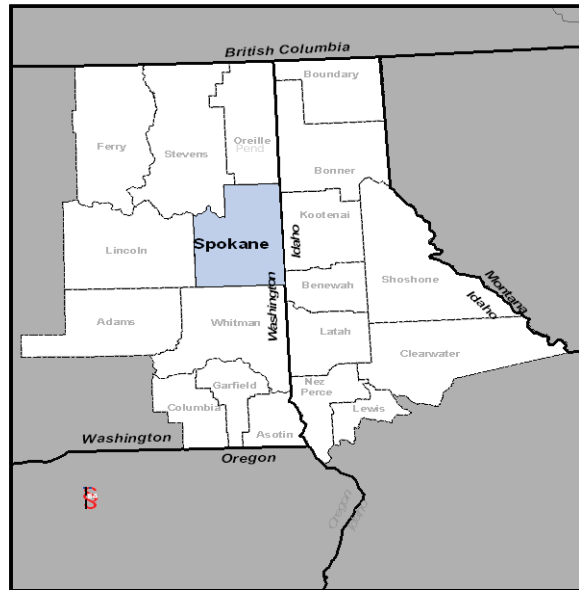
Top 10 Commodities Shipped Out Of Shoshone County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Nonmetallic Minerals	Tons	158,932	65,006	(59.1%)										158,932	65,006	(59.1%)
	Value/Ton	\$5	\$5	(0.1%)										\$5	\$5	(0.1%)
Lumber or Wood Products	Tons	155,650	105,683	(32.1%)										155,650	105,683	(32.1%)
	Value/Ton	\$397	\$521	31.2%										\$397		
Rubber or Misc Plastics	Tons	3,739	6,813	82.2%										3,739	6,813	82.2%
	Value/Ton	\$5,521	\$5,500	(0.4%)										\$5,521	\$5,500	(0.4%)
Misc Manufacturing Products	Tons	2,378	5,890	147.7%										2,378	5,890	147.7%
	Value/Ton	\$1	\$1	(16.3%)										\$1	\$1	(16.3%)
Pulp, Paper or Allied Products	Tons	1,601	2,776	73.3%										1,601	2,776	73.3%
	Value/Ton	\$27	\$27	0.0%										\$27	\$27	0.0%
Machinery	Tons	632	545	(13.9%)										632	545	(13.9%)
	Value/Ton	\$25,585	\$25,585	(0.0%)										\$25,585	\$25,585	(0.0%)
Clay, Concrete, Glass or Stone	Tons	556	988	77.8%										556	988	77.8%
	Value/Ton	\$161	\$161	0.0%										\$161	\$161	0.0%
Farm Products	Tons	432	709	64.0%										432	709	64.0%
	Value/Ton	\$59	\$46	(21.1%)										\$59	\$46	(21.1%)
Metallic Ores	Tons	129	69	(46.3%)										129	69	(46.3%)
	Value/Ton	\$1,860	\$1,860	0.0%										\$1,860	\$1,860	0.0%
Petroleum or Coal Products	Tons	100	97	(3.0%)										100	97	(3.0%)
	Value/Ton	\$475	\$475	0.0%										\$475	\$475	0.0%
All Commodities In Shoshone County, WA	Tons	324,213	188,676	(41.8%)										324,213	188,676	(41.8%)
	Value/Ton	\$309	\$570	84.6%										\$309	\$570	84.6%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

SPOKANE COUNTY, WASHINGTON

Spokane County is the heart of the Inland Northwest, serving as the regional hub for health care and specialized health services, retail, education, business and industry, and cultural activities in a largely rural region. Seven institutions of higher education are located in Spokane County supporting a range of research and technology transfer while providing outstanding educational opportunities.

Like many other metropolitan areas in the United States, Spokane has experienced a decline in manufacturing employment since the mid 1990's at the same time the value of manufacturing production increased as a result of improved productivity from new technologies. From 2001 to 2005, manufacturing output in Spokane County increased by 4.4 percent compared with other MSA's where manufacturing output increased by only 3.1 percent. Between 2002 and 2005 the Spokane economy created 19,000 new jobs primarily in the construction, manufacturing, and trade sectors.¹⁸⁵



A high technology manufacturing cluster has developed to the east of the City of Spokane in Orchard Park and Liberty Lake. Other manufacturing firms have concentrated east near Liberty Lake and to the west near Highway 2 and I-90.¹⁸⁶ The growth of technology businesses and research and development activities has resulted in an expansion of employment in firms like Itron Inc. and Signature Genomic Laboratories, and Pacinian Inc. The University District, Sirti, and research collaborations with the Department of Energy, Department of Defense, and other university institutions have created a growth cluster of technology excellence in Spokane.

POPULATION TRENDS

The population of Spokane County grew by 10.7 percent between 2000 and 2008 outpacing the national population growth of 7.1 percent and on par with population growth statewide. According to the U.S. Census Bureau, the county's population in 2008 was 462,677, increasing by over 100,000 people since the 1990 census. Over the past 30 years Spokane's County's population has growth at a slightly slower pace than growth statewide but substantially higher than the national population growth rate.

¹⁸⁵ Washington Department of Labor, 2008 Labor Area Summary

¹⁸⁶ Beyers, William B., et al, "Washington State Workforce Development Areas", November, 2008

Table 86: Population Data for Spokane County

Year	Population
1990 ¹⁸⁷	361,333
2000	417,939
2008 ¹⁸⁸	462,677
2015	509,610
2020	544,060
2030	614,080

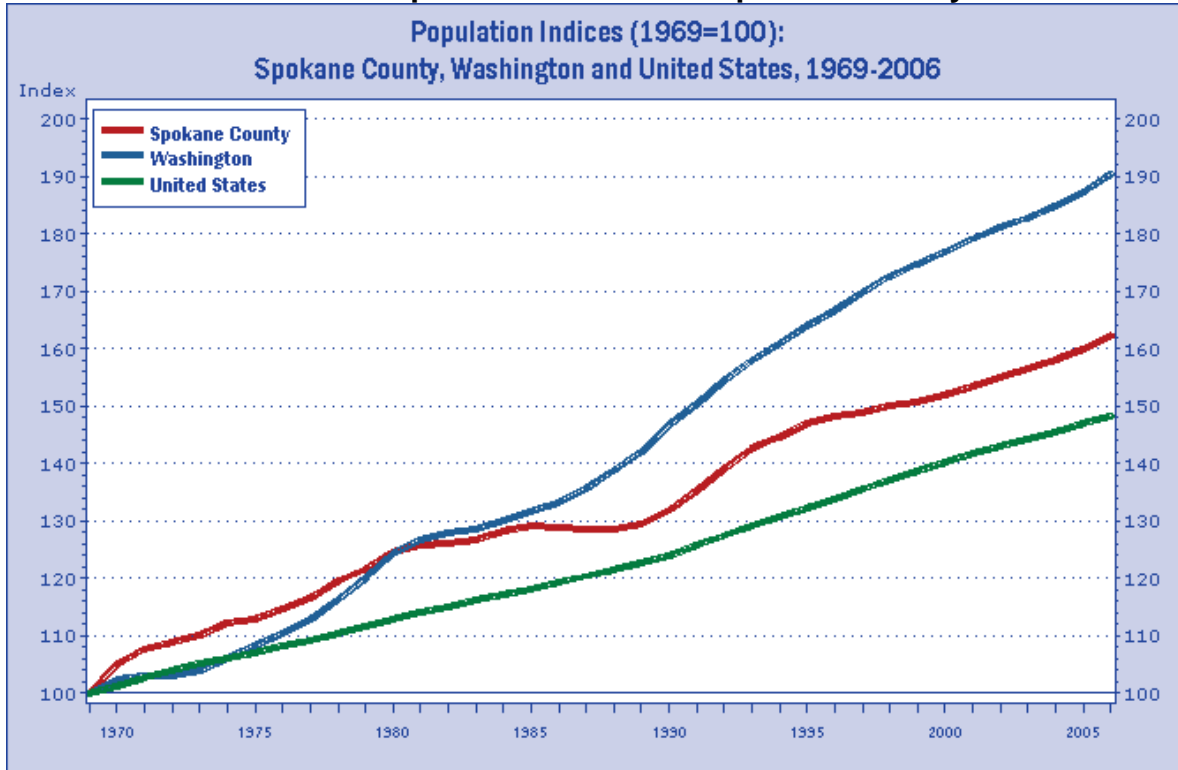
Thirteen percent of the population in Spokane County lives below the poverty level compared to 11.4 percent statewide. The City of Spokane and Spokane County are aggressive in their efforts to address affordable housing, workforce training, and economic diversification to insure broad participation in the economic prosperity of the community.

Exhibit 37 show the population growth of Spokane County compared with the growth in Washington and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. The population of Spokane County increased 65.5 percent during this period compared to Washington's 92.9 percent population growth statewide and 49.7 percent growth nationally.

¹⁸⁷ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

¹⁸⁸ U.S. Census Bureau Population Estimates 2008

Exhibit 37: Population Indices for Spokane County



INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Employment and job growth in Spokane County grew at a rate of 2.6 percent in 2007 and remained generally flat in 2008.¹⁸⁹ The county's cumulative job growth between January 2006 and September 2008 was 3.4 percent, the lowest of the metro areas in the state compared to Seattle-Everett with 7.6 percent and the Tri-Cities with 8.3 percent job growth during the same period. Job losses have been concentrated in construction and financial sectors. Employment in healthcare and education are projected to remain stable in 2009 and are anticipated to increase slightly as the national economy improves. Growth in bio-fuels and related "green energy" companies may create a new dynamic growth sector for Spokane in future years linking the production of agriculture in the rural areas around Spokane to new processing operations and technologies.

Unemployment in Spokane County increased to 9.6 percent in January 2009 with 23,610 people out of work up from the 7.6 percent rate in December 2008. The declining national economy and severe weather that closed a number of businesses during December influenced these economic results. Manufacturing employment has also been impacted by the Boeing strike and other production delays particularly for those firms in Spokane that supply Boeing with parts.

¹⁸⁹ Washington Department of Employment Security, Labor Market Report

The largest employers in Spokane County include Fairchild Air Force Base with over 4,992 employees in Spokane County, Sacred Heart Medical Center with 3,040 employees, local, state, and federal government operations with over 33,000 employees; URM Stores Inc. a wholesale grocery distributor, Dakota Direct Headquarters a telemarketing and customer services firm with 1,600 employees, Kaiser Aluminum & Chemical with 800 employees, and Honeywell Electronics Materials with 371 employees.¹⁹⁰

Table 87: Industry Sectors Employment Spokane County¹⁹¹

Industry	Employment
Government	33,272
Retail Trade	25,355
Manufacturing	18,136
Construction	11,829
Wholesale Trade	10,278

Government is the largest employer in Spokane County due in part to the location of Fairchild Air Force Base and several major state employers including Eastern Washington University, and the State of Washington offices for eastern Washington which are located in Spokane. The June 2009 unemployment rate remained at 8.9 percent with two sectors experiencing job losses in June, education and retail trade. Some of this decline may be due to the summer break; however the recession has taken a toll even in the education sector. The statewide unemployment rate in June was similar to Spokane County, but by December 2009, had risen to 9.5 percent.

According to the most recent economic impact study for tourism expenditures in Washington State, tourism generated \$859 million in travel spending in 2007 creating over 10,000 jobs and \$60 million in tax revenues.¹⁹² Travel spending has increased by 4.8 percent over the past seven years in Spokane County. Tourism is big business in Spokane, the county ranked 4th in the state in terms of travel spending in 2007 behind Snohomish, Pierce, and King Counties.

Exhibit 38 compares employment growth in Spokane County for the past 37 years to employment growth in Washington and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Spokane County's employment increased by 131.9 percent during the

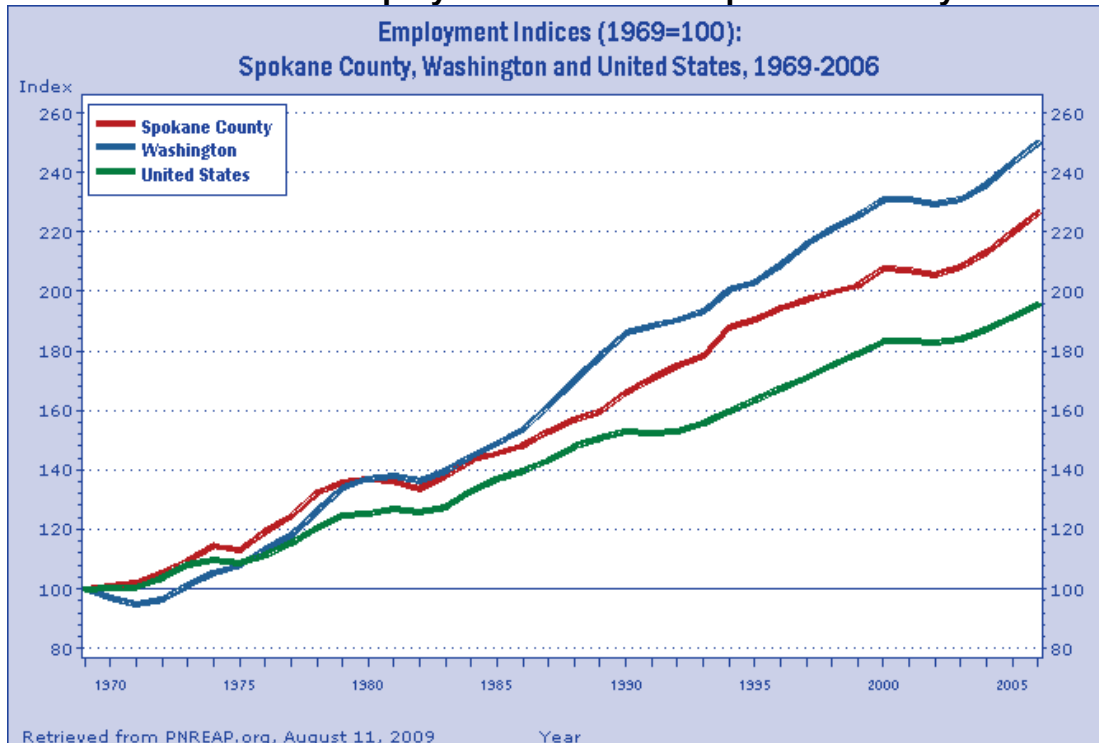
¹⁹⁰ Washington Department of Commerce, County Profiles, July 2009

¹⁹¹ Washington Department of Labor, Workforce Explorer, July 2009

¹⁹² Washington State County Travel Impacts 1991 – 2007, Washington Tourism Office, September 2008

period compared to Washington growth at 156.6 percent and the nation at 98.7 percent.¹⁹³

Exhibit 38: Employment Indices for Spokane County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skills are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. Spokane County equals or exceeds the statewide graduation rates for high school and college. Nearly 90 percent of the population over 25 years of age has graduated from high school and 25 percent have a Bachelor’s degree or higher. Nine percent of the population has a graduate or professional degree. Five of the colleges within 50 miles of Spokane offer graduate degrees and the two community colleges had enrollments in excess of 22,000 students in 2005. Spokane County offers business and industry a skilled and well educated workforce, a crucial component of economic competitiveness in the future.

¹⁹³ Pacific Northwest Regional Economic Analysis

Table 88: Location Quotients for Spokane County¹⁹⁴

Industry	Location Quotient	2007 Employment
Primary Metal Manufacturing	2.86	2,011
Sporting Goods, Book & Music Stores	2.11	2,156
Furniture and Related Manufacturing	1.6	1,306
Nonmetallic Mineral Products	1.52	1,175
Insurance Carriers	1.38	4,605
Broadcasting, except internet	1.37	691

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotients, shown in **Table 88**, compare Spokane County to the State of Washington as a whole. Spokane County has higher employment concentration in primary metal manufacturing than the state as a whole which indicates a degree of economic specialization within the county in this type of manufacturing. The location of firms such as Kaiser, Honeywell Electronic Materials, Travis Patter & Foundry, and Wagstaff, an aluminum casting company, suggest that there are competitive advantages for this sector in Spokane.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market; companies receive supplies from international firms to produce their products; and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

Interstate 90 runs through Spokane County linking the county to Seattle and west coast ports and Chicago and points east. U.S. Highway 395 runs north to Canada and U.S. Highways 195 and 95 link Spokane to the Snake River and Lewiston. U.S. Highway 2 runs west to Everett and east to Sandpoint and points east. There are five rail lines that converge in Spokane, two BNSF lines, one Union Pacific line, the Montana Rail Link and the Palouse River and Coulee City short line rail system.¹⁹⁵ The Spokane International Airport provides commercial and cargo service to the region. According to the Washington Department of

¹⁹⁴ U.S. Department of Labor, 2007 Bureau of Labor Statistics

¹⁹⁵ Washington Department of Transportation Rail System Map

Commerce the closest intermodal facility is the BNSF facility in Spokane which is classified as a “non-daily intermodal services facility.”¹⁹⁶

MAJOR COMMODITIES

Tables 89 and 90, identify the top commodity imports and exports for Spokane County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

However, in the case of Spokane County it is also likely that some products such as inbound electrical equipment are being counted as secondary traffic. Based on interviews conducted for the study, some businesses in Spokane are bringing in electrical equipment such as circuit boards by air freight container or expedited carrier shipments. In both instances this traffic may be classified as secondary traffic if the containers hold a mix of electrical equipment, or the expedited carrier has other shipments in addition to electrical component shipments on the plane or truck.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

Spokane County is by far the largest importer in the study area. Its import commodities are widely dispersed. The county’s largest import is lumber or wood products (nearly 2.3 million tons annually in 2007), but is expected to decrease by 37 percent over the next 20 years to 1.5 million tons. Though lumber or wood products will remain the county’s largest import, there is expected to be a much smaller gap between its first and second largest imported commodities by 2027. The county’s second largest import in 2007, petroleum or coal products with more than 1.2 million tons in 2007, is projected to grow by almost 17 percent to 1.4 million tons in 2027. The petroleum or coal products category maybe be worthy of further investigation, but this commodity group generally includes refined petroleum products such as gasoline, diesel (including bio-diesel) and products such as asphalt and roofing material. This group of products also tends to be heavy with a low value per ton.

¹⁹⁶ BNSF Intermodal Network Map

Spokane County's largest export in 2007 was lumber or wood products, exporting more than 1.4 million tons. The county's next largest exports in 2007 were food or kindred products (807,000 tons), chemicals or allied products (741,000 tons), clay, concrete, glass or stone (624,000 tons), and farm products (554,000 tons). By 2027, the county's top five exports are all projected to decrease. Two commodities, however, show significant export growth over this 20 year period; machinery and transportation equipment (44 and 73 percent growth respectively). These industries might most benefit from continued and future investment to realize their future growth potential in the county. Overall, Spokane County exports are projected to decrease very slightly over the next 20 years.

Table 89: Inbound Commodities for Spokane County

Top 10 Commodities Shipped Into Spokane County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	2,264,274	1,392,326	(38.5%)	102,680	107,006	4.2%				7	6	(24.6%)	2,366,961	1,499,338	(36.7%)
	Value/Ton	\$375	\$425	13.3%	\$505	\$451	(10.7%)				\$926	\$950	2.6%	\$381	\$427	12.1%
Petroleum or Coal Products	Tons	817,750	1,013,039	23.9%	383,448	385,770	0.6%							1,201,198	1,398,809	16.5%
	Value/Ton	\$638	\$592	(7.3%)	\$712	\$720	1.2%							\$662	\$627	(5.2%)
Chemicals or Allied Products	Tons	1,042,827	1,269,027	21.7%	84,840	113,441	33.7%				1,809	1,479	(18.3%)	1,129,475	1,383,947	22.5%
	Value/Ton	\$2,116	\$2,250	6.4%	\$582	\$611	5.0%				\$5,020	\$4,963	(1.1%)	\$2,005	\$2,119	5.7%
Food or Kindred Products	Tons	1,022,476	1,177,216	15.1%	47,720	72,402	51.7%				236	256	8.4%	1,070,432	1,249,874	16.8%
	Value/Ton	\$893	\$912	2.2%	\$814	\$770	(5.3%)				\$2,451	\$2,860	16.7%	\$890	\$904	1.7%
Clay, Concrete, Glass or Stone	Tons	427,225	371,295	(13.1%)	504,068	497,763	(1.3%)				28	17	(38.8%)	931,322	869,075	(6.7%)
	Value/Ton	\$2,850	\$2,757	(3.3%)	\$80	\$80	(0.1%)				\$268	\$257	(4.4%)	\$1,350	\$1,223	(9.4%)
Primary Metal Products	Tons	308,315	325,354	5.5%	110,820	83,738	(24.4%)				18	5	(71.4%)	419,153	409,097	(2.4%)
	Value/Ton	\$2,596	\$2,294	(11.6%)	\$1,442	\$1,436	(0.4%)				\$2,132	\$2,323	9.0%	\$2,291	\$2,118	(7.5%)
Transportation Equipment	Tons	204,988	329,483	60.7%	104,000	153,068	47.2%				1,187	2,279	92.0%	310,175	484,830	56.3%
	Value/Ton	\$13,080	\$12,755	(2.5%)	\$8,839	\$8,941	1.2%				\$45,672	\$24,384	(46.6%)	\$11,782	\$11,606	(1.5%)
Electrical Equipment	Tons		325,019			2,906						965			328,889	
	Value/Ton		\$19,925			\$9,038						\$16,476			\$19,818	
Farm Products	Tons	67,894			233,904						519			302,316		
	Value/Ton	\$1,131			\$139						\$952			\$363		
Fabricated Metal Products	Tons	294,976	349,523	18.5%							204	251	23.3%	295,180	349,775	18.5%
	Value/Ton	\$4,110	\$4,077	(0.8%)							\$5,523	\$5,684	2.9%	\$4,111	\$4,078	(0.8%)
Pulp, Paper or Allied Products	Tons	252,989	281,508	11.3%	25,824	24,237	(6.1%)				339	363	7.3%	279,151	306,108	9.7%
	Value/Ton	\$1,593	\$1,630	2.3%	\$1,113	\$1,018	(8.6%)				\$1,594	\$1,656	3.9%	\$1,549	\$1,581	2.1%
All Commodities In Spokane County, WA	Tons	7,634,188	7,961,269	4.3%	1,923,864	2,114,152	9.9%				18,852	22,580	19.8%	9,576,905	10,098,001	5.4%
	Value/Ton	\$2,889	\$3,974	37.6%	\$1,551	\$1,785	15.1%				\$9,205	\$10,512	14.2%	\$2,633	\$3,530	34.1%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

Table 90: Outbound Commodities for Spokane County

Top 10 Commodities Shipped Out Of Spokane County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	1,245,535	949,715	(23.8%)	180,960	113,095	(37.5%)				403	564	40.0%	1,426,898	1,063,374	(25.5%)
	Value/Ton	\$423	\$387	(8.5%)	\$1,041	\$1,065	2.3%				\$875	\$923	5.4%	\$501	\$459	(8.4%)
Food or Kindred Products	Tons	721,752	613,451	(15.0%)	83,560	77,853	(6.8%)				1,968	3,234	64.4%	807,280	694,538	(14.0%)
	Value/Ton	\$827	\$854	3.3%	\$443	\$443	0.2%				\$1,668	\$1,719	3.0%	\$789	\$812	2.9%
Chemicals or Allied Products	Tons	711,983	625,989	(12.1%)	27,280	29,478	8.1%				2,131	2,165	1.6%	741,395	657,632	(11.3%)
	Value/Ton	\$3,025	\$2,937	(2.9%)	\$988	\$1,009	2.1%				\$4,607	\$5,909	28.3%	\$2,954	\$2,861	(3.2%)
Clay, Concrete, Glass or Stone	Tons	593,016	445,110	(24.9%)	31,000	35,379	14.1%				59	70	17.8%	624,075	480,559	(23.0%)
	Value/Ton	\$283	\$295	4.1%	\$1,346	\$1,178	(12.5%)				\$5,232	\$7,271	39.0%	\$337	\$361	7.2%
Farm Products	Tons	154,033	170,173	10.5%	398,684	221,568	(44.4%)				1,966	2,246	14.2%	554,683	393,988	(29.0%)
	Value/Ton	\$674	\$677	0.5%	\$214	\$234	9.3%				\$221	\$134	(39.4%)	\$342	\$425	24.3%
Fabricated Metal Products	Tons	515,441	548,197	6.4%	800	1,018	27.3%				704	1,284	82.4%	516,945	550,498	6.5%
	Value/Ton	\$3,687	\$3,648	(1.1%)	\$4,130	\$4,130	0.0%				\$6,539	\$6,363	(2.7%)	\$3,691	\$3,655	(1.0%)
Machinery	Tons	508,637	728,843	43.3%							2,930	5,774	97.0%	511,567	734,617	43.6%
	Value/Ton	\$13,966	\$14,245	2.0%							\$25,589	\$26,418	3.2%	\$14,033	\$14,341	2.2%
Waste or Scrap Materials	Tons		19,802			490,250						6			510,058	
	Value/Ton		\$206			\$179						\$2,796			\$180	
Transportation Equipment	Tons	411,684	713,562	73.3%	2,040	2,375	16.4%				11	13	27.1%	413,735	715,951	73.0%
	Value/Ton	\$7,861	\$8,714	10.9%	\$2,161	\$2,161					\$12,066	\$18,430	52.7%	\$7,833	\$8,692	11.0%
Primary Metal Products	Tons	385,067									784			385,851		
	Value/Ton	\$2,230									\$10,952			\$2,248		
Petroleum or Coal Products	Tons		324,956			13,145						302			338,403	
	Value/Ton		\$695			\$642						\$249			\$693	
Electrical Equipment	Tons	314,669									1,139			315,808		
	Value/Ton	\$15,249									\$20,368			\$15,268		
All Commodities In Spokane County, WA	Tons	6,497,425	6,473,287	(0.4%)	1,126,956	1,104,775	(2.0%)				44,248	56,570	27.8%	7,668,629	7,634,632	(0.4%)
	Value/Ton	\$4,199	\$5,351	27.4%	\$688	\$728	5.9%				\$4,529	\$6,476	43.0%	\$3,685	\$4,691	27.3%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

STEVENS COUNTY, WASHINGTON

Stevens County is located in northeastern Washington between Ferry and Pend Oreille Counties, bordering British Columbia, Canada. These three Washington counties are known collectively as the Tri-Counties. Stevens County is the fifth largest county in terms of land size among all Washington Counties. The Colville National Forest takes up much of the northern half of the county. Sixty percent of the Tri-County land area is publically owned. The Colville National Forest and the Little Pend Oreille National Wildlife Refuge are located in eastern Stevens County. The Spokane Indian Tribal Lands are located in the southern end of the county.



Stevens County has six incorporated cities ranging in population from 169 to 4,965. Colville is the county's largest city and is located 68 miles north of Spokane. Colville is also the county's retail and distribution center, and is home to several of its largest companies. The primary economic drivers in Stevens County are retail trade, manufacturing, and government employment.

Stevens County has a higher than average number of sole proprietorship businesses compared to the balance of the state. As a result small businesses make up a higher percentage of employment activity in Stevens County. Forestry, wood products, and mining continue to play a role in the county's economy but employment in these sectors continues to decline throughout the IPH study area.

POPULATION TRENDS

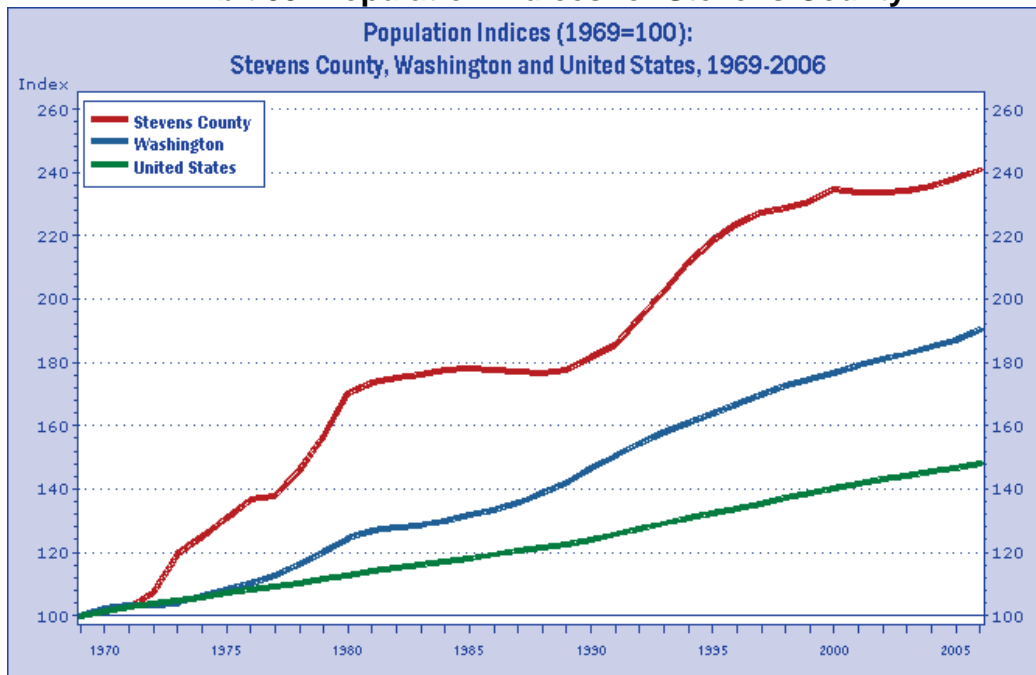
According to the U.S. Census Bureau the population of Stevens County was 42,050 in 2008, increasing by over 11,000 since 1990. The county's population growth was lower than the State of Washington as a whole from 2000 to 2007 as Stevens County's population grew 5 percent compared to an 11.1 percent population growth for the state as a whole. Twenty-three percent of the population in Stevens County is under 18 years of age very similar to the statewide population in this age group at 23.8 percent. Over 16 percent of the population in Stevens County lives below the poverty level and the 2007 median household income of \$41,861 is substantially below the state median income of \$55,628.

Table 91: Population Data for Stevens County

Year	Population
1990 ¹⁹⁷	30,948
2000	40,066
2008 ¹⁹⁸	42,050
2015	45,390
2020	47,700
2030	52,410

Exhibit 39 shows the population growth of Stevens County compared with the growth in Washington and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. The population of Stevens County increased by 143.8 percent during this period compared to 92.9 percent population growth statewide and 49.7 percent growth nationally.¹⁹⁹

Exhibit 39: Population Indices for Stevens County



¹⁹⁷ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

¹⁹⁸ U.S. Census Bureau Population Estimates 2008

¹⁹⁹ Pacific Northwest Regional Economic Analysis

INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Unemployment in Stevens County reached 14.1 percent in January 2009, eclipsing the state average of 9.5 percent, primarily as a result of jobs lost in mining, forestry, and retail. The unemployment rate in December 2008 was 11.1 percent increasing from 7.7 percent in December 2007. Total employment increased by only 40 jobs in 2008 and existing labor market conditions recently have not improved. Retail sales have declined by 2.7 percent in 2008.

The largest employers in Stevens County include Hearth & Home, a manufacturer of wood and pellet stoves with 340 employees, Boise Lumber with 395 employees, Wal-Mart with 233 employees, and Mt. Carmel Hospital with 170 employees. In-migration of retirees is projected to continue and should result in increased jobs in the construction sector once the recession ends.

Table 92: Industry Sectors by Employment Stevens County²⁰⁰

Industry	Employment
Government	2,283
Manufacturing	1,333
Retail Trade	1,171
Construction	417
Transportation and Warehousing	265
Finance and Insurance	156

Government is the largest employer in Stevens County including federal, state, and local governments. Colmac Coil designs and manufactures heating and cooling coils for Colmac Industries, a nationally recognized manufacturer of laundry equipment. Hewes Marine is a regional boat manufacturer. The manufacturing sector in Stevens County is relatively diversified and the niche heating cluster has been identified by a recent Washington Industrial Cluster study referenced in the IPH Profile.

According to the most recent economic impact study for tourism expenditures in Washington State, tourism generated \$52.3 million in travel spending in 2007 creating 960 jobs and \$3 million in state and local tax revenues.²⁰¹ Travel spending has increased by 3.4 percent over the past seven years in Stevens County.

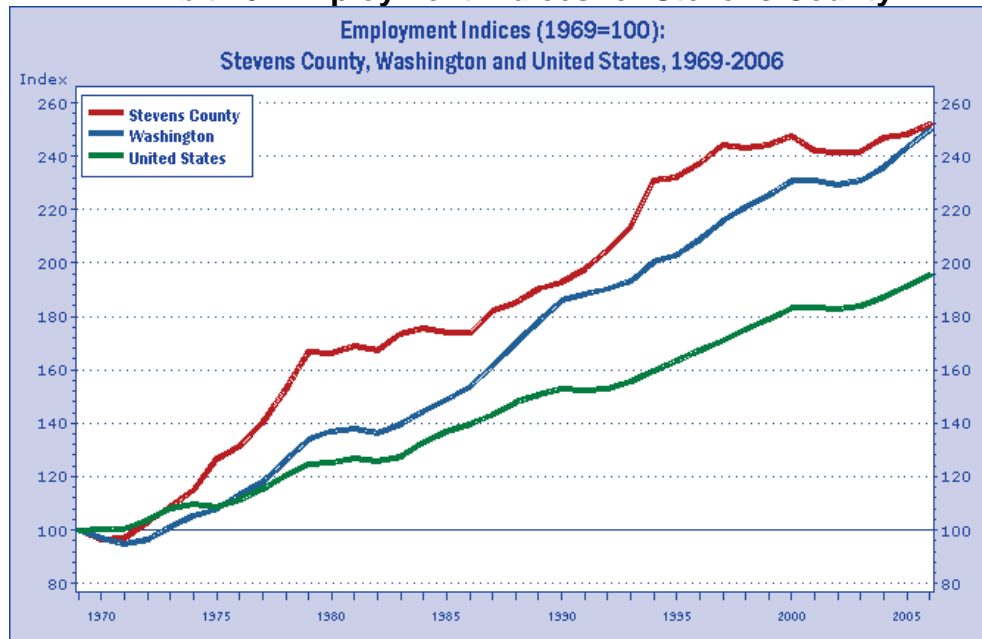
Exhibit 40 compares employment growth in Stevens County for the past 37 years to employment growth in Washington and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Stevens County's employment increasing by 155.9 percent during the

²⁰⁰ Bureau of Economic Analysis, Employment Statistics

²⁰¹ "Washington State County Travel Impacts 1991 – 2007, Washington Division of Tourism

period compared to Washington growth at 156.6 percent and the nation at 98.7 percent.²⁰²

Exhibit 40: Employment Indices for Stevens County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skills are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. Over 85 percent of the population of Stevens County over the age of 25 completed high school compared to the statewide average of 87.1 percent. However, only 15.3 percent of the population over the age of 25 have completed a Bachelor’s degree or higher compared with 27.7 percent statewide.

Table 93: Location Quotients for Stevens County

Industry	Location Quotient	2007 Employment
Forestry and Logging	52.66	225
Wood Product Manufacturing	22.60	757
Mining, except oil and gas	5.44	78
Machinery Manufacturing	5.07	391
Agriculture and Forestry Support	2.69	58
Truck Transportation	1.97	185

²⁰² Pacific Northwest Regional Economic Analysis

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotients shown in **Table 93** compare Stevens County to the State of Washington as a whole. Stevens County has a substantially higher employment concentration in forestry and logging and wood product manufacturer than the state as a whole and there is a degree of economic specialization within the county in these two businesses. Unfortunately, employment concentration in these two sectors is generally an indication of economic vulnerability rather than potential competitive advantages as both of these sectors continue to decline and long term trends do not indicate sustainable employment growth within these two sectors.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market; companies receive supplies from international firms to produce their products; and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

U.S. Highway 395 links Stevens County to Spokane and Interstate 90 to the south and Kettle Falls and Canada to the north. State Route 20 runs from east to west linking the county to U.S. Highway 2, the cities of Newport and Sandpoint to the east and Tonasket and U.S. Highway 97 to the west. Stevens County is served by a BNSF rail line that links to the Kettle Falls International short line rail road that runs into Canada.²⁰³ The closest commercial airport is the Spokane International Airport and there is state owned airport at Avery and a municipal airport at Colville.

MAJOR COMMODITIES

Tables 94 and 95 identify the top commodity imports and exports for Stevens County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product

²⁰³ Washington Department of Transportation Rail System Map

may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

Stevens County's largest import in 2007 was lumber or wood products with almost 370,000 tons imported annually. There is a large gap between its first and second largest import, food and kindred products with 58,000 tons annually. Over the next 20 years, lumber or wood products, is projected to decrease significantly, almost 63 percent, to about 137,000 tons. The county's largest export is also lumber or wood products, totaling more than 1.8 million tons in 2007. Its second largest export is nonmetallic minerals with about 526,000 tons exported annually in 2007. By 2027, Stevens County's lumber or wood product exports will decrease by more than 43 percent, while nonmetallic minerals is projected to increase by 40 percent, to approximately 736,000 tons annually.

Table 94: Inbound Commodities for Stevens County

Top 10 Commodities Shipped Into Stevens County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	368,784	137,238	(62.8%)										368,784	137,238	(62.8%)
	Value/Ton	\$344	\$413	19.9%										\$344	\$413	19.9%
Food or Kindred Products	Tons	57,894	83,054	43.5%										57,894	83,054	43.5%
	Value/Ton	\$885	\$887	0.2%										\$885	\$887	0.2%
Primary Metal Products	Tons	27,108	40,307	48.7%										27,108	40,307	48.7%
	Value/Ton	\$2,982	\$2,371	(20.5%)										\$2,982	\$2,371	(20.5%)
Clay, Concrete, Glass or Stone	Tons	25,828	29,820	15.5%										25,828	29,820	15.5%
	Value/Ton	\$383	\$386	0.5%										\$383	\$386	0.5%
Pulp, Paper or Allied Products	Tons	22,705	29,916	31.8%										22,705	29,916	31.8%
	Value/Ton	\$1,233	\$1,374	11.4%										\$1,233	\$1,374	11.4%
Petroleum or Coal Products	Tons	18,753	25,812	37.6%										18,753	25,812	37.6%
	Value/Ton	\$238	\$230	(3.3%)										\$238	\$230	(3.3%)
Fabricated Metal Products	Tons	18,691	28,828	54.2%										18,691	28,828	54.2%
	Value/Ton	\$3,646	\$3,664	0.5%										\$3,646	\$3,664	0.5%
Chemicals or Allied Products	Tons	14,187	22,724	60.2%										14,187	22,724	60.2%
	Value/Ton	\$1,265	\$1,258	(0.5%)										\$1,265	\$1,258	(0.5%)
Nonmetallic Minerals	Tons		15,042												15,042	
	Value/Ton		\$313												\$313	
Waste or Scrap Materials	Tons	8,751												8,751		
	Value/Ton	\$282												\$282		
Transportation Equipment	Tons	8,227	17,523	113.0%										8,227	17,523	113.0%
	Value/Ton	\$15,304	\$14,997	(2.0%)										\$15,304	\$14,997	(2.0%)
All Commodities In Stevens County, WA	Tons	595,740	471,081	(20.9%)										595,740	471,081	(20.9%)
	Value/Ton	\$1,142	\$2,059	80.3%										\$1,142	\$2,059	80.3%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

Table 95: Outbound Commodities for Stevens County

Top 10 Commodities Shipped Out Of Stevens County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	1,664,802	908,851	(45.4%)	229,120	165,704	(27.7%)							1,893,922	1,074,555	(43.3%)
	Value/Ton	\$442	\$485	9.6%	\$1,005	\$1,005	0.0%							\$510	\$565	10.7%
Nonmetallic Minerals	Tons	151,336	236,737	56.4%	374,844	499,915	33.4%							526,180	736,652	40.0%
	Value/Ton	\$24	\$21	(11.3%)	\$6	\$6	(0.0%)							\$11	\$11	(2.4%)
Fabricated Metal Products	Tons	108,521	167,154	54.0%										108,521	167,154	54.0%
	Value/Ton	\$4,547	\$4,622	1.7%										\$4,547	\$4,622	1.7%
Farm Products	Tons	89,304	93,099	4.2%										89,304	93,099	4.2%
	Value/Ton	\$700	\$697	(0.4%)										\$700	\$697	(0.4%)
Clay, Concrete, Glass or Stone	Tons	46,258	52,326	13.1%										46,258	52,326	13.1%
	Value/Ton	\$325	\$323	(0.6%)										\$325	\$323	(0.6%)
Furniture or Fixtures	Tons	21,650	27,478	26.9%										21,650	27,478	26.9%
	Value/Ton	\$4,058	\$4,057	(0.0%)										\$4,058	\$4,057	(0.0%)
Waste or Scrap Materials	Tons	18,335	37,266	103.3%										18,335	37,266	103.3%
	Value/Ton	\$184	\$205	11.1%										\$184	\$205	11.1%
Primary Metal Products	Tons	8,527												8,527		
	Value/Ton	\$1,610												\$1,610		
Pulp, Paper or Allied Products	Tons	5,585	9,144	63.7%										5,585	9,144	63.7%
	Value/Ton	\$21	\$18	(14.4%)										\$21	\$18	(14.4%)
Fresh Fish or Marine Products	Tons		4,122												4,122	
	Value/Ton		\$5,893												\$5,893	
Apparel or Related Products	Tons	3,148	10,161	222.8%										3,148	10,161	222.8%
	Value/Ton	\$12,129	\$12,109	(0.2%)										\$12,129	\$12,109	(0.2%)
All Commodities In Stevens County, WA	Tons	2,126,728	1,557,878	(26.7%)	603,964	665,619	10.2%							2,730,692	2,223,496	(18.6%)
	Value/Ton	\$717	\$1,059	47.7%	\$385	\$255	(33.9%)							\$644	\$818	27.1%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

WHITMAN COUNTY, WASHINGTON

Whitman County is located in southeast Washington. Its largest city is Pullman which was rated second in a list of “Best Cities for Business” in Washington in 2005. Much of the business activity in Whitman County is centered on agriculture and higher education. The county is the home of Washington State University and its 18,000 students, and eight miles away in Moscow, Idaho, is the University of Idaho. Both of these research universities are part of the Palouse Research Corridor. Companies including Schweitzer Engineering Laboratories and Decagon Devices have chosen to locate their technology based firms here. Whitman County produces the highest quantity of wheat of any county in Washington.



Efforts to diversify the county's economy have focused on manufacturing and tourism. Access to an abundant electrical power, a well educated workforce, and available industrial park sites have supported the attraction and growth of new businesses to the community. The Port of Whitman County headquartered in the county seat of Colfax manages three industrial parks in the county as well as several port operations. One of the industrial parks has been designated as an Innovation Partnership Zone by the state and a Green Grid Infrastructure Center of Excellence has been located in this park. The Center of Excellence is a public-private partnership focusing on research and green energy technology for IT data centers.

POPULATION TRENDS

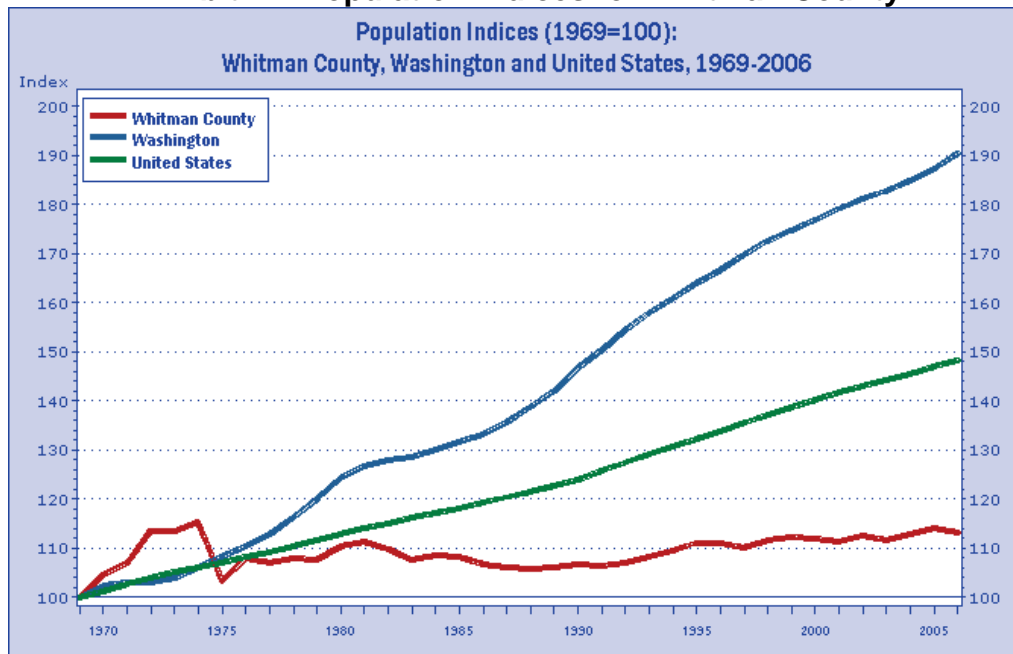
According to the U.S. Census Bureau, the population of Whitman County was 41,664 in 2008, increasing by almost 2,900 since 1990. The county's population growth was significantly lower than the State of Washington as a whole from 2000 to 2008 with Whitman County realizing only 2.3 percent population growth during this period compared to an 11.1 percent population growth for the state as a whole. Only 15.7 percent of the population of Whitman County is under 18 years of age, which is below the statewide population for this age group at 23.8 percent. Over 26.7 percent of the population in Whitman County lives below the poverty level, which is the highest poverty rate within the study area. This is likely due in part to the fact that the students at Washington State University represent approximately 43 percent of the county's population. The 2007 median household income of \$36,538 is substantially below the state median income of \$55,628.

Table 96: Population Data for Whitman County

Year	Population
1990 ²⁰⁴	38,775
2000	40,740
2008 ²⁰⁵	41,664
2015	42,450
2020	43,290
2030	44,990

Exhibit 41 shows the population growth of Whitman County compared with the growth in Washington and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year of 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. The population of Whitman County increasing by 12.0 percent during this period compared to Washington's 92.9 percent population growth statewide and 49.7 percent growth nationally.

Exhibit 41: Population Indices for Whitman County



INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Unemployment in Whitman County increase from 5.1 percent in June 2008 to 6.2 percent in June 2009 primarily as a result of jobs lost in the service and government sector. Whitman County unemployment is still less than the state average, which by December 2009 had risen to 9.5 percent. There were some

²⁰⁴ Population data for 1990, 2000, 12015, 2020, 2030 Woods and Poole Economics

²⁰⁵ U.S. Census Bureau Population Estimates 2008

modest employment gains in early 2009 in manufacturing, mining, wholesale trade, and information and financial services. The most significant job losses for the first six months of 2006 were in the government sector. The largest employers in Whitman County include Schweitzer Engineering who designs and manufactures power system electronics with 1,465 employees, McGregor's a fertilizer manufacturer with 240 employees, Pullman Hospital with 270 employees, and the largest employer in the county, Washington State University, with 4,321 employees.

Table 97: Industry Sectors by Employment in Whitman County²⁰⁶

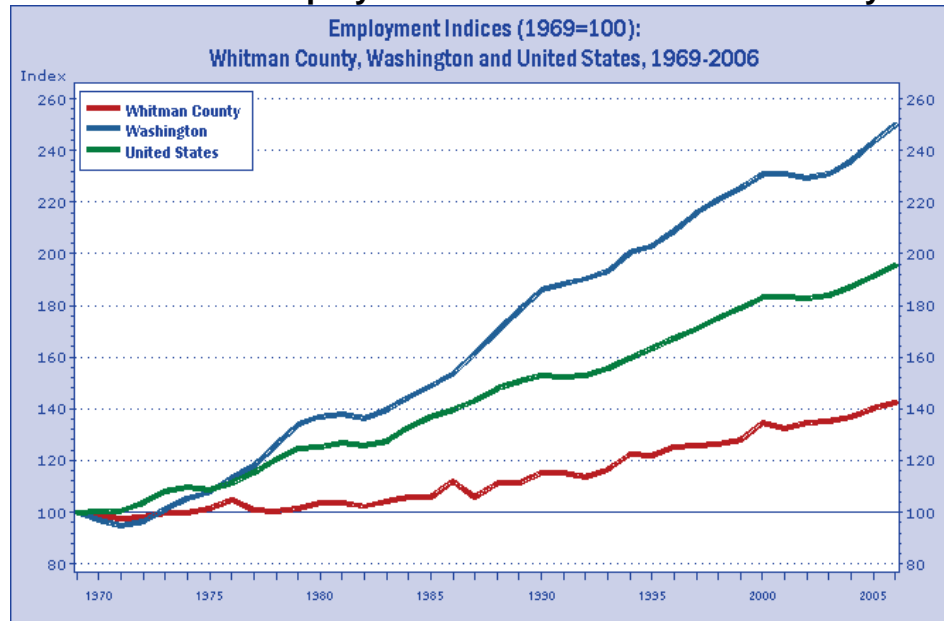
Industry	Employment
State Government	5,139
Local Government	2,001
Retail Trade	1,223
Construction	389
Agriculture, Forestry, and Fishing	368

State government is the largest employer in Whitman County as a result of the large number of state employees at Washington State University's main campus. Other government employers in the county include the city governments, Whitman County government, and the school districts. Retail trade is substantially supported by the student population on campus at the University where enrollment is approaching 18,000 students.

Exhibit 42 compares employment growth in Whitman County for the past 37 years to employment growth in Washington and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Whitman County's employment increasing by 41.6 percent during the period compared to Washington growth at 156.6 percent and the nation at 98.7percent.

²⁰⁶ Bureau of Economic Analysis, Employment Statistics

Exhibit 42: Employment Indices for Whitman County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce accessibility and skill are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. Over 92.8 percent of the population in Whitman County over the age of 25 has completed high school compared to the statewide average of 87.1 percent. Forty-four percent of the population over the age of 25 have completed a Bachelor’s degree or higher.

Table 98: Location Quotients for Whitman County

Industry	Location Quotient	2007 Employment
Crop Production	8.73	341
Merchant Non-durable Goods	3.22	479
Sporting Goods	2.55	122
Animal Production	2.41	39
Food and Beverage Stores	1.81	374
Building Materials and Gardening Stores	1.81	171

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotients, shown

in **Table 98**, compare Whitman County to the State of Washington as a whole. Whitman County has a substantially higher employment concentration in crop production than the state as a whole. There are potential opportunities for developing additional economic specialization in the county from this sector primarily in the form of value-added agricultural operations such as food processing, organics, and bio-mass.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market; companies receive supplies from international firms to produce their products; and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

U.S. Highway 195 links Whitman County to Lewiston and the Snake River to the south and Spokane and U.S. Highway 395 to Canada to the north. The county is served by two short line railroads, the Washington & Idaho RR and Palouse River & Coulee City RR. These two short lines connect to the Union Pacific Railroad and the BNSF Railway at Spokane. The closest commercial airports are the Pullman-Moscow Regional Airport located in Whitman County, the Lewiston/Nez Perce County airport about 40 miles south of Pullman and the Spokane International Airport 75 miles north. The closest rail intermodal facility serving Whitman County is the BNSF intermodal facility in Spokane. The Port of Wilma is a 2,275 acre port operation on the Snake River at the southeastern corner of the county. The Port of Whitman County manages three on-water industrial parks on the river including Wilma and two additional industrial parks in Pullman and Colfax.

MAJOR COMMODITIES

Tables 99 and **100** identify the top commodity imports and exports for Whitman County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason, secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out

to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

Whitman County's largest import in 2007 was petroleum or coal products with almost 1.3 million tons imported annually. By 2027, the total is expected to rise to more than 2.3 million tons, mostly due to a 94 percent increase in the transportation of these products being transported by water. The petroleum or coal products commodity group generally includes refined petroleum products such as gasoline, diesel (including bio-diesel) and products such as asphalt, roofing materials and other petroleum based products. While the petroleum or coal products category maybe be worthy of further investigation, the forecasted robust growth of these high weight, low value materials is likely based on predicted increases in fuel prices, making water transport options for these products more attractive.

The county's next largest imports are farm products and lumber or wood products, importing 186,685 and 185,504 tons respectively in 2007. Overall, the county is expected to grow imports by more than 74 percent over the 20 year period. The strongest growth is expected to occur in the water mode for low value – high weight products, suggesting the Port of Whitman County and the surrounding industrial parks will see increased activity.

Whitman County's largest export was farm products totaling more than 1.1 million tons annually. The TRANSEARCH forecast suggests that by 2027, the county will experience a 51 percent reduction in its farm product exports to just over 550,000 tons annually. The decline in farm exports is consistent with predicted trends nationally for agriculture as more crops are consumed locally for value-added activities such as livestock production, locally based food processing and production of ethanol and other bio-fuels. U.S. farmers are also facing increasing foreign competition, fluctuations in the value of the U.S. dollar and greater environmental regulations, all of which can impact price competitiveness of U.S. agriculture exports. These national trends however may not hold true for the IPH study area due to its diverse agricultural production capabilities, access to low cost transportation by rail and barge, and close proximity to major export gateways such as Seattle, Tacoma and Portland.

The county's second largest export in 2007 was food or kindred products with nearly 781,000 tons exported annually. By 2027, food or kindred products are expected to grow by almost 60 percent and become the county's largest export with more than 1.2 million tons.

Table 99: Inbound Commodities for Whitman County

Top 10 Commodities Shipped Into Whitman County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Petroleum or Coal Products	Tons	173,551	169,052	(2.6%)				1,113,993	2,161,061	94.0%				1,287,544	2,330,112	81.0%
	Value/Ton	\$716	\$679	(5.2%)				\$690	\$704	2.1%				\$693	\$703	1.3%
Farm Products	Tons	20,456	30,521	49.2%				166,228	245,523	47.7%	0	1	32.0%	186,685	276,045	47.9%
	Value/Ton	\$991	\$1,010	2.0%				\$295	\$282	(4.2%)				\$371	\$363	(2.2%)
Lumber or Wood Products	Tons	173,676	316,113	82.0%				11,829	40,991	246.5%				185,504	357,103	92.5%
	Value/Ton	\$289	\$269	(7.0%)				\$987	\$987	(0.0%)				\$334	\$351	5.3%
Nonmetallic Minerals	Tons	3,874	5,873	51.6%				114,049	169,571	48.7%				117,924	175,445	48.8%
	Value/Ton	\$153	\$151	(1.2%)				\$7	\$7	0.6%				\$11	\$11	0.6%
Food or Kindred Products	Tons	76,864	118,122	53.7%				35,411	51,859	46.4%				112,276	169,981	51.4%
	Value/Ton	\$926	\$919	(0.8%)				\$688	\$679	(1.3%)				\$851	\$846	(0.6%)
Chemicals or Allied Products	Tons	15,185	25,172	65.8%	53,680	70,263	30.9%	2,123	11,449	439.4%	1	1	23.9%	70,988	106,885	50.6%
	Value/Ton	\$1,461	\$1,458	(0.2%)	\$488	\$525	7.7%	\$767	\$769	0.3%	\$4,629	\$4,629		\$704	\$771	9.5%
Electrical Equipment	Tons	67,339	122,340	81.7%										67,339	122,340	81.7%
	Value/Ton	\$10,371	\$10,983	5.9%										\$10,371	\$10,983	5.9%
Clay, Concrete, Glass or Stone	Tons	37,220	52,087	39.9%										37,220	52,087	39.9%
	Value/Ton	\$1,235	\$1,249	1.1%										\$1,235	\$1,249	1.1%
Transportation Equipment	Tons		30,632								1				25,797	
	Value/Ton		\$15,082								\$18,022				\$178	
Pulp, Paper or Allied Products	Tons	17,496												17,496		
	Value/Ton	\$1,058												\$1,058		
Waste or Scrap Materials	Tons	4,337	6,694	54.4%				12,127	19,103	57.5%				16,464	25,797	56.7%
	Value/Ton	\$277	\$275	(1.0%)				\$143	\$144	0.3%				\$179	\$178	(0.5%)
All Commodities In Whitman County, WA	Tons	624,933	945,194	51.2%	53,680	70,263	30.9%	1,464,624	2,715,575	85.4%	6	9	36.1%	2,143,243	3,731,042	74.1%
	Value/Ton	\$2,277	\$2,919	28.2%	\$488	\$525	7.7%	\$605	\$637	5.3%	\$6,117	\$7,580	23.9%	\$1,090	\$1,213	11.3%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

Table 100: Outbound Commodities for Whitman County

Top 10 Commodities Shipped Out Of Whitman County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Farm Products	Tons	86,820	91,872	5.8%	45,472	19,395	(57.3%)	1,010,060	439,449	(56.5%)				1,142,352	550,716	(51.8%)
	Value/Ton	\$473	\$407	(13.8%)	\$178	\$196	10.1%	\$209	\$212	1.4%				\$228	\$244	7.1%
Food or Kindred Products	Tons	204,822	315,191	53.9%				576,172	932,948	61.9%				780,994	1,248,138	59.8%
	Value/Ton	\$633	\$631	(0.3%)				\$671	\$658	(1.9%)				\$661	\$652	(1.5%)
Electrical Equipment	Tons	334,265	266,369	(20.3%)										334,265	266,369	(20.3%)
	Value/Ton	\$36,566	\$36,607	0.1%										\$36,566	\$36,607	0.1%
Fresh Fish or Marine Products	Tons	138	200	44.9%				35,480	29,857	(15.8%)				35,618	30,057	(15.6%)
	Value/Ton	\$5,833	\$5,833	0.0%				\$3,617	\$3,578	(1.1%)				\$3,626	\$3,593	(0.9%)
Clay, Concrete, Glass or Stone	Tons							4,891	9,483	93.9%				4,891	9,483	93.9%
	Value/Ton							\$65	\$65	(0.0%)				\$65	\$65	(0.0%)
Nonmetallic Minerals	Tons	4,019						215						4,233		
	Value/Ton	\$8						\$7						\$8		
Lumber or Wood Products	Tons	4,164	6,734	61.7%										4,164	6,734	61.7%
	Value/Ton	\$180	\$244	35.4%										\$180	\$244	35.4%
Transportation Equipment	Tons	4,106	17,727	331.7%										4,106	17,727	331.7%
	Value/Ton	\$5,592	\$6,307	12.8%										\$5,592	\$6,307	12.8%
Instrum, Photo, Optical Equip	Tons	3,067	11,800	284.8%										3,067	11,800	284.8%
	Value/Ton	\$55,265	\$28,464	(48.5%)										\$55,265	\$28,464	(48.5%)
Waste or Scrap Materials	Tons		2,351												2,351	
	Value/Ton		\$187												\$187	
Printed Matter	Tons	1,689	3,246	92.2%										1,689	3,246	92.2%
	Value/Ton	\$4,021	\$4,065	1.1%										\$4,021	\$4,065	1.1%
All Commodities In Whitman County, WA	Tons	646,049	720,000	11.4%	45,472	19,395	(57.3%)	1,627,483	1,412,125	(13.2%)	1	0	(19.1%)	2,319,005	2,151,521	(7.2%)
	Value/Ton	\$19,499	\$14,522	(25.5%)	\$178	\$196	10.1%	\$447	\$577	29.2%	\$42,590	\$42,590	0.0%	\$5,749	\$5,240	(8.9%)

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

APPENDIX A: TRANSEARCH DATA ERRATA

The TRANSEARCH™ database on freight flows is developed in a top down process. Due to the large aggregate amounts for freight flows at the national level small shifts in shipping tonnage at the county level produce very small changes in percentage of growth. However, that same amount of absolute change at the county level will generate a much larger percentage change because the base number of tonnage at the county level is only a very small aggregate portion of the national total.

Focus on Benewah County, ID

During final review of Working Paper 4.1 – County Profiles, in Table 20, on page 64, it was observed that the rate of growth for Benewah County for miscellaneous manufactured products grew 1101 percent from 2007 to 2027. In 2007 total outbound tonnage was 11,472 and in 2027 it was shown to be 137,739 tons. The 126,266 tons of growth, when divided by the small starting base number of 11,472 produced the large percentage. The growth in question appeared to be eastbound truck freight to New York and Pennsylvania forecast to grow over the 20 years from 2007. The large end result number was considered to be a computational or transpositional error in the dataset that resulted in the decimal point being shifted one space to the right. After adjusting the decimal location on space to the left, the 2027 tonnage would be 13,774 tons with a resulting growth rate of 19.6 percent. This is reasonable as Benewah County does not have a large manufacturing activity base. That said, the amount for miscellaneous manufactured products in Working Paper 4.1 – County Profiles, in Table 20, on page 64, was adjusted to 13,774 tons. The total amount for the column was also adjusted. The same adjustments were made for values in Table 20.

The IPH regional impact from the adjustment was observed in Working Paper 3.2 – Regional Freight Profile, across the following Exhibits: (Exhibit [cross reference below]). Adjusting the 126,266 ton variance for the new 2027 amount of 13,774 tons leaves a net adjustment of 112,492 tons. **Exhibit A-1** indicates where freight flow total amounts could be impacted. Overall outbound tonnage in the lower right hand corner of the table would change the 2027 total from 86,199,468 tons as shown in the initial Working Paper 3.2 – Regional Freight Profile Exhibit 7 down to 86,086,976 or only 0.13 percent. Note, it should be taken into consideration this reflects a very small change on assumptions about a 20 year forecast. Observation at a finer level of detail, in Exhibit 1 the 2027 eastbound truck tonnage would adjust from 6,168,589 down to 6,056,097. This equates to a 1.82 percent for 2027 eastbound truck freight adjustment in 20 years; again it is not a very significant change considering it is on a 20 year forecast. Because the forecast spans many years, and the absolute amount as well as percentage of change are not significant to the outbound freight flows, much less the total inbound, outbound and through freight flows from Exhibit 1 which would be less than seven hundredths of a percent. it was determined the remaining tables in all

working papers and technical memos would not be materially impacted and were allowed to remain as initially presented.

Table A-1: Errata Table List of Cell Changes

Exhibit Number & Cell Location	Initial 2027 Amount	Adjusted 2027 Amount	Percent Change
Exhibit 7: <u>Row 4:</u> Truck Outbound <u>Column 6:</u> Eastern Flows	6,168,589	6,056,097	1.82%
Exhibit 7: <u>Row 4:</u> Truck Outbound <u>Column 9:</u> Totals	48,484,473	48,371,981	0.23%
Exhibit 7: <u>Row 12:</u> Truck + Rail Outbound <u>Column 6:</u> Eastern Flows	7,501,800	7,389,308	1.50%
Exhibit 7: <u>Row 12:</u> Truck + Rail Outbound <u>Column 9:</u> Totals	55,457,046	55,344,564	0.20%
Exhibit 7: <u>Row 13:</u> Truck + Rail <u>Column 6:</u> Eastern Flows	15,631,046	15,518,555	0.72%
Exhibit 7: <u>Row 13:</u> Truck + Rail Outbound <u>Column 9:</u> Totals	86,199,468	86,086,976	0.13%

Observation on Latah County, ID

During final review of Working Paper 4.1 – County Profiles, it was pointed out that in Table 60, on page 128, the rate of growth for Latah County for chemicals and allied products grew 540 percent from 2007 to 2027. In 2007 total outbound tonnage was 35,560 and in 2027 it was shown to be 278,138 tons. The chemical and allied products growth in question appeared to be eastbound and southbound truck freight going to many destinations enabling the amount of growth to be plausible considering it was off of a low starting number in 2007 and no adjustment was needed.

Observation on Lincoln County, WA

Also during final review of Working Paper 4.1 – County Profiles, it was pointed out that in Table 70, on page 144, the rate of growth for Lincoln County for machinery grew 430 percent from 88,516 tons in 2007 up to 469,932 tons in 2027. The machinery growth in question appeared to be westbound, eastbound and southbound truck freight going to many destinations so this growth also seemed plausible and no adjustment was needed.

INLAND PACIFIC HUB

Transportation Study



Working Paper 4.2

Inland Pacific Hub Study Area Property and Technology Inventory Report

Final

April, 2010

WilburSmith
ASSOCIATES

In Association with

Halcrow

and

HNTB

The study was supported by the US Department of Transportation, Office of the Secretary, Grant No. DTOS59-08-G-00105

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INTRODUCTION

The Inland Pacific Hub (IPH) study area is comprised of nineteen counties located in eastern Washington and northern Idaho. The economic interests of this region are represented in part by the IPH Advisory Board, a public-private partnership established by and consisting of representatives from both states. The Board's objective is to establish the IPH study area as a multimodal global gateway to increase international commerce.

The Board has partnered with the Washington State Department of Transportation and the Idaho Transportation Department to study the region's capacity for economic development. The IPH Transportation Study has two objectives: 1) To identify the IPH study area's capacity as a globally-connected, multimodal transportation gateway; and 2) To identify the critical infrastructure requirements needed to drive the IPH study area's future economic growth.

Report Organization and Composition of Task 4

To accomplish the objectives established by the IPH Advisory Board, Wilbur Smith Associates, in association with HNTB and Halcrow, proposed a work plan based on six tasks:

- Task 1: Analyze Existing Transportation Market
- Task 2: Profile Existing Multimodal Transportation Infrastructure (Tech Memo 1)
- Task 3: Profile Regional Economic Assets (Tech Memo 2)
- Task 4: Profile Commercial and Technology Assets (Tech Memo 3)
- Task 5: Identify Public Education and Stakeholder Involvement
- Task 6: Compile Final Report and Phase II Recommendations

Several tasks (2, 3 and 4) have Technical Memoranda as final task deliverables.

Technical Memoranda 2 and 3 are each made up of several internal working papers that break the analysis associated with these tasks into discrete work elements, to allow study team members to work concurrently on sub-tasks.

This Working Paper

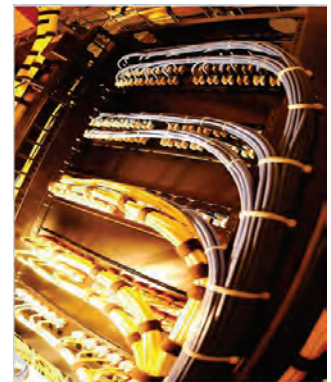
Working Paper 4.2 – Property and Technology Inventory: This working paper presents a detailed inventory of higher education, utility and commercial business properties in the IPH study area. The document concludes with a Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis for the regional economy.

TECHNOLOGY ASSETS INVENTORY

“But let us not underestimate our strengths or the innovation that could explode from the flat world when we really do connect all of the knowledge centers together. On such a flat earth, the most important attribute you can have is creative imagination—the ability to be the first on your block to figure out how all these enabling tools (technology et al) can be put together in new and exciting ways to create products, communities, opportunities, and profits.”

- Thomas Friedman, The World is Flat: A Brief History of the Twenty-First Century

Technology is an integral part of many competitive business operations today. In this economic environment, most businesses expect key technology and infrastructure assets to be readily available to them. Communities who lack these important assets will have difficulty attracting businesses that rely on technology and may find it challenging to retain existing businesses if the existing infrastructure can not support their needs. While highway accessibility continues to be an important site selection factor recognized by 95.4 percent of the businesses responding to the 2008 Corporate Site Survey, other attributes are also important. Cost effective and reliable energy, readily available land and building inventories, advanced high speed internet and broadband services, and proximity to a skilled workforce and technical universities are important evaluation factors for a broad range of businesses considering a location for new operations or expanding existing facilities.



A number of factors influence the availability of technology assets and infrastructure within the Inland Pacific Hub (IPH) study area. The lack of population concentration in some areas of the region, installation and construction costs for technology and utility infrastructure, challenging topography and other environmental considerations, the amount of publically-held land and constraints on the use of that property, growth management policies, and the needs of the existing business community all play a role in the provision of technology and utility infrastructure in this region. Within the study area there are several counties where federal or state agencies and Tribes are the primary property owners and other counties where topographic and environmental constraints affect new development and population growth. All the counties in the region have some communications infrastructure but many of the non-metro communities lack the broadband framework needed to fully support today's businesses. Particularly in the non-metro communities that are relatively isolated, communications and broadband infrastructure are crucial not only to their economy, this infrastructure provides a link to educational services, health care, and other key resources as well.

SECTION 1: UNIVERSITIES AND COMMUNITY COLLEGES

Universities and colleges generate competitive advantages for the Inland Pacific Hub study area fostering technology and business growth in addition to their original mission of education and research. A study conducted at MIT found that one of the critical contributions of universities to economic development is through their contributions to local industrial innovation processes helping firms to incorporate new technologies and market knowledge and apply it most effectively to the demands of a larger marketplace.¹ Evidence from MIT research indicates that universities contribute to local innovation and growth of technology business in several ways including through technology transfer, by attracting new people and knowledge from other parts of the world to enhance the technological capabilities of a region, and through the adaptation of knowledge to local conditions.

The IPH study area is fortunate to have a significant cluster of highly regarded educational and research institutions in the region – Washington State University, the University of Idaho, Gonzaga University, Eastern Washington University, the Intercollegiate University District in downtown Spokane, Lewis-Clark State College, several community colleges, as well as two national laboratories. The vision and collaboration between these colleges and universities has helped to build the economy of the IPH study area and contributed to the attraction of businesses and the expansion of many companies in the region.

Certainly one of the most important contributions of these colleges and universities is the educational resources that they provide to the region. A skilled and available workforce is essential to fostering quality economic growth in the region. The rapid changes in technology, communication, and trade means companies need to attract and retain employees that can readily adapt to a changing environment. This dynamic work environment may require employees to develop new skills and prompt companies to seek out locations that can support life-long learning opportunities. The services available through the Workforce Development Councils throughout the IPH study area are also important to developing a well trained and skilled workforce to meet the needs of employers in the region.

Universities foster on-going research and support the latest in technological advances and applications. The state supported colleges and universities in the IPH study area sponsor programs of study designed to evaluate local economic issues and build upon existing technology assets. As an example, the Washington State University and The University of Idaho are actively involved in international agricultural marketing, nanotechnology and materials sciences, and social and economic research for the region.

Washington State and the University of Idaho sponsor programs focused on improvements in transportation including research in biodiesel fuels, intelligent transportation systems, development of sustainable materials and construction, clean vehicle technology, and asphalt materials analysis. The National Institute for Advanced Transportation Technology at the University of Idaho and the Washington State Transportation Research Center are national centers of excellence focused on the development of engineering solutions for transportation challenges. Both of these institutions also support business and technology

¹ "Universities, Innovation, and the Competitiveness of Local Economies", Richard Lester, Industrial Performance Center, Massachusetts Institute of Technology

incubators that specialize in technology transfer in order to accelerate the success of entrepreneurial ventures utilizing state-of-the-art technology and research developing new products and services that foster successful entrepreneurship and business success.

WASHINGTON UNIVERSITIES

THE UNIVERSITY DISTRICT

The University District in Spokane was developed to link the Riverpoint Campus of Washington State University, Eastern Washington University, the Spokane Medical District, the Community Colleges of Spokane, Whitworth University, and Gonzaga University. The district brings together over 11,000 students², staff and faculty, state-of-the-art researchers, and entrepreneurial businesses as a catalyst to enhance the commercialization of technology and build the economy of the Spokane region. The district is becoming a leading technology, research, and education hub. The new WSA Biomedical/Health Sciences building will be built in the district aligned with the WSU College of Nursing-Intercollegiate Center for Nursing, a satellite clinic of the WSU College of Veterinary Medicine, and the WSU Sleep and Performance Research Center already located in the district.

Research Triangle Park (RTP) in North Carolina, a technology and economic development powerhouse, grew out of a similar genesis by focusing on a vision and strategy that was promoted by a group of government, university, and business leaders as a model for technology and innovation leveraging economic development for the region. RTP recently completed a survey of peer science and technology districts and innovation centers to identify trends that will affect their future.³ The preliminary results of this study identified several external trends that are expected to challenge technology-based economic development in the coming years:

- The 21st century will be defined by biology and biomedical clusters that will prosper and grow differently than IT industries did.
- Science is becoming globalized and local clusters of technology can not exist in isolation, they must be connected to other innovation hubs and be committed to collaborative and interactive work processes.
- Collaborative work styles of new scientist will function differently than the “scientist in the lab” model requiring places and opportunities where scientists and technology experts can come together and collaborate and design solution strategies.
- The federal government will invest in basic research and companies will favor more open innovation strategies requiring systems that can take breakthroughs from raw basic research and move them quickly to commercialization.
- “Place” is important for the creative, collaborative work effort requiring spaces that are agile and flexible.
- Changes in technology transfer mechanisms will be needed to help universities treat intellectual property more like corporations do.

² Spokane University District Master Plan, Executive Summary vol. 1.5, 1995

³ Institute for the Future, “The Future of Technology-based Economic Development”, conducted for Research Triangle Foundation of North Carolina

WASHINGTON STATE UNIVERSITY

According to U.S. News and World Reports, Washington State University (WSU) is one of the top research universities in the country with over 200 fields of study including 46 PhD programs. The main campus in Pullman offers 100 majors and conducts research in many diverse fields including renewable energy-biofuels, advanced materials, environmental policy, and sustainable farming. Over 18,500 students were enrolled on the Spokane and Pullman campuses in 2007.⁴ The WSU system includes additional campuses in Vancouver and Tri-Cities, regional learning centers, extension offices in every Washington county, and distance degree programs.

Over \$213 million in research was conducted at WSU in 2007⁵ in sports medicine, driver fatigue research, nano-composite materials, renewable energy, animal health and agriculture. Key research centers in the university include Biomedical Research and Brain Behavior, Environmental Sustainability, Agricultural Research, and Human and Animal Health. Examples of ongoing research at WSU include:

- 1) WSU Division of Health Sciences in Spokane was created in 2006 providing a multi-disciplined center for health science research, teaching, and research in molecular biosciences, pharmacology, and related health disciplines. Over \$120 million in research was conducted in life sciences at WSU in 2005. A new College of Nursing, the College of Pharmacy, the Sleep and Performance Research Lab and other related research is housed on the WSU Spokane campus. The university collaborates with area health care facilities on a variety of research initiatives.
- 2) WSU School for Global Animal Health conducts international research, education, global outreach, and promotes disease control to improve the quality of animal health around the world. WSU immunologists have developed a screening methodology that can help researchers working on infectious diseases to quickly identify proteins leading to a vaccine against disease. This methodology could help to significantly reduce the spread and costs of infectious disease transfer from animal to human.
- 3) The International Marketing Program for Agricultural Commodities and Trade (IMPACT) assists the state in exporting agricultural products. The program focuses on identifying marketing opportunities and strategies for agricultural goods, addressing economic and technical impediments for current agricultural exports, and finding alternative products or processes that have export potential. As a trade-dependent state, it is important to identify and pursue market opportunities and respond to market barriers. IMPACT plays an important role in ongoing efforts to enhance the states exports.
- 4) The Clean Technology Center of Excellence in Pullman is conducting research in energy, computer science, and environmental disciplines and works in a collaborative partnership with the College of Engineering and Architecture. This Center of Excellence is primarily focused on sustainability and works closely with the Pacific Northwest National Laboratory.

⁴ USDE-IES, National Center for Education Statistics, Enrollment data Fall 2007

⁵ WSU Total R & D Expenditures, FY 2007

- 5) The Washington State University Transportation Research Center (TRAC) is a collaboration between Washington Universities and the Washington State Department of Transportation (WSDOT). Research topics include freeway and arterial management, intelligent transportation systems, geotechnical engineering, and freight travel. TRAC facilities at Washington State University include the Albrook Hydraulics Laboratory, Asphalt Materials Laboratory, High-Resolution X-Ray Tomography Laboratory, Washington Center for Asphalt Technology, and Wood Materials and Engineering Laboratory. Researchers in TRAC conduct a broad range of transportation related research including studies in hydraulic engineering, fluid mechanics, water resources, and fisheries engineering. The Asphalt Materials Laboratory can provide testing and research on a wide variety of construction materials used on roadways and other transportation projects. The High-Resolution X-Ray Tomography Laboratory provides non-invasive three-dimensional characterization and visualization of micro-structural features in opaque solid objects.

EASTERN WASHINGTON UNIVERSITY

Eastern Washington University (EWU) is a regional, comprehensive public university located in Cheney, Washington with programs available in several other cities in Washington. Classes are also available at the University District in Spokane. EWU's main campus is located 17 miles southwest of Spokane with a current enrollment of over 10,000 students.⁶ EWU offers undergraduate programs in 100 fields of study including biotechnology, cyber security, forensic science, urban planning, and electrical engineering. Graduate studies are available in computer science, mathematics, biology, and communication disorders and in 46 programs. EWU is the only regional university in Washington to offer a Doctorate in Physical Therapy. The Washington State Patrol Regional Crime Laboratory, the Washington State Digital Archives, and a new School of Computing and Engineering Sciences have recently been completed on the EWU campus. Construction of a new \$60 million science center on the Cheney campus of EWU was recently announced to provide a state-of-the-art facility that will supplement an older science building on campus.

GONZAGA UNIVERSITY

Gonzaga University was founded in 1881. The university is a private, four-year institution offering both undergraduate and graduate programs in the University District of Spokane. Enrollment for the 2007 academic year reached 6,873 students.⁷ Gonzaga University offers seven undergraduate degrees in 43 majors including engineering, business, and arts and sciences; 26 graduate degrees, and a Doctor of Jurisprudence through the Law School. The university offers "study abroad" programs in 15 different countries including an "Engineering in Italy" program allowing students to study in Florence.

WHITWORTH UNIVERSITY

Whitworth University, located in Spokane, is a private Liberal Arts University founded in 1890 affiliated with the Presbyterian Church USA. The university has an enrollment of 2,700 students and offers 55 undergraduate and graduate degree programs. Whitworth was recognized as one of the top producers of Fulbright Scholars with nine students and four faculty members selected for Fulbright Scholarships between 2000 and 2007. Academic

⁶ USDE-IES National Center for Education Statistics, Enrollment data Fall 2007

⁷ USDE-IES National Center for Education Statistics, Enrollment data Fall 2007

programs include biology, chemistry, communication studies, music, mathematics and computer science, physics, and theology and philosophy.

COMMUNITY COLLEGES OF SPOKANE

Community Colleges of Spokane include Spokane Community College, Spokane Falls Community College, and the Institute for Extended Learning. Enrollment at these three institutions exceeded 50,000 in the fall of 2007.⁸

- **Spokane Community College** offers Associate Degree programs, Career and Technical training, and transfer programs in health sciences, information technology, transportation and logistics, and science engineering and mathematics. Because of significant increases in enrollment this year, a number of programs are not accepting applications for the remainder of 2009.
- **Spokane Falls Community College** offers two-year transfer programs, career and technical programs, continuing education, and distance learning opportunities. Transfer majors include accounting, aviation, fine arts, economics, and modern languages. Career and technical training services are provided for web design, interior design, business technology, and hearing instrument specialist.
- **The Institute for Extended Learning** offers students access to adult education, business-oriented courses, and community classes. Through the Spokane Community Colleges, several centers around the region provide job skills and educational services to residents in Ferry County, Colville, and at the Fairchild Air Force Base. Through the Institute students can earn their Associate of Arts degree or various Associate of Applied Science degrees.

WALLA WALLA COMMUNITY COLLEGE

Located in Clarkston, Washington, the Clarkston campus of Walla Walla Community College offers academic transfer programs, associate degree programs, and certificates in biological sciences, chemistry, physics, agriculture science and technology, and business administration. Currently 4,600 students are enrolled in the college pursuing degrees in agri-business, biology, civil engineering technology, geology, and physics.

IDAHO UNIVERSITIES

UNIVERSITY OF IDAHO

The University of Idaho's main campus in Moscow has a current enrollment of 10,654 students and the Coeur d'Alene campus has 461 students. The University offers 103 majors in 10 colleges, 107 graduate degrees, and 31 doctoral degrees.

University of Idaho research projects are often conducted in conjunction with area industries and a business incubator on campus assists with technology transfer and commercial development of new products from the research facilities. The University of Idaho works with other Idaho universities, research laboratories, and industries to expand scientific capabilities and R & D within the state. Research areas include biomedical and molecular biology, agricultural and natural resources research, bioremediation and subsurface

⁸ USDE-IES National Center for Education Statistics, Enrollment data Fall 2007

sciences, and nanotechnology and materials sciences. The University has six research institutes:

- Aquaculture Research Institute – This institute coordinates research among educational institutions and industry focusing on commercial aquaculture and conservation. The institute fosters collaboration between neighboring states, tribal councils, extension centers, and industry in the field of aquaculture
- Center for Advanced Microelectronics and Biomolecular Research – The center creates advanced microelectronics for NASA, Department of Defense, and commercial applications. The National Institutes of Health are working with electrical engineers at the Center to combine molecular biology and microelectronics to develop electronic sensors.
- University of Idaho National Institute for Advanced Transportation Technology (NIATT) – This institute develops engineering solutions and technologies for transportation problems. The Center for Traffic Operations and Control builds and evaluates technology products supporting advanced traffic control systems. The Center for Clean Vehicle Technology researches and tests technologies that reduce the impact vehicles have on the environment.
- Idaho Water Resources Research Institute – Researchers work with local, state, and federal agencies, national laboratories, other universities, and industries focused on water quality, water supply, and water management.
- Microelectronics Research and Communications Institute – The institute is dedicated to research in microelectronics, computer communications and system architecture, avionics, graphics technology, and signal processing.
- Environmental Research Institute – The institute focuses on basic and applied research in molecular biology and bio-process technology for physical and chemical systems, plants, animals, and microbials.

LEWIS-CLARK STATE COLLEGE

The main campus of Lewis-Clark State College is located in Lewiston, with satellite facilities in Coeur d'Alene and Orofino. Lewis-Clark State College is a public four-year college offering academic and technical degrees. Academic programs are available in business, education, humanities, natural sciences, nursing and health sciences, and social sciences. Professional technical programs are available in business technology and technical and industrial services. Current enrollment in the college is 3,612.⁹ The college provides a bachelor's degree completion program for the residents of northern Idaho. The Region II Small Business Development Center is located on this campus offering a variety of entrepreneurial support programs throughout the region.

NORTH IDAHO COLLEGE

Located in Coeur d'Alene, North Idaho College is a comprehensive community college offering college transfer programs, professional-technical programs, and workforce training and community education. Currently 4,856 students are enrolled in the college. Enrollment in the college's workforce training programs is 7,595. The campus is located in Coeur d'Alene with outreach centers in Bonners Ferry, Ponderay, and the Silver Valley.

⁹ USDE-IES National Center for Education Statistics, Enrollment data Fall 2007

JOINT WASHINGTON AND IDAHO EDUCATION INITIATIVES

WWAMI

This unique medical education program began in 1971 to improve access to medical education in the five states that are part of this collaborative initiative: Washington, Wyoming, Alaska, Montana, and Idaho (WWAMI). Currently there are 40 first year medical students sharing resources at two major research universities in Moscow and Pullman linking the University of Idaho and Washington State University in an effort to improve health care in the northwest, provide enhanced primary care and medical research, and ensure accessibility to public medical education.

College of Pharmacy USTUR Program

Washington State University and the University of Idaho conduct collaborative research programs through the U.S. Transuranium and Uranium Registries allowing Health Physics faculty and students to work on joint projects and research utilizing the facilities of both institutions.

NATIONAL, STATE, AND PRIVATE RESEARCH LABORATORIES

PACIFIC NORTHWEST NATIONAL LABORATORY (PNNL)

Pacific Northwest National Laboratory is one of 10 national laboratories managed by the Department of Energy (DOE), Office of Science. The lab, located in Richland, Washington just west of the IPH study area, performs research for various government agencies, industries, and universities. PNNL conducts over \$881 million in research annually and manages a national scientific user facility, The William R. Wiley Environmental Molecular Sciences Laboratory.

PNNL provides outstanding facilities and state-of-the-art scientific equipment allowing renowned scientists and engineers to collaborate on applied and fundamental research and innovation. Core capabilities currently include chemical and molecular sciences, chemical engineering, applied materials science and engineering, advanced instrumentation, and biological systems science. PNNL is recognized for their applications in information analytics and computer science. The Energy Smart Data Center and the Smart Grid research at this lab has assisted in developing electrical grid computing capabilities and effectively engaged other national and international organizations to collaborate on clean technology development projects.

IDAHO NATIONAL LABORATORY

Idaho National Laboratory is a Department of Energy (DOE) facility dedicated to supporting DOE's missions in nuclear and energy research. The laboratory, located south and east of the IPH study area near Idaho Falls, collaborates with leading industrial, academic, and governmental personnel on projects in advanced fuel cycle programs, analytical chemistry, batteries, cellulosic feedstock, energy storage and transportation, the Freedom Car, and plug-in hybrid electric vehicles.

Schweitzer Engineering Laboratory (SEL)

The Government Services Division of SEL conducts ongoing research to ensure the security, safety, and reliability of electrical power services at critical facilities such as military

bases, sensitive research facilities, and related operations. SEL provides training and programs to these customers to improve their ability to diagnose problems, respond to power system issues, and identify related system needs.

ReliOn Inc.

ReliOn develops modular, cartridge based proton exchange membrane fuel cell technology and produces stationary fuel cells for energy and backup power, uninterruptible power supplier (UPS), digital power needs, and off-grid power issues. ReliOn is located in Spokane and is a spin-off of Avista Corporation serving both public and private clients.

OTHER TECHNOLOGY BUSINESS RESOURCES

SPOKANE INTERCOLLEGIATE RESEARCH AND TECHNOLOGY INSTITUTE (SIRTI)

Located on the campus of Washington State University in the Spokane University District, SIRTI is a Washington State economic development agency dedicated to accelerating the development and success of technology based companies in the Inland Northwest. SIRTI teams experienced entrepreneurs and business professionals with start-up innovation companies to help them navigate the challenges often associated with developing a new business operation.



According to the National Business Incubator Association, firms that have “graduated” from technology incubator programs are four times more likely to succeed compared to companies that were not incubator tenants. SIRTI works aggressively to leverage state and local resources, Small Business Innovation Research grants, and they recently announced the creation of a Technology Growth Fund to provide capital resources for technology companies. SIRTI also assists companies in accessing other private capital resources to help firms secure the financing required to successfully bring new products and services to the marketplace.

UNIVERSITY OF IDAHO BUSINESS TECHNOLOGY INCUBATOR (BTI)

University of Idaho Business Technology Incubator is located adjacent to the main campus of the University of Idaho in Moscow and provides over 17,000 square feet of affordable space along with a range of support services for start-up companies. The incubator also brokers partnerships between University faculty, researchers, engineers, scientists, and tenant companies. Tenants include Computing Metrology Laboratory, a firm devoted to measurement technologies; Cypress, a publically traded firm designing and fabricating programmable controllers, general-purpose programmable clocks and memories for the consumer, data communications, and green power markets;



GoNano Technologies, a nano-materials research and development company with applications in photovoltaics, hydrogen storage, and other catalytic energy applications; and Orielle, a computer science research and development firm focused in the defense industry.

BTI was created to leverage the commercialization of new technologies through start-up companies and to encourage Idaho businesses to identify technology transfer opportunities that could be beneficial to their businesses and continued economic development in the state. BTI also offers “virtual tenant” services for businesses that do not occupy office or lab space in the incubator but take advantage of facilities in the incubator including conference rooms, office equipment, and mentoring and networking resources.

PACIFIC NORTHWEST NATIONAL LABORATORY ECONOMIC DEVELOPMENT OFFICE

The Economic Development Office of the Pacific Northwest National Laboratory (PNNL) provides assistance to technology based businesses providing technical assistance from leading researchers and engineers with access to world-class facilities and laboratories, assistance in identifying collaborators in specific fields that may help firms compete more effectively for grants and research funds, and they can provide contacts to venture capital firms, assistance with Small Business Innovation Research (SBIR) funding, and resources. Small businesses are eligible for up to five days of free technical assistance each year from scientists and engineers at PNNL to help resolve technical problems, improve production processes, or assist with other technology related applications.

SECTION 2: PUBLIC UTILITIES AND COMMUNICATION INFRASTRUCTURE

The availability and quality of public utilities and communication infrastructure is a significant challenge for many of the non-metro counties in the Inland Pacific Hub study area. That is not to suggest that utility and communications infrastructure in Spokane or Kootenai Counties are without challenges; however, the density of population, the availability of larger municipal water and wastewater systems and the associated professional staff, and a concentration of commercial and industrial users provides more robust utility and communications services in these two counties.

Creating and maintaining an environment that can support a range of business and industrial operations is crucial to the economic future of this region. There are significant areas within the study area that will not be attractive to many industrial and business operations. These areas lack reliable high-speed broadband services, readily available water and wastewater infrastructure, a diverse range of workforce skills, and agile transportation facilities. Communities that can not provide a competitive operating environment for key business sectors must build on targeted niche strategies such as home-based businesses, unique tourism opportunities such as adventure tourism, or entrepreneurial based businesses that locate where the owner wants to live. The economy of these areas will most likely depend on small niche market businesses, tourism, agricultural and natural resource production, and out-of-county employment in the future. Meeting the technology and infrastructure needs of these businesses will be crucial to supporting a viable economy in many of the rural areas of the Inland Pacific Hub study area.

State, regional, and local economic development professionals and area businesses interviewed during the course of this study have provided important perspective on the utility and communication infrastructure challenges and opportunities facing this region. Although the utility and communication infrastructure challenges facing the non-metro areas of the region may be different than the utility and communication challenges that face the metropolitan counties, the Inland Pacific Hub study area as a whole could benefit from regional planning efforts that could identify solution strategies and financing opportunities for these issues at a regional level that might benefit all the counties of the region.

POWER GENERATION IN THE INLAND PACIFIC HUB STUDY AREA

Hydroelectric power in the Pacific Northwest has produced inexpensive electrical rates compared to the rest of the United States for many years.¹⁰ Power generation and the cost of energy were not considered to be an issue for economic developers interviewed in this study. Although other regions of the country face increasingly higher power costs, the electricity and energy resources of the Inland Pacific Hub study area can be a competitive advantage for the study area, particularly for those businesses that utilize a significant amount of power in their production and operations.

Bonneville Power Administration (BPA) generates and delivers the wholesale power supply to the IPH study area. BPA, a federal agency, is responsible for assuring that the Pacific

¹⁰ "Generating Electric Power in the Pacific Northwest: Implications of Alternative Technologies", Rand Corporation, 2002

Northwest has adequate, efficient, economical, and reliable power supply and transmission resources. The agency also monitors the impacts of the Federal Columbia River Power System on fish and wildlife. Although hydropower power is the primary power supply in the IPH study area, energy conservation plays an important role and BPA is investing in renewable generating resources including wind and geothermal projects.

Grant County Public Utility District (PUD) owns and operates two hydro-dams on the Columbia River providing power generation to customers in Central Washington and the Pacific Northwest. Their Priest Rapids and Wanapum Dam produce 2,000 megawatts of electricity. Grant County PUD sells electricity to Grant County residents and to 22 regional utility companies in Washington, Oregon, and Idaho. Grant County PUD is currently testing wind power sites in Grant County and holds contracts for power from the Nine Canyon Wind Project owned by Energy Northwest.

The Northwest Power and Conservation Council was created by Congress in 1980 to provide a forum for citizens and organizations in the states of Idaho, Washington, Montana, and Oregon concerned about the use of Columbia River Basin resources including hydropower. The Council is tasked with developing a 20-year power plan to guarantee adequate and reliable energy at the lowest economic and environmental cost for the northwest utilizing a range of resources in addition to hydroelectric power. The Columbia River Basin area encompasses all of the Inland Pacific Hub study area as well as parts of Canada, Washington, Idaho, western Montana, and a significant portion of Oregon.¹¹

The Northwest Power and Conservation Council recently completed the draft of their annual assessment of the Pacific Northwest region's power supply for 2011 and 2013.¹² The "Sixth Northwest Power Plan" finds that the region has ample power resources for the next five years to avoid any significant power curtailments. This was based on existing generation resources and those currently under construction. **Exhibit 1** below shows the power generation resources in the Pacific Northwest. **Exhibit 2** below shows what portion of the overall energy capacity each of these resources provides for the northwest region (Washington, Idaho, Oregon, and Montana).

¹¹ www.nwccouncil.org/library/2004/2004-16/map.htm

¹² "Pacific Northwest Resource Adequacy Assessment", Northwest Power and Conservation Council, August, 2008

Exhibit 1: Pacific NW Generating Capability

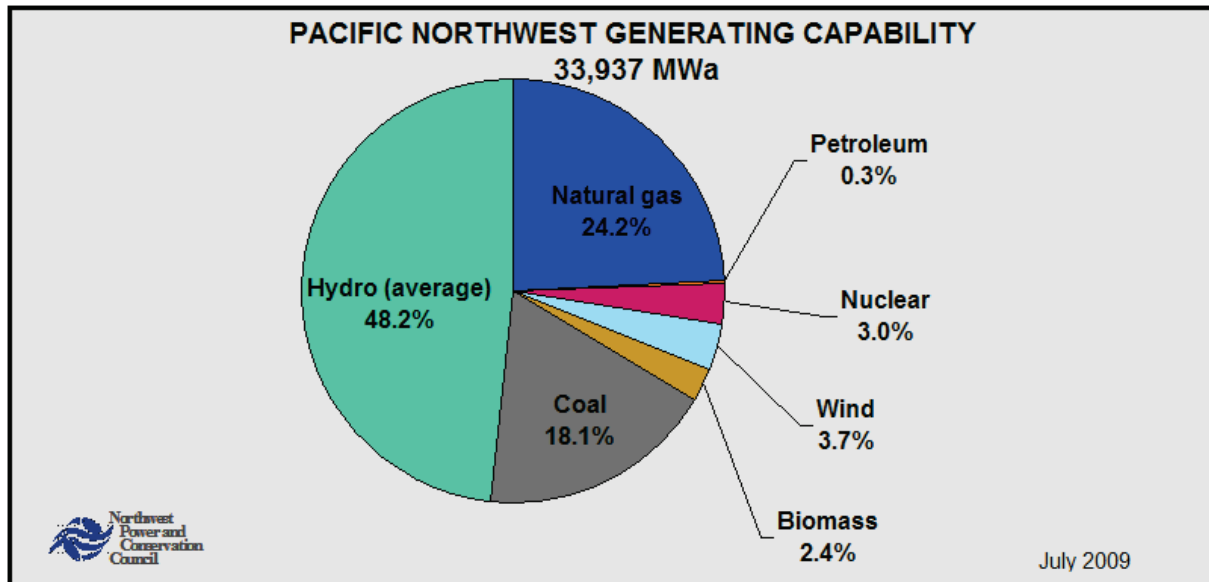
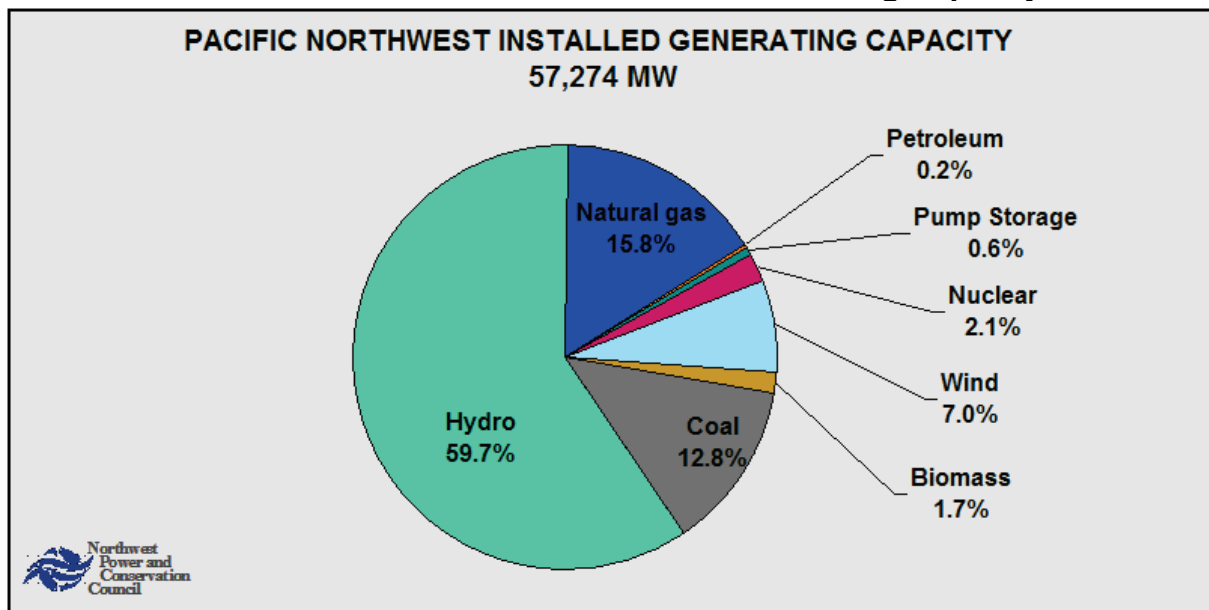


Exhibit 2: Pacific NW Installed Generating Capacity



Hydroelectric power accounts for almost 64 percent of the power supply capacity in the Pacific Northwest and a significant amount of that power is generated on the Columbia River and its various tributaries. A much smaller amount of electrical capacity in the region, about 14 percent, comes from coal fired plants with a similar capacity generated from plants that burn natural gas.¹³

There are seven hydroelectric generation facilities generating 50 megawatts or more within or adjacent to the IPH study area (**Exhibit 3**):

¹³ "Electricity Generation for the Pacific Northwest", June 2006, updates June 2009, Northwest Power and Conservation Council

Exhibit 3: IPH Hydroelectric Generation Facilities

Facility Name	Capacity in Megawatts	Owner
Boundary	1039.8	City of Seattle
Box Canyon Dam	60	Pend Oreille PUD
Cabinet Gorge	213.3	Avista
Dworshak	400	Corps of Engineers
Little Goose	810	Corps of Engineers
Long Lake	71	Avista
Lower Granite	810	Corps of Engineers

There are no coal generation plants within the IPH study area, but five natural gas facilities, four owned by Avista and one owned jointly by Cogentrix Energy and Avista Power. The Hopkins Ridge Wind Facility in Garfield County is owned by Puget Sound Energy and has a capacity of 150 megawatts. Four biomass facilities are located in the IPH study area according to the most recent Northwest Power and Conservation Council report (Exhibit 4).¹⁴

Exhibit 4: IPH Biomass Plants

Facility	Capacity	Owner
Kettle Falls Generation Station	50.7	Avista
Potlatch Lewiston 3	28.8	Potlatch Corp.
Potlatch Lewiston 4	65	Potlatch Corp.
Wheelabrator Spokane GEN1	26	City of Spokane

The “Sixth Northwest Power Plan” draft released in September, 2009 is currently being reviewed by the public. The plan estimates that 58 percent of the new demand for electricity over the next five years within the Pacific Northwest can be met through energy efficiency efforts.¹⁵ Recent research indicates that adequate energy resources will be available to support the Inland Pacific Hub study area’s economic future. According to economic developers in the region, the availability of adequate power resources is not an issue of concern for existing businesses and has not been a concern expressed by companies evaluating the region for potential business locations. The power capacity and pricing in the region is a competitive advantage for economic development.

POWER QUALITY

Many companies are dependent on electronic equipment and as a result power quality and power reliability has become increasingly important issues for many businesses and the electric utilities that serve them. Machines are highly sensitive to power fluctuations, “brown

¹⁴ “Electricity Generation for the Pacific Northwest”, Northwest Power and Conservation Council, June 2006 updated June 2009

¹⁵ “Sixth Northwest Power Plan”, September 2009, Northwest Power and Conservation Council

power” and outages as these changes in power quality can cause data errors, equipment damage and shut-downs, and loss of data.

Evaluating the power quality and reliability of specific power distribution systems in the IPH study area is not a part of this study; however, significant power quality and reliability factors can influence corporate site location decisions. Questions about power quality issues were included in interviews with businesses and economic developers interviewed as a part of the study. Although there may be some power quality issues within the region, they are not perceived to be an issue of significant concern. Frequently the solutions to power quality issues require a collaborative effort between the company and their power utility provider.

Several small wineries interviewed within the study area reported occasional “blips” in the power system resulting in the shut-down of climate control devices in the wineries. The potential loss of these climate control devices is a crucial issue for wine production with some wineries installing alarm systems to alert the winery operators when these climate control devices are no longer in operation. These devices must be manually reset to protect the wine fermentation process. Local power distributors have responded and made some improvements and are continuing to monitor the situation. Based upon discussions with regional economic developers, the power distributors within the IPH study area are responsive to concerns about power quality and work closely with businesses in an effort to resolve them.

POWER DISTRIBUTORS IN THE INLAND PACIFIC HUB STUDY AREA

The largest electric power distributors within the study area are Avista Utilities and Inland Power and Light. Avista is involved in natural gas transmission, power transmission, and electrical distribution. The company is investor-owned and traded on the New York Stock Exchange. The company provides electric and natural gas services to over 481,000 customers. Within the Inland Pacific Hub study area, Avista distributes power from hydroelectric, natural gas, and biomass facilities. Inland Power and Light is a cooperative owned by the members in their service area. Inland Power has 38,000 member customers and recently moved into a new headquarters facility in Spokane.

In addition to Avista and Inland Power & Light, there are other power distributors in the Inland Pacific Hub study area including several municipal utility districts owned and operated by local governments and cooperatives that are not-for-profit corporations managed by a board of directors. **Exhibit 5** shows the Avista service area for electrical transmission, natural gas distribution, and electrical distribution. **Exhibit 6**, captured from the Inland Power and Light website, shows the electric service area denoted in green.

Exhibit 5: Avista Power Distribution Area

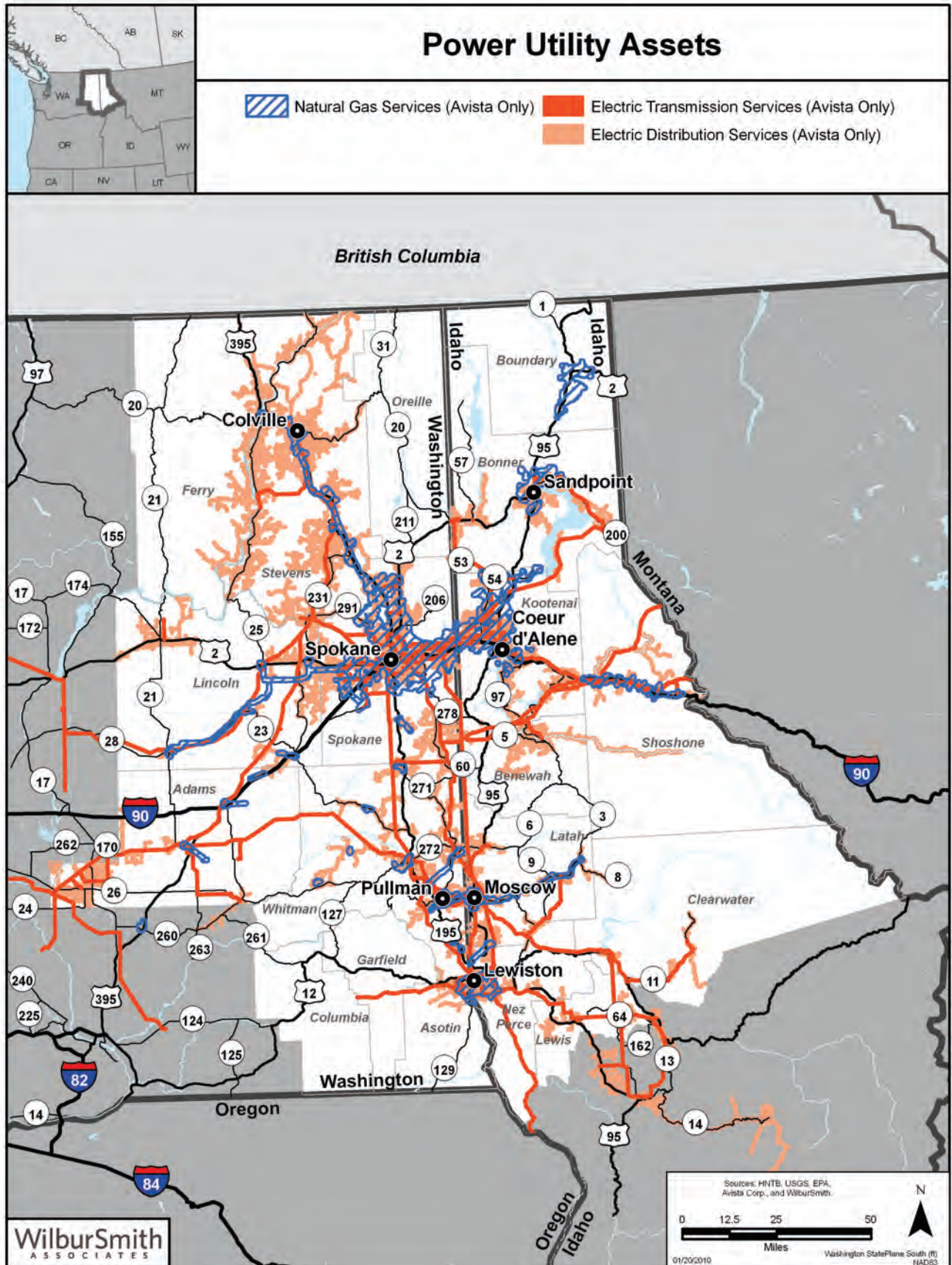
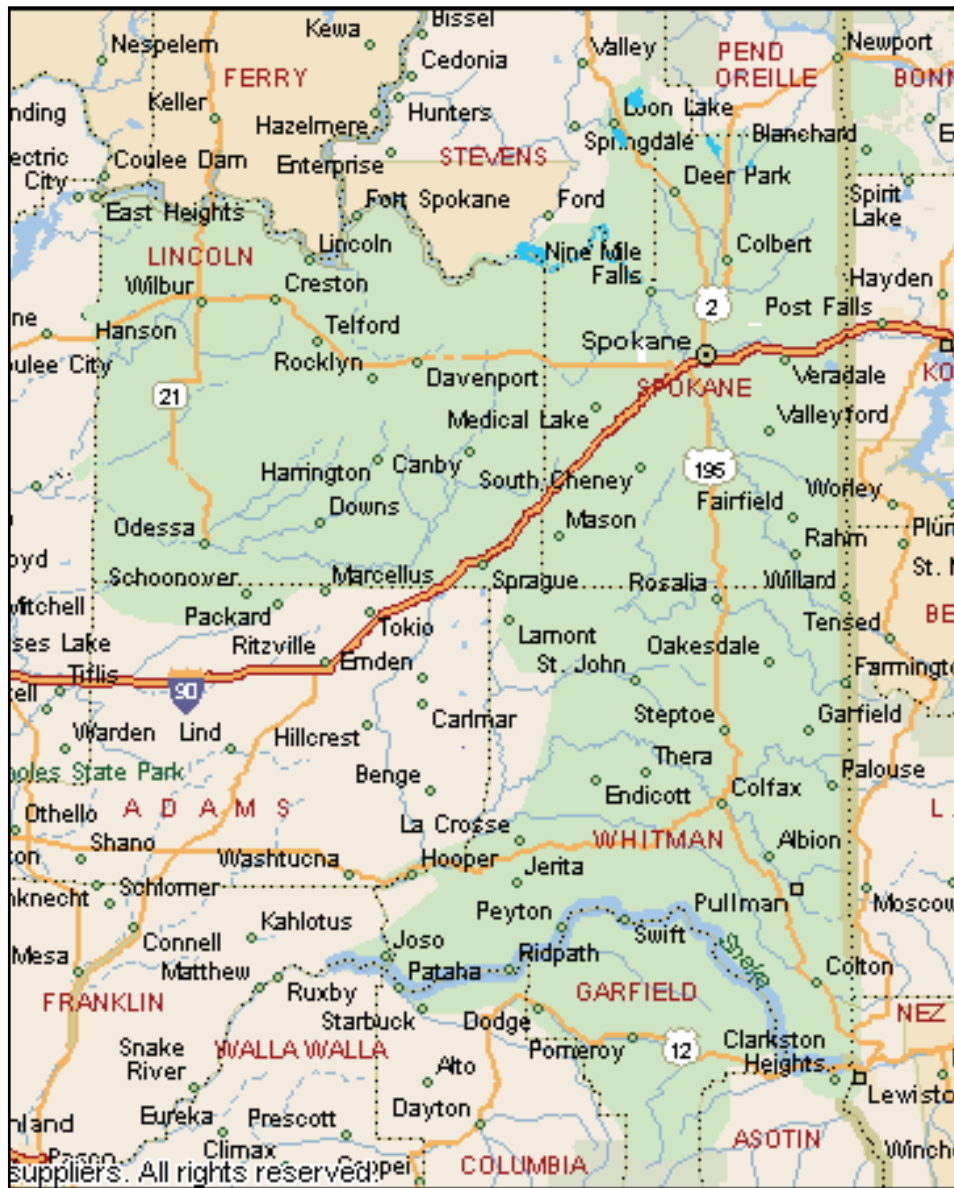


Exhibit 6: Inland Power & Light Service Area



Within each of the counties in the IPH study area, there may be more than one power distributor. The power distributors for each county in the study area are listed below:

- **Adams County** – Avista Corporation, Inland Power and Light, and Big Bend Electric Cooperative (has only one electric customer, Quail Ridge Golf Course)
- **Asotin County** – Avista Corporation, Asotin County PUD, Inland Power and Light, Clearwater Power Co.
- **Benewah County** – Avista Corporation, Clearwater Power Co., City of Plummer PUD
- **Boundary County** – Bonners Ferry's Electric Department, Bonners Ferry Electric Cooperative, Northern Lights
- **Bonner County** – Avista Corporation, Inland Power & Light, Northern Lights

- **Clearwater County** – Clearwater Power Company
- **Columbia County** – Columbia Rural Electric Association, Inland Power & Light, Pacific Power
- **Ferry County** – Avista Corporation, Inland Power & Light, Ferry County Public Utility District
- **Garfield County** – Inland Power & Light, Clearwater Power Co., PacifiCorp
- **Kootenai County** – Avista Corporation, Kootenai County Electric Cooperative
- **Latah County** – Avista Corporation, Clearwater Power Co.
- **Lewis County** – Avista Corporation
- **Lincoln County** – Avista Corporation, Inland Power & Light
- **Nez Perce County** – Avista Corporation, Clearwater Power Co.
- **Pend Oreille County** – Pend Oreille Public Utility District, Inland Power & Light
- **Shoshone County** – Avista Corporation, Clearwater Power Co.
- **Spokane County** – Avista Corporation, City of Cheney Light Department, Inland Power & Light, Kootenai Electric Cooperative, Modern Electric Water Company, Vera Water & Power
- **Stevens County** – Avista Corporation, Inland Power & Light
- **Whitman County** – Avista Corporation, Inland Power & Light, Clearwater Power Co.

In those counties where there are multiple power distributors, it is important to communicate designated service areas for each of the distributors to avoid any confusion for existing or future businesses considering locations in the region. Likewise, developing a collaborative partnership between distributors can be a competitive advantage when trying to attract a large power user in the event that a single distributor can not meet all of the potential customer's demands or power quality requirements.

SUSTAINABLE ENERGY RESOURCES

A 2007 study conducted by the Rand Corporation for four Pacific Northwestern states; Idaho, Washington, Montana, and Oregon, assessed the critical energy issues that could face this region over the next 20 years.¹⁶ Concerns about energy supply, pricing, and the environment led policy-makers to question the risks and opportunities facing the region relative to electrical supply and demand. The Northwest Power and Conservation Council's Sixth Annual Power Plan has considered a broad range of potential energy resources to meet the needs of the four Pacific Northwest states. A number of technologies were evaluated in the plan including renewable generating resources such as hydropower, biogas from a variety of sources, geothermal, wind, solar, fossil generating resources such as coal and natural gas, nuclear generating resources, and energy storage systems including sodium sulfur batteries and compressed air energy storage.

The Northwest Power and Conservation Council's plan relies on commercially-proven technologies to insure that the energy demands for the region for the next twenty-year period could be met. "Power generation technologies differ in their ability to deliver services and in the cost of providing these services".¹⁷ Within the IPH study area there are several biomass and natural gas generation facilities and additional technologies and organic resources are being evaluated to determine if additional "green" power options are

¹⁶ "Generating Electric Power in the Pacific Northwest", RAND Corporation Report, September 2007

¹⁷ Northwest Power and Conservation Council, "Sixth Annual Power Plan", September 2009, page 7

economically feasible. There are several existing wind farms and other wind farm sites are currently being evaluated within the region. Energy generators in the region continue to evaluate alternative energy resources to insure the region has adequate power capacity to support future population growth and economic development while continuing to improve environmental quality.

As an example, Clearwater Power Company co-owns Coffin Butte Resource Project in Oregon. This project uses methane gas from decomposing landfill waste to generate electricity. The United States Environmental Protection Agency has recognized the venture as one of the most efficient projects in the country. The project generates about 5.66 megawatts of electricity, enough to provide power to about 4,000 homes. Clearwater Power Company also co-owns Reedsport Ocean Power Technologies (OPT), a project to develop the technology to harness ocean wave resources to generate power. In the initial stages of operation, OPT expects to generate two megawatts of energy that could power approximately 1,600 homes.

Renewable Energy Systems (RES) develops, owns, and operates wind farms. The company has developed two wind projects in Columbia County and has one project under construction. Together these three projects will generate 360 megawatts of power when they are completed. Puget Sound Energy and RES have also filed a conditional use permit for a wind energy facility in Garfield County.

Although the Pacific Northwest National Laboratory (PNNL) and the Idaho National Laboratory (INL) are located outside of the study area, both of these facilities offer exceptional technological resources to address technology and infrastructure issues in the IPH study area. PNNL's Energy Efficiency and Renewable Energy market group provides science and technology support focused on advanced fuel-efficient transportation including hydrogen technology, processes to convert biomass to fuels and chemicals, and effective use of renewable resources. INL has more than 300 scientists and engineers working in the Energy, Environment Science & Technology division. This division leads the nation's biomass feedstock harvesting research and is also conducting research in materials characterization, geophysics, and nuclear energy.

NATURAL GAS

Avista Utilities provides natural gas to the Inland Pacific Hub study area. In recent years natural gas markets have been very volatile primarily due to external influences such as weather, market speculation, and increasing demand relative to supply. Natural gas prices and availability in the Inland Pacific Hub study area have traditionally been lower than most of the U.S. due in part to the proximity of natural gas sources and pipeline capacity in the region.¹⁸ The region's proximity to large natural gas production areas in Canada and the U.S. Rockies has resulted in lower natural gas prices in the region. New pipelines built in recent years have resulted in transport of these supplies to other areas of the country creating additional competition for supply and rising prices.¹⁹ The availability of natural gas supplies and lower pricing is a competitive advantage for the region.

¹⁸ Public Utility Commission, State of Idaho, "Idaho Natural Gas Utilities", 2008

¹⁹ "Natural Gas Prices in the Pacific Northwest", Northwest Gas Association, Volume 3, 2008

WATER AND WASTEWATER INFRASTRUCTURE

The availability of water and wastewater infrastructure in the Inland Pacific Hub study area involves many complex legal issues, environmental regulations, water quality requirements, development regulations, and the habitat needs of fish and wildlife. In the non-metro areas of the region, water and wastewater issues may be one of the most significant constraints to economic development in the future according to several economic development professionals interviewed for this study.²⁰ Securing new water rights or transferring water rights can take as long as three years, making it an expensive process. Land with existing water rights that can be documented and preserved is becoming increasingly expensive even in more rural areas.

In some cases the time required to secure or transfer water rights is not the most challenging issue, finding enough water has become a significant challenge for some communities in the Inland Pacific Hub study area. This problem is not exclusive to the non-metro counties either as municipal utilities in the region report challenges in identifying adequate water resources to support anticipated future development. In the State of Washington, the Department of Ecology has been charged by the State Legislature with the responsibility to provide for the efficient administration of the state's waters. In Idaho, the Department of Water Resources regulates water in the state.

Limited water availability limits economic development in the Inland Pacific Hub study area. The Idaho Water Resource Board recently approved a first-ever “recharge” program for an aquifer in the southern portion of the state. This recharge was possible because of average or above-average snow falls last winter, rain and cooler temperatures in the spring, and carryover storage in other reservoirs. Availability of groundwater and surface water affects agricultural production, manufacturing, development, and municipalities and utility districts. The State of Washington Department of Ecology recently produced a “Water Smart” guide designed to help Washington residents understand the threats to the state's water supply that could ultimately impact the state's economy.²¹

Wastewater treatment issues are equally complex. Wastewater treatment and ultimately the return of the treated wastewater to area water resources requires that water temperature, biological levels, and other parameters must be carefully monitored and treated to insure the discharge meets all treatment requirements. Lagoon systems, settling ponds, aerated spray fields, trickling filtration, biofilters, activated sludge digesters, and other treatment options are used in the Inland Pacific Hub Study Region in the waste treatment process. In Washington, the Department of Ecology issues permits for wastewater treatment facilities and wastewater discharge. Currently the State of Idaho does not have NPDES permitting authority, and wastewater discharge permits are issued by the Environmental Protection Agency, Region 10 administrators except for those permits on tribal lands.

Agricultural processing operations, as well as manufacturing and some assembly and production businesses, may be required to pre-treat their wastewater on site prior to discharging it to a treatment plant. Tertiary treatment requirements can be very expensive particularly in those cases where the waste stream is heavily concentrated with one particular element, as is often the case with agricultural processing where the waste stream

²⁰ State, Regional, and Local Economic Development Agencies interviewed for study

²¹ “5 Ways to Secure Water for Washington's Future”, State of Washington Department of Ecology

may have heavy BOD loading. Waste treatment can be a significant issue for food processors and wineries. According to several regional economic developers, wastewater treatment issues may ultimately constrain the expansion of wineries in the region in the future. This is an issue internationally, not just in the Inland Pacific Hub study area, and continuing research in specific winery wastewater treatment systems offer some promising options for low cost and effective treatment including land based treatment systems.²²

The Growth Management Act in Washington requires cities and counties to address quality and quantity of water in preparing their plans. Communities must address projected demands for water to support population growth, economic development, and other community development factors and develop a plan for providing water services in advance of anticipated demand. In Idaho, an administrative process is required for an application for new water rights or to change existing water rights or new statutory claim. There are areas around the state that have been designated as critical ground water areas or ground water management areas in which any new ground water development is strictly controlled.

Water and wastewater treatment is most cost effective in areas where there is a concentration of population. In more rural areas of the IPH study area, some communities must rely on wells and septic tanks to address these utility issues. There is increasing concern about groundwater permit exemptions or homestead exemption in the State of Washington that allow for the use of groundwater under certain conditions without securing any permits. Research by the Water Resources Division in the Department of Ecology indicate that the largest number of permit-exempt water wells drilled in the last 8 years were drilled in Spokane County when compared to the other counties in the state.²³ The Washington Department of Ecology is seeking clarification to groundwater exemptions through legislation or rulemaking. The resolution of these groundwater issues are of significant concern to all of the counties in the IPH study area.

The water and wastewater utility resources can vary significantly even within a single county. Based upon interviews with regional businesses, agencies, and economic developers, securing permits for water and wastewater resources is already an economic development issue within the region. Planning for and addressing the future water and wastewater needs of the Inland Pacific Hub study area may well be one of the most pressing issues affecting the future economic development of this region.

BROADBAND AND TELECOMMUNICATIONS SERVICES

Strategic Networks Group North America recently completed a business survey finding that 86 percent of the businesses surveyed ranked fiber connectivity as essential or very important in their consideration for remaining at their current business location.²⁴ Internet access is essential in the global marketplace and for more rural communities, the availability of high speed internet access is absolutely crucial to their economic future.

Many urbanized communities have access to highly efficient telecommunications services and broadband access that can be effectively deployed for businesses, homes, universities,

²² "A low cost land based winery wastewater treatment system: Development and preliminary Results", CSIRO Land and Water Science Report, August 2008

²³ "5 Ways to Secure Water for Washington's Future", State of Washington Department of Ecology, page 7

²⁴ www.sngroup.com

and government institutions. Unfortunately, many rural areas do not present an attractive business option for telecommunications companies and those areas frequently do not have ready access to the broadband network services they need to compete.

As an example, the City of Spokane is linked to the Pacific Northwest GigaPop which provides robust, highest-speed access to current state of the art Internet; next generation internet services and technology, and exclusive R & D test beds where future internet technologies are being developed. Researcher will be able to utilize this to transfer massive computer files to other researchers who can then work collaboratively on projects, share data, and access other resources including equipment and data at other national laboratories and universities. At the present time the partners in this project are universities, businesses, and cities with access to a gigabit point of presence, or access to Internet 2, a network that supports this kind of collaboration.

Broadband networks have become the backbone of many business operations linking small businesses to global economic opportunities and creating new businesses like Amazon, Yahoo, and Google. Health care providers in rural China can discuss microsurgery techniques with major medical centers in the U.S. and treat medical conditions that would have been fatal in the past. Broadband networks have leveled the playing field for many types of businesses creating a truly “flat world”. In communities where broadband connectivity is not available, questions are being raised about the future of these areas and the important public good generated from access to quality internet services.

In a May 2009 report from the Federal Communications Commission, the need for broadband access in rural areas and low-income neighborhoods in urban communities was evaluated, and recommendations developed to more effectively address these issues.²⁵ This report calls for a national broadband plan to: coordinate rural broadband efforts through better coordination at all levels, coordination in Tribal areas, mapping of broadband service availability and infrastructure deployment, and creating strategic responses to overcome the challenges to broadband deployment in rural areas.

A study being conducted by the Washington Utilities and Transportation Commission (WUTC)²⁶ is evaluating the future of telecommunications in Washington State. The study found that changes in technology have fundamentally altered the telecommunications industry. Telecommunications companies of the past provided wired land line telephone services and enjoyed monopolies in their service areas. States regulated these service providers to ensure that rates were fair, just and reasonable. Those same companies now face competition from cable, wireless, Internet and other local exchange companies. Today telecommunications companies compete for customers and the return on investment margins are smaller and smaller. Public Service Commissions who regulate these telecommunications companies are evaluating their policies to insure that consumers are protected and improved services can be provided to a broader range of customers.

The availability of reliable, high speed broadband service is important to the economic future of the Inland Pacific Hub study area. Most of the state, regional, and local economic developers in the IPH study area outside of Spokane and Kootenai Counties expressed

²⁵ “Broadband Opportunities for Rural America”, a joint initiative of the FCC and USDA

²⁶ WUTC, <http://www.wutc.wa.gov/webimage.nsf/0/FDEC1959124F69E588257306006BABB5>

concern about the availability and quality of broadband connectivity in the remainder of the region and what it could mean for business attraction, entrepreneurship, and small businesses in the future. A recent study conducted by the US Department of Agriculture found that rural communities that had broadband access by 2000 had higher employment growth and nonfarm private earnings compared to similar communities that had little or no broadband access as of 2000.²⁷ According to this study, an estimated 55 percent of U.S. adults had broadband access at home in 2008; however, only 41 percent of adults in rural households had broadband access. Within Spokane and Kootenai Counties, broadband services are highly reliable and competitively priced. For these counties, broadband services are a competitive advantage for economic development.

When Avista sold its telecommunications arm, it retained rights to a dark fiber optic network that is available for future needs and economic development. VPnet, the Virtual Possibilities Network has been developed using this fiber and provide regional higher educational institutions and other partner organizations access to fiber optic telecommunications networks for projects that are primarily focused on education, research and development, and incubators. VPnet currently links several universities and cities in the IPH study area including Clarkston, Pullman, Spokane, Sirti, WSU, EWU, and the Mead School District. Current projects that are underway as a result of VPnet including a program as the WSU College of Pharmacy that is providing access to the INHS Meditech system allowing enhanced education and training for health and pharmacy students, a business plan competition workshop, and the Inland Northwest Collaborative E-Learning Project that has received funds to develop a digital classroom that might ultimately provide students throughout the region access to advanced classes in mathematics, physics, and biological sciences.

Although rural and suburban areas have access to the internet, broadband technologies have been less prevalent in rural areas than in more densely populated areas because the rural and suburban areas are less profitable. A 2008 study conducted by CBG Communications for the Washington Utilities and Transportation Commission assessed broadband services in five eastern Washington counties including Columbia, Ferry, and Stevens Counties. This study found that broadband availability varied widely within counties and across counties in this particular region. While 72 percent of residents in the study area had internet access, only 32 percent had wired broadband and in Ferry County, just 15 percent of residents had wired broadband.²⁸ According to this study the primary obstacles to broadband availability in more rural areas are:

- Low or lower population density
- Relative distance of consumers from major transportation corridors
- Physical impediments resulting from mountainous and heavily forested terrain
- Problems encountered securing public and private rights-of-way in a timely manner
- Longer than acceptable Return on Investment for private providers
- Limitation of existing broadband technology

²⁷ "Broadband Internet's Value for Rural America", US Department of Agriculture, Economic Research Report, August, 2009

²⁸ "Broadband Study Report for Washington Utilities and Transportation Commission", prepared by CBG Communications, Inc., June 2008

An abstract prepared for the Pacific Northwest Economic Region annual conference earlier this year provided an overview of public initiatives in the Pacific Northwest states and provinces, California, North Carolina, Virginia, and several foreign countries including Australia, the United Kingdom, Japan, China, and India.²⁹ According to this document, there are several strategies being pursued by Washington and Idaho to improve broadband access. Both states allow a portion of sales and use taxes to be used for building and maintaining telecommunications infrastructure. However, in more rural counties these revenues will likely not be adequate to improve existing infrastructure much less provide for new facilities and services.

Glossary of Telecommunication Terms:

Cable: An assembly of one or more insulated conductors or optical fibers that may be used singly or in groups.

Dial-up: User initiated service on an existing truck line; also allow computer terminals to use telephone systems to initiate communications with other computers.

DSL: Digital Subscriber Line providing data transmission over the hard wire of a local telephone network. Download speeds range from 386 kilobits per second (kbps) to 20 megabits per second (Mbps).

Ethernet: Computer networking technology for local area networks using a combination of twister pairs of wire or fiber-optic cables.

Fiber-Optic: A method of transmitting information by sending pulses of light through optical fiber, revolutionizing telecommunications and replacing copper wired communications.

Satellite Internet: Used in locations where terrestrial internet access is not available or for users who move frequently. This broadband access uses geostationary satellites to provide service.

T-1: A T-1 line is a specific type of copper or fiber-optic telephone line that can carry more data than traditional telephone lines. A T-1 line can transmit 1,544 megabits per second providing service up to 60 times faster than a traditional modem.

VoIP: Voice Over IP, is a digital telephone service that uses public internet and private backbones for call transport. VoIP calls can originate and terminate from regular telephone lines and can often be provided for a low per-minute charge for national or international calls.

²⁹ "Broadband Comparison Report for Regions", Pacific Northwest Economic Region, Genevieve Pickart, August 2009

Telecommunications Providers in the Inland Pacific Hub Study Area

Basic telecommunication services, such as telephone and fax lines were not identified as an issue for economic development in the Inland Pacific Hub study area according to state, regional, and local economic developers. There are two major telecommunication providers in the IPH study area, Verizon and Qwest Corporation. In Idaho these two firms provide more than 90 percent of the wired telecommunication lines. Wireless and satellite communications are provided by a number of providers, many of whom are smaller business operations. **Exhibits 7-24** provide a listing of the telecommunication providers in the IPH study area counties. These companies do not have exclusive franchise areas and compete for customers and businesses by offering better services or better pricing. A glossary of telecommunications terms can be found at the close of this section.

Exhibit 7: Adams County Telecommunication Providers

Telecommunications Provider	Services
CenturyTel	Fiber-Optic
Noel Communications	Fiber-Optic, T-1
Odessa Office	Wireless, Dial-Up
Qwest	DSL
Ritzville Computer and Internet	Wireless, Dial-Up

Exhibit 8: Asotin County Telecommunication Providers

Telecommunications Provider	Services
Comcast	Cable
First Step	Wireless, Satellite, DSL, Dial-Up, VoIP
Qwest	DSL
TDS	DSL, Dial-Up Internet

Exhibit 9: Benewah County Telecommunication Providers

Telecommunications Provider	Services
HughesNet	Satellite Internet
My Blue Dish	Satellite Internet
Skycasters	Satellite Internet
Starband	Satellite Internet
Verizon	DSL, Fiber-Optic, Satellite Internet

Exhibit 10: Boundary County Telecommunication Providers

Telecommunications Provider	Services
HughesNet	Satellite Internet
My Blue Dish	Satellite Internet
Skycasters	Satellite Internet
Starband	Satellite Internet
Verizon	DSL, Fiber-Optic, Satellite Internet

Exhibit 11: Bonner County Telecommunication Providers

Telecommunications Provider	Services
HughesNet	Satellite Internet
My Blue Dish	Satellite Internet
Skycasters	Satellite Internet
Starband	Satellite Internet
Verizon	DSL, Fiber-Optic, Satellite Internet

Exhibit 12: Clearwater County Telecommunication Providers

Telecommunications Provider	Services
HughesNet	Satellite Internet
IDACOMM	Fiber-Optic
My Blue Dish	Satellite Internet
Skycasters	Satellite Internet
Starband	Satellite Internet
SuddenLink	Digital Cable
Verizon	DSL, Fiber-Optic, Satellite Internet

Exhibit 13: Columbia County Telecommunication Providers

Telecommunications Provider	Services
Columbia Energy	Wireless
Qwest	DSL

Exhibit 14: Garfield County Telecommunication Providers

Telecommunications Provider	Services
First Step	Wireless, Satellite, DSL, Dial-Up, VoIP
Qwest	DSL

Exhibit 15: Kootenai County Telecommunication Providers

Telecommunications Provider	Services
Adelphia	DSL
HughesNet	Satellite Internet
IDACOMM	Fiber-Optic
My Blue Dish	Satellite Internet
Skycasters	Satellite Internet
Starband	Satellite Internet
Verizon	DSL, Fiber-Optic, Satellite Internet

Exhibit 16: Latah County Telecommunication Providers

Telecommunications Provider	Services
Adelphia	DSL
Electric Lightwave	T-1, Private Line
HughesNet	Satellite Internet
My Blue Dish	Satellite Internet
Skycasters	Satellite Internet
Starband	Satellite Internet
Verizon	DSL, Fiber-Optic, Satellite Internet

Exhibit 17: Lewis County Telecommunication Providers

Telecommunications Provider	Services
HughesNet	Satellite Internet
IDACOMM	Fiber-Optic
My Blue Dish	Satellite Internet
Qwest	DSL
Skycasters	Satellite Internet
Starband	Satellite Internet

Exhibit 18: Lincoln County Telecommunication Providers

Telecommunications Provider	Services
Odessa Office	Wireless, Dial Up Internet

Exhibit 19: Nez Perce County Telecommunication Providers

Telecommunications Provider	Services
Cable One	Digital Cable
Electric Lightwave	T-1, Private Line
HughesNet	Satellite Internet
IDACOMM	Fiber-Optic
My Blue Dish	Satellite Internet
Qwest	DSL
Skycasters	Satellite Internet
Starband	Satellite Internet

Exhibit 20: Pend Oreille County Telecommunication Providers

Telecommunications Provider	Services
Pend Oreille Telephone	Wireless, Satellite, DSL
Verizon	High Speed Internet

Exhibit 21: Shoshone County Telecommunication Providers

Telecommunications Provider	Services
HughesNet	Satellite Internet
My Blue Dish	Satellite Internet
Skycasters	Satellite Internet
Starband	Satellite Internet
SuddenLink	Digital Cable
Verizon	DSL, Fiber-Optic, Satellite Internet

Exhibit 22: Spokane County Telecommunication Providers

Telecommunications Provider	Services
Columbia Fiber Solutions	Fiber-Optic
Comcast	Cable
Integra Telecom	DSL
OneEighty Networks Inc.	DSL
Qwest	DSL
Time Warner Telecom	T-1, Ethernet
XO Communications Inc.	DSL, VoIP
Century Telecom	Fiber-Optic, DSL

Exhibit 23: Stevens County Telecommunication Providers

Telecommunications Provider	Services
CenturyTel	Fiber-Optic
Qwest	DSL

Exhibit 24: Whitman County Telecommunication Providers

Telecommunications Provider	Services
First Step	Wireless, Satellite, DSL, Dial-Up, VoIP

Whether broadband redundancy is needed to attract a major data center or access to internet services are necessary to support the operations of a small manufacturing firm, information and communication infrastructure is vitally important to existing businesses in the IPH study area. Providing competitive communications architecture is absolutely necessary to attract new businesses and entrepreneurs to the region in the future. To insure the availability of adequate broadband services, there are a number of new service models that are being developed to provide services to more rural areas of the country.

Some local and regional governments are becoming involved in delivering broadband services to their communities through public-private partnership. There are several important reasons for bringing a public partner to the table:

- Broadband availability, quality, and price is a political issue from an economic development as well as a citizen perspective
- There are areas even in metropolitan communities that may not receive the same level of service as other neighborhoods such as older industrial areas, low-income communities, or areas where there are geographic or environmental challenges to overcome
- Some communities have chosen to “brand” their community as an advanced communications region, installing free Wi-Fi downtown, at the airport, in parks, or other areas of the city promoting these areas as growth areas for new technology.

A new business model developed by U.S. MetroNets is helping small communities develop Fiber-to-the-Home (FTTH) networks that provide high-bandwidth advanced IP services to residents and businesses. The network is built on a public-private partnership involving U.S. MetroNets, a municipal-broadband network facilitator that brings together a network services provider and a local government. The model has been utilized in Powell, Wyoming

with great success and other rural areas in the IPH study area are currently evaluating this model as a potential option for improving their broadband access.

Connect Kentucky has expanded broadband access in the state to 94 percent as of August 2007. This is a public-private partnership with bi-partisan political support bringing together competing broadband providers and using every broadband platform possible including cable, DSL, cellular, wireless, and satellite.³⁰ There are a variety of policies in the program that address the broadband demand issues as well as infrastructure supply issues that have helped to make this program a success.

There are a number of other examples of programs and policies that have helped to expand the availability of quality broadband services in areas that have traditionally not had access to services or access to affordable quality services. The American Recovery and Reinvestment Act (ARRA) authorized \$4.7 billion for broadband technology opportunity programs including \$2.5 billion designated for the Rural Utilities Services. At least \$4.35 billion of these funds are for broadband deployment efforts and a number of applications are being prepared by several agencies in the IPH study area for funds to improve and enhance broadband services in the region. The Panhandle Regional Broadband Fiber-Optic Infrastructure project in Bonner County and the North Central Idaho Telecommunication Initiative are examples of programs currently underway to improve broadband services for underserved areas of the IPH study area.

³⁰ "Setting the Pace: Accelerating Broadband Expansion", 2008 Progress Report, ConnectKentucky

SECTION 3: BUSINESS AND INDUSTRIAL PROPERTY AND BUILDING PROFILE

Assessing the attractiveness of a region for specific targeted businesses requires an evaluation of a variety of factors. There are several key criteria common to most businesses including transportation access, available skilled workforce, labor costs, and business climate including regulations, taxes and fees, incentives, support services, and the availability of readily developable land or buildings. Economic development is a very competitive business. Today, communities in the IPH study area compete with communities and regions around the world for business opportunities, if this region can not meet a business's requirements there will most certainly be another community that will be pleased to have an opportunity to try and do so.

The “place” requirements for business and industry have changed in recent years as globalization transformed the pattern of goods movement and production. The real estate market has seen the advent of mega-projects requiring large acreage sites over 1,500 acres. Logistics centers in major market areas such as Chicago, Memphis, Dallas, and Atlanta have developed multimodal transportation facilities and millions of square feet of warehouse and distribution space. These mega-distribution centers can generate substantial cost savings for users, particularly for companies that receive a significant volume of goods from a number of different producers and these centers create thousands of well paying jobs.

Most mega-distribution centers are located near heavily populated metropolitan regions, although some suburban and even rural locations have been developed where land availability, development costs, and workforce availability are an issue. Major retailers and third-party logistics companies are the primary users of the largest warehouse and distribution operations. As the economy emerges from the recession, many economist and real estate experts predict that the retail sector will not return to pre-recession volumes for several years. This factor will likely stymie development of some of the major logistics/distribution developments in the planning phase when the recession began.

Concerns over fuel costs, coupled with the slow recovery of some key market sectors, may focus attention on a “hub and spoke” model of distribution and warehousing placing smaller facilities closer to consumers. This change could benefit market areas that are accessible to consumers and businesses at the end of the supply chain rather than focusing only on those major population centers.

The availability of sites with utility infrastructure in place, environmental studies completed, access to a quality transportation network, and proximity to a skilled workforce are important factors for business and industry as they evaluate potential locations for new facilities. The dynamics of business operations have changed as have the requirements for site selection. Today's companies and corporate site consultants want to finalize their site selection, construct the facility, and begin start-up operations within a very tight timeframe. As a result, the most competitive locations are generally those that have the required utilities and infrastructure in place, initial permitting secured, and pertinent due diligence completed. Companies want a site that meets their requirements, limits their risk exposure, enables them to expedite their construction timeline, and allows them to meet the delivery requirements of their customers.

Because businesses want to minimize the time between site selection and completion of construction, many communities prepare due diligence reports and secure preliminary permits for wetland mitigation and other development issues on business and industrial sites before a specific tenant is even identified. Concerns about delays caused by permitting or unexpected environmental issues have focused a great deal of attention on identifying and verifying sites that meet the specific requirements of projects. These time and cost factors are driving more and more of the site evaluation decisions today. Many companies will only consider “certified” sites insuring that the site complies with key regulatory requirements; that the utility, communication, and transportation infrastructure has been designed and financing is in place; environmental permitting can be secured within an established timeframe; and site development requirements can be readily quantified.

The facility and infrastructure needs of companies vary depending upon a range of factors. Generally, the acquisition and development of property and environmental permitting require the longest lead times and as a result communities that own property with basic utilities installed, permitting in place, and can provide ready access to transportation infrastructure are in the most competitive position to meet the requirements of businesses seeking to locate a new facility or expand one. Some companies will only consider available buildings primarily due to time constraints. Many companies will not construct new facilities on leased land and the unique facility requirements of some businesses make it difficult to structure a lease agreement with the terms and conditions typical in today’s real estate market.

Because of a number of physical and financial constraints within the region, the availability of sites that meet the “state of readiness” requirements for many businesses is limited in the IPH study area. This condition may become a more significant issue for the region over time if concrete steps are not taken to identify and preserve appropriate land resources for economic development, particularly those sites that are accessible to quality transportation services. These physical constraints include public land ownership, rugged topography, availability of water and wastewater services, access to transportation infrastructure, wetlands and other environmentally protected areas, and proximity to available workforce.

The maps that follow depict a number of these physical constraints in the Inland Pacific Hub study area. **Exhibit 25** gives a regional perspective of relief that can constrain development in the region. **Exhibit 26** identifies primary forest lands, agriculture areas, and water features in relation to primary highways and railroads. **Exhibit 27** shows land constraints resulting from public land ownership, reservoirs and waterways, and other environmental features in relation to transportation networks and major cities in the region.

By linking the constraints and assets shown on each of these maps, the importance of identifying an inventory of sites to support the long term economic development of the region becomes more evident. The transportation network that serves the region will play an increasingly important role in economic development as transportation costs and efficiencies becomes a more significant competitive advantage globally. Preserving appropriate land to meet the future needs of business and industry that is accessible to this transportation network as well as other utilities and workforce is crucial to the region’s economic development.

Exhibit 25: Regional Topography

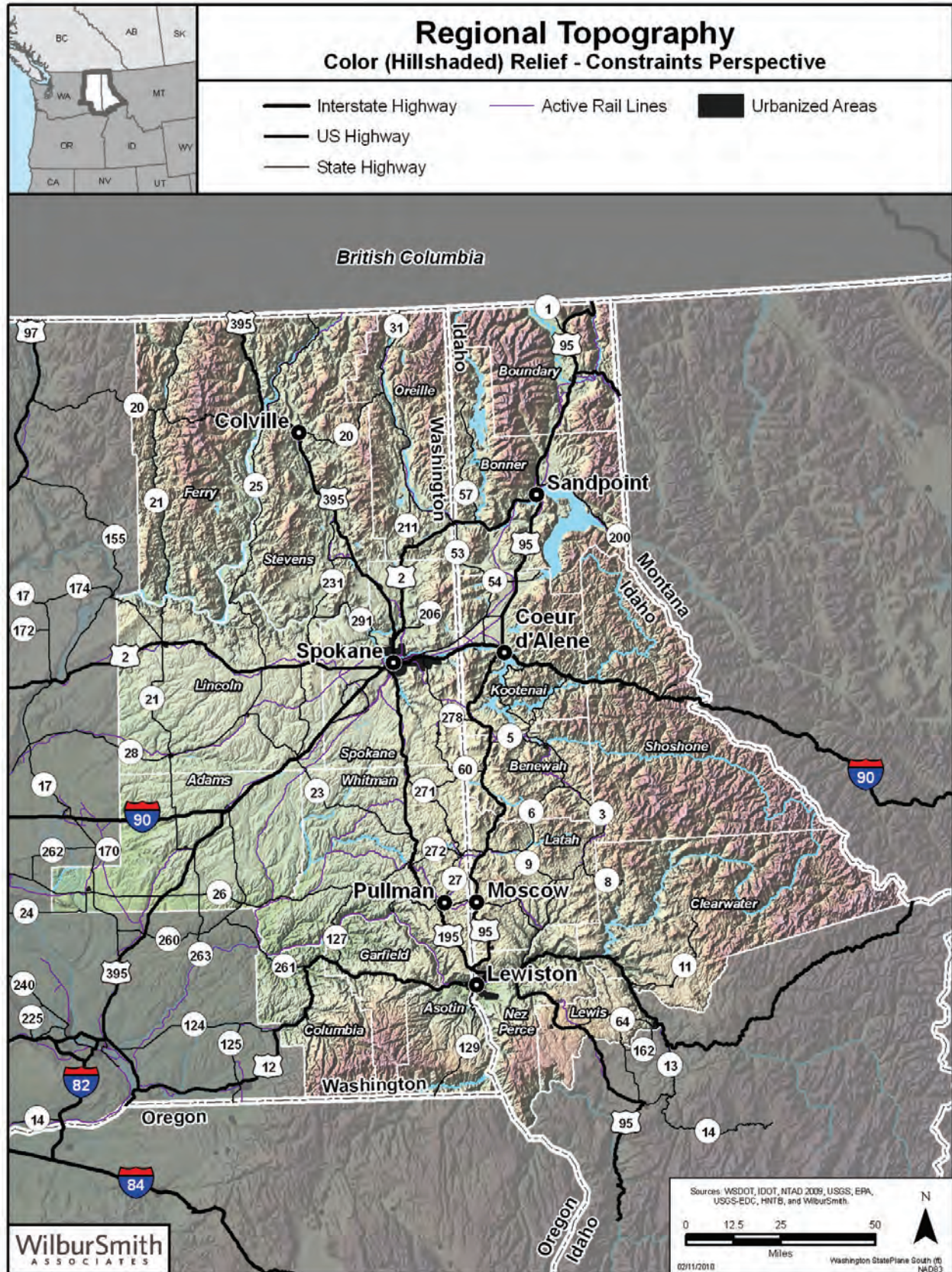


Exhibit 26: Regional Land Use

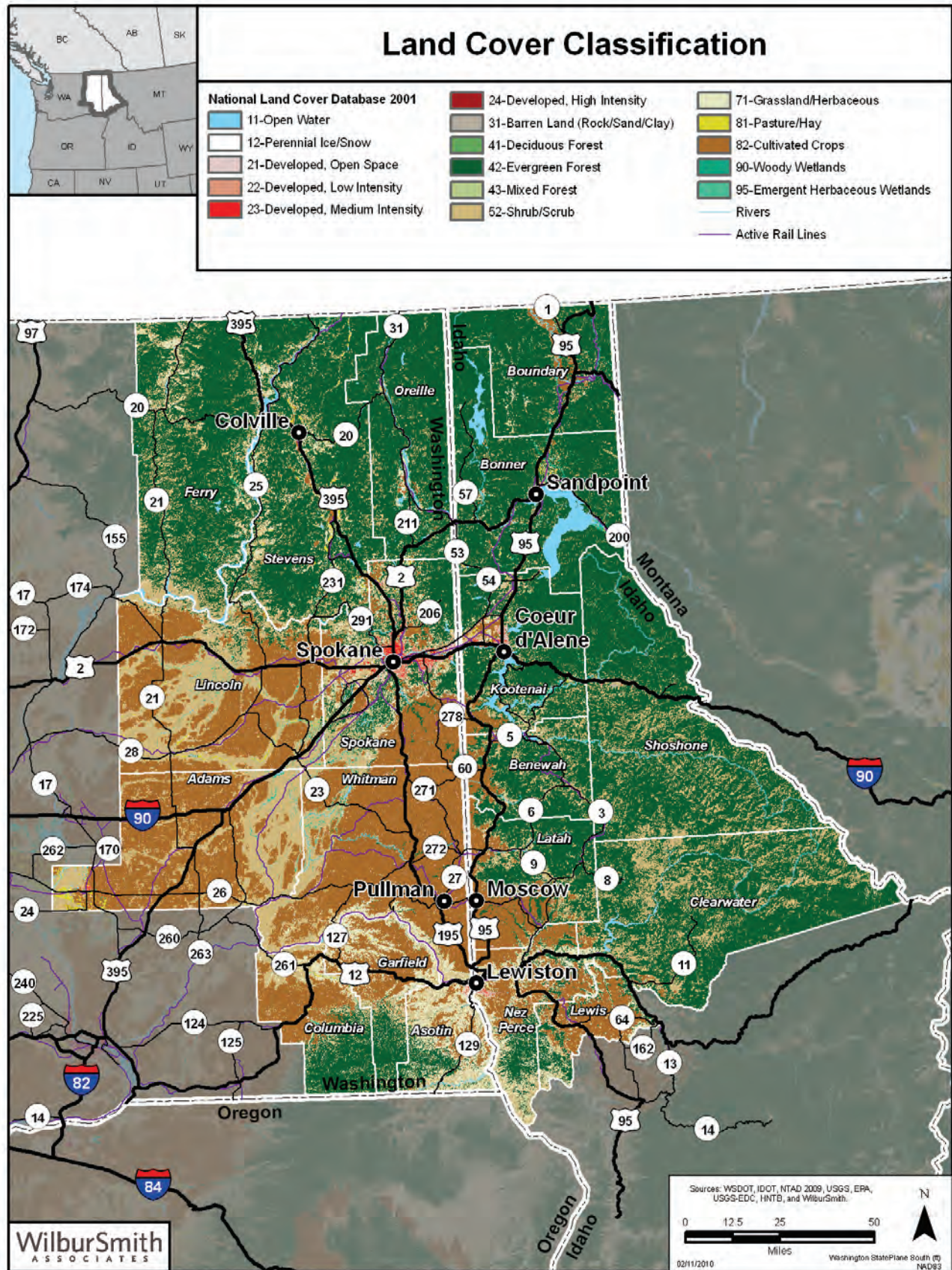
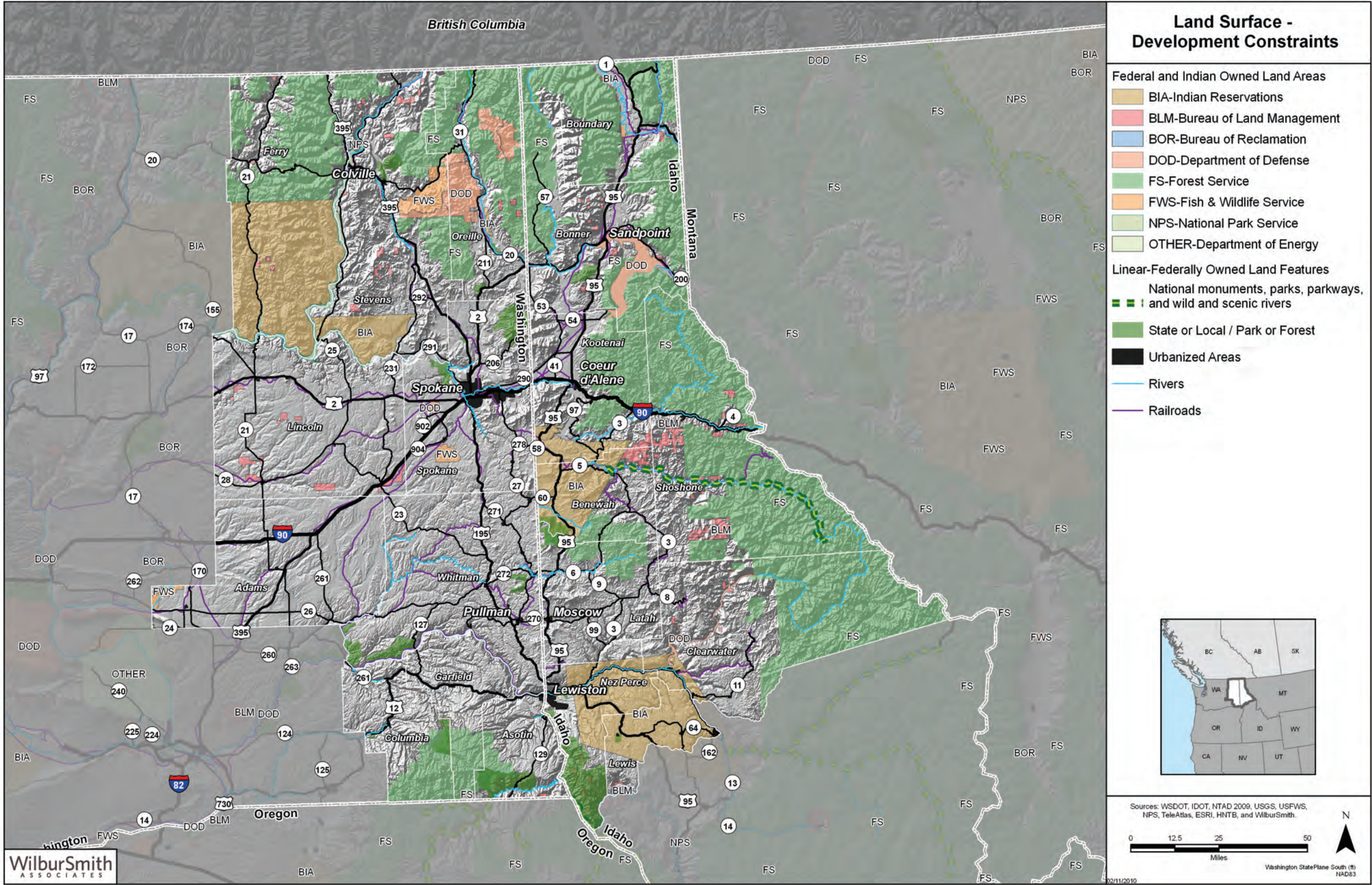


Exhibit 27: Regional Development Constraints



The land resources necessary to support a logistics and warehouse hub are significant. Based upon a review of state and local real estate databases and interviews with economic developers in the IPH study area, there are very few sites in the region with 50 acres or more that are less than 1 mile from existing utilities and adequate transportation services. Most logistics and warehouse developments today are located on site in excess of 1,500+ acres.

The State of Washington's Growth Management Act initially required that commercial and industrial development should be directed to urban growth areas which are primarily located in incorporated cities and towns. Since the passage of the Act, some modifications to the act have been made to provide additional flexibility to support economic development which is one of the 13 planning goals defined in the act. One such change allowed single-industry users to locate within a rural area in a "Major Industrial Development". The time required to secure the approval for such an industrial location appears to be significant and few industries have submitted properties under these provisions.³¹ Additional changes to the act have allowed for county designated land banks requiring a planning level decision enabling subsequent industrial or business users located in the land bank to pay for providing necessary infrastructure to the site. The State of Idaho does not currently have growth management legislation.

Although Spokane has the most extensive and diversified land and buildings portfolio in the Inland Pacific Hub study area, one of the recommendations in the recent "Target Clusters Strategic Findings Study" for Greater Spokane Incorporated reads as follows:

"Ensure that regional land use planning efforts recognize the need for suitable sites and infrastructure to match the needs of target industry companies. The availability of shovel ready sites and suitable real estate that matches the demands of company's in each cluster will give Spokane an edge in attracting new companies and retaining expanding ones."

WAREHOUSE AND DISTRIBUTION FACILITIES IN THE INLAND PACIFIC HUB STUDY AREA

There are a number of tools and resources available in the IPH study area to help business and industry find available industrial and commercial buildings. Both Idaho and Washington have real estate databases that include both land and buildings. In Washington, the Department of Commerce maintains the <http://www.washingtonprospector.com/> site that provides tools for mapping, data for available sites and buildings, and community data. Idaho utilizes the <http://www.gemstateprospector.com/ed.asp?bhcp=1> database to provide similar information about land, buildings, and community information. Several local and regional economic development organizations have real estate databases that are accessed through their websites and there are a number of commercial realtors in the region that specialize in industrial and commercial properties. On a semiannual basis, a "Real Estate Report: Regional Research on Spokane and Kootenai Counties" is released by the Spokane-Kootenai Real Estate Research Committee. This report, which is available by subscription, is primarily focused on residential property but it does provide vacancy rate information for office and industrial property in Spokane and Kootenai Counties. The

³¹ "Growth Management: Finding Suitable Industrial Sites outside Urban Areas in Washington", Association of Washington Business, June 2004

Washington Center for Real Estate Research at Washington State University conducts a range of real estate research issues.

Several economic developers raised concerns about how current the state real estate databases were. This is a critical concern because many prospective businesses contact state economic development resources first. If the state real estate database do not reflect the most current land and building information available, firms may conclude that sites or buildings that meet their requirements are not available within the Inland Pacific Hub study area because the most up-to-date information is not on the state's database. Both state real estate databases rely on local economic developers and realtors to provide the most up-to-date information about available land and buildings to them in order to update their system. Many companies may never look beyond the state databases and thus local communities could be overlooked.

The availability and quality of existing buildings and warehousing varies widely across the Inland Pacific Hub study area. Several new industrial and commercial buildings have been constructed in the metro IPH study area counties. There are few industrial spec buildings available in the non-metro IPH study area communities. The suitability of these buildings ultimately depends on the specific requirements of the businesses considering them. The list below illustrates the available warehouse and industrial buildings within the Inland Pacific Hub study area in mid-2009. The Washington and Idaho state real estate databases, local and regional real estate databases, and information from local realtors and economic developers were used to compile the warehouse inventory below.

While the specific available buildings will change, there are several important factors to consider:

- 1) There is a limited availability of existing warehouse or industrial buildings in the IPH study area to support the expansion of existing businesses or the location of new businesses
- 2) Many of the counties in the IPH study area do not have any existing building inventory and do not have the financial capabilities to support the development of spec building space
- 3) Redevelopment or adaptive re-use of older industrial buildings and brownfield sites can be a beneficial option, however careful due diligence and structural evaluation must be conducted to insure that the buildings can be cost-effectively adapted and that "perceptions" of environmental issues do not render the building or site "un-usable" by potential businesses.

Adams County

The Ritzville Warehouse Company is a farmer-owned grain cooperative with 1,400 members. The company has grown to include 30 different locations with storage capacity for 18 million bushels of wheat, two barge facilities on the Snake River, and a two-unit train loading facility. These facilities are available to co-op members. The company also allows e-trading of commodities through their website.

Asotin County

The Port of Clarkston has one of the largest cranes on a navigable river east of Portland. When operational, the crane is capable of moving logs, containers, and other cargo. The port has shipped large yachts, up to 78 feet in length and weighing more than 90,000 pounds, loading them onto trucks to ship them inland. Commercial property is available along the riverfront and the Port owns 11 acres of industrial property available for sale or lease. Utilities are in place and one building of 1,300 square feet is currently available.



Photo Courtesy of the Port of Clarkston:

<http://portofclarkston.com/>

Ferry County

The City of Republic has a 26,000 square foot industrial warehouse available.

Kootenai County

Riverbend Commerce Park in Post Falls has a 7,450 square foot warehouse available that will be sub-divided from a larger warehouse facility. Utilities and transportation infrastructure are in place.

Latah County

The City of Deary Recreation District has purchased a fertilizer storage facility and plans to convert a portion of the facility into a business incubator for local entrepreneurs.

Nez Perce County

The Northport Business Park at the Port of Lewiston in Nez Perce County houses a terminal and elevator docks with limited storage capacity. The Business and Technology Park, located at the Port of Lewiston, has a 150,000 square foot distribution facility with truck and rail bays and the Seaport Business Center, an incubator facility has some office and industrial space available.



Picture courtesy of the Port of Lewiston

<http://www.portoflewiston.com/index2.html>

Pend Oreille County

The Port of Pend Oreille operates the Pend Oreille Valley Railroad with storage capacity available for approximately 125 cars and on-site shop service.

Spokane County

A review of the Spokane Site Selector database found 23 existing warehouse buildings in Spokane County. The largest building located in Liberty Lake had 169,000 square feet. There were several multi-tenant warehouse buildings available providing as little as 1,500 square feet. Six of the fourteen warehouse buildings were available for sale only; two for sale or lease, and the remainder were available for lease only. These buildings are in

reasonable proximity to transportation networks and utility services and most of these buildings are located near the interstate corridor.

The Spokane Business and Industrial Park listed five distribution-warehouse facilities available for lease ranging from 40,000 square feet to 120,000 square feet. Three of these facilities offered rail access. Pinecroft Business Park in Spokane Valley had six small multi-tenant warehouse spaces available ranging from 2,099 square feet to 7,950 square feet.

Whitman County

The on-water Port of Wilma at the Port of Whitman has a storage facility for 4.6 million bushels of grain, with barge, rail, and truck access. The Port of Central Ferry, also at the Port of Whitman, has capacity to store 4.6 million bushels of grain.

AVAILABLE INDUSTRIAL SITES

The availability of business and industrial sites with water and wastewater utility services, access to transportation services, and proximity to available workforce is an issue in the IPH study area. Some of the IPH study area counties are not included below because they do not have available industrial or businesses sites at this time. Several counties are evaluating the acquisition of smaller acreage sites that could provide some industrial or business property for economic development. Most other regions of the country have a larger inventory of industrial and business sites that could be readily marketed to prospective businesses or existing companies that want to expand their operations.

The availability and quality of industrial and business sites varies widely across the Inland Pacific Hub study area. There are several industrial and business parks in the region offering a range of site acreages and services. The suitability of these sites ultimately depends on the specific requirements of the businesses considering them. The list below illustrates the available industrial sites within the Inland Pacific Hub study area in mid-2009. The Washington and Idaho state real estate databases, local and regional real estate databases, and information from local realtors and economic developers were used to compile the industrial site inventory below.

While the specific available sites will change over time, there are several important factors to consider:

- 1) The land base that will support economic development in this region is limited due to significant public property ownership, topography, available water and wastewater treatment services, access to transportation networks, proximity to workforce, and regulatory and policy constraints
- 2) Many of the counties in the IPH study area do not have any existing industrial land inventory and do not have the financial capabilities to support the development of a fully served industrial or business park
- 3) Redevelopment of brownfield sites can be a beneficial option; however, careful due diligence must be conducted to insure that the site can be cost-effectively remediated and that “perceptions” of environmental issues do not render the build or site “un-usable” by potential businesses.

Bonner County

The Idaho State Prospector lists one site in Bonner County of 20 acres. All utility and transportation services are in place, including municipal water and wastewater, electric, fiber-optics, and potential for rail access. Property is zoned commercial D which permits most industrial and business uses.

Clearwater County

The Economic Development Council is currently creating an inventory of developable land located within areas that are appropriately zoned. The City of Orofino has developed a business park near the Clearwater River with limited utility services available to the site. The City of Pierce promotes the vacant Potlatch Jaype plywood mill site as a potential development site. The Idaho State Prospector lists one available parcel in Clearwater County of 4.3 acres located in Orofino on US Highway 12. Wastewater services would be limited to a septic tank. Four parcels located on Tomho Road are listed outside of Orofino ranging from 7.3 acres to 12.89 acres with no wastewater utility services available.

Kootenai County

The Idaho State Prospector lists several small tracts from .48 to 2 acres and one site of 140 acres in Kootenai County. This undeveloped property is located on a county road near several residential dwellings and is 10 minutes from I-90 at the Post Falls exit. Utilities are available along the east and west property boundaries. Zoning restrictions may preclude certain projects; additional clarification was not readily available regarding acceptable land uses for this site.

Latah County

Economic developers in Latah County are concerned about the conversion of properties initially preserved for business and industrial uses that have recently been converted to retail or residential development. Private land owners frequently lack the patience that is sometimes required to develop and hold industrial and business property, and they may find a quicker return by converting this property to retail or residential use. The importance of preserving land for business and industrial development often requires public ownership or public-private partnerships to maintain an adequate inventory of land to meet the community's economic development needs.

The Alturas Business and Technology Park was developed for commercial and technology businesses, providing a permanent location for companies that “graduate” from the University of Idaho Business Incubator. Alturas Research and Technology Park, Phase II has 5 parcels totaling 4.5 acres available. The Potlatch Corporation owns property near the town of Potlatch that is currently being considered for an industrial park development by the city.

The Idaho State Prospector site lists three available parcels in Latah County. The first site has 13.69 acres located in Moscow with water and wastewater utilities within 500 feet of the site. The second site with 325 acres is near the City of Potlatch, but information regarding utility services for the site is not available. The third site in Orofino has 12.89 acres and wastewater services are restricted to a septic tank; other services are not available at the site at this time.

Lewis County

The City of Craigmont has received approval from the Federal Aviation Administration to convert vacant land at the Craigmont City Airport for use as an industrial park. The City of Nez Perce has a small industrial area currently home to a seed cleaning company. The capacity of utility treatment facilities may be an issue for any industrial expansion in this park.

Nez Perce County

Nez Perce County industrial properties are primarily in Lewiston. The Port of Lewiston has acquired 40 acres for a new business and technology park and has leased a 60,000 square foot industrial building that can be subdivided for sub-lease. The Harry Wall Industrial Park has 72 acres available for development. Forty-five acres of the original industrial park have been developed for a city jail and police center.

Nez Perce Tribe

The Nez Perce Tribe is evaluating several sites that could be acquired and developed for industrial and manufacturing facilities primarily in the Lapwai-Lewiston corridor along U.S. Highway 12. The Tribe is also evaluating sites for an industrial park in Lapwai to support their efforts to attract more diverse employment opportunities to the area.

Spokane County

The Spokane Regional Site Selector, a searchable website, lists 12 properties with over 2 acres available for sale or lease in Spokane County. A site of approximately 100 acres, located on Spring Creek Road, is zoned for industrial use and is within the high density growth boundary. Historic Dagoon Lake is located on the property, as is a portion of Dagoon Creek. Three-phase power and natural gas are available near the property. The site is one mile from the interstate

A 90-acre site is listed in the City of Spokane near the W. Sunset Frontage Road. Information about utilities and other services was not available. The final site is a narrow split tract adjacent to a rail line with a right-of-way to E. Trent Avenue. From the information provided, it is difficult to determine the suitability of this site for development; however, it is adjacent to an existing industrial area. The property is approximately 5.8 acres. Several other parcels are currently listed in Spokane County with access to water and wastewater utilities and proximity to transportation networks. Most of these parcels are small acreage tracts some with existing buildings on the property.

Spokane International Airport owns 1,200 acres of commercial property adjacent to the airport in nine development areas designated for development. A number of parcels of varying sizes are available with utility services and access to highway and air cargo facilities. These properties are available for lease only. The largest industrial site currently available in Spokane County is a 400-acre tract within the airport development area. This site has access to utilities and excellent highway access.

Whitman County

The Port Authority in Whitman County has continued to acquire and develop industrial sites in the county, particularly properties adjoining their port facilities. Pullman Industrial Park has 24.6 acres available with roads, all utility infrastructure, natural gas, and telecommunication services in place. The park is 15 minutes from the Pullman-Moscow

Regional Airport. There is suitable access for truck traffic. The Pullman Industrial Park West has one 30-acre parcel currently in the planning stage that will be developed over the next few years.

The Port of Whitman Business Air Center has 20 acres available with all utility services in place and there is a 12.73 acre undeveloped site adjacent to the park that is owned by the Port Authority. The Port of Central Ferry has 31 acres available in an industrial park with barge, rail, and truck access. Utilities at this site are provided from individual wells and septic tanks. The Port of Central Ferry is located between Walla Walla and Colfax.

The Port of Wilma Industrial Park has 20 acres available in an industrial park with utilities available and barge, rail, and truck access on site. Air services are available at the Lewiston Airport, three miles from the park.

SECTION 4: SWOT ANALYSIS

In an economy that is increasingly global, regional competitive advantages such as costs, regulatory environment, education and training services, and a skilled workforce creates an environment that supports the creation of new jobs, the retention of existing employment, and fosters economic sustainability. Often however, there are challenges within a region that must be balanced by businesses against those competitive advantages in order to determine the ultimate benefit-cost scenario that will truly enable a business to compete in this global market environment.

As a part of the Inland Pacific Hub Study, the region's strengths, weaknesses, opportunities and threats (SWOT) were evaluated. This SWOT analysis was developed through a review of the study area's competitiveness, an analysis of the commercial assets, location quotients and shift-share analysis, review of the infrastructure, interviews throughout the study area with area economic development professionals, and input from the public meetings. The basic purpose of SWOT analysis was to identify the following:

- **Strengths:** regional attributes and conditions that are competitive advantages for the study area
- **Weaknesses:** regional attributes and conditions that may impede the competitiveness of the study area
- **Opportunities:** external conditions that may enhance and sustain the competitiveness of the study area in the future
- **Threats:** external conditions that may impede the competitiveness of the study area in the future

STRENGTHS

There are a number of strengths in the Inland Pacific Hub study area that contribute to the region's economic vitality and quality of life. These strengths offer a strong foundation on which to build a more competitive and prosperous economic future for the entire 19-county study area. Key indicators among the study area's strengths are:

- Higher Educational Institutions
- Traditional Industries: Agriculture, Timber, Mining
- Tourism and Outdoor Recreation
- Power availability and costs

HIGHER EDUCATIONAL INSTITUTIONS

The IPH study area has a significant cluster of highly regarded educational and research institutions including Washington State University, the University of Idaho, Gonzaga University, Eastern Washington University, the Intercollegiate University District in downtown Spokane, Lewis-Clark State College, and several community colleges. The vision, collaboration, and ongoing innovation between these colleges and universities has helped to build the economy of the IPH study area and contributed to the attraction of businesses and the expansion of many companies in the region. These colleges and universities also provide a significant educational resource for the region. In today's dynamic

work environment employees must develop new skills prompting companies to seek locations that support life-long learning opportunities.

TRADITIONAL INDUSTRIES: AGRICULTURE, TIMBER, MINING

Agriculture, forest products, manufacturing, and mining have been core industries in the Inland Pacific Hub study area for many years. Forest products continue to be a key industrial cluster in the IPH and have developed important domestic and international business opportunities for the study area. Agriculture employs over 23,400 people within the Inland Pacific Hub study area. According to the U.S. Department of Labor, Bureau of Labor Statistics, the mining industry employed over 5,100 people in the IPH in 2007.³²

These core industries helped to drive the development and employment in much of the study area in the past and many of these industries still consume a significant volume of the study area's transportation capacity. Based upon the 2007 TRANSEARCH data, lumber or wood products, nonmetallic minerals, farm and food products, and secondary traffic make up the majority of the outbound commodities from the IPH study area.

TOURISM AND OUTDOOR RECREATION

Tourism is important to the Inland Pacific Hub study area. The combined visitor expenditures for all of the IPH counties totaled over \$1.6 billion in 2009. There are a number of tourism assets within the non-metro IPH counties that represent opportunities for future growth in the tourism industry. Niche market tourism sectors including adventure tourism, agri-tourism, eco-tourism, and heritage tourism experienced steady growth prior to the recession and are expected to continue to play an important role in the tourism industry when the economy stabilizes.

POWER AVAILABILITY AND COSTS

Power in the Inland Pacific Hub study area is relatively inexpensive and readily available. Power generation and the cost of energy were not considered to be an issue for economic developers interviewed in this study. Although other regions of the country face increasingly higher power costs, the electricity and energy resources of the Inland Pacific Hub study area can be a competitive advantage, particularly for those businesses that utilize a significant amount of power in their production and operations.

GLOBAL REACH TO ASIA AND WESTERN CANADA

The geographic location of the IPH study area under 300 miles from the Ports of Seattle and Tacoma, give local industries exporting to Pacific Rim nations a transportation-cost advantage by truck. While many shippers further inland may have been access to intermodal rail services, the cost of an intermodal move by rail and the associated drayage cost, is likely to be significantly higher than a 300 mile truck move. In fact, due to railroad consolidation, especially in western states, many shippers must dray containers by truck 300 miles or more to access a rail hub in order to access a major west coast ocean gateway.

The IPH study area is also well positioned to capitalize on trade activities resulting from some of the fastest growing areas of western Canada. Between 2001 and 2006 the

³² U.S Department of Labor, Bureau of Labor Statistics, Quarterly Census of Employment and Wages, July 2009

population of Calgary grew by 12.6 percent and exceeded 1 million people. In 2009 the population of Calgary exceeded 1.3 million. Calgary, within a one-day drive by truck, offers a growing market for consumption of processed foods – one of the strong industry sectors of the IPH study area.

WEAKNESSES

Weaknesses constrain the region's ability to grow and compete. Key weaknesses in the study area include:

REGIONAL WEAKNESSES

- Declining populations in non-metro areas
- Lack of diversified regional long-range planning
- Limited availability of land to support future economic development
- Lack of Broadband Capacity in some of the non-metro counties
- Condition of some highway and rail infrastructure in the region

DECLINING POPULATIONS IN NON-METRO AREAS

A number of the counties within the study area face future declining or stagnant population trends that contribute to the erosion of economic conditions. Columbia, Garfield, Clearwater, Lewis, and Shoshone Counties lost population between 2000 and 2008, and over the past thirty years these counties have experienced stagnant or declining populations. Eight counties within the study area experienced positive but very slow population growth, less than 5 percent during the past eight years: Asotin, Ferry, Lincoln, Stevens, and Whitman Counties in Washington and Benewah, Latah, and Nez Perce Counties in Idaho.

From 2000 to 2008, the State of Washington realized an 11.1 percent population growth statewide compared to Idaho which grew at a rate of 17.8 percent during the same period. Only Kootenai County's population growth exceeded the statewide growth rate. The remaining eighteen counties in the study area experienced population growth below their respective statewide average. Only six counties in the study area had a population growth rate above 5 percent during the past eight years: Adams County, WA with 5.2 percent; Pend Oreille County, WA with 9.6 percent; Spokane County, WA with 10.7 percent; Bonner County, ID with 11.8 percent; Boundary County, ID with 11.1 percent; and Kootenai County, ID with 26.5 percent. These six counties represent 74.16 percent of the study area population.

In those counties with declining population, employment has been relatively stagnant or has declined as well. In Columbia County, WA, total employment has decreased 28 percent since 2000 while Garfield County's employment rate declined by 7.2 percent during the past eight years.³³ In Clearwater County, ID, employment has declined by slightly over 7 percent and the labor force has steadily decreased since 1999.³⁴ Lewis County, ID, has continued to experience modest fluctuations in employment since 2000, for example in 2008 there were 1,660 jobs compared to 1,628 in 2000. Shoshone County has also experienced

³³ Washington State Employment Security Department, Labor Market and Economic Analysis March 2009

³⁴ Idaho Department of Labor, Labor Market Information, July 2009

continued employment fluctuations over the past eight years with 237 more jobs available in 2008 than in 2000.

If more of the counties in the study area had sustained more positive population growth, positive economic effects would have been realized throughout the region. The slow or declining populations within the region affect the profitability of businesses throughout the study area including the metropolitan communities where specialized services often draw customers from a broad catchment area.

LACK OF DIVERSIFIED LONG-RANGE PLANNING

Participants at two of the public meetings were encouraged by the integration achieved and the efforts to involve the entire study area in the study process. General consensus from participants indicated that stronger regional efforts to plan and cooperate on important issues would be very beneficial to the entire region particularly for economic development and transportation. Participants believed that the study area could benefit from a broadly based planning effort that focused on multimodal transportation issues, utility infrastructure, land for economic development, and multi-state policy issues.

LIMITED AVAILABILITY OF LAND TO SUPPORT FUTURE ECONOMIC DEVELOPMENT

Because of a number of physical and financial constraints within the study area, the availability of sites that meet the “state of readiness” requirements is limited in the IPH. This condition will likely become a more significant issue in the study area over time if concrete steps are not taken to identify and preserve appropriate land resources for economic development, particularly those sites that are accessible to quality transportation services. These physical constraints include public land ownership, mountainous topography, availability of water and wastewater services, access to transportation infrastructure, wetlands and other environmentally protected areas, and proximity to available workforce.

LACK OF BROADBAND CAPACITY IN SOME OF THE NON-METRO COUNTIES

The availability of reliable, high speed broadband service is important to the economic future of the Inland Pacific Hub study area. Most of the state, regional, and local economic developers in the IPH study area outside of Spokane and Kootenai Counties expressed concern about the availability and quality of broadband connectivity in the remainder of the region and what it could mean for business attraction, entrepreneurship, and small businesses in the future. A recent study conducted by the U.S. Department of Agriculture found that rural communities that had broadband access by 2000 had higher employment growth and nonfarm private earnings compared to similar communities that had little or no broadband access as of 2000.³⁵ According to this study, an estimated 55 percent of U.S. adults had broadband access at home in 2008; however, only 41 percent of adults in rural households had broadband access. Within Spokane and Kootenai Counties, broadband services are highly reliable and competitively priced, so for these counties broadband services are a competitive advantage for economic development. There are a number of initiatives underway within the study area to improve the availability of broadband connectivity.

³⁵ “Broadband Internet’s Value for Rural America”, US Department of Agriculture, Economic Research Report, August, 2009

CONDITION OF SOME HIGHWAY AND RAIL INFRASTRUCTURE IN THE STUDY AREA

Throughout the study area, businesses, economic developers, and meeting participants recognized the importance of transportation to the region. Infrastructure preservation and improvement are critical for almost every region of the Inland Pacific Hub study area. The availability of all-weather roads to the region's river ports, the condition of roadways in almost every county, and the condition of some of the short-line railroads were identified as crucial issues and will most certainly impact the economic development of the region going forward.

GLOBAL REACH TO EUROPE AND SOUTH AMERICA

The geographic location of the IPH study area, over 2,500 miles from the Ports of New York / New Jersey, place local industries exporting to Europe at a disadvantage to similar industries located in the U.S. heartland that have better access to the eastern railroad network of the U.S. While the recent devaluation of the dollar has made Europe an attractive export market for some industries, most economists agree that over longer time horizons, China and the rest of Asia will be stronger export growth markets for the U.S.

In a similar fashion, the distance from the IPH study area to major Gulf Coast export gateways, such as the Port of Houston or New Orleans exceeds 2,200 miles. In addition, the largely east/west orientation of U.S. railroads makes accessing Central and South American export markets challenging for local industries

OPPORTUNITIES

Opportunities build on competitive advantages and emerging strengths that can help to build a more diversified and sustainable economic future for the entire region. Key opportunities in the Inland Pacific Hub study area are:

Opportunities:

- Health Sciences
- Innovation and Entrepreneurship

HEALTH SCIENCES

Health sciences and health services employ a significant number of people in the IPH study area and represent a growth industry for both the metro and non-metro counties in the region. Health science sub-sectors that represent strong growth opportunities include:

- Medical and Diagnostic Laboratories
- Medical Equipment and Supplier
- Bioinformatics

Examples of the health science research currently underway in the study area include the Washington State University Division of Health Sciences, a multi-disciplined center for health science research, teaching, and research in molecular biosciences, pharmacology, and related health disciplines. The University of Idaho Center for Advanced Microelectronics and Biomolecular Research works with the National Institutes of Health to combine molecular biology and microelectronics to develop sensors.

INNOVATION AND ENTREPRENEURSHIP

While the universities within the study area foster research and innovation, the national laboratories and technology innovation and incubator facilities help to commercialize this research and support the ongoing efforts of entrepreneurs. Spokane Intercollegiate Research and Technology Institute (SIRTI) and the University of Idaho Business Technology Incubator (BTI) have developed a range of financing tools, business mentors, and other services designed to improve the success rate of start-up technology-based businesses. Both states have also developed incentives and other programs designed to enhance the development and growth of knowledge businesses.

THREATS

Key impediments to the study area's future prosperity include:

Threats:

- Loss of competitiveness in aerospace industry
- Availability of water and access to wastewater treatment capacity
- Cost of doing business in some areas of the region

LOSS OF COMPETITIVENESS IN THE AEROSPACE INDUSTRY

The recent announcement that the Boeing 787 jet assembly plant selected a location outside of the Pacific Northwest continues a trend observed in recent years. Aerospace is an important industry in the Inland Pacific Hub study area and the conditions that are causing Boeing to locate facilities outside of the northwest can also impact the aerospace businesses in the IPH study area as well. A study of the aerospace industry competitiveness identified several disadvantages: cost of living, real estate/utility costs, training, wage rates, and labor relations.

AVAILABILITY OF WATER AND ACCESS TO WASTEWATER TREATMENT CAPACITY

The availability of raw water resources and water and wastewater treatment infrastructure in the Inland Pacific Hub study area involves many complex legal issues, environmental regulations, water quality requirements, development regulations, and the habitat needs of fish and wildlife. In the non-metro areas of the study area, water and wastewater issues may be one of the most significant constraints to economic development in the future according to several economic development professionals interviewed for this study.³⁶ Securing new water rights or transferring water rights can take as long as three years, making it an expensive process. Land with existing water rights that can be documented and preserved is becoming increasingly expensive even in more rural areas.

COST OF DOING BUSINESS IN THE INLAND PACIFIC HUB STUDY AREA

Differences in regulations, fees, tax rates, and other factors affecting the cost of business operations are a concern in this region. Businesses must make the best decisions for their continued operation; however, businesses moving from one area of the region to another in order to avoid these costs create real challenges within the study area. Many of these issues can only be resolved at the state level but these "cost of business" issues represent a serious concern for the study area from the standpoint of tax base, fostering regional

³⁶ State, Regional, and Local Economic Development Agencies interviewed for study

cooperation, and transportation and transit as employees may be required to drive greater distances to their workplace.

ENHANCING ECONOMIC DEVELOPMENT OPPORTUNITIES IN THE IPH STUDY AREA

A global economic transformation is underway. The industries that sustained the Inland Pacific Hub study area in the past will likely not contribute the same economic benefits as they once did in terms of job growth, competitive incomes, and tax base. As companies emerge from the economic downturn, their focus will be on value, capturing new opportunities, and responding to marketplace shifts with even greater agility and speed. Business location decisions in the future will be even more dependent on regional cost efficiencies in order to remain competitive. The Inland Pacific Hub study area identifies a number of significant competitive advantages for business but there are also potentially serious challenges facing the region including land available to support economic development, available water and wastewater utilities to support growth, high-speed broadband access, and population and workforce issues in some counties that may affect the economic development of the region as well.

A potentially serious constraint facing the IPH study area is the limited supply of suitable land that can meet the long term needs of business and industry. As the metro counties continue to develop, land that is properly zoned with access to transportation services and utility infrastructure will become more expensive and more difficult and costly to develop. In the non-metro counties land is more readily available but there are other development challenges including the availability of utilities, access to transportation infrastructure, and available workforce.

The region should consider developing an Inland Pacific Hub Business Land Plan to identify strategic properties that should be preserved and eventually developed as business and industrial parks. These sites could be strategically located through the region to provide quality sites that will meet the expectations and needs of targeted businesses. A regional analysis of the most viable industrial and business sites that could be defined based upon a site evaluation matrix, coupled with a long range strategy to preserve these properties and finance the necessary improvements would provide the region with an inventory of sites to support the region's long term economic prosperity. It may also be possible by taking a regional approach to site evaluation to identify a mega-site for the region that might support a future data center or aerospace facility, if there is an interest in such a resource.

By considering land needs for both metro and non-metro areas in conjunction with existing and planned transportation improvements, the region can carefully evaluate land assets, water and wastewater issues, and the needs of targeted industries in a coordinated and collaborative fashion that can generate significant benefits for the entire region in the long term. Transportation planning is already conducted in this manner through the Metropolitan Planning Organizations. An approach that links land assets, transportation resources, and workforce on a broader regional scale may also attract additional funding resources to support transit services or infrastructure development in the future.

The IPH study area has created several successful regional planning initiatives including the Inland Northwest Economic Alliance that brings together 14 of the 19 study area counties (Adams, Lincoln, Benewah, Clearwater, and Lewis Counties are not currently participants in this regional alliance). This collaborative marketing and recruiting program has been

effective in attracting a number of small and mid-sized businesses to the area, particularly firms desiring to escape the high costs, congestion, and workforce issues in California. Bob Potter, Executive Director of the Alliance and a retired telecommunications executive, has effectively used his numerous contacts in California and other communities to recruit companies to locate in the IPH study area. The Alliance provides a quality marketing program and an aggressive business recruiting effort that would be difficult, if not impossible, for most of its members to pursue on their own.

To achieve even greater prosperity for the entire region, additional regional collaborations might be beneficial. Regions around the world are developing new partnerships, including public/private partnerships in order to collaborate and coordinate economic strategy more effectively at a regional level. Regional planning does not dictate actions and strategies for participating counties, but creates a foundation to engage the region's leaders in ongoing discussions about what will be required for the region to have a more prosperous, sustainable economy and maintain quality of life for all in the years ahead. Several examples to consider include:

- 1) The Atlanta Regional Commission is a regional planning and intergovernmental coordinating agency for the 10-county Atlanta metro area focused on land use, environmental issues including water resources, transportation, workforce solutions, and quality growth. Using a "scenario-based" approach the Commission is currently conducting "Envision6" integrating land use planning, water planning, and transportation planning to develop a strategy that will enable the region to accommodate 2.3 million more people in the region and maintain a high quality of life.
- 2) Memphis Regional Economic Development Council is a facilitating organization focused on fostering economic growth in a tri-state region with 21 core counties and 24 secondary counties in western Tennessee, eastern Arkansas, and northern Mississippi. The Council facilitates regional research, including studies on regional infrastructure, regional workforce issues, and regional business and industrial sites. The Council also focuses the regional attention on issues affecting economic development of the region such as workforce development and training and helps communities to better understand the collective strengths of the region to foster greater competitive advantage for the region.
- 3) Ohio, Kentucky, Indiana Council of Governments (OKI) is a 117 member organization bringing together local governments, businesses, and community organizations. OKI helps the region advocate for federal funding, resolve interstate dilemmas, and develop major multi-state projects. The agency facilitates multi-state planning for land use, capital improvements, economic development, transportation, green space, and watersheds.

An outstanding example of regional collaboration that is very beneficial to the urban and rural counties in the Inland Pacific Hub study area is the Barr Regional Bio-Industrial Park in Lincoln County. This project will take organic waste (yard waste, food waste, bio-solids, and construction and land-clearing debris) from the Spokane metropolitan area and convert this waste stream to produce high grade compost, algae oil, two megawatts of renewable energy, and greenhouse fruit and vegetable production. At the present time, yard waste is trucked 280 miles round trip and food waste recycling is not available. This organic waste processing facility will provide a composting facility; anaerobic digester to process food

waste and produce methane, three combined heat and power units will convert methane selling power back into the electrical grid, and a greenhouse that will grow food.

The Barr Regional Bio-Industrial Park is home to two businesses, Barr-Tech LLC and N.W. Industrial Services. Other businesses have expressed an interest in locating in the park to take advantage of park resources. By thinking regionally, Lincoln solved a problem for neighboring Spokane County and created new job opportunities and tax revenues for themselves.

The entire region could benefit from additional “Thinking Regionally” strategies. A number of counties in the region are facing serious economic issues including declining populations, rising poverty levels, and increasing unemployment. Urban and rural communities will benefit from increased economic prosperity in the region. Just as the Inland Northwest Economic Alliance brings together many of the counties in the Inland Pacific Hub study area, there are beneficial partnerships in tourism, entrepreneurship, and utility services that could generate significant economic benefits for the entire region. Building stronger partnerships between the communities in the region can create stronger political alliances to achieve greater success in competing for funding and support for future projects.

Ultimately the economic competitiveness of the Inland Pacific Hub study area is measured by the prosperity of the region’s people. Being competitive is not about having the lowest labor costs or the cheapest electricity; it is about creating the conditions where businesses and people can be productive and prosperous. A real disparity exists in the IPH study area. Those counties that have declining employment and populations, increasing levels of poverty, and low educational attainment represent a potential opportunity as well as a significant challenge. It will be almost impossible for these counties to turn the corner on their own; however, a regional approach could help to “raise everyone’s boat”. The transportation, technology, and utility infrastructure available in these counties almost requires that they focus their economic development initiatives on niche market businesses that they can effectively support such as eco and adventure tourism, value-added agriculture, entrepreneurial ventures, opportunities to capitalize on unique strengths within the region such as niche research and development resources and advanced manufacturing.

The Inland Northwest Economic Alliance has demonstrated how the region can work together to attract businesses and market the region. Perhaps the next step is a collaborative regional alliance to engage the region’s leaders in an effort to link the physical infrastructure and land assets needed to support a transforming economy with the marketing and attraction strategies already underway.

INLAND PACIFIC HUB

Transportation Study



Technical Memorandum 3

Inland Pacific Hub Commercial and Technology Assets Report

Final

April, 2010

WilburSmith
ASSOCIATES

In Association with

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and

HNTB

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EXECUTIVE SUMMARY

A global economic transformation is underway. The industries that sustained the Inland Pacific Hub study area in the past will likely not contribute the same economic benefits as they once did in terms of job growth, competitive incomes, and tax base. As companies emerge from the economic downturn, their focus will be on value, capturing new opportunities, and responding to marketplace shifts with even greater agility and speed. Business location decisions in the future will be even more dependent on regional cost efficiencies in order to remain competitive. The Inland Pacific Hub study area provides a number of significant competitive advantages for business but there are also potentially serious challenges facing the region including land available to support economic development, available water and wastewater utilities, high-speed broadband access, and population and workforce issues in some counties that may affect the economic development of the region as well. These strengths and weaknesses create opportunities and threats to the regions economy, and are evaluated throughout the remainder of this document.

A potentially serious constraint facing the IPH study area is the limited supply of suitable land that can meet the long term needs of business and industry. As the metro counties continue to develop, land that is properly zoned with access to transportation services and utility infrastructure will become more expensive and more difficult and costly to develop. In the non-metro counties land is more readily available but there are other development challenges including the availability of utilities, access to transportation infrastructure, and available workforce.

The region should consider developing an Inland Pacific Hub - Business Land Plan (for the nineteen county study area) to identify strategic properties that should be preserved and eventually developed as business and industrial parks. These sites could be strategically located throughout the region to provide quality sites that will meet the expectations and needs of targeted businesses. A regional analysis of the most viable industrial and business sites that could be defined based upon a site evaluation matrix, coupled with a long range strategy to preserve these properties and finance the necessary improvements would provide the region with an inventory of sites to support the region's long term economic prosperity. It may also be possible by taking a regional approach to site evaluation to identify a mega-site for the region that might support a future data center or aerospace facility, if there is an interest in such a resource.

By considering land needs for both metro and non-metro areas in conjunction with existing and planned transportation improvements, the region can carefully evaluate land assets, water and wastewater issues, and the needs of targeted industries in a coordinated and collaborative fashion that can generate significant benefits for the entire region in the long term. Transportation planning is already conducted in this manner through the Metropolitan Planning Organizations (MPOs) in the IPH study area, SRTC, KMPO and LCVMP. An approach that links land assets, transportation resources, and workforce on a broader regional scale may also attract additional funding resources to support transit services or infrastructure development in the future.

The IPH study area has created several successful regional planning initiatives including the Inland Northwest Economic Alliance that brings together 14 of the 19 study area counties (Adams, Lincoln, Benewah, Clearwater, and Lewis Counties are not currently participants in this regional alliance). This collaborative marketing and recruiting program has been effective in attracting a number of small and mid-sized businesses to the area, particularly firms desiring to escape the high costs, congestion, and workforce issues in California. Bob Potter, Executive Director of the Alliance and a retired telecommunications executive, has effectively used his numerous contacts in California and other communities to recruit companies to locate in the IPH study area. The Alliance provides a quality marketing program and an aggressive business recruiting effort that would be difficult, if not impossible, for most of its members to pursue on their own.

To achieve even greater prosperity for the entire region, additional regional collaborations might be beneficial. Regions around the world are developing new partnerships, including public/private partnerships in order to collaborate and coordinate economic strategy more effectively at a regional level. These collaborations will also help to narrow the cost of doing business in the region by mitigating differences in regulations, fees, and tax rate differences. Regional planning does not dictate actions and strategies for participating counties but creates a foundation to engage the region's leaders and support a greenhouse for fruit and vegetable production in ongoing discussions about what will be required for the region to have a more prosperous, sustainable economy and maintain quality of life for all in the years ahead.

An outstanding example of regional collaboration that is very beneficial to the urban and rural counties in the Inland Pacific Hub study area is the Barr Regional Bio-Industrial Park in Lincoln County. This project will take organic waste (yard waste, food waste, bio-solids, and construction and land-clearing debris) from the Spokane metropolitan area and convert this waste stream to produce high grade compost, algae, 2 MW of renewable energy, and fruit and vegetable production. At the present time yard waste is currently trucked 280 miles round trip and food waste recycling is not available. This organic waste processing facility will provide a composting facility; anaerobic digester to process food waste and produce methane, three combined heat and power units will convert methane selling power back into the electrical grid, and a greenhouse that will grow food.

The Barr Regional Bio-Industrial Park is home to two businesses: Barr-Tech LLC and N.W. Industrial Services. Other businesses have expressed an interest in locating in the park to take advantage of park resources. By thinking regionally, Lincoln County solved a problem for neighboring Spokane County and created new job opportunities and tax revenues for themselves.

The entire region could benefit from "Thinking Regionally". A number of counties in the region are facing serious economic issues including declining populations, rising poverty levels, and increasing unemployment. Urban and rural communities will benefit from increased economic prosperity in the region. Just as the Inland Northwest Economic Alliance brings together many of the counties in the Inland Pacific Hub study area, there are beneficial partnerships in tourism, entrepreneurship, and utility services that could generate significant economic benefits for the entire region. Building stronger partnerships between

the counties in the region can create stronger political alliances to achieve greater success in competing for funding and support for future projects.

Ultimately the economic competitiveness of the Inland Pacific Hub study area is measured by the prosperity of the region's people. Being competitive is not about having the lowest labor costs or the cheapest electricity; it is about creating the conditions where businesses and people can be productive and prosperous. A real disparity exists in the IPH study area. Those counties that have declining employment and populations, increasing levels of poverty, and low educational attainment represent a potential opportunity as well as a significant challenge. It will be almost impossible for these counties to turn the corner on their own; however, a regional approach could help to "raise everyone's boat". Limited transportation, technology, and utility infrastructure available in these counties requires that they focus their economic development initiatives on niche market businesses that they can effectively support such as eco and adventure tourism, value-added agriculture, entrepreneurial ventures, opportunities to capitalize on unique strengths within the region such as niche R & D resources and advanced manufacturing.

The Inland Northwest Economic Alliance has demonstrated how the region can work together to attract businesses and market the region. Perhaps the next step is a collaborative regional alliance to engage the region's leaders in an effort to link the physical infrastructure and land assets needed to support a transforming economy with the marketing and attraction strategies already underway.

REPORT ORGANIZATION

The Inland Pacific Hub (IPH) study area is comprised of nineteen counties located in eastern Washington and northern Idaho. The economic interests of this region are represented in part by the IPH Advisory Board, a public-private partnership established by and consisting of representatives from both states. The Board's objective is to establish the IPH study area as a multimodal global gateway to increase international commerce.

The Board has partnered with the Washington State Department of Transportation and the Idaho Transportation Department to study the region's capacity for economic development. The IPH Transportation Study has two objectives: 1) To identify the IPH study area's capacity as a globally-connected, multimodal transportation gateway; and 2) To identify the critical infrastructure requirements needed to drive the IPH study area's future economic growth.

Scope Tasks and Report Organization

To accomplish the objectives established by the IPH Advisory Board, Wilbur Smith Associates, in association with HNTB and Halcrow, proposed a work plan based on six tasks:

- Task 1: Analyze Existing Transportation Market
- Task 2: Profile Existing Multimodal Transportation Infrastructure (Tech Memo 1)
- Task 3: Profile Regional Economic Assets (Tech Memo 2)
- Task 4: Profile Commercial and Technology Assets (Tech Memo 3)
- Task 5: Identify Public Education and Stakeholder Involvement
- Task 6: Compile Final Report and Phase II Recommendations

This Technical Memorandum

Several tasks (2, 3 and 4) have Technical Memoranda as final task deliverables. Technical Memorandum 3 is a summary report based on two more detailed working papers that break the analysis associated with Task 4 into discrete work elements. The two more detailed working papers forming the basis of this Technical Memorandum are:

Working Paper 4.1 – Study Area Profile and Technology Assets: This working paper presents a detailed economic profile of the nineteen county region followed by profiles for each of the individual nineteen counties. The county profiles presented in this paper have been extracted as presented in the working paper and included as **Appendix A** of Technical Memorandum 3.

Working Paper 4.2 – Property and Technology Inventory: This working paper presents a detailed inventory of higher education, utility and commercial business properties in the IPH study area. The document concludes with a Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis for the regional economy.

These more detailed working papers are available upon request.

INTRODUCTION

The economic future of the Inland Pacific Hub (IPH) study area will be influenced by opportunities and challenges resulting from dynamic markets and competitive forces that are at work in an ever changing global marketplace. Transportation connections are vital to the economic prosperity of this region because:

- Manufacturers, still important to the Washington and Idaho economies, need to receive raw materials (inbound freight) and send finished goods to markets around the world (outbound freight)
- Wholesale and retail trade, distribution and logistics facilities, and other businesses need to receive consumer goods and customers and employees must be able to reach these facilities
- Workers need access to jobs and employers need access to an increasingly skilled workforce
- Visitors and business travelers alike need access to regional attractions, goods and services, and regional businesses

Globalization and technology continue to change economies around the world, redefining business operations, challenging existing transportation networks, and creating international business opportunities never imagined before. Trade is driving economic growth throughout the United States and in the Inland Pacific Hub study area. Companies today depend on transportation networks to move goods and people around the world as never before.

The dramatic growth of international trade has placed new competitive pressures on existing industry in the IPH study area while creating new challenges and opportunities for emerging and existing business sectors. While freight transportation alone is not a sufficient condition to cause the economy to prosper, it is an important linkage to support more sustainable and competitive existing business, attract high quality jobs and investment into the IPH study area, expand tourism activities, and provide efficient access to larger customer market areas in the Northwest and Canada. The IPH study area's proximity to major Asian-Pacific gateways, i.e. Seattle, Tacoma, Portland and Vancouver provide the region ample opportunity to capture an increasing share of the growing export trade between the U.S. and China. Between 2005 and 2009, U.S. exports to China grew 69 percent.¹

There are those who believe that "*location*" no longer matters, that production and the provision of services can be accomplished anywhere in the world today. While the world has become more closely integrated and connected, there are very important differences between regions and communities that are important to future economic viability. Some routine business operations can often compete very effectively outside the U.S., but there are businesses that require access to natural resources, continual innovation, teamwork, and close communication with customers and suppliers to effectively compete and bring quality products and services to the marketplace. In this context teamwork means the ability to work in collaboration either by physical proximity or by advanced telecommunication to facilitate innovative processes, such as those required in scientific research and product design. The implication is that team members being physically located in proximity to one

¹ US Dept. of Commerce, International Trade Division, TradeStats Express, <http://tse.export.gov/>
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another allow cross functional teams to work together in the same location when required to optimize a process. The distinctive characteristics, talents, and inventive capabilities within the Inland Pacific Hub study area will become even more important in the future as businesses seek the best locations to optimize their competitive advantages and capitalize on the unique assets, knowledge, and expertise found in specific regions.

A recent study by the U.S. Council on Competitiveness identified “regions” as a critical building block for the economy:

“In order to compete successfully in the new global marketplace, firms must have access to the assets—human, financial, institutional, and physical—that support innovation. Although national and state policies create a platform for innovation, the focus of innovation activities is at the regional level where workers, companies, universities, and government interface most directly. Supporting dynamic firms requires that regions provide access to skilled labor, a solid transportation and communications infrastructure, and a business culture that supports entrepreneurship and risk-taking”.²

While most of the “heavy lifting” in economic development is done by the private sector, the public sector in the IPH study area plays a critical role in building an environment where the conditions for success can come together. The idea of regional planning for transportation also extends to economic development. For instance a starting point could be the development of a regional master plan for the IPH study area to address environmental issues and protect future sites for business development and address future needs for industrial water, sewage and communication infrastructure.

Understanding the critical factors that influence a company’s decision in selecting a location for a new operation or business expansion is a quintessential economic development activity. The economic prosperity of the IPH study area depends upon the business and industry in the region and their requirements for labor, transportation, utilities, and other services. Because the IPH study area is a “producer” region that exports far more than it imports, businesses in the study area are also heavily dependent on trade relationships with businesses external to the region.

To help business leaders, economic developers, real estate investors, and local and state governments better understand these site location trends, a corporate site location survey has been conducted annually for the past 23 years by the Area Development Site and Facility Planning Journal.³ The number one factor impacting site selection decisions in the 2008 Corporate Site Survey was **highway accessibility**. Rising concern over higher fuel costs, overall transportation costs, and the ability to schedule timely deliveries is evidenced by three major site selection factors: highway accessibility, proximity to suppliers, and railroad services increasing significantly over last year’s rankings. The key corporate site selection factors identified in the survey along with factor rankings based upon the percentage of respondents who identified each factor as “very important” or “important” to their site decisions are shown in **Exhibit 1**.

² Council on Competitiveness, “Guide for Effective Engagement of Business Leaders in Regional Development”

³ “23rd Annual Corporate Survey” Area Development Journal Site and Facilities Planning, January, 2009
Inland Pacific Hub Transportation Study

Exhibit 1: 2008 Corporate Site Selection Factors

Ranking	Factor	2007%	2008%
1	Highway Accessibility	90.0%	96.9%
2	Labor Costs	95.0%	92.3%
3	Energy Availability and Costs	82.4%	89.0%
4	Available Skilled Labor	85.1%	88.7%
5	Occupancy or Construction Cost	85.5%	88.2%
6	Available Land	73.3%	85.4%
7	Corporate Taxes	90.8%	83.8%
8	Incentives	88.6%	83.4%
9	Environmental Regulations	68.9%	83.2%
10	Proximity to Major Markets	76.9%	82.8%
15	Proximity to Suppliers	49.3%	71.8%
22	Railroad Services	20.8%	38.1%

These factors, along with other unique competitive conditions, will affect the viability and competitiveness of business investment in the IPH study area and will significantly influence the site decisions that businesses make in the future about locating new business operations or expanding existing facilities. Transportation alone will not foster economic growth; however, improved transportation connections linked with an available skilled workforce, sites with the required utilities that allow building construction to begin immediately, “one-stop permitting” assistance, and multimodal transportation services can be significant differentiators improving the IPH study area’s ability to attract and retain businesses in the future.

Economic development is a very competitive business. Companies continually assess their operations to evaluate profitability and determine where to invest revenues to position their business for the future. In order for businesses to choose their location for further development they must consider the cost efficiencies of the location. The land availability, water and wastewater utilities, as well as high speed broadband access all weigh into potential developments. Those businesses will also consider the available population and workforce that could potentially support their endeavor.

EXISTING INDUSTRIES IN THE INLAND PACIFIC HUB STUDY AREA

Agriculture, forest products, manufacturing, and mining have been important in the IPH study area economy for many years. These core industries helped to drive the development of much of the transportation infrastructure in the region. The IPH Regional Freight Profile shows that these industries still consume a significant volume of the region's transportation capacity. Based upon the 2007 TRANSEARCH data, lumber or wood products, nonmetallic minerals, farm and food products, and secondary traffic make up the majority of the outbound commodities from the IPH.

A recent analysis of industrial clusters in eastern Washington excluding Spokane County, found that in the remaining nine Washington counties in the study area, the two largest industrial clusters were agriculture/food products and forestry products. Two smaller industry clusters were also identified in this analysis as having a concentration of employment and growth in recent years, mining and heating equipment manufacturing.⁴ Agriculture/food product firms are located primarily in the southern Washington counties while the forest products, mining, and heating equipment firms are clustered primarily in the northern Washington counties.

FOREST PRODUCTS

Forest products continues to be a key industrial cluster in the IPH study area and this sector has developed important domestic and international business relationships that are dependent upon the regions' transportation infrastructure. A recent study by the University of Washington projects a continued slow contraction of employment in the forest products sector that will affect the IPH study area.⁵ While the economic and employment outlook for the forest products sector is not positive over the next several years primarily due to the decline in residential construction, continuing research by the Inland Northwest Forest Products Research Consortium has developed new technologies and processes that may enhance industry operations in the IPH study area that enable this industry to compete more effectively in the future. This research has improved wood strand composites allowing for utilization of small diameter timber, wood and plastics composites for more durable building products, and high-temperature kiln drying to reduce energy consumption.

According to the Washington State Department of Natural Resources and the Idaho Department of Lands, timber harvesting in the IPH study area has been trending downward. The 2005 timber harvest was about one-third less than harvest levels in 1990. The reasons for this decline include forest health, changes in the management practices of the National forests, and increasing foreign competition. One of the most significant challenges facing this industry is access to raw materials. The reduction of timber harvests, labor supply, and transportation pose a continuing challenge for this industry sector. Work in this sector is physically demanding and seasonality makes it difficult to attract and retain workforce. Because of declines in timber harvests in the IPH, more timber is coming into the study area from adjoining states and British Columbia. This drives up the transportation costs affecting the pricing and competitiveness of forest product from the IPH study area.

⁴ "Industrial Cluster Analysis in the Tri-County Region of Washington State", August 2007, Chase Economics for Tri-County Economic Development District

⁵ Beyers, William B., et al, "Washington State Workforce Development Areas", Nov. 2008, page 62

AGRICULTURE AND FOOD PROCESSING

Agriculture employs over 23,400 people within the Inland Pacific Hub study area and continues to be an important component of the regional economy.⁶ Based on a gross contribution analysis conducted by the University of Idaho, the agriculture sector, inclusive of food processing generated over \$12 billion in total sales and employed over 56,000 people statewide in Idaho in 2006.⁷ Idaho ranks 20th in the nation in total output of agricultural products according to a study by the U.S. Department of Agriculture and the state ranks first nationally in potato production, second in barley, and third in sugar beets. Idaho's principal agricultural products include beef, wheat, corn, and bean in addition to the products mentioned previously.

Agriculture accounts for over \$28 billion of Washington State's economy according to the Washington Department of Commerce.⁸ The diversity of agriculture in Washington allows producers to adjust their mix of products as market conditions and demands change. Several counties within the IPH study area produce a significant volume of agricultural products. Food processing represents an important value-added industry in the IPH study area. Food processing is an important component of the economy in Washington State; however, only \$592 million of the \$15 billion generated annually from the food processing industry is processed in eastern Washington, primarily in Spokane County. With a substantial volume of agricultural production and a diversity of crops, there should be opportunities to attract additional value-added processing businesses to Adams, Whitman, and Lincoln Counties. Similar economic data by county for food processing in the Idaho IPH counties was not available.

The food production and processing industry requires both unskilled and skilled workers as well as highly educated researchers to remain competitive globally. A decline in the food production and food processing workforce in Washington and Idaho continues to be a challenge. Workers are more mobile and, with increased job skills, they seek better job opportunities.⁹ Attracting and preparing new workers with the right skills and continuing to link farm operations with ongoing research at the regional Universities can generate competitive advantages for agribusinesses within the IPH study area.

Agricultural production in both states is exported, and world agricultural supply and demand factors have a direct impact on prices received by growers and processors in the region.¹⁰ International trade policies, fluctuations in foreign currency exchange rates, oil prices, and weather all affected the price of regional agricultural products and the competitiveness of these IPH goods in international markets. Wastewater treatment at food processing plants is an issue as more stringent regulatory guidelines are established by EPA and state agencies creating additional costs for these facilities. Continual investment in food production, process research to develop innovative waste treatment processes, improved products, strategies to gain pricing advantages, and implementation of new innovations in product

⁶ Data includes Grant and IPH Counties, Washington State Employment Security Department, Agricultural Labor and Employment June 2009; Idaho Department of Labor, Work Force Trends December 2008

⁷ University of Idaho Extension, "The Contribution of Agriculture to Idaho's Economy: 2006

⁸ State of Washington, Department of Commerce, "Value-added Agriculture", www.chosewashington.com

⁹ Washington Department of Agriculture, "Review of the Food Processing Industry in Washington, Working Paper Commissioned for the Future of Farming Project", 2008

¹⁰ Washington State Employment Security Department, "2008 Agricultural Workforce in Washington State", June 2009

development are vital to maintaining global competitiveness for this industry and research in these areas is being conducted in the IPH study area.¹¹ Finally, the availability of efficient, reliable, and cost effective transportation can enhance shipping of agricultural production domestically and internationally expanding market opportunities and creating pricing advantages for agribusinesses in the IPH study area. The IPH study area's access to two Class I railroads, river transport and longer combination vehicle (LCV) truck transport provides the region with ample access to transportation options for moving agriculture products by cost effective means.

MINING

According to the U.S. Department of Labor, Bureau of Labor Statistics, the mining industry employed over 5,100 people in the IPH study area in 2007.¹² The mining and mineral industries in the IPH study area include firms engaged in mineral extraction of ores, and natural gas. There are other products included in this industrial sector such as stone, clay, metals, sand, gravel, and chemical and mineral fertilizers. The mining and mineral industries primarily located in the northern IPH counties were silver, gold, zinc, magnesium, and molybdenum and are mined.¹³ Sand, gravel, and aggregate for highways and construction make up 95 percent of the nonmetallic minerals shipped in the IPH study area.¹⁴

Mining employment in Washington has remained relatively stagnant for the past decade while employment from mining operations has experienced modest increases in Idaho.¹⁵ Employment in mining and mineral operations extends beyond just extraction; it involves exploration, mineral assessment, mine construction, environmental monitoring, and reclamation. According to a recent study of the Tri-County region of Washington (Ferry, Stevens, and Pend Oreille Counties), the average covered wages for mining workers was \$54,950 in 2006, among the highest in the state.¹⁶ According to the National Mining Association, jobs in the mining industry in Washington and Idaho are well-paying jobs, with an average wage of \$53,300.¹⁷

A recent industrial cluster study by William B. Beyers, Paul Sommers and Andrew Wenzl, projected continued modest growth for the mining industry in the Washington counties of the IPH and review of employment projections for Idaho IPH counties projects modest employment growth as well. While mining does not represent a future growth industry for the IPH study area, sustaining existing mining operations is important to other industries both in the IPH study area and nationally so this sector will continue to provide employment within the region primarily in extraction, engineering, and environmental reclamation.

¹¹ Washington Department of Agriculture, "Value-Added Agriculture"

¹² U.S. Department of Labor, Bureau of Labor Statistics, Quarterly Census of Employment & Wages, July 2009

¹³ Minerals Division, U.S. Geological Survey

¹⁴ WSA Regional Freight Profile, August 2009

¹⁵ Idaho Mining Association, Mining Industry Report 2008

¹⁶ "Industrial Cluster Analysis in the Tri-County Region of Washington State, August 2007, Chase Economics for Tri-County Economic Development District

¹⁷ Idaho Mining Association, Mining Wages

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GROWTH INDUSTRIES IN THE INLAND PACIFIC HUB STUDY AREA

According to many economists, the current recession is not just another mid-course correction in the business cycle but a general restructuring or transformation of the economy.¹⁸ The impacts of this downturn are global in scope affecting international markets as well as communities throughout the U.S. While some industries may be pushed to the brink of failure, when the economic recovery inevitably returns, surviving businesses and emerging industries will create new job opportunities. A greater emphasis on retraining workers for new careers will be needed generating additional opportunities for the education and training sector that is already a growth industry in the IPH study area.

In order to identify growth clusters within the IPH study area, a number of resources were utilized, including review of industry sector data and economic data from IPH counties and a literature review of a number of resources including Bureau of Labor Statistics and other federal data sources, state workforce reports, and studies. For each of the identified clusters, the study area has comparative advantages, disadvantages, and linkages to other industries that create strategic opportunities for these business clusters. Just as in other regions of the country, conditions that support and nurture these industries are not uniform throughout the IPH study area. Available workforce and workforce skills, land and building that meet the needs of business, broadband services, and other strategic factors will be evaluated by each company considering a potential location in the IPH study area. The unique requirements of each company will determine the precise evaluation criteria and weighting that they will utilize in making their ultimate investment decisions.

GROWTH AND EMERGING INDUSTRIES IN THE METRO INLAND PACIFIC HUB STUDY AREA

A recent industrial study for the State of Washington identified a number of strategic business clusters in the state including Spokane and Kootenai Counties.¹⁹ High technology manufacturing was identified as a substantial cluster in these two metro counties. High technology manufacturing, including manufacturing of aircraft components, communications and computer equipment, and electrical signal testing and electrical equipment, were identified as strategic growth sectors for these two metro counties.²⁰ This analysis went beyond the traditional concentration analysis and evaluated linkages to other industries within the study area, quality of wages, and industry size to assess the strategic importance of these clusters. Additionally, the study identified health care, educational services and construction as important growth clusters in both counties.

The majority of the identified cluster firms for Spokane and Kootenai Counties in high technology, manufacturing, and services were located near major roadway corridors. This reflects the important role accessible transportation connections play in locating these industry clusters within a broader regional workforce catchment area.

¹⁸ Wall Street Journal, The Economist, Business Week

¹⁹ Industrial Cluster Analysis for Washington State Workforce Development Areas, prepared for the Washington State Workforce Board, November 2008

²⁰ "Industry Cluster Analysis for Washington State Workforce Development Areas, Region 12" report prepared for the Washington State Workforce Board, Nov. 2008

Great Spokane Incorporated (GSI) conducted a detailed industry analysis to define core industry clusters for their future economic development efforts. GSI retained Angelou Economics to analyze and validate the targeted clusters and provide additional guidance on attracting these targeted clusters to the Greater Spokane region. As a result of the analysis, six target clusters were recommended:

- Health Sciences
- Aerospace
- IT and Digital Services
- Clean Technology
- Logistics and Distribution
- Industrial Machinery and Supplies (including building material and supplies)

Niche industries within these clusters that were identified as recommended targets for the Greater Spokane region include:

Health Science

- Medical and Diagnostic Laboratories
- Medical Equipment and Supplier
- Bioinformatics

Aerospace

- Maintenance, Repair and Overhaul (MRO)
- Navigational, Measuring, Electrical, and Control Instruments Manufacturing
- Materials and Component Manufacturing to Serve Boeing Supply Chain
- Small Aircraft Manufacturing, Original Equipment Manufacture

IT and Digital Services

- Communications Equipment Manufacturing
- Computer and Peripheral Equipment Manufacturing
- Computer Systems Design and Related Services
- Motion Picture and Video Industries
- Software Publishers

Clean Technology

- Sustainable Building Design and Materials Manufacturing
- Solar Cell Manufacturing
- Wind Turbine Manufacturing

Logistics and Distribution

- Assembly and Distribution of Medical Equipment and Supplies
- Hub for International Import/Export and Regional Distribution Centers
- Logistics Systems Design/Supply Chain Management Software

Industrial Machinery and Supplies

- Building Supplies and Materials Manufacturing
- Industrial Machinery Manufacturing
- Metal Working Machinery Manufacturing
- Ventilation, Heating, A/C Machine Manufacturing

Based upon the analysis developed in these two industrial cluster studies for the metro IPH counties, there are twelve specific industry clusters identified. These industry clusters are the focus of the metro counties economic development efforts and the foundation for workforce development activities in the metro counties within the IPH study area.

The twelve clusters are:

- Aerospace
- Communication Equipment
- Computer Equipment
- Electrical Signal Testing
- Electrical Equipment
- Health Care and Health Sciences
- Education Services
- Construction
- IT and Digital Services
- Clean Technology
- Logistics and Distribution
- Industrial Machinery and Supplier

Two industry clusters were common to both studies, aerospace and health sciences. Nine of the identified clusters are traded-sector businesses. Three of the clusters could be either traded-sector or non-traded sector businesses, health care/health sciences, education services, and construction. To the extent that these three industrial clusters represent a service that can be essentially “exported”, bringing revenues from external sources, they are traded-sector businesses. For example, construction firms that work outside of the study area or health care services that draw patients from other areas of the country are functioning as traded-sector businesses.

The use of shift-share analysis is a standard analytical tool that evaluates regional job growth and assesses how that job growth is affected by national trends and what portion of that growth is attributable to the competitive factors within the region vs. national business cycles and industry growth. The shift-share analysis for all of the IPH study area counties suggests there are competitive advantages within the region for: *Professional and Business Services, Manufacturing, and Trade and Transportation*. Only three of the metro county clusters that were identified in the abovementioned studies fall outside of these three competitive sectors. Those three sectors are *Health Care, Construction, and Clean Technologies*. Generally the targeted clusters identified for the metro counties in the IPH study area are consistent with the areas of competitive advantages identified in the IPH shift-share analysis.

A recent study conducted to assess competitive factors for the aerospace industry in Washington provides some insights that may help to enhance the competitiveness for other clusters as well. The “Aerospace Industry Competitiveness Study” evaluated recent aerospace projects that chose to locate in other states and analyzed factors that influenced those decisions.²¹ The study ranked key site selection factors and assessed how well Washington performed on each of these factors. The study found:

²¹ “Aerospace Industry Competitiveness Study”, prepared by Deloitte Consulting, April, 2009

- Washington labor costs were among the highest in the country in the aerospace industry which hindered competitiveness
- Washington had higher workers' compensation costs paid by employers
- Washington has a larger existing aerospace manufacturing workforce and more engineers focused in aerospace than competitor states
- Washington's average unemployment insurance rates were higher than in competing states
- Washington had the highest percentage of college educated adults compared to the competing states
- Facility-related costs (i.e., construction costs, electric rates, and water rates) were higher at the Washington sites than other competing sites
- Overall cost of living factors were highest in Washington

The Washington Aerospace study examined the industry state-wide assessing labor costs, state regulations and fees, land and facility development costs, cost of living, availability of highly educated workers, and the existing aerospace workforce. The positive findings of the assessment, e.g. education levels of the workforce and the availability of skilled aerospace workers, are a positive attribute for economic development in eastern WA. Unfortunately the state regulatory and fee costs, the higher land and facility costs (due in some measure to affects of statewide Growth Management Laws) affect Eastern Washington, just as they affect Western Washington.

Similar research has been conducted in Idaho. The state has developed Project 60, a plan to strengthen its rural and urban economies through a comprehensive initiative designed to grow the states' gross domestic product (GDP) from \$51.5 billion to \$60 billion by nurturing existing businesses while also attracting new companies to the area. The plan has an idealistic goal to create quality jobs for all Idahoans by fostering systemic growth through workforce training and recruitment, placing more emphasis on business retention and expansion, and implementing innovative technologies in the region. The plan has laid out several target industries that complement the existing mix of businesses in the region today. The targeted clusters include:

- Alternative Energy
- Recreational Technology
- Manufacturing
- Aeronautics
- Technology

GROWTH AND EMERGING INDUSTRIES IN THE NON-METRO IPH STUDY AREA

There are differences between the growth clusters in the metro counties of Spokane and Kootenai Counties and the clusters identified for the non-metro IPH counties in the study. For many years non-metro economies have faced challenges often as a result of their dependency on more traditional industry clusters such as mining, manufacturing, and agriculture. In the IPH study area, many of the non-metro counties face unique economic development challenges including a limited availability of land held in private ownership that is suitable for business and industrial development, limited marketing budgets to support

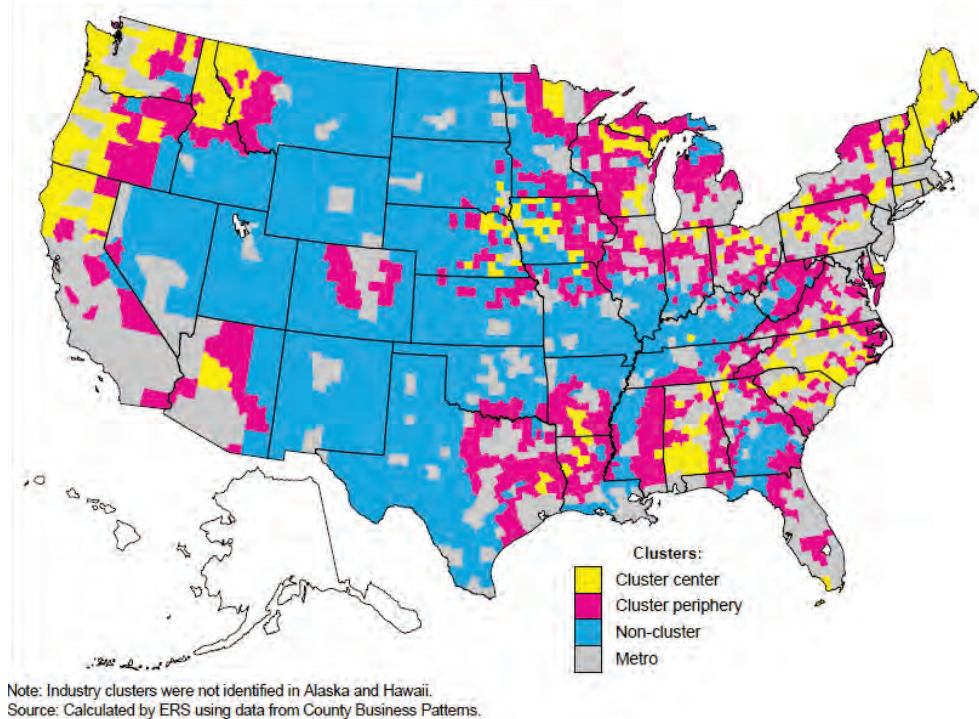
business attraction strategies, constrained public tax revenues to support local economic development activities, and infrastructure needs that exceed the local financing capacity.

Rural industrial clusters are a concentration of businesses in an area that allow them to take advantage of natural resources, access significant market areas or larger labor pools, and often as a result there are lower transportation costs or labor costs for these companies than there might have if they were located elsewhere. Often in rural areas, clusters are merely similar businesses that draw on common suppliers, known as *sectoral* clusters.²² A study conducted by the USDA found that “at the national level, when all 18 manufacturing industries are considered together, the average cluster-employed worker earns about 7 percent more than other comparable workers”.²³

The most significant concentration of rural clustering is found in and around the IPH study area, in the industrial Northeast, the Great Lakes Region, and in the Southeast. Industrial clustering is very limited in the Plains and Rocky Mountain states. **Exhibit 2** shows four types of non-metro counties: 1) those without establishments in any industry clusters; 2) those with non-clustering establishments; 3) peripheral counties of clusters; and, 4) central counties in clusters with the highest concentration of businesses relative to adjoining counties. Most of the non-metro IPH counties fall into the fourth category.

Exhibit 2: Non-metro Manufacturing Industry Clusters

Nonmetro clusters are less common in the Great Plains and Rocky Mountains



Bonner County is an outstanding example of economic development success in the IPH study area. In spite of their location in the northern Idaho panhandle, some challenging transportation connections and winter weather issues, Bonner County has been successful

²² “Rural Industry Clusters Raise Local Earnings”, USDA, Rural Development Perspectives, vol. 12, no. 3

²³ “Ibid, page 22

attracting and retaining businesses and helping local companies achieve very impressive growth. Bonner County has an aggressive economic development program that works closely with local businesses to help them resolve problems and promotes strategic public investments that benefit businesses and the community, such as their efforts to improve broadband services in the area.

Karl Dye, Executive of the Bonner County Economic Development Corporation says, “We have found that the most successful companies in our region have one thing in common: an entrepreneurial owner or management team who has made a conscious decision to build their business in Bonner County. They have accepted the fact that they may face challenges because of our location, but it is a location they want to live in.” Successful examples of these entrepreneurial businesses include: Coldwater Creek, a national retail apparel company; Litehouse Foods, a food processing company that manufactures refrigerated salad dressings and other products distributed nationwide; Quest Aircraft, a company that manufactures bush/utility aircraft and provides missionary and humanitarian aircraft without charge to groups around the world; and, Unicep Packaging Inc., an innovative packaging solutions firm headquartered in Sandpoint.

Based upon an extensive literature review, interviews with regional economic developers and businesses, and analysis of location quotients, shift-share analysis and additional professional evaluation the following sectors offer potential for economic growth in the non-metro counties of the Inland Pacific Hub study area:

1. Value-added agribusiness – The data suggests there are niche market opportunities in food processing primarily in Adams, Lincoln, and Whitman County, Washington. These counties produce a significant volume of agricultural products but have relatively low gross sales from food processing. Food processing is a significant value-added opportunity for non-metro counties in the IPH study area. According to some studies, there is an 80 percent value added from basic food processing.²⁴ Although many of the existing food processors in the IPH study area are large-scale businesses, the Departments of Agriculture in both Washington and Idaho provide services to help small businesses begin new business operations providing potential support for new niche market processing operations.

Further agricultural market opportunities within the non-metro IPH counties may be realized in wineries, livestock production, organic and specialty crops, and agri-tourism. The IPH study area is already a source for “identity preserved crops” that generate higher prices and greater revenues for growers.²⁵ This specialized crop production strategy can generate long-term profits for producers in both domestic and international markets.

There are a number of opportunities to expand value-added agriculture in the non-metro IPH counties. Direct marketing to customers or direct selling to restaurants generates opportunities to increase pricing and revenues from agricultural production. Many growers in the IPH study area have developed relationships with local groceries and

²⁴ Washington State University, Extension Food Processing

²⁵ “White Paper-Identity Preserved Marketing: Key to Future Agricultural Viability”, Identity Preserved.com, 2003

restaurants but opportunities to expand on those markets create additional value-added agriculture for the study area.

2. Bio-products and green technology – Bio-products refers to products that are manufactured using chemicals, energy, or processes produced from biological materials or biomass, which are renewable organic materials. This “green” sector offers opportunities to capture what was once considered “waste products” and produce new products that come from forestry, agricultural, and even municipal waste sources. Research and technology within the IPH study area are making significant advances in this industry, and because of the sustainable volume of “raw materials” within the study area, there is a natural linkage between the available “waste products” and producing new industrial products. Bio-product opportunities for the IPH study area include green fuels, value-added bio-products for feed and fiber, and environmentally friendly lubricants, chemicals, coatings, and fibers derived from non-petroleum sources.²⁶ Within the IPH study area, Washington State University, Pacific Northwest National Laboratory, and the USDA are involved in research to continue to develop new bio-products.

Inexpensive electric power and state incentives have created an opportunity to create additional “green” economic development opportunities expanding on solar panel, photovoltaic cells, and silicon production in the IPH study area. Solar Grade Silicon LLC located in Moses Lake, WA could not keep up with demands for silicon last year. Several solar panel and silicon producers are considering sites for new facilities in the IPH study area at the present time, according to local economic developers. Workforce, land availability, and wastewater treatment capacity will be key factors for companies considering IPH locations for these types of facilities.

3. Tourism and Visitor Services – Tourism is important to all of the counties within the IPH study area. The combined visitor expenditures for all of the IPH counties totaled over \$1.6 billion.²⁷ Visitor expenditures, excluding Spokane and Kootenai Counties, were \$505,485,000. Bonner, Nez Perce, Stevens, and Whitman Counties have the most significant tourism revenues of all the non-metro counties. There are a number of tourism assets within the non-metro IPH counties that represent opportunities for future growth in the tourism industry. Niche market tourism sectors including adventure tourism, agri-tourism, eco-tourism, and heritage tourism experienced steady growth prior to the recession and are expected to continue to play an important role in the tourism industry when the economy stabilizes.²⁸ Tourism is an important traded-sector business for the more rural areas as it attracts both people and revenues most often from outside the IPH study area.

Successful tourism also offers a high-value business development opportunity for the IPH study area. There are many examples of business leaders who have visited an area and subsequently decided to make a business investment there, including the CEO of Trex in Reno, Nevada or the CEO of Coldwater Creek in Idaho. A number of non-metro

²⁶ “Creating a Bioeconomy in Washington State”, Washington State University, 2008

²⁷ “Washington State County Travel Impacts 1991-2007”, prepared by Dean Runyan Associates, “The Economic Impact of Travel & Tourism in Idaho”, prepared by Global Insight and D.K. Shifflet. Note – dates for data collection do not coincide between the two state, Idaho reflects 2004 data collection and Washington reflects 2006 data collection, the most recent available data

²⁸ Travel Industry Association of America, 2009 research

IPH communities have been successful in developing their tourism industry but significant opportunities for growth in this sector remain, particularly if more visitor services can be developed within the study area to support the tourism assets that already exist in this area. These visitor services include lodging in a range of price points, restaurants and catering, and enhancing services related to arts, entertainment, and recreation.

While wages in the tourism sector are low and work is seasonal, there are many small business owners in this sector that earn more than the regional average income. Some of the tourism assets in the non-metro IPH study area include:

- Access to 2010 Olympic Games and associated Paralympics
- Many scenic byways including Panhandle Historic River Passage, Coulee Corridor, The Mullan Road, the Lewis and Clark Trail, and the International Selkirk Loop
- Several ski areas
- Numerous historic sites
- Rivers and wildlife areas
- National Forests and State Parks
- Friends of the Coeur d'Alene Trails

Transportation access and wayfinding programs along with marketing and advertising funds to attract more visitors to these areas are vital to building additional tourism revenues in the non-metro IPH counties. The availability of appropriate visitor services will be a constraint as well, until more of these services are readily available in the non-metro counties but for many of these counties, the growth of tourism represents an important revenue source for the future.

4. Forest Products – Within the non-metro counties of the IPH there are millions of acres of forestland. The northern counties in the IPH study area represent a significant forest resource and are challenged by the threats facing this industry and by the limited availability of privately owned land that could support the growth of other industries in this area. New technologies and industrial processes for creating finished lumber have been developed at universities in the region providing some potential growth opportunities within this sector. Building commercial opportunities based on this research may represent new strategic potentials for the timber sector in some rural IPH counties.

Demand for kiln-dried dimension lumber and veneer that is due in part to concerns about mold and related health concerns represents one of these sector growth opportunities.²⁹ However, the currently excess supply of housing stock following the mortgage crisis of the last several years is likely to dampen the demand for new housing for the foreseeable future. There are also value-added market opportunities to be developed expanding upon international markets, providing specialized woods to craftsmen furniture makers and building upon the small but growing niche in the IPH study area. Linking residual forest waste products to the creation of biomass and bio-fuel feedstock also represent a potential alternative energy opportunity.

²⁹ Northwest Forest Products Research Consortium, newsletter 2008

5. Manufacturing – The shift-share analysis for the IPH clearly shows regional competitive advantages for manufacturing in the IPH study area. Although manufacturing employment has decreased nationally, improvements in technology and productivity account for some of those job losses and new opportunities exist in advanced and high-value manufacturing. There are a diverse range of manufacturers in the non-metro IPH counties including:

- Food Processing
- Primary metal manufacturing, including manufacture of metal alloys and related products
- Fabricated metal manufacturing, including machining, tool making, welding, coatings, and small arms manufacturing
- Power electronics testing equipment
- Farm and mining machinery manufacturing
- Heating equipment, including warm air furnaces and commercial laundry finishing equipment
- Boat building

The public sector plays an important role in enhancing the manufacturing sector within the IPH study area through their efforts to support an environment where the manufacturing sector can be competitive and prosper. The public sectors efforts that help these manufacturing firms maintain or improve their competitiveness, both in terms of cost and quality of their products will help them to continue to create jobs in the IPH study area. Public sector investments that can help to enhance competitiveness include:

- Improved transportation facilities and networks
- Focusing on the cost of utilities services and insuring timely availability of treatment and collection/distribution services
- Assessment of proposed regulations to evaluate both the cost and consequences of regulations on local businesses balanced with expected good to be realized from regulatory changes

Most of the non-metro counties in the IPH study area have manufacturing operations. Some of the manufacturing businesses in the study area, such as Schweitzer Engineering Laboratory (SEL), were started by entrepreneurs with personal ties to the region. SEL designs and manufacturers embedded systems to monitor, control, and meter electric power systems. The company began in 1982 as the result of a PhD project at Washington State University. Today the company sells their products and research around the world from their headquarters and manufacturing facility in Pullman, WA.

Several states have developed successful “cross match” programs that provide information about key inputs used by manufacturers around the state. These programs enable smaller businesses to identify potential customers for their products. As an example, Quest Aircraft currently purchases aviation parts from companies in Seattle but there may be opportunities within the study area to find a firm with machine tooling and heat treat capabilities that could fabricate parts that meet Quest’s requirements.

LAND AVAILABILITY

Assessing the attractiveness of a region for specific targeted businesses requires an evaluation of a variety of factors. There are several key criteria common to most businesses including transportation access, available skilled workforce, labor costs, and business climate including regulations, taxes and fees, incentives, support services, and the availability of readily developable land or buildings. Economic development is a very competitive business. Today, communities in the IPH study area compete with communities and regions around the world for business opportunities, if this region can not meet a business's requirements there will most certainly be another community that will be pleased to have an opportunity to try and do so.

The “place” requirements for business and industry have changed in recent years as globalization transformed the pattern of goods movement and production. The real estate market has seen the advent of mega-projects requiring large acreage sites over 1,500 acres. Logistics centers in major market areas such as Chicago, Memphis, Dallas, and Atlanta have developed multimodal transportation facilities and millions of square feet of warehouse and distribution space. Mega-distribution centers can generate substantial cost savings for users, particularly for companies that receive a significant volume of goods from a number of different producers. These centers also create thousands of well paying jobs.

Most mega-distribution centers are located near heavily populated metropolitan regions, although some suburban and even rural locations have been developed where land availability, development costs, and workforce availability are an issue. Major retailers and third-party logistics companies are the primary users of the largest warehouse and distribution operations. As the economy emerges from the recession, many economist and real estate experts predict that the retail sector will not return to pre-recession volumes for several years. This factor will likely stymie development of some of the major logistics/distribution developments in the planning phase when the recession began.

Concerns over fuel costs, coupled with the slow recovery of some key market sectors, may focus attention on a “hub and spoke” model of distribution and warehousing placing smaller facilities closer to consumers. This change could benefit market areas that are accessible to consumers and businesses at the end of the supply chain rather than focusing only on those major population centers.

The availability of sites with utility infrastructure in place, environmental studies completed, access to a quality transportation network, and proximity to a skilled workforce are important factors for business and industry as they evaluate potential locations for new facilities. The dynamics of business operations have changed as have the requirements for site selection. Today's companies and corporate site consultants want to finalize their site selection, construct the facility, and begin start-up operations within a very tight timeframe. As a result, the most competitive locations are generally those that have the required utilities and infrastructure in place, initial permitting secured and pertinent due diligence completed. Companies want a site that meets their requirements, limits their risk exposure, enables them to expedite their construction timeline, and allows them to meet the delivery requirements of their customers.

Because businesses want to minimize the time between site selection and completion of construction, many communities prepare due diligence reports and secure preliminary permits for wetland mitigation and other development issues on business and industrial sites before a specific tenant is even identified. Concerns about delays caused by permitting or unexpected environmental issues have focused a great deal of attention on identifying and verifying sites that meet the specific requirements of projects. These time and cost factors are driving more and more of the site evaluation decisions today. Many companies will only consider “certified” sites insuring that the site complies with key regulatory requirements; that the utility, communication, and transportation infrastructure has been designed and financing is in place; environmental permitting can be secured within an established timeframe; and site development requirements can be readily quantified.

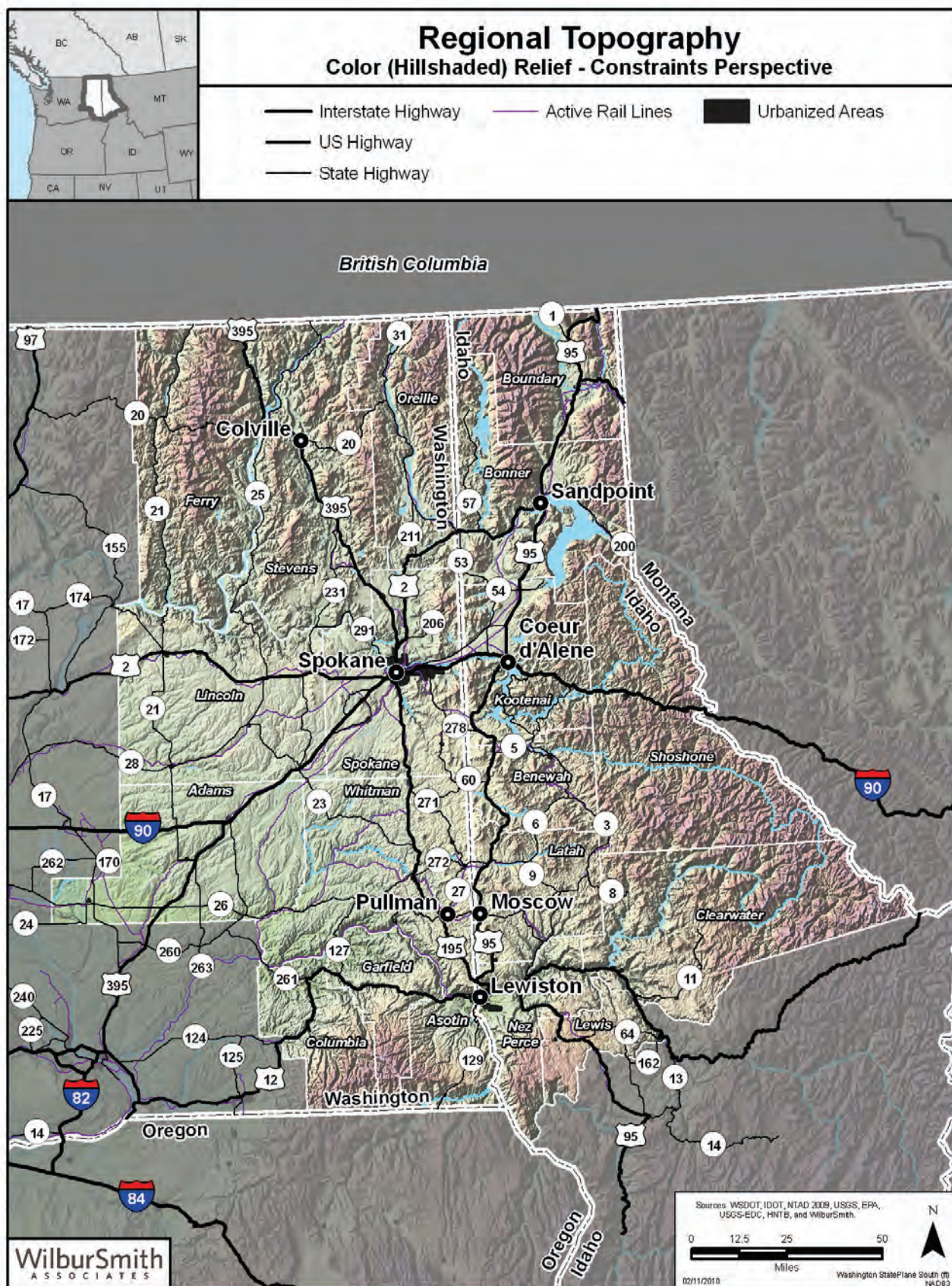
The facility and infrastructure needs of companies vary depending upon a range of factors. Generally, the acquisition and development of property and environmental permitting require the longest lead times and as a result communities that own property with basic utilities installed, permitting in place, and can provide ready access to transportation infrastructure are in the most competitive position to meet the requirements of businesses seeking to locate a new facility or expand one. Some companies will only consider available buildings primarily due to time constraints. Many companies will not construct new facilities on leased land and the unique facility requirements of some businesses make it difficult to structure a lease agreement with the terms and conditions typical in today’s real estate market.

Because of a number of physical and financial constraints within the region, the availability of sites that meet the “state of readiness” requirements for many businesses is limited in the IPH study area. This condition may become a more significant issue for the region over time if concrete steps are not taken to identify and preserve appropriate land resources for economic development, particularly those sites that are accessible to quality transportation services. These physical constraints include public land ownership, rugged topography, availability of water and wastewater services, access to transportation infrastructure, wetlands and other environmentally protected areas, and proximity to available workforce.

The maps that follow depict a number of these physical constraints in the Inland Pacific Hub study area. **Exhibit 3** gives a regional perspective of relief that can constrain development in the region. **Exhibit 4** identifies primary forest lands, agriculture areas, and water features in relation to primary highways and railroads. **Exhibit 5** shows land constraints resulting from public land ownership, reservoirs and waterways, and other environmental features in relation to transportation networks and major cities in the region.

By linking the constraints and assets shown on each of these maps, the importance of identifying an inventory of sites to support the long term economic development of the region becomes more evident. The transportation network that serves the region will play an increasingly important role in economic development as transportation costs and efficiencies becomes a more significant competitive advantage globally. Preserving appropriate land to meet the future needs of business and industry that is accessible to the transportation network, utilities and workforce is crucial to the region’s economic development.

Exhibit 3: Regional Topography



Land Cover Classification

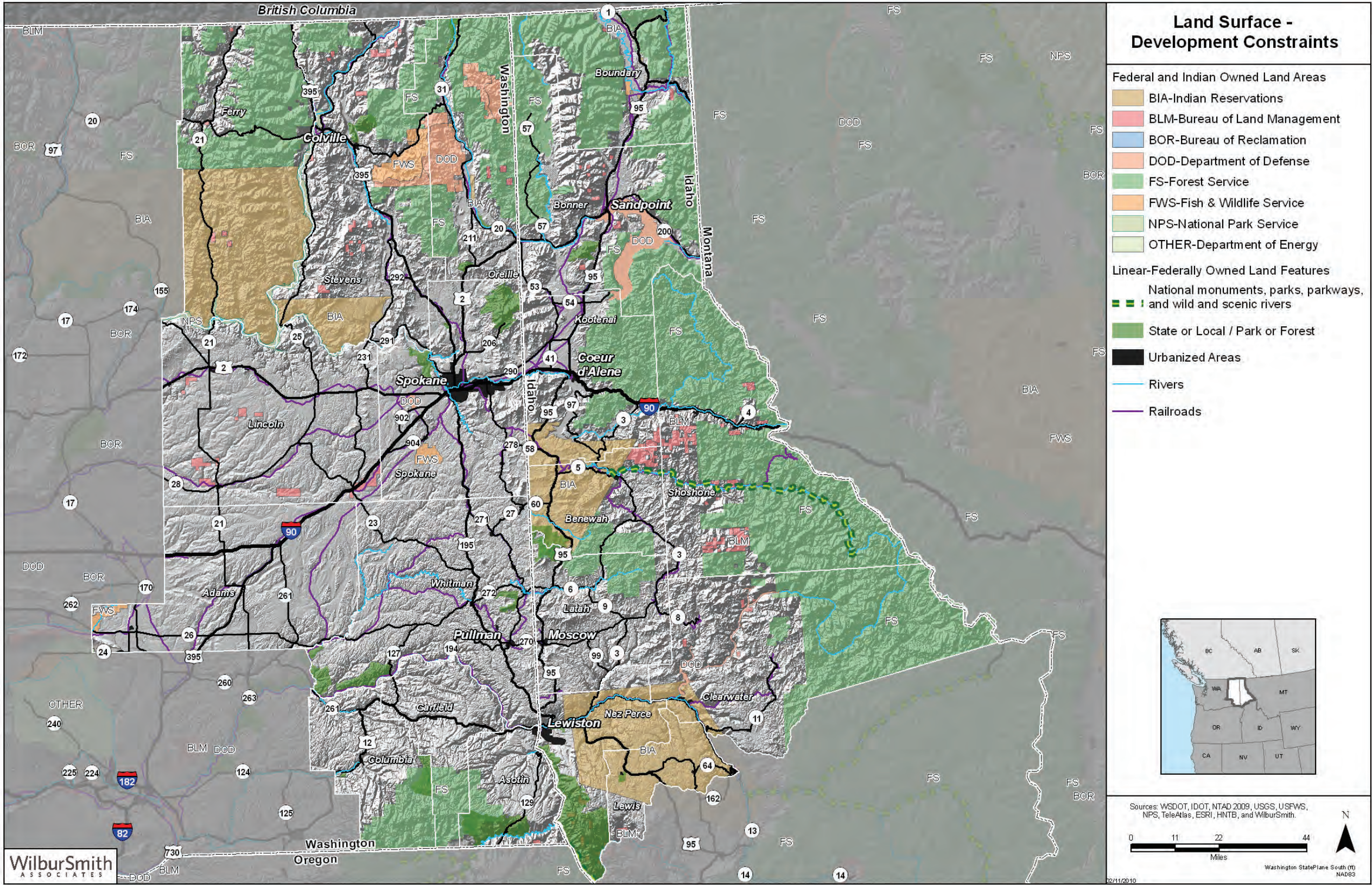
National Land Cover Database 2001

- 11-Open Water
- 12-Perennial Ice/Snow
- 21-Developed, Open Space
- 22-Developed, Low Intensity
- 23-Developed, Medium Intensity

- 24-Developed, High Intensity
- 31-Barren Land (Rock/Sand/Clay)
- 41-Deciduous Forest
- 42-Evergreen Forest
- 43-Mixed Forest
- 52-Shrub/Scrub

- 71-Grassland/Herbaceous
- 81-Pasture/Hay
- 82-Cultivated Crops
- 90-Woody Wetlands
- 95-Emergent Herbaceous Wetlands
- Rivers
- Active Rail Lines

Exhibit 5: Regional Development Constraints



The land resources necessary to support a logistics and warehouse hub are significant. Based upon a review of state and local real estate databases and interviews with economic developers in the IPH study area, there are very few sites in the region with 50 acres or more that are less than 1 mile from existing utilities and adequate transportation services. Most logistics and warehouse developments today are located on site in excess of 1,500+ acres.

The State of Washington's Growth Management Act initially required that commercial and industrial development should be directed to urban growth areas which are primarily located in incorporated cities and towns. Since the passage of the Act, some modifications to the act have been made to provide additional flexibility to support economic development which is one of the 13 planning goals defined in the act. One such change allowed single-industry users to locate within a rural area in a "Major Industrial Development". The time required to secure the approval for such an industrial location appears to be significant and few industries have submitted properties under these provisions.³⁰ Additional changes to the act have allowed for county designated land banks requiring a planning level decision enabling subsequent industrial or business users located in the land bank to pay for providing necessary infrastructure to the site. The State of Idaho does not currently have growth management legislation.

Although Spokane has the most extensive and diversified land and buildings portfolio in the Inland Pacific Hub study area, one of the recommendations in the recent "Target Clusters Strategic Findings Study" for Greater Spokane Incorporated reads as follows:

"Ensure that regional land use planning efforts recognize the need for suitable sites and infrastructure to match the needs of target industry companies. The availability of shovel ready sites and suitable real estate that matches the demands of company's in each cluster will give Spokane an edge in attracting new companies and retaining expanding ones."

WAREHOUSE & DISTRIBUTION FACILITIES IN THE INLAND PACIFIC HUB STUDY AREA

There are a number of tools and resources available in the IPH study area to help business and industry find available industrial and commercial buildings. Both Idaho and Washington have real estate databases that include both land and buildings. In Washington, the Department of Commerce maintains the <http://www.washingtonprospector.com/> site that provides tools for mapping, data for available sites and buildings, and community data. Idaho utilizes the <http://www.gemstateprospector.com/ed.asp?bhcp=1> database to provide similar information about land, buildings, and community information. Several local and regional economic development organizations have real estate databases that are accessed through their websites and there are a number of commercial realtors in the region that specialize in industrial and commercial properties. On a semiannual basis, a "Real Estate Report: Regional Research on Spokane and Kootenai Counties" is released by the Spokane-Kootenai Real Estate Research Committee. This report, which is available by subscription, is primarily focused on residential property but it does provide vacancy rate information for office and industrial property in Spokane and Kootenai Counties. The

³⁰ "Growth Management: Finding Suitable Industrial Sites outside Urban Areas in Washington", Association of Washington Business, June 2004

Washington Center for Real Estate Research at Washington State University conducts a range of real estate research issues.

Several economic developers raised concerns about how current the state real estate databases were. This is a critical concern because many prospective businesses contact state economic development resources first. If the state real estate database do not reflect the most current land and building information available, firms may conclude that sites or buildings that meet their requirements are not available within the Inland Pacific Hub study area because the most up-to-date information is not on the state's database. Both state real estate databases rely on local economic developers and realtors to provide the most up-to-date information about available land and buildings to them in order to update their system. Many companies may never look beyond the state databases and thus local communities could be overlooked.

The availability and quality of existing buildings and warehousing varies widely across the Inland Pacific Hub study area. Several new industrial and commercial buildings have been constructed in the metro IPH study area counties. There are few industrial spec buildings available in the non-metro IPH study area communities. The suitability of these buildings ultimately depends on the specific requirements of the businesses considering them. The list below illustrates the available warehouse and industrial buildings within the Inland Pacific Hub study area in mid-2009. The Washington and Idaho state real estate databases, local and regional real estate databases, and information from local realtors and economic developers were used to compile the warehouse inventory below.

While the specific available buildings will change, there are several important factors to consider:

- 1) There is a limited availability of existing warehouse or industrial buildings in the IPH study area to support the expansion of existing businesses or the location of new businesses.
- 2) Many of the counties in the IPH study area do not have any existing building inventory and do not have the financial capabilities to support the development of "spec" building space.*
- 3) Redevelopment or adaptive re-use of older industrial buildings and brownfield sites can be a beneficial option, however careful due diligence and structural evaluation must be conducted to insure that the buildings can be cost-effectively adapted and that "perceptions" of environmental issues do not render the building or site "un-usable" by potential businesses.

*Note: Financial capability means available public funding to support the speculative development of an industrial sites and buildings. Many public entities around the U.S. have acquired and developed business and industrial parks; prepared "shovel-ready" building pads to enable industries to fast-track project constructions on those sites; and build "spec" industrial buildings to sell to industrial users particularly in areas where there is a limited inventory of available industrial buildings. (Spec buildings are constructed to generic specifications for a particular use). In a Kansas metro area, the county used their funds to acquire and grade a site adjacent to an interstate interchange that they subsequently sold to Cabela's and subsequent private development now generates well over \$8 million in annual property taxes and 1,400 jobs.

Adams County

The Ritzville Warehouse Company is a farmer-owned grain cooperative with 1,400 members. The company has grown to include 30 different locations with storage capacity for 18 million bushels of wheat, two barge facilities on the Snake River, and a two-unit train loading facility. These facilities are available to co-op members. The company also allows e-trading of commodities through their website.

Asotin County

The Port of Clarkston has one of the largest cranes on a navigable river east of Portland. When operational, the crane is capable of moving logs, containers, and other cargo. The port has shipped large yachts, up to 78 feet in length and weighing more than 90,000 pounds, loading them onto trucks to ship them inland. Commercial property is available along the riverfront and the Port owns 11 acres of industrial property available for sale or lease. Utilities are in place and one building of 1,300 square feet is currently available.

Ferry County

The City of Republic has a 26,000 square foot industrial warehouse available.

Kootenai County

Riverbend Commerce Park in Post Falls has a 7,450 square foot warehouse available that will be sub-divided from a larger warehouse facility. Utilities and transportation infrastructure are in place.

Latah County

The City of Deary Recreation District has purchased a fertilizer storage facility and plans to convert a portion of the facility into a business incubator for local entrepreneurs.

Pend Oreille County

The Port of Pend Oreille operates the Pend Oreille Valley Railroad with storage capacity available for approximately 125 cars and on-site shop service.

Nez Perce County

The Northport Business Park at the Port of Lewiston in Nez Perce County houses a terminal and elevator docks with limited storage capacity. The Business and Technology Park, located at the Port of Lewiston, has a 150,000 square foot distribution facility with truck and rail bays and the Seaport Business Center, an incubator facility has some office and industrial space available.

Spokane County

A review of the Spokane Site Selector database found 23 existing warehouse buildings in Spokane County. The largest building located in Liberty Lake had 169,000 square feet. There were several multi-tenant warehouse buildings available providing as little as 1,500 square feet. Six of the fourteen warehouse buildings were available for sale only; two for sale or lease, and the remainder were available for lease only. These buildings are in reasonable proximity to transportation networks and utility services and most of these buildings are located near the interstate corridor.

The Spokane Business and Industrial Park listed five distribution-warehouse facilities available for lease ranging from 40,000 square feet to 120,000 square feet. Three of these

facilities offered rail access. Pinecroft Business Park in Spokane Valley had six small multi-tenant warehouse spaces available ranging from 2,099 square feet to 7,950 square feet.

Whitman County

The on-water Port of Wilma at the Port of Whitman has a storage facility for 4.6 million bushels of grain, with barge, rail, and truck access. The Port of Central Ferry, also at the Port of Whitman, has capacity to store 4.6 million bushels of grain.

AVAILABLE INDUSTRIAL SITES

The availability of business and industrial sites with water and wastewater utility services, access to transportation services, and proximity to available workforce is an issue in the IPH study area. Some of the IPH study area counties are not included below because they do not have available industrial or businesses sites at this time. Several counties are evaluating the acquisition of smaller acreage sites that could provide some industrial or business property for economic development. Most other regions of the country have a larger inventory of industrial and business sites that could be readily marketed to prospective businesses or existing companies that want to expand their operations.

The availability and quality of industrial and business sites varies widely across the Inland Pacific Hub study area. There are several industrial and business parks in the region offering a range of site acreages and services. The suitability of these sites ultimately depends on the specific requirements of the businesses considering them. The list below illustrates the available industrial sites within the Inland Pacific Hub study area in mid-2009. The Washington and Idaho state real estate databases, local and regional real estate databases, and information from local realtors and economic developers were used to compile the industrial site inventory below.

While the specific available sites will change over time, the factors discussed previously under warehousing also apply here.

Bonner County

The Idaho State Prospector lists one site in Bonner County of 20 acres. All utility and transportation services are in place, including municipal water and wastewater, electric, fiber-optics, and potential for rail access. Property is zoned commercial D which permits most industrial and business uses.

Clearwater County

The Economic Development Council is currently creating an inventory of developable land located within areas that are appropriately zoned. The City of Orofino has developed a business park near the Clearwater River with limited utility services available to the site. The City of Pierce promotes the vacant Potlatch Jaype plywood mill site as a potential development site. The Idaho State Prospector lists one available parcel in Clearwater County of 4.3 acres located in Orofino on US Highway 12. Wastewater services would be limited to a septic tank. Four parcels located on Tomho Road are listed outside of Orofino ranging from 7.3 acres to 12.89 acres with no wastewater utility services available.

Kootenai County

The Idaho State Prospector lists several small tracts from .48 to 2 acres and one site of 140 acres in Kootenai County. This undeveloped property is located on a county road near several residential dwellings and is 10 minutes from I-90 at the Post Falls exit. Utilities are available along the east and west property boundaries. Zoning restrictions may preclude certain projects; additional clarification was not readily available regarding acceptable land uses for this site.

Latah County

Economic developers in Latah County are concerned about the conversion of properties initially preserved for business and industrial uses that have recently been converted to retail or residential development. Private land owners frequently lack the patience that is sometimes required to develop and hold industrial and business property, and they may find a quicker return by converting this property to retail or residential use. The importance of preserving land for business and industrial development often requires public ownership or public-private partnerships to maintain an adequate inventory of land to meet the community's economic development needs.

The Alturas Business and Technology Park was developed for commercial and technology businesses, providing a permanent location for companies that “graduate” from the University of Idaho Business Incubator. Alturas Research and Technology Park, Phase II has 5 parcels totaling 4.5 acres available. The Potlatch Corporation owns property near the town of Potlatch that is currently being considered for an industrial park development by the city.

The Idaho State Prospector site lists three available parcels in Latah County. The first site has 13.69 acres located in Moscow with water and wastewater utilities within 500 feet of the site. The second site with 325 acres is near the City of Potlatch, but information regarding utility services for the site is not available. The third site in Orofino has 12.89 acres and wastewater services are restricted to a septic tank; other services are not available at the site at this time.

Lewis County

The City of Craigmont has received approval from the Federal Aviation Administration to convert vacant land at the Craigmont City Airport for use as an industrial park. The City of Nez Perce has a small industrial area currently home to a seed cleaning company. The capacity of utility treatment facilities may be an issue for any industrial expansion in this park.

Nez Perce County

Nez Perce County industrial properties are primarily in Lewiston. The Port of Lewiston has acquired 40 acres for a new business and technology park and has leased a 60,000 square foot industrial building that can be subdivided for sub-lease. The Harry Wall Industrial Park has 72 acres available for development. Forty-five acres of the original industrial park have been developed for a city jail and police center.

Nez Perce Tribe

The Nez Perce Tribe is evaluating several sites that could be acquired and developed for industrial and manufacturing facilities primarily in the Lapwai-Lewiston corridor along U.S.

Highway 12. The Tribe is also evaluating sites for an industrial park in Lapwai to support their efforts to attract more diverse employment opportunities to the area.

Spokane County

The Spokane Regional Site Selector, a searchable website, lists 12 properties with over 2 acres available for sale or lease in Spokane County. A site of approximately 100 acres, located on Spring Creek Road, is zoned for industrial use and is within the high density growth boundary. Historic Dagoon Lake is located on the property, as is a portion of Dagoon Creek. Three-phase power and natural gas are available near the property. The site is one mile from the interstate

A 90-acre site is listed in the City of Spokane near the W. Sunset Frontage Road. Information about utilities and other services was not available. The final site is a narrow split tract adjacent to a rail line with a right-of-way to E. Trent Avenue. From the information provided, it is difficult to determine the suitability of this site for development; however, it is adjacent to an existing industrial area. The property is approximately 5.8 acres. Several other parcels are currently listed in Spokane County with access to water and wastewater utilities and proximity to transportation networks. Most of these parcels are small acreage tracts some with existing buildings on the property.

Spokane International Airport owns 1,200 acres of commercial property adjacent to the airport in nine development areas designated for development. A number of parcels of varying sizes are available with utility services and access to highway and air cargo facilities. These properties are available for lease only. The largest industrial site currently available in Spokane County is a 400-acre tract within the airport development area. This site has access to utilities and excellent highway access.

Whitman County

The Port Authority in Whitman County has continued to acquire and develop industrial sites in the county, particularly properties adjoining their port facilities. Pullman Industrial Park has 24.6 acres available with roads, all utility infrastructure, natural gas, and telecommunication services in place. The park is 15 minutes from the Pullman-Moscow Regional Airport. There is suitable access for truck traffic. The Pullman Industrial Park West has one 30-acre parcel currently in the planning stage that will be developed over the next few years.

The Port of Whitman Business Air Center has 20 acres available with all utility services in place and there is a 12.73 acre undeveloped site adjacent to the park that is owned by the Port Authority. The Port of Central Ferry has 31 acres available in an industrial park with barge, rail, and truck access. Utilities at this site are provided from individual wells and septic tanks. The Port of Central Ferry is located between Walla Walla and Colfax.

The Port of Wilma Industrial Park has 20 acres available in an industrial park with utilities available and barge, rail, and truck access on site. Air services are available at the Lewiston Airport, three miles from the park.

UTILITY INFRASTRUCTURE

The availability and quality of public utilities and communication infrastructure is a significant challenge for many of the non-metro counties in the Inland Pacific Hub study area. That is not to suggest that utility and communications infrastructure in Spokane or Kootenai Counties are without challenges; however, the density of population, the availability of larger municipal water and wastewater systems and the associated professional staff, and a concentration of commercial and industrial users provides more robust utility and communications services in these two counties.

POWER GENERATION

Hydroelectric power in the Pacific Northwest has produced inexpensive electrical rates compared to the rest of the United States for many years.³¹ Power generation and the cost of energy were not considered to be an issue for economic developers interviewed in this study, the electricity and energy resources of the Inland Pacific Hub study area can be a competitive advantage for the study area, particularly for those businesses that utilize a significant amount of power in their production and operations.

The Northwest Power and Conservation Council was created by Congress in 1980 to provide a forum for citizens and organizations in the states of Idaho, Washington, Montana, and Oregon concerned about the use of Columbia River Basin resources including hydropower. The Council is tasked with developing a 20-year power plan to guarantee adequate and reliable energy at the lowest economic and environmental cost for the northwest utilizing a range of resources in addition to hydroelectric power. The Columbia River Basin area encompasses all of the Inland Pacific Hub study area as well as parts of Canada, Washington, Idaho, western Montana, and a significant portion of Oregon.³²

The Northwest Power and Conservation Council recently completed the draft of their annual assessment of the Pacific Northwest region's power supply for 2011 and 2013.³³ The "Sixth Northwest Power Plan" finds that the region has ample power resources for the next five years to avoid any significant power curtailments. This was based on existing generation resources and those currently under construction. **Exhibit 6** below shows the power generation resources in the Pacific Northwest. **Exhibit 7** below shows what portion of the overall energy capacity each of these resources provides for the northwest region (Washington, Idaho, Oregon, and Montana).

³¹ "Generating Electric Power in the Pacific Northwest: Implications of Alternative Technologies", Rand Corporation, 2002

³² www.nwcouncil.org/library/2004/2004-16/map.htm

³³ "Pacific Northwest Resource Adequacy Assessment", Northwest Power and Conservation Council, August, 2008

Exhibit 6: Power Generation Resources of the Pacific Northwest

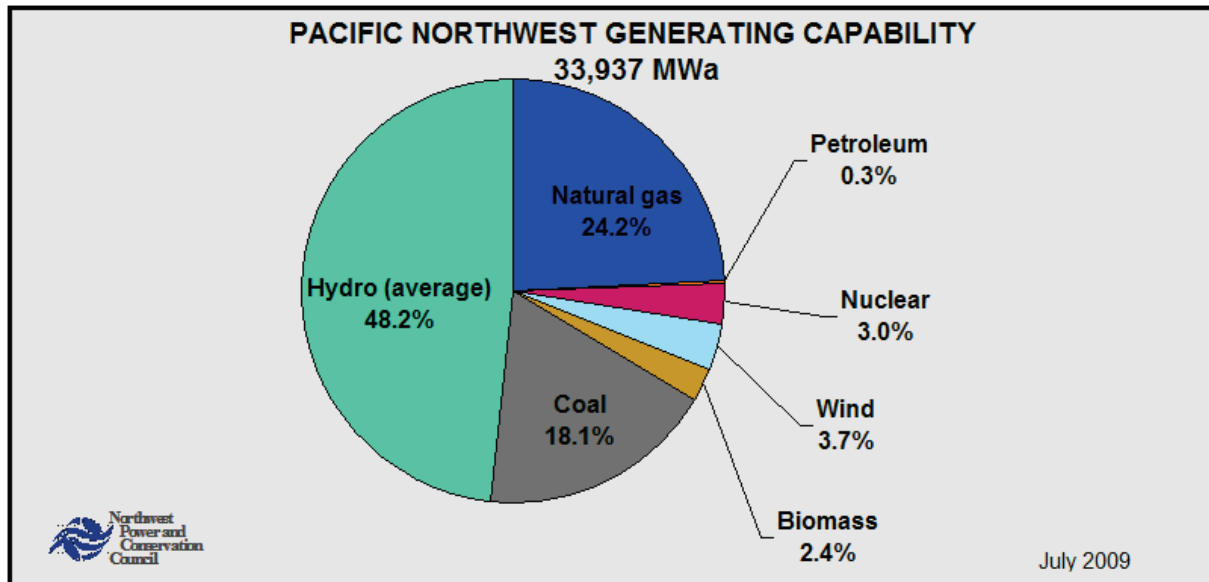
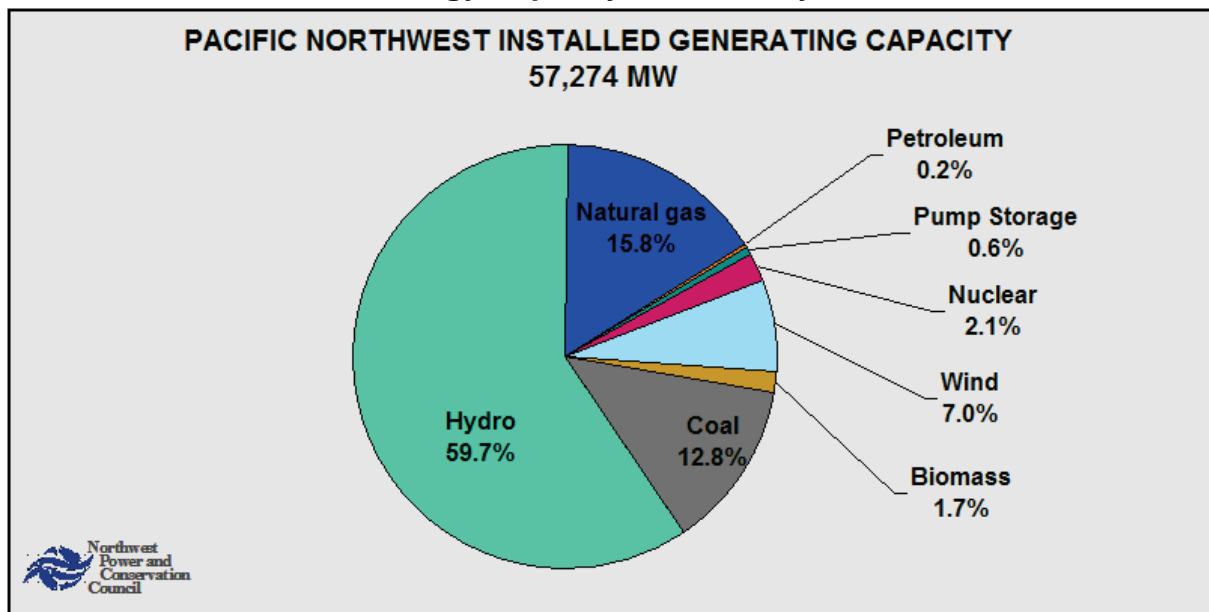


Exhibit 7: Portion of Energy Capacity Provided by Resources in the Northwest



Hydroelectric power accounts for almost 64 percent of the power supply capacity in the Pacific Northwest and a significant amount of that power is generated on the Columbia River and its various tributaries. A much smaller amount of electrical capacity in the region, about 14 percent, comes from coal fired plants with a similar capacity generated from plants that burn natural gas.³⁴

There are seven hydroelectric generation facilities generating 50 megawatts or more within or adjacent to the IPH study area: Boundary, Box Canyon Dam, Cabinet Gorge, Dworshak, Little Goose, Long Lake, and Lower Granite. There are no coal generation plants within the

³⁴ "Electricity Generation for the Pacific Northwest", June 2006, updates June 2009, Northwest Power and Conservation Council

IPH study area, but five natural gas facilities; four owned by Avista and one owned jointly by Cogentrix Energy and Avista Power. The Hopkins Ridge Wind Facility in Garfield County is owned by Puget Sound Energy and has a capacity of 150 megawatts. Four biomass facilities are located in the IPH study area according to the most recent Northwest Power and Conservation Council report.³⁵ These biomass plants are Kettle Falls Generation Station, Potlatch Lewiston 3, Potlatch Lewiston 4, and Wheelabrator Spokane GEN1.

The “Sixth Northwest Power Plan” draft released in September, 2009 is currently being reviewed by the public. The plan estimates that 58 percent of the new demand for electricity over the next five years within the Pacific Northwest can be met through energy efficiency efforts.³⁶ Recent research indicates that adequate energy resources will be available to support the Inland Pacific Hub study area’s economic future. According to economic developers in the region, the availability of adequate power resources is not an issue of concern for existing businesses and has not been a concern expressed by companies evaluating the region for potential business locations.

POWER QUALITY

Many companies are dependent on electronic equipment and as a result power quality and power reliability has become increasingly important issues for many businesses and the electric utilities that serve them. Machines are highly sensitive to power fluctuations, “brown power” and outages as these changes in power quality can cause data errors, equipment damage and shut-downs, and loss of data. Questions about power quality issues were included in interviews with businesses and economic developers interviewed as a part of the study. Although there may be some power quality issues within the region, they are not perceived to be an issue of significant concern. Frequently the solutions to power quality issues require a collaborative effort between the company and their power utility provider.

Several small wineries interviewed in southeastern Washington reported occasional “blips” in the power system resulting in the shut-down of climate control devices in the wineries. The potential loss of climate control can impact the quality of wine. As a result, some wineries installed back-up alarm systems to alert operators when climate controls are lost, so that climate controls can be reset to protect the wine fermentation process. Local power distributors have responded and made some improvements and are continuing to monitor the situation. Based upon discussions with regional economic developers, the power distributors within the IPH study area are responsive to concerns about power quality and work closely with businesses in an effort to resolve them.

POWER DISTRIBUTORS IN THE INLAND PACIFIC HUB STUDY AREA

The largest electric power distributors within the study area are Avista Utilities and Inland Power and Light. Avista is involved in natural gas transmission, power transmission, and electrical distribution. Within the Inland Pacific Hub study area, Avista distributes power from hydroelectric, natural gas, and biomass facilities. Inland Power and Light is a cooperative owned by the members in their service area. Inland Power has 38,000 member customers and recently moved into a new headquarters facility in Spokane.

³⁵ “Electricity Generation for the Pacific Northwest”, Northwest Power and Conservation Council, June 2006 updated June 2009

³⁶ “Sixth Northwest Power Plan”, September 2009, Northwest Power and Conservation Council

In addition to Avista and Inland Power & Light, there are other power distributors in the Inland Pacific Hub study area including several municipal utility districts owned and operated by local governments and cooperatives that are not-for-profit corporations managed by a board of directors. Within each of the counties in the IPH study area there may be more than one power distributor. The power distributors for each county in the study area are listed below:

- Adams County – Avista Corporation, Inland Power & Light, and Big Bend Electric Cooperative (has only one electric customer, Quail Ridge Golf Course)
- Asotin County – Avista Corporation, Asotin County PUD, Inland Power & Light, Clearwater Power Co.
- Benewah County – Avista Corporation, Clearwater Power Co., City of Plummer PUD
- Boundary County – Bonners Ferry's Electric Department, Bonners Ferry Electric Cooperative, Northern Lights
- Bonner County – Avista Corporation, Inland Power & Light, Northern Lights
- Clearwater County – Clearwater Power Company
- Columbia County – Columbia Rural Electric Association, Inland Power & Light, Pacific Power
- Ferry County – Avista Corporation, Inland Power & Light, Ferry County Public Utility District
- Garfield County – Inland Power & Light, Clearwater Power Co., PacifiCorp
- Kootenai County – Avista Corporation, Kootenai County Electric Cooperative
- Latah County – Avista Corporation, Clearwater Power Co.
- Lewis County – Avista Corporation
- Lincoln County – Avista Corporation, Inland Power & Light
- Nez Perce County – Avista Corporation, Clearwater Power Co.
- Pend Oreille County – Pend Oreille Public Utility District, Inland Power & Light
- Shoshone County – Avista Corporation, Clearwater Power Co.
- Spokane County – Avista Corporation, City of Cheney Light Department, Inland Power & Light, Kootenai Electric Cooperative, Modern Electric Water Company, Vera Water & Power
- Stevens County – Avista Corporation, Inland Power & Light
- Whitman County – Avista Corporation, Inland Power & Light, Clearwater Power Co.

In those counties where there are multiple power distributors, it is important to communicate designated service areas for each of the distributors to avoid any confusion for existing or future businesses considering locations in the region. Likewise, developing a collaborative partnership between distributors could make the difference when trying to attract a larger power user in the event that a single distributor can not meet all of the potential customer's demands.

NATURAL GAS

Avista Utilities provides natural gas to the Inland Pacific Hub study area. In recent years natural gas markets have been very volatile primarily due to external influences such as weather, market speculation, and increasing demand relative to supply. Natural gas prices and availability in the Inland Pacific Hub study area have traditionally been lower than most of the U.S. due in part to the proximity of natural gas sources and pipeline capacity in the

region.³⁷ The region's proximity to large natural gas production areas in Canada and the U.S. Rockies has resulted in lower natural gas prices in the region. New pipelines built in recent years have resulted in transport of these supplies to other areas of the country creating additional competition for supply and rising prices.³⁸ The availability of natural gas supplies and lower pricing is a competitive advantage for the region.

WATER AND WASTEWATER INFRASTRUCTURE

The availability of water and wastewater infrastructure in the Inland Pacific Hub study area involves many complex legal issues, environmental regulations, water quality requirements, development regulations, and the habitat needs of fish and wildlife. In the non-metro areas of the region, water and wastewater issues may be one of the most significant constraints to economic development in the future according to several economic development professionals interviewed for this study.³⁹ Securing new water rights or transferring water rights can take as long as three years, making it an expensive process. Land with existing water rights that can be documented and preserved is becoming increasingly expensive even in more rural areas.

In some cases the time required to secure or transfer water rights is not the most challenging issue, finding enough water has become a significant challenge for some communities in the Inland Pacific Hub study area. This problem is not exclusive to the non-metro counties either as municipal utilities in the region report challenges in identifying adequate water resources to support anticipated future development. In the State of Washington, the Department of Ecology has been charged by the State Legislature with the responsibility to provide for the efficient administration of the state's waters. In Idaho, the Department of Water Resources regulates water in the state.

Limited water availability limits economic development in the Inland Pacific Hub study area. The Idaho Water Resource Board recently approved a first-ever "recharge" program for an aquifer in the southern portion of the state. This recharge was possible because of average or above-average snow falls last winter, rain and cooler temperatures in the spring, and carryover storage in other reservoirs. Availability of groundwater and surface water affects agricultural production, manufacturing, development, and municipalities and utility districts. The State of Washington Department of Ecology recently produced a "Water Smart" guide designed to help Washington residents understand the threats to the state's water supply that could ultimately impact the state's economy.⁴⁰

Wastewater treatment issues are equally complex. Wastewater treatment and ultimately the return of the treated wastewater to area water resources requires that water temperature, biological levels, and other parameters must be carefully monitored and treated to insure the discharge meets all treatment requirements. Lagoon systems, settling ponds, aerated spray fields, trickling filtration, biofilters, activated sludge digesters, and other treatment options are used in the Inland Pacific Hub study area in the waste treatment process. In Washington, the Department of Ecology issues permits for wastewater treatment facilities

³⁷ Public Utility Commission, State of Idaho, "Idaho Natural Gas Utilities", 2008

³⁸ "Natural Gas Prices in the Pacific Northwest", Northwest Gas Association, Volume 3, 2008

³⁹ State, Regional, and Local Economic Development Agencies interviewed for study

⁴⁰ "5 Ways to Secure Water for Washington's Future", State of Washington Department of Ecology

and wastewater discharge. Currently the State of Idaho does not have NPDES permitting authority, and wastewater discharge permits are issued by the Environmental Protection Agency, Region 10 administrators except for those permits on tribal lands.

Agricultural processing operations, as well as manufacturing and some assembly and production businesses, may be required to pre-treat their wastewater on site prior to discharging it to a treatment plant. Tertiary treatment requirements can be very “expensive” particularly in those cases where the waste stream is heavily concentrated with one particular element, as is often the case with agricultural processing where the waste stream may have heavy BOD loading. Waste treatment can be a significant issue for food processors and wineries. According to several regional economic developers, wastewater treatment issues may ultimately constrain the expansion of wineries in the region in the future. This is an issue internationally, not just in the Inland Pacific Hub study area, and continuing research in specific winery wastewater treatment systems offer some promising options for low cost and effective treatment including land based treatment systems.⁴¹

The Growth Management Act in Washington requires cities and counties to address quality and quantity of water in preparing their plans. Communities must address projected demands for water to support population growth, economic development, and other community development factors and develop a plan for providing water services in advance of anticipated demand. In Idaho, an administrative process is required for an application for new water rights or to change existing water rights or new statutory claim. There are areas around the state that have been designated as critical ground water areas or ground water management areas in which any new ground water development is strictly controlled.

Water and wastewater treatment is most cost effective in areas where there is a concentration of population. In more rural areas of the IPH study area, some communities must rely on wells and septic tanks to address these utility issues. There is increasing concern about groundwater permit exemptions or homestead exemption in the State of Washington that allow for the use of groundwater under certain conditions without securing any permits. Research by the Water Resources Division in the Department of Ecology indicate that the largest number of permit-exempt water wells drilled in the last 8 years were drilled in Spokane County when compared to the other counties in the state.⁴² The Washington Department of Ecology is seeking clarification to groundwater exemptions through legislation or rulemaking. The resolution of these groundwater issues are of significant concern to all of the counties in the IPH study area.

The water and wastewater utility resources can vary significantly even within a single county. Based upon interviews with regional businesses, agencies, and economic developers, securing permits for water and wastewater resources is already an economic development issue within the region. Planning for and addressing the future water and wastewater needs of the Inland Pacific Hub study area may well be one of the most pressing issues affecting the future economic development of this region.

⁴¹ “A low cost land based winery wastewater treatment system: Development and preliminary Results”, CSIRO Land and Water Science Report, August 2008

⁴² “5 Ways to Secure Water for Washington’s Future”, State of Washington Department of Ecology, page 7

BROADBAND ACCESS

Strategic Networks Group North America recently completed a business survey finding that 86 percent of the businesses surveyed ranked fiber connectivity as essential or very important in their consideration for remaining at their current business location.⁴³ Internet access is essential in the global marketplace and for more rural communities, the availability of high speed internet access is absolutely crucial to their economic future.

Many urbanized communities have access to highly efficient telecommunications services and broadband access that can be effectively deployed for businesses, homes, universities, and government institutions. Unfortunately, many rural areas do not present an attractive business option for telecommunications companies and those areas frequently do not have ready access to the broadband network services they need to compete. In communities where broadband connectivity is not available, questions are being raised about the future of these areas and the important public good generated from access to quality internet services.

In a May 2009 report from the Federal Communications Commission, the need for broadband access in rural areas and low-income neighborhoods in urban communities was evaluated, and recommendations developed to more effectively address these issues.⁴⁴ This report calls for a national broadband plan to: coordinate rural broadband efforts through better coordination at all levels, coordination in Tribal areas, mapping of broadband service availability and infrastructure deployment, and creating strategic responses to overcome the challenges to broadband deployment in rural areas.

The availability of reliable, high speed broadband service is important to the economic future of the Inland Pacific Hub study area. Most of the state, regional, and local economic developers in the IPH study area outside of Spokane and Kootenai Counties expressed concern about the availability and quality of broadband connectivity in the remainder of the region and what it could mean for business attraction, entrepreneurship, and small businesses in the future. A recent study conducted by the U.S. Department of Agriculture found that rural communities that had broadband access by 2000 had higher employment growth and nonfarm private earnings compared to similar communities that had little or no broadband access as of 2000.⁴⁵ According to this study, an estimated 55 percent of U.S. adults had broadband access at home in 2008; however, only 41 percent of adults in rural households had broadband access.

Although rural and suburban areas have access to the internet, broadband technologies have been less prevalent in rural areas than in more densely populated areas because the rural and suburban areas are less profitable. A 2008 study conducted by CBG Communications for the Washington Utilities and Transportation Commission assessed broadband services in five eastern Washington counties including Columbia, Ferry, and Stevens Counties. This study found that broadband availability varied widely within counties and across counties in this particular region. While 72 percent of residents in the study area

⁴³ www.sngroup.com

⁴⁴ "Broadband Opportunities for Rural America", a joint initiative of the FCC and USDA

⁴⁵ "Broadband Internet's Value for Rural America", US Department of Agriculture, Economic Research Report, August, 2009

had internet access, only 32 percent had wired broadband and in Ferry County, just 15 percent of residents had wired broadband.⁴⁶ According to this study the primary obstacles to broadband availability in more rural areas are:

- Low or lower population density
- Relative distance of consumers from major transportation corridors
- Physical impediments resulting from mountainous and heavily forested terrain
- Problems encountered securing public and private rights-of-way in a timely manner
- Longer than acceptable Return on Investment for private providers
- Limitation of existing broadband technology

An abstract prepared for the Pacific Northwest Economic Region annual conference earlier this year provided an overview of public initiatives in the Pacific Northwest states and provinces, California, North Carolina, Virginia, and several foreign countries including Australia, the United Kingdom, Japan, China, and India.⁴⁷ According to this document, there are several strategies being pursued by Washington and Idaho to improve broadband access. Both states allow a portion of sales and use taxes to be used for building and maintaining telecommunications infrastructure. However, in more rural counties these revenues will likely not be adequate to improve existing infrastructure much less provide for new facilities and services.

TELECOMMUNICATIONS PROVIDERS IN THE INLAND PACIFIC HUB STUDY AREA

Primary telecommunication services were not identified as an issue for economic development in the Inland Pacific Hub study area according to state, regional, and local economic developers. There are two major telecommunication providers in the IPH study area, Verizon and Qwest Corporation. In Idaho these two firms provide more than 90 percent of the wired telecommunication lines. Wireless and satellite communications are provided by a number of providers, many of whom are smaller business operations.

Whether broadband redundancy is needed to attract a major data center or access to internet services are necessary to support the operations of a small manufacturing firm, information and communication infrastructure is vitally important to existing businesses in the IPH study area. Providing competitive communications architecture is absolutely necessary to attract new businesses and entrepreneurs to the region in the future. To insure the availability of adequate broadband services, there are a number of new service models that are being developed to provide services to more rural areas of the country.

Some local and regional governments are becoming involved in delivering broadband services to their communities through public-private partnership. There are several important reasons for bringing a public partner to the table:

- Broadband availability, quality, and price is a political issue from an economic development as well as a citizen perspective

⁴⁶ "Broadband Study Report for Washington Utilities and Transportation Commission", prepared by CBG Communications, Inc., June 2008

⁴⁷ "Broadband Comparison Report for Regions", Pacific Northwest Economic Region, Genevieve Pickart, August 2009

- There are areas even in metropolitan communities that may not receive the same level of service as other neighborhoods such as older industrial areas, low-income communities, or areas where there are geographic or environmental challenges to overcome
- Some communities have chosen to “brand” their community as an advanced communications region, installing free Wi-Fi downtown, at the airport, in parks, or other areas of the city promoting these areas as growth areas for new technology

A new business model developed by U.S. MetroNets is helping small communities develop Fiber-to-the-Home (FTTH) networks that provide high-bandwidth advanced IP services to residents and businesses. The network is built on a public-private partnership involving U.S. MetroNets, a municipal-broadband network facilitator that brings together a network services provider and a local government. The model has been utilized in Powell, Wyoming with great success and other rural areas in the IPH study area are currently evaluating this model as a potential option for improving their broadband access.

There are a number of other examples of programs and policies that have helped to expand the availability of quality broadband services in areas that have traditionally not had access to services or access to affordable quality services. The American Recovery and Reinvestment Act (ARRA) authorized \$4.7 billion for broadband technology opportunity programs including \$2.5 billion designated for the Rural Utilities Services. At least \$4.35 billion of these funds are for broadband deployment efforts and a number of applications are being prepared by several agencies in the IPH study area for funds to improve and enhance broadband services in the region. The Panhandle Regional Broadband Fiber-Optic Infrastructure project in Bonner County and the North Central Idaho Telecommunication Initiative are examples of programs currently underway to improve broadband services for underserved areas of the IPH study area.

POPULATION

Population statistics frequently influence early stage evaluations for new business locations. Healthy population growth within a region is a positive indicator for workforce availability. Businesses considering a new location or facility expansion will evaluate population not only within the county they are assessing but also in a broader region as the workforce catchment area will include potential employees that are willing to drive to an employment destination. National and regional distribution facilities and other commercial operations will evaluate regional population data when assessing sites for new locations to characterize future demographics of the region⁴⁸. Based upon population projections from Woods & Poole Economics Inc., the population of the IPH study area will reach 1,211,600 by 2030, which is a population increase of 289,468 over the next 21 years, a percentage increase of approximately 31 percent. During the same period, the U.S. population is project to grow by approximately 21 percent. The higher than average projected population growth is a positive indicator for workforce availability.

Exhibit 8: Population by County in the Inland Pacific Hub Study Area

County	Population		
	1990	2008	2030
Adams, WA	13,643	17,285	19,330
Asotin, WA	17,670	21,420	25,880
Benewah, ID	7,937	9,352	12,040
Bonner, ID	29,700	41,168	58,940
Boundary, ID	7,937	10,962	15,490
Clearwater, ID	8,480	8,176	8,330
Columbia, WA	4,024	3,990	3,840
Ferry, WA	6,295	7,353	8,630
Garfield, WA	2,248	2,060	1,920
Kootenai, ID	70,440	137,475	210,870
Latah, ID	30,617	35,906	45,410
Lewis, ID	3,516	3,594	3,840
Lincoln, WA	8,864	10,344	10,860
Nez Perce, ID	33,754	38,975	43,120
Pend Oreille, WA	8,915	12,760	16,880
Shoshone, ID	13,931	12,913	12,710
Spokane, WA	361,333	462,677	614,080
Stevens, WA	30,948	42,050	52,410
Whitman, WA	38,775	41,664	44,990
Total	698,017	922,132	1,211,600

Source: Woods and Poole, Inc., 2008

⁴⁸ Inbound Logistics, May 2009

A number of the counties within the study area will face real challenges in the future as a result of declining or stagnant population and eroding economic conditions. Columbia, Garfield, Clearwater, and Shoshone Counties lost population between 1990 and 2008 and over the past thirty years each of these counties have experienced stagnant or declining populations. Nine counties within the study area experienced positive but relatively stagnant population growth below 5 percent during the past eight years: Asotin, Ferry, Lincoln, Stevens, and Whitman Counties in Washington and Benewah, Latah, Lewis and Nez Perce Counties in Idaho. Only six counties in the study area had a population growth rate above 5 percent during the past eight years: Adams County, WA with 5.2 percent; Pend Oreille County, WA with 9.6 percent; Spokane County, WA with 10.7 percent; Bonner County, ID with 11.8 percent; Boundary County, ID with 11.1 percent; and Kootenai County, ID with 26.5 percent. These six counties represent 74.16 percent of the study area population.

If more of the counties in the study area sustained more significant population growth, then a number of positive economic effects would have been experienced throughout the region. Many businesses in the study area are engaged in providing services primarily for local populations including health care, retail and commercial services, professional services, leisure and hospitality services, and other related businesses. These types of businesses depend on customers and consumption to drive the profitability of their businesses. The slow or declining populations within the study area affect the profitability of businesses throughout the study area including the metropolitan communities where specialized services often draw customers from a broader catchment area.

WORKFORCE

The retirement of baby-boomers will have a significant impact on the workforce in many regions of the country and the IPH study area is no exception. Certain industry sectors within the IPH have a higher percentage of older workers and several counties in the study area have aging populations, a factor that can affect existing business operations as well as companies making new location decisions. From an economic development perspective, an aging population means larger numbers of employees retiring affecting the knowledge and experience base within industries. The industries with the highest percent of their workforce 55 and over in Idaho and Washington include:⁴⁹

- Educational Services
- Utilities
- Public Administration
- Real Estate and Rental and Leasing
- Mining
- Transportation and Warehousing
- Agriculture, Forestry, Fishing, and Hunting

Significant retirements in these industry sectors may create critical workforce voids in these industry sectors. Many businesses within the study area have already begun to revise their employee recruiting strategies anticipating the loss of these workers.⁵⁰ Some companies in the IPH study area are developing policies and work-sharing strategies to accommodate older workers and entice them to continue to work. Several workforce boards in the IPH study area are developing programs to recruit young people into industries where shortages are projected through specialized programs.

While the percentage of population over the age of 65 is lower in Spokane County when compared to most of the other Washington counties in the Inland Pacific Hub study area, Spokane County has lost population in several younger age categories in recent years, which could indicate challenges for workforce availability in the future. The potential imbalance between the concentration of businesses and workers available for employment in the metro areas, and an aging of the population suggests the need to evaluate strategies that can enhance transportation connectivity to support workforce mobility from the surrounding counties into the larger job centers and additional transportation options for an aging workforce.

⁴⁹ Idaho Department of Labor, "Census Report Idaho's Aging Work Force" Dec. 2008 and "2008 Washington State Labor Market Report, Chapter Five Washington's Aging Workforce"

⁵⁰ Interviews with IPH businesses, 2009

Exhibit 9: Median Age in the Inland Pacific Hub Study Area (years)⁵¹

County	2008	2020	2030
Adams, WA	29.01	28.54	28.74
Asotin, WA	39.74	42.15	46.49
Benewah, ID	42.54	44.08	45.37
Bonner, ID	42.96	43.70	45.89
Boundary, ID	39.89	40.88	42.74
Clearwater, ID	46.80	49.89	47.55
Columbia, WA	44.66	44.19	46.35
Ferry, WA	40.70	40.21	42.33
Garfield, WA	47.30	48.74	48.61
Kootenai, ID	37.47	38.85	40.35
Latah, ID	29.70	32.48	33.28
Lewis, ID	44.43	40.37	40.06
Lincoln, WA	45.32	45.46	47.29
Nez Perce, ID	40.88	42.52	44.79
Pend Oreille, WA	42.86	43.91	47.83
Shoshone, ID	45.69	49.89	51.25
Spokane, WA	36.51	38.70	40.53
Stevens, WA	41.17	40.84	45.52
Whitman, WA	26.23	32.08	32.40
Boise, ID	33.69	34.60	35.00
Seattle, WA	37.66	38.50	38.88
Idaho	34.29	35.75	36.46
Washington	37.15	38.47	39.57
United States	36.73	37.70	38.71

As the rate of population growth slows somewhat in the IPH metro areas and the other counties continue to experience relatively low growth or declining growth coupled with an aging workforce, population and aging factors will become a more significant consideration when businesses choose to expand facilities and locate new operations in the future.

Before businesses locate or expand in a region they want to be assured they can access a knowledgeable and skilled workforce now and in the future. The regional population between the ages of 18 and 55 within a 30 mile radius of sites being considered for an expanded or new business operation will definitely influence a company's consideration of potential sites for new or expanded facilities. Ultimately one of the most important workforce evaluation criteria used by many businesses and site consultants is educational attainment. While high school graduation rates may be a controversial performance benchmark in some education circles, it is routinely used by corporate real estate and economic development professionals as a reliable and consistent indicator of expected workforce skill. According to the U.S. Census Bureau, Washington has a statewide high school graduation rate of 87.1 percent compared to Idaho at 84.7 percent. Within the study area the high school graduation rate ranges from a low of 69 percent to a high of 92.8 percent.

⁵¹ Woods and Poole Economics Inc.

All of the counties in the study area have high school graduation rates over 80 percent except for Adams, Shoshone, and Benewah Counties. In Washington 27.7 percent of residents over the age of 25 have completed a Bachelor's degree or higher compared to 21.7 percent of the population in Idaho. Two counties within the study area have an exceptionally high college-educated population: Latah County, home of the University of Idaho where 41 percent of the population over 25 have earned a Bachelor's degree or higher and Whitman County, home of Washington State University where 44 percent of the population over the age of 25 have completed one or more college degrees.

For many companies, one method of gauging a region's technical skill base is to evaluate the number of residents within the community or region who have completed a college degree and also evaluate the "output" of specific post secondary degrees from regional colleges and universities. However, the post-secondary degree requirements are often dependent upon the specific technical demands of the company conducting the analysis and therefore it is difficult to identify a prevalent type of post-secondary degree that would give the region an edge.

Both Idaho and Washington are pursuing programs targeting an "Innovation Economy" to support future economic growth. The "Innovation Economy" utilizes the Research and Development primarily in Science and Technology Sector as well as other knowledge applications to generate new business opportunities that commercialize these new R & D applications. Both Washington and Idaho have increased University R & D funding, continue to diversify their technology sectors, and continue to support and foster entrepreneurial business activity particularly related to innovation. The study area would be well served to consider a more detailed assessment of the workforce to document specific educational assets particularly related to post graduate science, math, engineering and other technical graduates in the study area.

UNIVERSITIES AND COMMUNITY COLLEGES

Universities and colleges generate competitive advantages for the Inland Pacific Hub study area fostering technology and business growth in addition to their original mission of education and research. Evidence from MIT research indicates that universities contribute to local innovation and growth of technology business in several ways including through technology transfer, by attracting new people and knowledge from other parts of the world to enhance the technological capabilities of a region, and through the adaptation of knowledge to local conditions.⁵²

The IPH study area is fortunate to have a significant cluster of highly regarded educational and research institutions in the region – Washington State University, the University of Idaho, Gonzaga University, Eastern Washington University, the Intercollegiate University District in downtown Spokane, Lewis-Clark State College, several community colleges, as well as two national laboratories. The vision and collaboration between these colleges and universities has helped to build the economy of the IPH study area and contributed to the attraction of businesses and the expansion of many companies in the region. The services available through the Workforce Development Councils throughout the IPH study area are also important to developing a well trained and skilled workforce to meet the needs of employers in the region.

WASHINGTON UNIVERSITIES

The University District

The University District in Spokane was developed to link the Riverpoint Campus of Washington State University, Eastern Washington University, the Spokane Medical District, the community colleges of Spokane, Whitworth University, and Gonzaga University. The district brings together over 11,000 students⁵³, staff and faculty, state-of-the-art researchers, and entrepreneurial businesses as a catalyst to enhance the commercialization of technology and build the economy of the Spokane region. The district is becoming a leading technology, research, and education hub. The new WSU Biomedical/Health Sciences building will be built in the district aligned with the WSU College of Nursing-Intercollegiate Center for Nursing, a satellite clinic of the WSU College of Veterinary Medicine, and the WSU Sleep and Performance Research Center already located in the district.

Washington State University (WSU)

According to U.S. News and World Reports, Washington State University (WSU) is one of the top research universities in the country with over 200 fields of study including 46 PhD programs. The main campus in Pullman offers 100 majors and conducts research in many diverse fields including renewable energy-biofuels, advanced materials, environmental policy, and sustainable farming. Over 18,500 students were enrolled on the Spokane and Pullman campuses in 2007.⁵⁴ The WSU system includes additional campuses in Vancouver

⁵² “Universities, Innovation, and the Competitiveness of Local Economies”, Richard Lester, Industrial Performance Center, Massachusetts Institute of Technology

⁵³ Spokane University District Master Plan, Executive Summary vol. 1.5, 2008

⁵⁴ USDE-IES, National Center for Education Statistics, Enrollment data Fall 2007

and Tri-Cities, regional learning centers, extension offices in every Washington county, and distance degree programs.

Over \$213 million in research was conducted at WSU in 2007⁵⁵ in sports medicine, driver fatigue research, nano-composite materials, renewable energy, animal health and agriculture. Key research centers in the university include Biomedical Research and Brain Behavior, Environmental Sustainability, Agricultural Research, and Human and Animal Health.

Eastern Washington University

Eastern Washington University (EWU) is a regional, comprehensive public university located in Cheney, Washington with programs available in several other cities in Washington. Classes are also available at the University District in Spokane. EWU's main campus is located 17 miles southwest of Spokane with a current enrollment of over 10,000 students.⁵⁶ EWU offers undergraduate programs in 100 fields of study including biotechnology, cyber security, forensic science, urban planning, and electrical engineering. Graduate studies are available in computer science, mathematics, biology, and communication disorders and in 46 programs. EWU is the only regional university in Washington to offer a Doctorate in Physical Therapy. The Washington State Patrol Regional Crime Laboratory, the Washington State Digital Archives, and a new School of Computing and Engineering Sciences have recently been completed on the EWU campus. Construction of a new \$60 million science center on the Cheney campus of EWU was recently announced to provide a state-of-the-art facility that will supplement an older science building on campus.

Gonzaga University

Gonzaga University was founded in 1881. The university is a private, four-year institution offering both undergraduate and graduate programs in the University District of Spokane. Enrollment for the 2007 academic year reached 6,873 students.⁵⁷ Gonzaga University offers seven undergraduate degrees in 43 majors including engineering, business, and arts and sciences; 26 graduate degrees, and a Doctor of Jurisprudence through the Law School. The university offers "study abroad" programs in 15 different countries including an "Engineering in Italy" program allowing students to study in Florence.

Whitworth University

Whitworth University, located in Spokane, is a private Liberal Arts University founded in 1890 affiliated with the Presbyterian Church USA. The university has an enrollment of 2,700 students and offers 55 undergraduate and graduate degree programs. Whitworth was recognized as one of the top producers of Fulbright Scholars with nine students and four faculty members selected for Fulbright Scholarships between 2000 and 2007. Academic programs include biology, chemistry, communication studies, music, mathematics and computer science, physics, and theology and philosophy.

⁵⁵ WSU Total R & D Expenditures, FY 2007

⁵⁶ USDE-IES National Center for Education Statistics, Enrollment data Fall 2007

⁵⁷ USDE-IES National Center for Education Statistics, Enrollment data Fall 2007

Community Colleges of Spokane

Community colleges of Spokane include Spokane Community College, Spokane Falls Community College, and the Institute for Extended Learning. Enrollment at these three institutions exceeded 50,000 in the fall of 2007.⁵⁸

- **Spokane Community College** offers Associate Degree programs, Career and Technical training, and transfer programs in health sciences, information technology, transportation and logistics, and science engineering and mathematics. Because of significant increases in enrollment this year, a number of programs are not accepting applications for the remainder of 2009.
- **Spokane Falls Community College** offers two-year transfer programs, career and technical programs, continuing education, and distance learning opportunities. Transfer majors include accounting, aviation, fine arts, economics, and modern languages. Career and technical training services are provided for web design, interior design, business technology, and hearing instrument specialist.
- **The Institute for Extended Learning** offers students access to adult education, business-oriented courses, and community classes. Through the Spokane Community Colleges, several centers around the region provide job skills and educational services to residents in Ferry County, Colville, and at the Fairchild Air Force Base. Through the Institute students can earn their Associate of Arts degree or various Associate of Applied Science degrees.

Walla Walla Community College

Located in Clarkston, Washington, the Clarkston campus of Walla Walla Community College offers academic transfer programs, associate degree programs, and certificates in biological sciences, chemistry, physics, agriculture science and technology, and business administration. Currently 4,600 students are enrolled in the college pursuing degrees in agribusiness, biology, civil engineering technology, geology, and physics.

IDAHO UNIVERSITIES

University of Idaho

The University of Idaho's main campus in Moscow has a current enrollment of 10,654 students and the Coeur d'Alene campus has 461 students. The University offers 103 majors in 10 colleges, 107 master's degrees, and 31 Doctoral degrees.

University of Idaho research projects are often conducted in conjunction with area industries and a business incubator on campus assists with technology transfer and commercial development of new products from the research facilities. The University of Idaho works with other Idaho universities, research laboratories, and industries to expand scientific capabilities and R & D within the state. Research areas include biomedical and molecular biology, agricultural and natural resources research, bioremediation and subsurface sciences, and nanotechnology and materials sciences. The University has six research institutes: the Aquaculture Research Institute, the Center for Advanced Microelectronics and Biomolecular Research, the University of Idaho National Institute for Advanced

⁵⁸ USDE-IES National Center for Education Statistics, Enrollment data Fall 2007

Transportation Technology (NIATT), the Idaho Water Resources Research Institute, the Microelectronics Research and Communications Institute, and the Environmental Research Institute.

Lewis-Clark State College

The main campus of Lewis-Clark State College is located in Lewiston, with satellite facilities in Coeur d'Alene and Orofino. Lewis-Clark State College is a public four-year college offering academic and technical degrees. Academic programs are available in business, education, humanities, natural sciences, nursing and health sciences, and social sciences. Professional technical programs are available in business technology and technical and industrial services. Current enrollment in the college is 3,612.⁵⁹ The college provides a bachelor's degree completion program for the residents of northern Idaho. The Region II Small Business Development Center is located on this campus offering a variety of entrepreneurial support programs throughout the region.

North Idaho College

Located in Coeur d'Alene, North Idaho College is a comprehensive community college offering college transfer programs, professional-technical programs, and workforce training and community education. Currently 4,856 students are enrolled in the college. Enrollment in the college's workforce training programs is 7,595. The campus is located in Coeur d'Alene with outreach centers in Bonners Ferry, Ponderay, and the Silver Valley.

JOINT WASHINGTON AND IDAHO EDUCATION INITIATIVES

Washington, Wyoming, Alaska, Montana, and Idaho (WWAMI)

This unique medical education program began in 1971 to improve access to medical education in the five states that are part of this collaborative initiative: Washington, Wyoming, Alaska, Montana, and Idaho (WWAMI). Currently there are 40 first year medical students sharing resources at the two major research universities in Moscow and Pullman linking the University of Idaho and Washington State University in an effort to improve health care in the northwest, provide enhanced primary care and medical research, and ensure accessibility to public medical education.

College of Pharmacy USTUR Program

Washington State University and the University of Idaho conduct collaborative research programs through the U.S. Transuranium and Uranium Registries allowing Health Physics faculty and students to work on joint projects and research utilizing the facilities of both institutions.

NATIONAL, STATE, AND PRIVATE RESEARCH LABORATORIES

Pacific Northwest National Laboratory (PNNL)

Pacific Northwest National Laboratory is one of 10 national laboratories managed by the Department of Energy (DOE), Office of Science. The lab, located in Richland, Washington just west of the IPH study area, performs research for various government agencies,

⁵⁹ USDE-IES National Center for Education Statistics, Enrollment data Fall 2007

industries, and universities. PNNL conducts over \$881 million in research annually and manages a national scientific user facility, The William R. Wiley Environmental Molecular Sciences Laboratory.

PNNL provides outstanding facilities and state-of-the-art scientific equipment allowing renowned scientists and engineers to collaborate on applied and fundamental research and innovation. Core capabilities currently include chemical and molecular sciences, chemical engineering, applied materials science and engineering, advanced instrumentation, and biological systems science. PNNL is recognized for their applications in information analytics and computer science. The Energy Smart Data Center and the Smart Grid research at this lab has assisted in developing electrical grid computing capabilities and effectively engaged other national and international organizations to collaborate on clean technology development projects.

Idaho National Laboratory

Idaho National Laboratory is a Department of Energy (DOE) facility dedicated to supporting DOE's missions in nuclear and energy research. The laboratory, located south and east of the IPH study area near Idaho Falls, collaborates with leading industrial, academic, and governmental personnel on projects in advanced fuel cycle programs, analytical chemistry, batteries, cellulosic feedstock, energy storage and transportation, the Freedom Car, and plug-in hybrid electric vehicles.

Schweitzer Engineering Laboratory (SEL)

The Government Services Division of SEL conducts ongoing research to ensure the security, safety, and reliability of electrical power services at critical facilities such as military bases, sensitive research facilities, and related operations. SEL provides training and programs to these customers to improve their ability to diagnose problems, respond to power system issues, and identify related system needs.

ReliOn Inc.

ReliOn develops modular, cartridge based proton exchange membrane fuel cell technology and produces stationary fuel cells for energy and backup power, uninterruptible power supplier (UPS), digital power needs, and off-grid power issues. ReliOn is located in Spokane and is a spin-off of Avista Corporation serving both public and private clients.

OTHER TECHNOLOGY BUSINESS RESOURCES

Spokane Intercollegiate Research and Technology Institute (SIRTI)

Located on the campus of Washington State University in the Spokane University District, SIRTI is a Washington State economic development agency dedicated to accelerating the development and success of technology based companies in the Inland Northwest. SIRTI teams experienced entrepreneurs and business professionals with start-up innovation companies to help them navigate the challenges often associated with developing a new business operation.

According to the National Business Incubator Association, firms that have “graduated” from technology incubator programs are four times more likely to succeed compared to

companies that were not incubator tenants. SIRTl works aggressively to leverage state and local resources, Small Business Innovation Research grants, and they recently announced the creation of a Technology Growth Fund to provide capital resources for technology companies. SIRTl also assists companies in accessing other private capital resources to help firms secure the financing required to successfully bring new products and services to the marketplace.

University of Idaho Business Technology Incubator (BTI)

University of Idaho Business Technology Incubator is located adjacent to the main campus of the University of Idaho in Moscow and provides over 17,000 square feet of affordable space along with a range of support services for start-up companies. The incubator also brokers partnerships between University faculty, researchers, engineers, scientists, and tenant companies. Tenants include Computing Metrology Laboratory, a firm devoted to measurement technologies; Cypress, a publically traded firm designing and fabricating programmable controllers, general-purpose programmable clocks and memories for the consumer, data communications, and green power markets; GoNano Technologies, a nano-materials research and development company with applications in photovoltaics, hydrogen storage, and other catalytic energy applications; and Oreille, a computer science research and development firm focused in the defense industry.

BTI was created to leverage the commercialization of new technologies through start-up companies and to encourage Idaho businesses to identify technology transfer opportunities that could be beneficial to their businesses and continued economic development in the state. BTI also offers “virtual tenant” services for businesses that do not occupy office or lab space in the incubator but take advantage of facilities in the incubator including conference rooms, office equipment, and mentoring and networking resources.

Pacific Northwest National Laboratory Economic Development Office

The Economic Development Office of the Pacific Northwest National Laboratory (PNNL) provides assistance to technology based businesses providing technical assistance from leading researchers and engineers with access to world-class facilities and laboratories, assistance in identifying collaborators in specific fields that may help firms compete more effectively for grants and research funds, and they can provide contacts to venture capital firms, assistance with Small Business Innovation Research (SBIR) funding, and resources. Small businesses are eligible for up to five days of free technical assistance each year from scientists and engineers at PNNL to help resolve technical problems, improve production processes, or assist with other technology related applications.

SWOT ANALYSIS

In an economy that is increasingly global, regional competitive advantages such as costs, regulatory environment, education and training services, and a skilled workforce creates an environment that supports the creation of new jobs, the retention of existing employment, and fosters economic sustainability. Often however, there are challenges within a region that must be balanced by businesses against those competitive advantages in order to determine the ultimate benefit-cost scenario that will truly enable a business to compete in this global market environment.

As a part of the Inland Pacific Hub Study, the region's strengths, weaknesses, opportunities and threats (SWOT) were evaluated. This SWOT analysis was developed through a review of the study area's competitiveness, an analysis of the commercial assets, location quotients and shift-share analysis, review of the infrastructure, interviews throughout the study area with area economic development professionals, and input from the public meetings. The basic purpose of SWOT analysis was to identify the following:

- **Strengths:** regional attributes and conditions that are competitive advantages for the study area
- **Weaknesses:** regional attributes and conditions that may impede the competitiveness of the study area
- **Opportunities:** external conditions that may enhance and sustain the competitiveness of the study area in the future
- **Threats:** external conditions that may impede the competitiveness of the study area in the future

STRENGTHS

There are a number of strengths in the Inland Pacific Hub study area that contribute to the region's economic vitality and quality of life. These strengths offer a strong foundation on which to build a more competitive and prosperous economic future for the entire 19-county study area. Key indicators among the study area's strengths are:

- Higher educational institutions
- Traditional industries: agriculture, timber, mining
- Tourism and outdoor recreation
- Power availability and costs
- Global Reach to Asia and Western Canada

Higher Educational Institutions

The IPH study area has a significant cluster of highly regarded educational and research institutions including Washington State University, the University of Idaho, Gonzaga University, Eastern Washington University, the Intercollegiate University District in downtown Spokane, Lewis-Clark State College, and several community colleges. The vision, collaboration, and ongoing innovation between these colleges and universities has helped to build the economy of the IPH study area and contributed to the attraction of businesses and the expansion of many companies in the region. These colleges and

universities also provide a significant educational resource for the region. In today's dynamic work environment employees must develop new skills prompting companies to seek locations that support life-long learning opportunities.

Traditional Industries: Agriculture, Timber, Mining

Agriculture, forest products, manufacturing, and mining have been core industries in the Inland Pacific Hub study area for many years. Forest products continue to be a key industrial cluster in the IPH study area and have developed important domestic and international business opportunities for the study area. Agriculture employs over 23,400 people within the Inland Pacific Hub study area. According to the U.S. Department of Labor, Bureau of Labor Statistics, the mining industry employed over 5,100 people in the IPH in 2007.⁶⁰

These core industries helped to drive the development and employment in much of the study area in the past and many of these industries still consume a significant volume of the study area's transportation capacity. Based upon the 2007 TRANSEARCH data, lumber or wood products, nonmetallic minerals, farm and food products, and secondary traffic make up the majority of the outbound commodities from the IPH study area.

Tourism and Outdoor Recreation

Tourism is important to the Inland Pacific Hub study area. The combined visitor expenditures for all of the IPH counties totaled over \$1.6 billion in 2009. There are a number of tourism assets within the non-metro IPH counties that represent opportunities for future growth in the tourism industry. Niche market tourism sectors including adventure tourism, agri-tourism, eco-tourism, and heritage tourism experienced steady growth prior to the recession and are expected to continue to play an important role in the tourism industry when the economy stabilizes.

Power Availability and Costs

Power in the Inland Pacific Hub study area is relatively inexpensive and readily available. Power generation and the cost of energy were not considered to be an issue for economic developers interviewed in this study. Although other regions of the country face increasingly higher power costs, the electricity and energy resources of the Inland Pacific Hub study area can be a competitive advantage, particularly for those businesses that utilize a significant amount of power in their production and operations.

Global Reach to Asia and Western Canada

The geographic location of the IPH study area, under 300 miles from the Ports of Seattle and Tacoma, give local industries exporting to Pacific Rim nations a transportation-cost advantage by truck. While many shippers further inland may have been access to intermodal rail services, the cost of an intermodal move by rail and the associated drayage cost, is likely to be significantly higher than a 300 mile truck move. In fact, due to railroad consolidation, especially in western states, many shippers must dray containers by truck

⁶⁰ U.S. Department of Labor, Bureau of Labor Statistics, Quarterly Census of Employment and Wages, July 2009

300 miles or more to access a rail hub in order to access a major west coast ocean gateway.

The IPH study area is also well positioned to capitalize on trade activities resulting from some of the fastest growing areas of western Canada. Between 2001 and 2006 the population of Calgary grew by 12.6 percent and exceeded 1 million people. In 2009 the population of Calgary exceeded 1.3 million. Calgary, within a one-day drive by truck, offers a growing market for consumption of processed foods – one of the strong industry sectors of the IPH study area.

WEAKNESSES

Weaknesses constrain the region's ability to grow and compete. Key weaknesses in the study area include:

Regional Weaknesses

- Declining populations in non-metro areas
- Lack of diversified regional long-range planning
- Limited availability of land to support future economic development
- Lack of broadband capacity in some of the non-metro counties
- Condition of some highway segments in the study area (e.g. Bigelow Gulch, Market Street)
- Rail access (e.g. eastbound intermodal services) and to a lesser extent some rail infrastructure (e.g. Plummer to Spokane) in the region.

Declining Populations in Non-Metro Areas

A number of the counties within the study area face future declining or stagnant population trends that contribute to the erosion of economic conditions. Columbia, Garfield, Clearwater, and Shoshone Counties lost population between 2000 and 2008, and over the past thirty years these counties have experienced stagnant or declining populations. Nine counties within the study area experienced positive but very slow population growth, less than 5 percent during the past eight years: Asotin, Ferry, Lincoln, Stevens, and Whitman Counties in Washington and Benewah, Latah, Lewis and Nez Perce Counties in Idaho.

From 2000 to 2008, the State of Washington realized an 11.1 percent population growth statewide compared to Idaho which grew at a rate of 17.8 percent during the same period. Only Kootenai County's population growth exceeded the statewide growth rate. The remaining eighteen counties in the study area experienced population growth below their respective statewide average. Only six counties in the study area had a population growth rate above 5 percent during the past eight years: Adams County, WA with 5.2 percent; Pend Oreille County, WA with 9.6 percent; Spokane County, WA with 10.7 percent; Bonner County, ID with 11.8 percent; Boundary County, ID with 11.1 percent; and Kootenai County, ID with 26.5 percent. These six counties represent 74.16 percent of the study area population.

In those counties with declining population, employment has been relatively stagnant or has declined as well. In Columbia County, WA, total employment has decreased 28 percent

since 2000 while Garfield County's employment rate declined by 7.2 percent during the past eight years.⁶¹ In Clearwater County, ID, employment has declined by slightly over 7 percent and the labor force has steadily decreased since 1999.⁶² Lewis County, ID, has continued to experience modest fluctuations in employment since 2000, for example in 2008 there were 1,660 jobs compared to 1,628 in 2000. Shoshone County has also experienced continued employment fluctuations over the past eight years with 237 more jobs available in 2008 than in 2000.

If more of the counties in the study area had sustained more positive population growth, positive economic effects would have been realized throughout the region. The slow or declining populations within the region affect the profitability of businesses throughout the study area including the metropolitan communities where specialized services often draw customers from a broad catchment area.

Lack of Diversified Long-Range Planning

Participants at two of the public meetings were encouraged by the integration achieved and the efforts to involve the entire study area in the study process. General consensus from participants indicated that stronger regional efforts to plan and cooperate on important issues would be very beneficial to the entire region, particularly for economic development and transportation. Participants believed that the study area could benefit from a broadly based planning effort that focused on multimodal transportation issues, utility infrastructure, land for economic development, and multi-state policy issues.

Limited Availability of Land to Support Future Economic Development

Because of a number of physical and financial constraints within the study area, the availability of sites that meet the "state of readiness" requirements is limited in the IPH. This condition will likely become a more significant issue in the study area over time if concrete steps are not taken to identify and preserve appropriate land resources for economic development, particularly those sites that are accessible to quality transportation services. These physical constraints include public land ownership, mountainous topography, availability of water and wastewater services, access to transportation infrastructure, wetlands and other environmentally protected areas, and proximity to available workforce.

Lack of Broadband Capacity in Some of the Non-Metro Counties

The availability of reliable, high speed broadband service is important to the economic future of the Inland Pacific Hub study area. Most of the state, regional, and local economic developers in the IPH study area outside of Spokane and Kootenai Counties expressed concern about the availability and quality of broadband connectivity in the remainder of the region, and what it could mean for business attraction, entrepreneurship, and small businesses in the future. A recent study conducted by the U.S. Department of Agriculture found that rural communities that had broadband access by 2000 had higher employment growth and nonfarm private earnings compared to similar communities that had little or no broadband access as of 2000.⁶³ According to this study, an estimated 55 percent of U.S.

⁶¹ Washington State Employment Security Department, Labor Market and Economic Analysis March 2009

⁶² Idaho Department of Labor, Labor Market Information, July 2009

⁶³ "Broadband Internet's Value for Rural America", US Department of Agriculture, Economic Research Report, August, 2009

adults had broadband access at home in 2008; however, only 41 percent of adults in rural households had broadband access. Within Spokane and Kootenai Counties, broadband services are highly reliable and competitively priced, so for these counties broadband services are a competitive advantage for economic development. There are a number of initiatives underway within the study area to improve the availability of broadband connectivity.

Condition of Some Highway and Rail Infrastructure in the Study Area

Throughout the study area, businesses, economic developers, and meeting participants recognized the importance of transportation to the region. Infrastructure preservation and improvement are critical for almost every region of the Inland Pacific Hub study area. The availability of all-weather roads to the region's river ports, the condition of roadways in almost every county, and the condition of some of the short-line railroads were identified as crucial issues and will most certainly impact the economic development of the region going forward. A more detailed discussion regarding the highway and rail infrastructure is provided in *Technical Memorandum #1* and *Working Paper 3.5 – Modal Issues*.

Global Reach to Europe and South America

The geographic location of the IPH study area, over 2,500 miles from the Ports of New York/New Jersey, places local industries exporting to Europe at a disadvantage to similar industries located in the U.S. heartland that have better access to the eastern railroad network of the U.S. While the recent devaluation of the dollar has made Europe an attractive export market for some industries, most economists agree that over longer time horizons, China and the rest of Asia will be stronger export growth markets for the U.S.

In a similar fashion, the distance from the IPH study area to major Gulf Coast export gateways, such as the Port of Houston or New Orleans exceeds 2,200 miles. In addition, the largely east/west orientation of U.S. railroads makes accessing Central and South American export markets challenging for local industries.

OPPORTUNITIES

Opportunities build on competitive advantages and emerging strengths that can help to build a more diversified and sustainable economic future for the entire region. Key opportunities in the Inland Pacific Hub study area are:

- Health Sciences
- Innovation and entrepreneurship

Health Sciences

Health sciences and health services employ a significant number of people in the IPH study area and represent a growth industry for both the metro and non-metro counties in the region. Health science sub-sectors that represent strong growth opportunities include:

- Medical and Diagnostic Laboratories
- Medical Equipment and Supplier
- Bioinformatics

Examples of the health science research currently underway in the study area include the Washington State University Division of Health Sciences, a multi-disciplined center for health science research, teaching, and research in molecular biosciences, pharmacology, and related health disciplines. The University of Idaho Center for Advanced Microelectronics and Biomolecular Research works with the National Institutes of Health to combine molecular biology and microelectronics to develop sensors.

Innovation and Entrepreneurship

While the universities within the study area foster research and innovation, the national laboratories and technology innovation and incubator facilities help to commercialize this research and support the ongoing efforts of entrepreneurs. Spokane Intercollegiate Research and Technology Institute (SIRTI) and the University of Idaho Business Technology Incubator (BTI) have developed a range of financing tools, business mentors, and other services designed to improve the success rate of start-up technology-based businesses. Both states have also developed incentives and other programs designed to enhance the development and growth of knowledge businesses.

THREATS

Key impediments to the study area's future prosperity include:

- Loss of competitiveness in aerospace industry
- Availability of water and access to wastewater treatment capacity
- Cost of doing business in some areas of the region

Loss of Competitiveness in Aerospace Industry

The recent announcement that the Boeing 787 jet assembly plant selected a location outside of the Pacific Northwest continues a trend observed in recent years. Aerospace is an important industry in the Inland Pacific Hub study area and the conditions that are causing Boeing to locate facilities outside of the northwest can also impact the aerospace businesses in the IPH study area as well. A study of the aerospace industry competitiveness identified several disadvantages: cost of living, real estate/utility costs, training, wage rates, and labor relations.

Availability of Water and Access to Wastewater Treatment Capacity

The availability of raw water resources and water and wastewater treatment infrastructure in the Inland Pacific Hub study area involves many complex legal issues, environmental regulations, water quality requirements, development regulations, and the habitat needs of fish and wildlife. In the non-metro areas of the study area, water and wastewater issues may be one of the most significant constraints to economic development in the future according to several economic development professionals interviewed for this study.⁶⁴ Securing new water rights or transferring water rights can take as long as three years, making it an expensive process. Land with existing water rights that can be documented and preserved is becoming increasingly expensive even in more rural areas.

⁶⁴ State, Regional, and Local Economic Development Agencies interviewed for study

Cost of Doing Business in the Inland Pacific Hub Study Area

Differences in regulations, fees, tax rates, and other factors affecting the cost of business operations are a concern in this region. Businesses must make the best decisions for their continued operation; however, businesses moving from one area of the region to another in order to avoid these costs create real challenges within the study area. Many of these issues can only be resolved at the state level but these “cost of business” issues represent a serious concern for the study area from the standpoint of tax base, fostering regional cooperation, and transportation and transit as employees may be required to drive greater distances to their workplace.

APPENDIX A: COUNTY PROFILES

The individual county profiles that follow were developed to evaluate economic activity to better understand how improved freight transportation connectivity may affect the county's economic future. Each of these county profiles assesses population and workforce trends, existing major industries, primary import and export commodities, and the existing transportation infrastructure.

UNDERSTANDING LOCATION QUOTIENTS

Location quotients (LQ) are used to measure economic specialization in a community or region compared to a larger geographic or economic region. They are a measure of relative concentration of private industry within a specific area and are often used to indicate a specific industry's export orientation and self-sufficiency. Location quotients are utilized in research to quantify and compare concentration of industries and they are a useful tool to better understand the economic strengths and weaknesses of a community or region.

Within accepted economic theory, a location quotient greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. Usually a LQ of greater than 1.25 is used to classify an area industry as an "exporter". Economic development professionals often use LQ to identify industries within an area where there may be competitive advantages creating opportunities for additional growth within the defined or related industries. The competitive advantages may be the presence of a major supplier, skilled workforce, transportation infrastructure, or other key resources. High LQ may also indicate economic vulnerability within a community particularly when concentrations are within industrial sectors where there is little or no growth.

The LQ may indicate that the local economy is a net importer of the goods and services of the particular industry being measured. Location Quotients were generated for each of the Counties in the IPH study area to provide additional insight into the comparable industry concentrations in each county.

COUNTY COMMODITY FLOW DATA

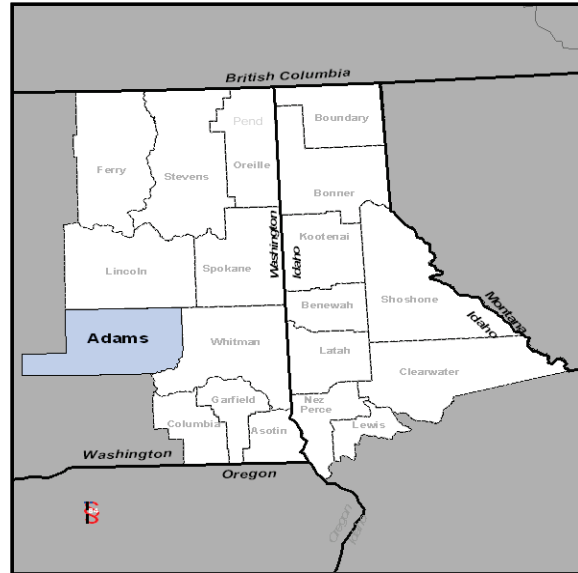
The commodity flow tables contained in each of the county profiles was developed from the TRANSEARCH data purchased for this study. This data is developed using various models, predictive analysis, trends research, and other information and is considered to be the best available database for commodity flow information. How TRANSEARCH data is created is explained in detail in Appendix A: Data Sources and Processes Used to Create TRANSEARCH; in the Regional Freight Profile working paper.

In general, the data is assembled at a national level for the U.S., Canada and Mexico from a wide variety of historic data sources which are then modeled to produce forecasts for future freight flows. Like all modeling based on economic indices, the further into the future the forecast, the more variability there is in the precision of the results. Also, since the model is created at the macro level, there is the possibility that disaggregating the national totals into

regional portions, then state portions and then further into county portions may cause some of the commodity tonnages to be overstated or understated at the finest granular levels due to assumptions about demographic and other economic modeling criteria. By and large, most commodity projections can be considered to be sound judgments. However, when data anomalies are spotted, TRANSEARCH is contacted to validate and explain the modeling assumptions or to correct the database.

ADAMS COUNTY, WASHINGTON

Adams County is part of the Columbia Basin that has become one of the state's premier agricultural centers. According to the USDA, Adams County is the 3rd largest wheat producer in the state and 17th in the U.S. generating over 12.7 million bushels in 2007. Most of the business activity within the county is related to the processing of vegetables and fruit including several processing operations and cold storage facilities. More than 60 different crops are grown in Adams County. Half of the nation's French fries are made from potatoes grown in this area. The area also has a growing wine industry.



Nonfarm employment is expected to grow over the next ten years in Adams County, increasing by 1.1 percent.⁶⁵ Some of the largest manufacturers in the county include frozen specialty good manufacturer McClain Foods and JR Simplot Co. Food Group. Service industries in Adams County include several transportation companies, professional services particularly related to the agribusiness section, and financial services.

POPULATION TRENDS

Although population in Adams County has increased by 3,682 since 1990, Adams County's population growth was substantially lower than the State of Washington as a whole from 2000 to 2008 with Adams County experiencing a 5.2 percent population change compared to an 11.1 percent population growth for the state as a whole during this period. The population growth in Adams County over the past 36 years is less than half of the statewide population growth during that same period. Between 1969 and 2006 the population of Washington increased by 91 percent while Adams County's population increased by only 48 percent.

Thirty-four percent of the population of Adams County is under 18 years of age compared with 23 percent below the age of 18 statewide. Adams County has the lowest median age of all the counties in the IPH study area. The Hispanic community represents over 53 percent of the Adams County population and 43.4 percent of the population over the age of five speak a language other than English at home. Over 18 percent of the population in Adams County lives below

⁶⁵ Washington State Employment Security Department, Labor Market and Economic Analysis 2009

the poverty level and the 2007 median household income of \$38,463 is significantly below the state median income of \$55,628.⁶⁶.

Table A-1: Population Data for Adams County

Year	Population
1990 ⁶⁷	13,643
2000	16,450
2008 ⁶⁸	17,285
2015	17,740
2020	18,250
2030	19,330

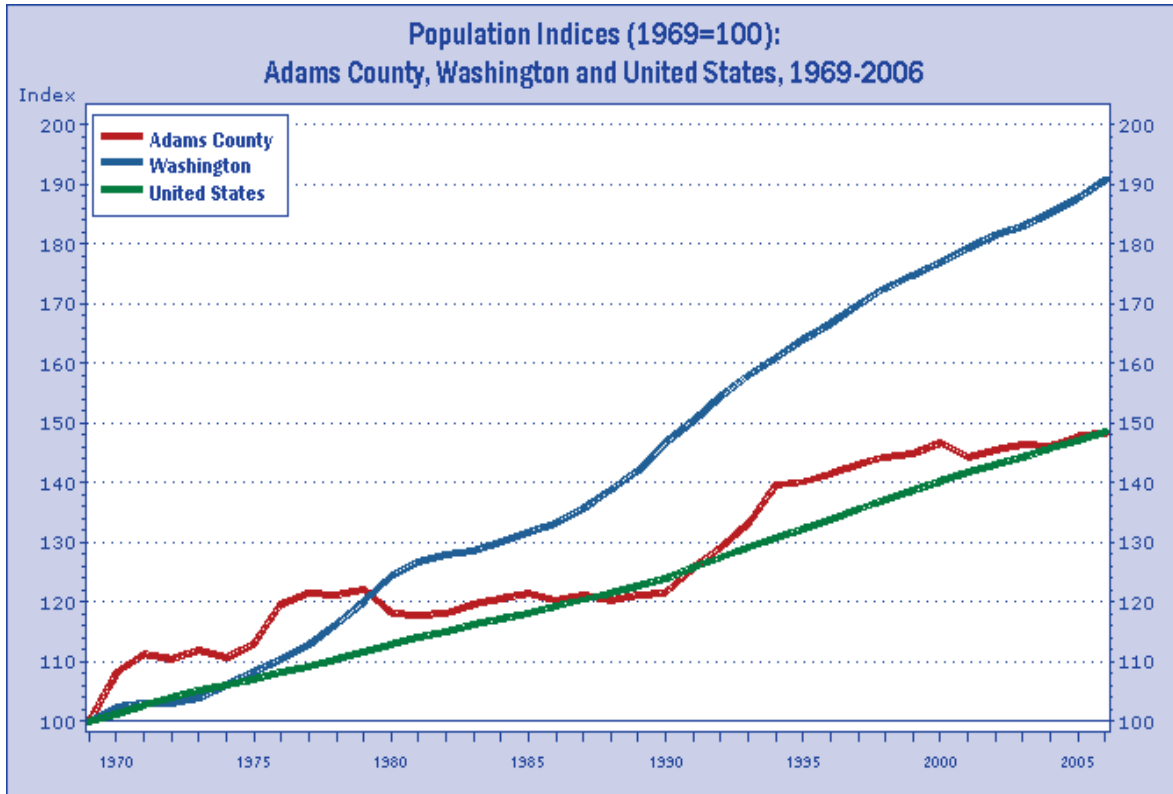
Exhibit A-1 shows the population growth of Adams County compared with the growth in the State of Washington and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969, and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. This exhibit compares the differences in population growth in these three geographic areas even though they vary in size. The population growth in Adams County during this period grew 50.5 percent, well behind Washington's growth at 92.9 percent but on par with the national population growth rate.

⁶⁶ U.S. Census Bureau and State of Washington

⁶⁷ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

⁶⁸ U.S. Census Bureau 2008 Population Estimates

Exhibit A-1: Population Indices for Adams County



INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Unemployment in Adams County increased from December 2007 to December 2008 primarily as a result of jobs lost in farming, crop production, nursery, and greenhouse employment. Unemployment increased to 10.4 percent by the end of 2008, which was a two percent increase over the jobless rate in 2007. There were some employment gains during 2008 in manufacturing and government, although modest in terms of total employment. The largest employers in Adams County include McCain Foods, a processor of frozen potato products with 450 employees, JR Simplot Co., a potato processor with 350 employees, and Columbia Cold Storage with 40 employees.

Table A-2: Industry Sectors by Employment in Adams County⁶⁹

Industry	Employment
Agriculture, Forestry, and Fishing	1,389
Manufacturing	1,032
Food Manufacturing	944
Crop Production	812
Retail Trade	572

Agri-business is the largest employer in Adams County which is consistent with the volume of agricultural products grown in the county. Adams County ranks 6th in the state in terms of market value of crops and livestock producing \$344 million of agriculture products in 2007, primarily potatoes, wheat, and apples.⁷⁰ Food processing generates \$59 million in gross sales in Adams County and is included as part of the manufacturing sector.

According to the most recent economic impact study for tourism expenditures in Washington State, tourism in Adams County generated \$27.5 million in travel spending in 2007 creating 310 jobs and \$1.9 million in state and local tax revenues.⁷¹ Travel spending has increased by 4.8 percent over the past seven years in Adams County.

Exhibit A-2 compares employment growth in Adams County for the past 37 years to employment growth in the State of Washington and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Adams County's employment increasing by 30.7 percent during the period, well below Washington at 156.6 percent and the nation at 98.7 percent.⁷²

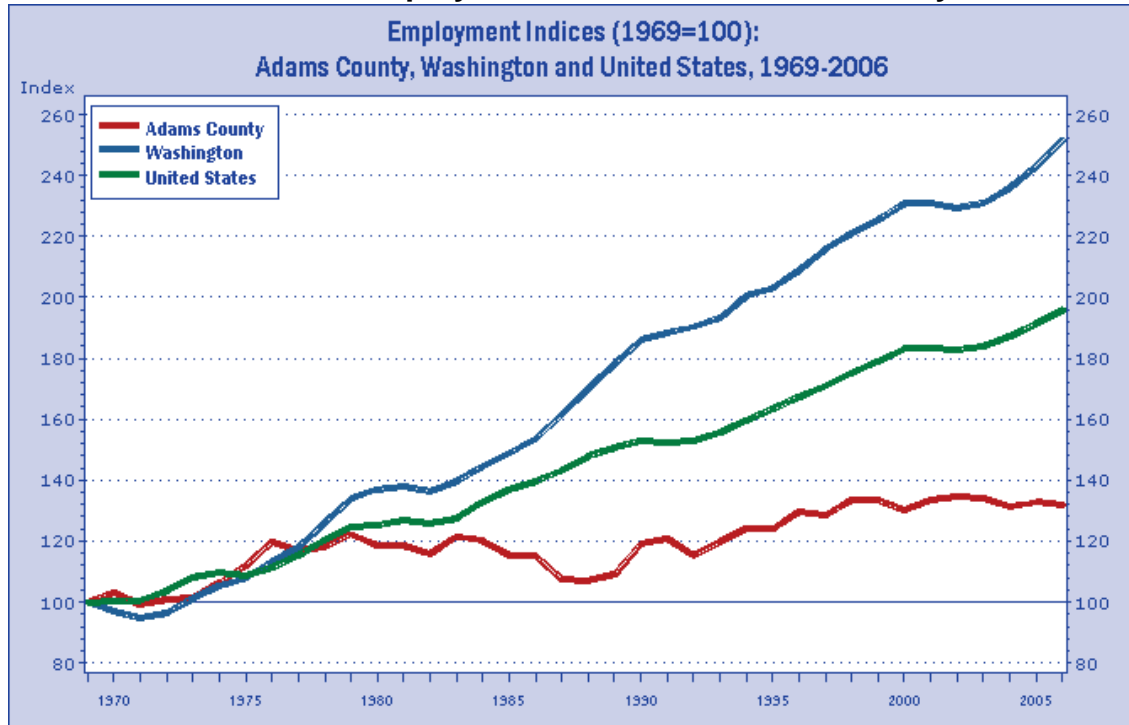
⁶⁹ Bureau of Economic Analysis, Employment Statistics

⁷⁰ Washington Department of Agriculture, "2007 Market Value of Crops and Livestock"

⁷¹ "Washington State County Travel Impacts 1991 – 2007" Washington State Department of Community, Trade, Economic Development

⁷² Pacific Northwest Regional Economic Analysis

Exhibit A-2: Employment Indices for Adams County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. Workforce availability and skill is a critical factor in retaining and attracting new investments and employment. Education attainment is frequently used to assess workforce skill based in a community. According to the U.S. Census Bureau, 63.3 percent of the residents of Adams County over the age of 25 graduated from high school.⁷³ This is one of the lowest high school graduate rates in the IPH study area. Only 17.6 percent of local residents have an Associate's Degree or higher and slightly over 12 percent have a Bachelors or Graduate degree. Based on education attainment, many companies would not consider Adams County as a potential location if their operations require a high level of skill or technology applications.

In 2008, employment in Adams County expanded at a slower rate than in 2007 with the addition of 120 jobs. Government employment, which makes up 30 percent of the employment base in the county, increased by 3.1 percent during 2008 representing 1,640 workers out of a total civilian labor force of 8,020.⁷⁴

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is exported outside the local area. The location quotients shown in **Table A-3**

⁷³ U.S. Census Bureau Comparative Community Profiles, 2008

⁷⁴ Labor Area Summary, June 2009, Washington State Employment Security Department

compare employment concentration in Adams County to the State of Washington as a whole. Adams County has a substantially higher employment concentration in crop production than the state as a whole and there is a high degree of economic specialization within the county in agri-business. There are competitive advantages for agri-business in Adams and opportunities for additional growth in food processing, identity preserved crops, organic food production, and other value-added agri-businesses.

Table A-3: Location Quotients for Adams County

Industry	Location Quotient	2007 Employment
Crop Production	33.2	812
Agriculture and Forestry support activities	26.8	403
Agriculture, Forestry, Fishing, and Hunting	26.2	1,389
Animal Production	17.1	173
Food Manufacturing	14.1	944

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people as never before. Consumers buy fruits at our local market, companies receive supplies from international firms to produce their products, and bulk commodities like grain, coal, or oil move into and out of U.S. ports every day. We expect constant access to the goods available from the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

Interstate 90 runs through northern Adams County linking the county to Spokane and Seattle. The county is also served by US 395 and Highway 26. A BNSF line runs through Ritzville and a Union Pacific line is located to the east approximately 70 miles from Othello.⁷⁵ According to the Washington Department of Commerce, the closest intermodal facility serving Adams County is the BNSF facility in Spokane that is classified as a “non-daily intermodal service” facility.⁷⁶ The airport closest to Adams County is the Tri-Cities Regional Airport located 47 miles from Othello; the Spokane International Airport is 120 miles away. The Port of Othello is located in the panhandle of Adams County and encompasses 182 square miles of property.

⁷⁵ Washington DOT, Transportation Map

⁷⁶ BNSF Intermodal Network Map

MAJOR COMMODITIES⁷⁷

The commodity flows shown in **Tables A-4** and **A-5** identify the top imports and exports for Adams County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the County. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, transloading, warehousing, and value-added inventory handling.

Adams County's most significant export in 2007 was farm products and food or kindred products accounting for the vast majority of the goods shipped out of the county. The TRANSEARCH data projects exports of these products from Adams County to decline significantly between 2007 and 2027 by over 46 percent for farm products alone. The decline in exports also mirrors a projected decrease in farm employment projected through 2030 by Woods and Poole Economics. The decline in farm exports is consistent with predicted trends nationally for agriculture as more crops are consumed locally for value-added activities such as livestock production, locally based food processing and production of ethanol and other bio-fuels. U.S. farmers are also facing increasing foreign competition, fluctuations in the value of the U.S. dollar and greater environmental regulations, all of which can impact price competitiveness of U.S. agriculture exports. These national trends however may not hold true for the IPH study area due to its diverse agricultural production capabilities, access to low cost transportation by rail and barge, and close proximity to major export gateways such as Seattle, Tacoma and Portland.

Imported commodities into Adams County have substantially lower volumes than the goods being exported. The primary goods being imported into the county were food or kindred products and farm products. These goods primarily represent consumable food products used by the community for personal and livestock consumption. These goods are sold in grocery stores, feed stores, and restaurants. The commodity data shows a decline in food and farm products over the next 20 years in Adams County. Although the population growth in Adams County is very modest, the population of the county is not projected to decline during the next 20 year period.

⁷⁷ Commodity data (TRANSEARCH) was purchased from Global Insight

Table A-4: Inbound Commodities for Adams County

Top 10 Commodities Shipped Into Adams County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Food or Kindred Products	Tons	162,818	93,964	(42.3%)	102,088	97,002	(5.0%)							264,906	190,965	(27.9%)
	Value/Ton	\$895	\$948	5.9%	\$1,900	\$2,063	8.6%							\$1,283	\$1,515	18.1%
Farm Products	Tons	121,970	63,154	(48.2%)	32,204	18,451	(42.7%)							154,174	81,605	(47.1%)
	Value/Ton	\$326	\$451	38.1%	\$163	\$197	21.4%							\$292	\$393	34.7%
Chemicals or Allied Products	Tons	4,730	6,862	45.1%	78,272	103,425	32.1%							83,002	110,287	32.9%
	Value/Ton	\$1,761	\$1,378	(21.8%)	\$560	\$639	14.0%							\$629	\$685	8.9%
Lumber or Wood Products	Tons	81,791	150,132	83.6%										81,791	150,132	83.6%
	Value/Ton	\$270	\$247	(8.5%)										\$270	\$247	(8.5%)
Clay, Concrete, Glass or Stone	Tons	28,189	32,907	16.7%										28,189	32,907	16.7%
	Value/Ton	\$510	\$538	5.5%										\$510	\$538	5.5%
Petroleum or Coal Products	Tons	11,294	18,467	63.5%	16,080	17,092	6.3%							27,374	35,558	29.9%
	Value/Ton	\$429	\$431	0.6%	\$762	\$762	(0.0%)							\$624	\$590	(5.5%)
Pulp, Paper or Allied Products	Tons	17,022	14,727	(13.5%)										17,022	14,727	(13.5%)
	Value/Ton	\$1,170	\$1,138	(2.7%)										\$1,170	\$1,138	(2.7%)
Nonmetallic Minerals	Tons	16,604	19,188	15.6%										16,604	19,188	15.6%
	Value/Ton	\$20	\$20	(0.9%)										\$20	\$20	(0.9%)
Fabricated Metal Products	Tons	5,104												5,104		
	Value/Ton	\$3,573												\$3,573		
Transportation Equipment	Tons		\$12,072												12,072	
	Value/Ton		\$15,803												\$15,803	
Primary Metal Products	Tons	3,862	9,397	143.3%										3,862	9,397	143.3%
	Value/Ton	\$1,985	\$1,814	(8.6%)										\$1,985	\$1,814	(8.6%)
All Commodities In Adams County, WA	Tons	462,739	440,330	(4.8%)	228,644	235,969	3.2%							691,383	676,299	(2.2%)
	Value/Ton	\$780	\$1,196	53.4%	\$1,117	\$1,199	7.3%							\$891	\$1,197	34.3%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

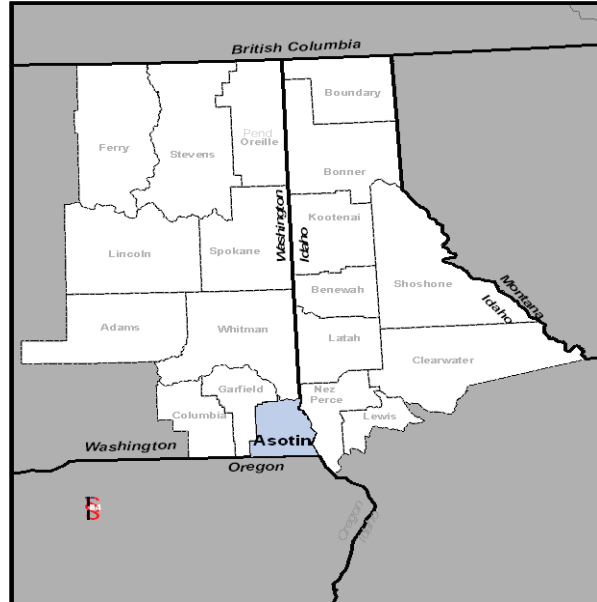
Table A-5: Outbound Commodities for Adams County

Top 10 Commodities Shipped Out Of Adams County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Farm Products	Tons	1,247,488	928,585	(25.6%)	1,011,116	285,835	(71.7%)							2,258,604	1,214,419	(46.2%)
	Value/Ton	\$664	\$630	(5.1%)	\$151	\$151	0.0%							\$434		(100.0%)
Food or Kindred Products	Tons	226,984	166,278	(26.7%)	143,960	81,032	(43.7%)							370,944	247,310	(33.3%)
	Value/Ton	\$652	\$658	0.9%	\$832	\$832	0.0%							\$722	\$715	(0.9%)
Waste or Scrap Materials	Tons	1,229	2,474	101.3%	3,800	3,484	(8.3%)							5,029	5,959	18.5%
	Value/Ton	\$179	\$199	11.7%	\$192	\$192	0.0%							\$189	\$195	3.3%
Chemicals or Allied Products	Tons	460	598	30.0%	3,960	4,579	15.6%							4,420	5,177	17.1%
	Value/Ton	\$437	\$560	27.9%	\$257	\$257	0.0%							\$276	\$292	5.9%
Clay, Concrete, Glass or Stone	Tons	2,751	4,300	56.3%										2,751	4,300	56.3%
	Value/Ton	\$196	\$193	(1.4%)										\$196	\$193	(1.4%)
Metallic Ores	Tons	626	336	(46.3%)										626	336	(46.3%)
	Value/Ton	\$421	\$421	(0.0%)										\$421	\$421	(0.0%)
Printed Matter	Tons	193	219	13.8%										193	219	13.8%
	Value/Ton	\$1,837	\$1,837	(0.0%)										\$1,837	\$1,837	(0.0%)
Fresh Fish or Marine Products	Tons	186	269	44.9%										186	269	44.9%
	Value/Ton	\$5,865	\$5,865	0.0%										\$5,865	\$5,865	0.0%
Pulp, Paper or Allied Products	Tons	143	168	17.6%										143	168	17.6%
	Value/Ton	\$291	\$325	11.7%										\$291	\$325	11.7%
Machinery	Tons	86	159	84.2%										86	159	84.2%
	Value/Ton	\$2,889	\$2,955	2.3%										\$2,889	\$2,955	2.3%
All Commodities In Adams County, WA	Tons	1,480,243	1,103,576	(25.4%)	1,162,836	374,930	(67.8%)							2,643,079	1,478,506	(44.1%)
	Value/Ton	\$662	\$634	(4.2%)	\$236	\$300	27.2%							\$474	\$549	15.8%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

ASOTIN COUNTY, WASHINGTON

Asotin County is a rural county located near the confluence of the Snake and Clearwater Rivers. The Port of Clarkson in Asotin County provides navigable river access to the West Coast supporting shipments of agricultural and forestry products, boats, and other regional goods. The county is an access point to North America's deepest gorge, Hells Canyon, and is also home to a diverse manufacturing sector including jet boats, wine, and wood processing. Tourism is also an important component of the county's economic base. Over 53,797 acres in Asotin County are within the Umatilla National Forest representing almost 17 percent of the total land base of the county. According to the Palouse Economic Development Council, revenues from tourism in 2005 exceeded \$24 million and generated over 390 jobs for Asotin County.



POPULATION TRENDS

The population of Asotin County was 21,420 in 2008, increasing by 3,815 since 1990. The county's population growth was substantially lower than the State of Washington as a whole from 2000 to 2008 with Asotin County experiencing a 4.2 percent population increase compared to an 11.1 percent population growth for the state as a whole during this period.

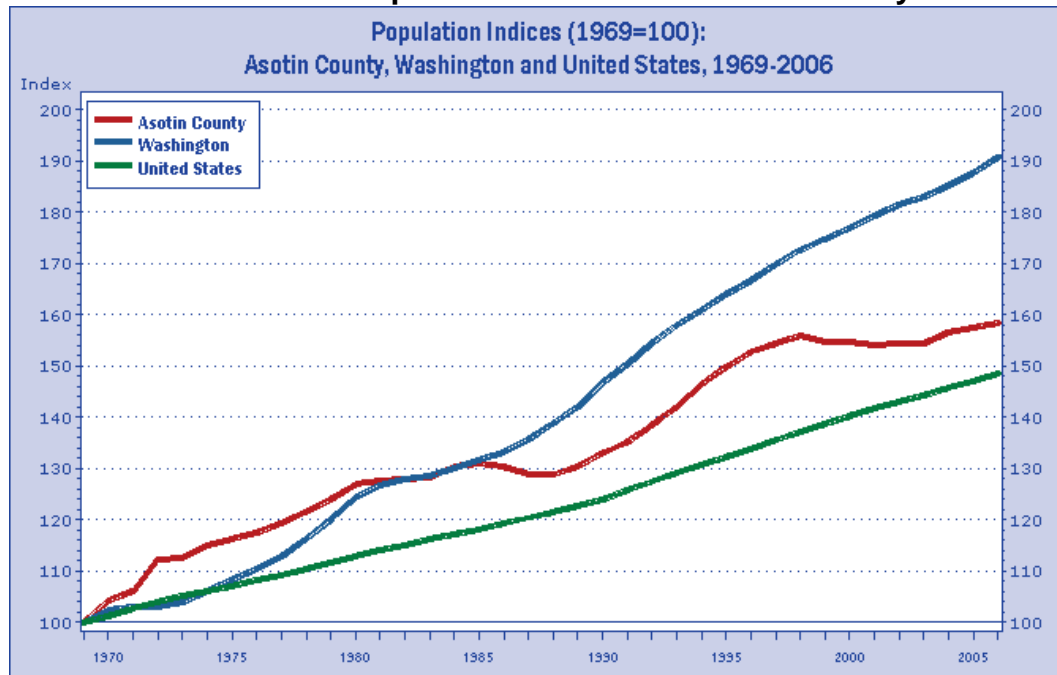
Twenty-two percent of the population in Asotin County is under 18 years of age similar to the statewide population under the age of 18 at 23.8 percent. Fourteen percent of the population in Asotin County lives below the poverty level and the 2007 median household income of \$42,665 are substantially below the state median income of \$55,628.

Table A-6: Population Data for Asotin County

Year	Population
1990 ⁷⁸	17,670
2000	20,551
2008 ⁷⁹	21,420
2015	22,690
2020	23,730
2030 ⁸⁰	25,880

Exhibit A-3 shows the population growth of Asotin County compared to the growth in the State of Washington and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. This exhibit compares the differences in population growth in these three geographic areas even though they vary substantially in size. The population growth in Asotin County during this period grew 56.7 percent below Washington's growth at 92.9 percent but ahead of the national population growth rate at 49.7 percent.

Exhibit A-3: Population Indices for Asotin County



⁷⁸ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

⁷⁹ U.S. Census Bureau 2008 Population Estimates

⁸⁰ 2030 population estimate Woods and Poole Economics

INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Employment growth in Asotin County increased by 170.4 percent from 1969 to 2006 exceeding employment growth statewide which increased 151 percent during this period. Employment growth in Asotin County significantly outpaced the national employment growth which was 95.8 percent. In 2008, employment in Asotin County expanded at a slower rate than in 2007 with the addition of 110 jobs. Government employment which made up 12 percent of the employment base in the county increased by 2.5 percent during 2008 representing 1,230 employees out of a total civilian labor force of 10,660. The largest public employers in Asotin County include the Clarkston School District with 447 employees, the Tri-State Memorial Hospital with 358 employees and Asotin County with 293 employees. The largest private sector employers include M.A. DeAtley Construction a heavy construction firm with over 200 seasonal employees, Costco a retail operation with 175 employees, Albertson's a retail operation with 115 employees, and Renaissance Marine Group a boat builder with 80 employees.

Unemployment in Asotin County in January 2009 was 8.9 percent, up from 7.8 percent in December, 2008. According to the Bureau of Labor Statistics, the statewide unemployment rate in January 2009 was 9.5 percent; slightly more than the rate in Asotin County. The number of nonfarm jobs actually grew by 1.9 percent in 2008 with a net increase of 110 jobs. This employment growth occurred in the trade, transportation and utilities sector, natural resources and mining sector, and in the governmental sector.

Table A-7: Industry Sectors by Employment Asotin County⁸¹

Industry	Employment
Government	964
Retail Trade	712
Manufacturing	472
Construction	434
Finance and Insurance	134
Agriculture, Forestry, and Fishing	67

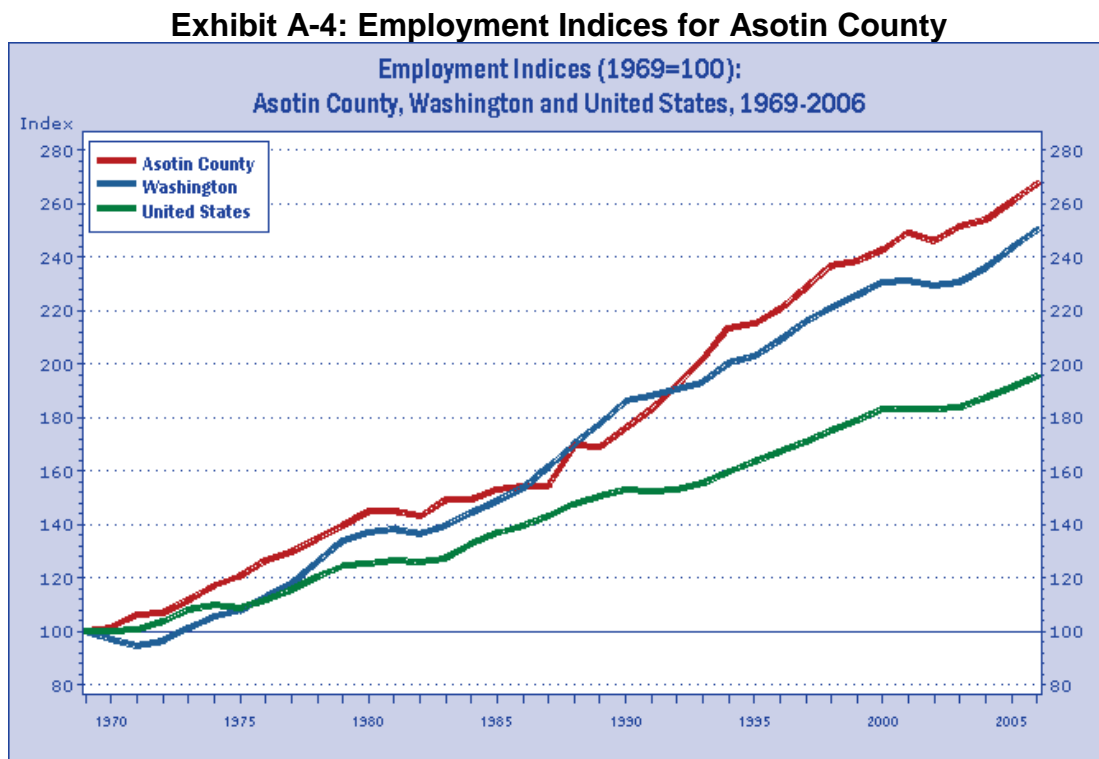
Government is the largest employer in Asotin County. This sector includes the local school district as well as city and county governments. The largest private employers in the county include Renaissance Marine Group, Costco, and Albertson's. Both Costco and Albertson's are retail businesses while Renaissance Marine is the largest manufacturing employer in the county.

According to the most recent economic impact study for tourism expenditures in Washington State, tourism generated \$26.6 million in travel spending in 2007 in

⁸¹ Bureau of Economic Analysis, Employment Statistics

Asotin County creating 370 jobs and \$1.7 million in state and local tax revenues.⁸² Travel spending has increased by 3.9 percent over the past seven years in Asotin County.

Exhibit A-4 compares employment growth in Asotin County for the past 37 years to employment growth in the State of Washington and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Asotin County's employment increasing by 170.9 percent exceeding Washington at 156.6 percent and far outpacing the national employment growth which grew 98.7 percent during this period.⁸³



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce is a critical factor in retaining and attracting corporate investments and new employment. Education attainment is frequently used by many companies and site location consultants as an indicator of the available workforce skills within a community.

⁸² “Washington State County Travel Impacts 1991 – 2007” Washington State Department of Community, trade, Economic Development

⁸³ Pacific Northwest Regional Economic Analysis

Almost 86 percent of the population of Asotin County completed high school slightly below the statewide average. Over 35 percent of the population over the age of 25 continued their studies after high school with 6.7 percent completing an Associate's Degree and eighteen percent completing a Bachelor's degree or higher compared with 27.7 percent of the population statewide. Certain industries that require a substantial pool of technically educated workers might exclude Asotin County from consideration because of their college graduation rate, however the community's high school graduation rate is favorable and would support many of the industrial clusters identified in the non-metro sector of the regional profile.

Table A-8: Location Quotients for Asotin County

Industry	Location Quotient	2007 Employment
Heavy Construction and Civil Engineering	4.29	162
Transportation Equipment Manufacturing	2.57	168
Amusements, Gambling, Recreation	2.41	131
Crop Production	2.28	47
Arts, Entertainment, Recreation	1.98	148
Food and Beverage Stores	1.80	196

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents. The location quotients, shown in **Table A-8**, compare Asotin County to the State of Washington as a whole. Asotin County has a substantially higher employment concentration in heavy construction, transportation equipment manufacturing, and gambling than the state as a whole. M. A. DeAtley Construction, Inc. is a heavy construction company that operates throughout the northwest. With over 200 seasonal employees and a fleet of heavy construction equipment the firm is involved in highway construction, excavation, and earthen construction. This employment concentration may reflect the location decisions of this third generation construction firm as opposed to specific economic specialization within the county.

American Turbine is a major supporter of the county's most valuable export commodity, transportation equipment. The company fabricates jets, shouldered wear rings, high-performance intakes, and stainless steel impellers for boat manufacturers. Boat manufacturers such as Renaissance Marine and American Turbine are included in the Transportation Equipment Manufacturing sector and the high LQ of this sector represents a niche specialization where additional economic opportunities could be developed.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market; companies receive supplies from international firms to produce their products; and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

U.S. Highway 12 runs through northern Asotin County linking the county to Nez Perce County to the east. U.S. Highway 195, just north of Asotin County, provides a link to Spokane County. There is limited Interstate access in Asotin County. Access to I-90 via Highway 12 is approximately 150 miles, and access to I-90 via US 195 is approximately 140 miles. The only rail service available in



Asotin County is through the Great Northwest Railroad, a short line operating out of Lewiston, Idaho. Rogersburg State Airport, a short turf strip, is located in the southeastern corner of the county. The closest commercial airport is the Lewiston-Nez Perce County Airport in Idaho. In addition to the Lewiston-Nez Perce County Airport, the Pullman-Moscow Regional Airport is located

approximately 32 miles northwest in Whitman County. The closest Class I railroad intermodal facility serving Asotin County is the BNSF intermodal facility in Spokane that is classified as a “non-daily intermodal services” facility.⁸⁴ However, the Port of Lewiston is nearby and offers container-loading services on barge and truck. The Port of Clarkston is located on the Snake River on a 120 acre site. Port facilities include a 140-ton crane for loading barges, a 570 foot dock, a hotel/convention center, and recreational facilities. Existing development on the port property has consumed most of the available acreage and the Port Authority is currently developing an additional 120 acre site for future industrial development in the county. The Port of Lewiston is located two miles across the Idaho border near the intersection of US highways 12 and 95. Port facilities include 150,000 sq. feet of warehouse space and a 240-ton mobile crane with three 35-ton container ship lifts.

⁸⁴ BNSF Intermodal Network Map, Washington DOT Transportation Map

MAJOR COMMODITIES

Tables A-9 and A-10 identify the top commodity imports and exports for Asotin County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

Asotin County's most significant export in 2007 was lumber or wood products and because there is no rail service in the county all of these products were shipped by truck. The TRANSEARCH™ data projects a 15.4 percent increase in the export of lumber and wood products between 2007 and 2027 however, the price per ton is projected to decrease by 15.4 percent. Farm products represent an important commodity for Asotin County and these products are primarily shipped via water from the Port of Clarkston. The data projects a decrease in farm product exports moving through the port over the next 20 years from Asotin County. This decline in farm product is consistent with agricultural trends affecting the IPH study area that result from foreign competition, fluctuation in international currencies that affect price competitiveness of products grown in the U.S., and environmental regulations that affect growers.

The export of nonmetallic minerals and transportation equipment is projected to increase significantly between 2007 and 2027. Nonmetallic minerals include sand, gravel, stone, clay, and refractory materials. The export of transportation equipment, which includes boats and component parts for boat manufacturers, is projected to increase by almost 32 percent during this period. This represents a strategic economic opportunity to support the expansion of the existing transportation equipment businesses that are already in the county and evaluate investment opportunities that could support additional growth within this niche in Asotin County.

Table A-9: Inbound Commodities for Asotin County

Top 10 Commodities Shipped Into Asotin County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	103,271	76,104	(26.3%)										103,271	76,104	(26.3%)
	Value/Ton	\$309	\$356	15.3%										\$309	\$356	15.3%
Food or Kindred Products	Tons	28,265	43,507	53.9%										28,265	43,507	53.9%
	Value/Ton	\$1,015	\$982	(3.2%)										\$1,015	\$982	(3.2%)
Clay, Concrete, Glass or Stone	Tons	16,394	24,407	48.9%										16,394	24,407	48.9%
	Value/Ton	\$314	\$329	4.6%										\$314	\$329	4.6%
Transportation Equipment	Tons	12,709	16,366	28.8%										12,709	16,366	28.8%
	Value/Ton	\$13,424	\$12,946	(3.6%)										\$13,424	\$12,946	(3.6%)
Petroleum or Coal Products	Tons	11,873	22,646	90.7%										11,873	22,646	90.7%
	Value/Ton	\$302	\$272	(9.9%)										\$302	\$272	(9.9%)
Pulp, Paper or Allied Products	Tons	9,841	16,759	70.3%										9,841	16,759	70.3%
	Value/Ton	\$1,294	\$1,491	15.2%										\$1,294	\$1,491	15.2%
Chemicals or Allied Products	Tons	6,142	12,501	103.5%										6,142	12,501	103.5%
	Value/Ton	\$1,295	\$1,339	3.4%										\$1,295	\$1,339	3.4%
Printed Matter	Tons	4,583	8,459	84.6%										4,583	8,459	84.6%
	Value/Ton	\$7,946	\$7,623	(4.1%)										\$7,946	\$7,623	(4.1%)
Fabricated Metal Products	Tons	3,581	6,389	78.4%										3,581	6,389	78.4%
	Value/Ton	\$4,217	\$4,245	0.7%										\$4,217	\$4,245	0.7%
Waste or Scrap Materials	Tons	3,136	4,810	53.4%										3,136	4,810	53.4%
	Value/Ton	\$271	\$267	(1.3%)										\$271	\$267	(1.3%)
All Commodities In Asotin County, WA	Tons	209,528	249,538	19.1%										209,528	249,538	19.1%
	Value/Ton	\$1,763	\$2,257	28.0%										\$1,763	\$2,257	28.0%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

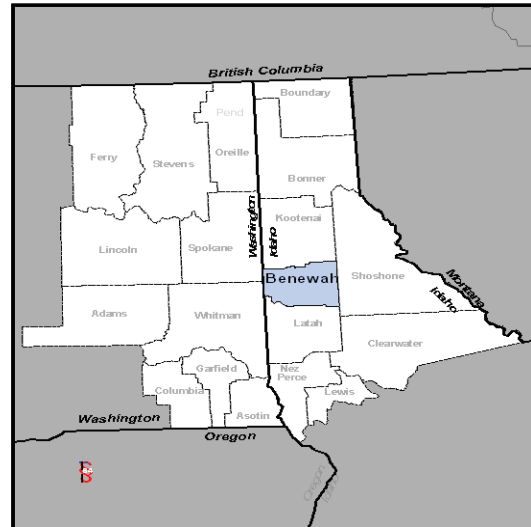
Table A-10: Outbound Commodities for Asotin County

Top 10 Commodities Shipped Out Of Asotin County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	75,332	100,289	33.1%										75,332	100,289	33.1%
	Value/Ton	\$316	\$267	(15.4%)										\$316	\$267	(15.4%)
Farm Products	Tons	11,559	11,010	(4.7%)				41,966	32,661	(22.2%)				53,524	43,671	(18.4%)
	Value/Ton	\$659	\$644	(2.2%)				\$294	\$282	(4.3%)				\$373	\$373	0.0%
Nonmetallic Minerals	Tons	31,205	188,260	503.3%										31,205	188,260	503.3%
	Value/Ton	\$10	\$10	(4.2%)										\$10	\$10	(4.2%)
Transportation Equipment	Tons	23,523	31,025	31.9%										23,523	31,025	31.9%
	Value/Ton	\$10,578	\$8,182	(22.6%)										\$10,578	\$8,182	(22.6%)
Clay, Concrete, Glass or Stone	Tons	8,058	36,130	348.4%										8,058	36,130	348.4%
	Value/Ton	\$133	\$129	(3.0%)										\$133	\$129	(3.0%)
Fabricated Metal Products	Tons	3,867	12,176	214.9%										3,867	12,176	214.9%
	Value/Ton	\$3,532	\$3,534	0.0%										\$3,532	\$3,534	0.0%
Waste or Scrap Materials	Tons	509	1,036	103.5%										509	1,036	103.5%
	Value/Ton	\$181	\$201	11.3%										\$181	\$201	11.3%
Fresh Fish or Marine Products	Tons	78	113	44.9%										78	113	44.9%
	Value/Ton	\$5,833	\$5,833	0.0%										\$5,833	\$5,833	0.0%
Machinery	Tons		60												60	
	Value/Ton		\$3,595												\$3,595	
Metallic Ores	Tons	38												38		
	Value/Ton	\$3,739												\$3,739		
Food or Kindred Products	Tons		47												47	
	Value/Ton		\$1,946												\$1,946	
Pulp, Paper or Allied Products	Tons	35												35		
	Value/Ton	\$157												\$157		
All Commodities In Asotin County, WA	Tons	154,297	380,241	146.4%				41,966	32,661	(22.2%)				196,262	412,902	110.4%
	Value/Ton	\$1,920	\$891	(53.6%)				\$294	\$282	(4.3%)				\$1,573	\$843	(46.4%)

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

BENEWAH COUNTY, IDAHO

Benewah County, Idaho was formed in 1915 from Kootenai County. St. Maries is the largest city in the county with a population of 2,644 and serves as the county seat. The county's economy is heavily dependent on forest products and more than 25 percent of the jobs in this county are in the forest products industry. Tourism represents an important growth industry for the county due in part to the investments made by the Coeur d'Alene Tribe whose reservation extends into western Benewah County. The scenic St. Joe River, bird watching, garnet mining, and riverboats in the Heyburn State Park offer visitors a variety of outdoor recreational activities and the availability of tourism support services such as lodging. The casino, available in Worley just inside Kootenai County, can leverage additional tourism revenues for Benewah County in the future. The county is also the gateway to the St. Joe National Forest.



POPULATION TRENDS

According to the U.S. Census Bureau, the population of Benewah County was 9,352 in 2008 increasing by only 1,415 since 1990. From 2000 to 2008 the county's population increased by only 2 percent compared to statewide growth of 17.8 percent during the same period. Nine percent of the population in Benewah County is American Indian. The Coeur d'Alene Tribal reservation extends into western Benewah County. The county's population growth of 48.7 percent from 1969 to 2006 was significantly lower than the 107.1 percent population growth for the State of Idaho during this period and mirrored the national growth rate of 48.8 percent. The county's population is projected to increase to over 12,000 by 2030, still well below the state's anticipated growth rate.

Table A-11: Population Data for Benewah County

Year	Population
1990 ⁸⁵	7,937
2000	9,191
2008 ⁸⁶	9,352
2015	10,190
2020	10,800
2030	12,040

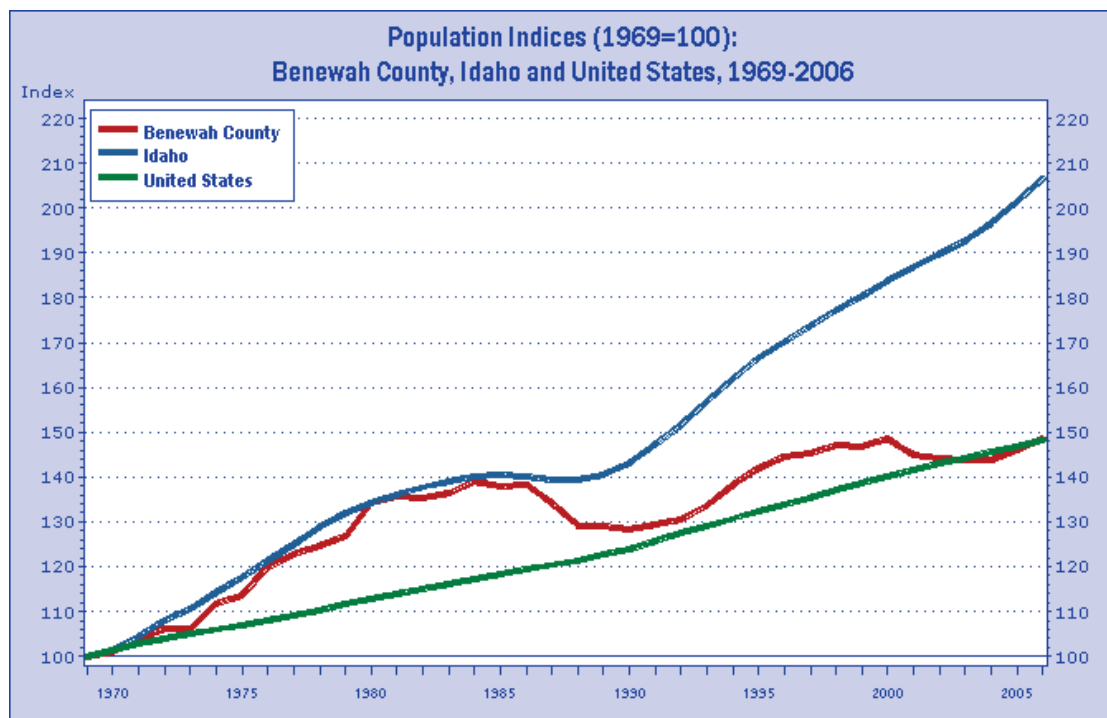
⁸⁵ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

⁸⁶ U.S. Census Bureau Population 2008 Estimates

Twenty-four percent of the population in Benewah County is under 18 years of age, slightly below the statewide population in this age group. Over 15.2 percent of the population in Benewah County lives below the poverty level and the 2007 median household income of \$38,402 well below the state median income of \$46,136.

Exhibit A-5 shows the population growth of Benewah County compared with the growth in the State of Idaho and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. This exhibit compares the differences in population growth in these three geographic areas even though they vary considerably in size. The population growth in Benewah County during this period increased 48.9 percent, well behind Idaho's growth at 111.6 percent, but on par with the national population growth rate of 49.9 percent.⁸⁷

Exhibit A-5: Population Indices for Benewah County



INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Employment in Benewah County is very dependent on the forest products sector and many factors have influenced employment and the industry itself in Benewah County and in the study area. According to a 2009 report on Idaho's forest products industry, the decline of housing construction and the international

⁸⁷ Pacific Northwest Regional Economic Analysis

recession have significantly affected the Idaho forest products industry in 2008.⁸⁸ Unemployment in the county increased from 5.6 percent in June 2008 to 8.6 percent in June 2009, largely as a result of declines in this industry.

Because of the concentration of employment in forestry products and agriculture, there is significant seasonality in employment in Benewah County. In 2007, unemployment peaked at 9.4 percent in March and declined to 3.1 percent in September reflecting the increase in employment during the harvest season. The unemployment rate in June of 2009 was 8.6 percent, slightly higher than the state and lower than the national unemployment rate of 9.5 percent.

A survey of wood products manufacturers in late 2008 indicated that major wood products manufacturers were experiencing serious declines in revenues and reduction in employment with sixty-three percent of those surveyed reporting reductions in production.⁸⁹ As a result of the concentration of employment in forest products, the county's economy is very vulnerable to fluctuations in housing construction. Declining lumber prices and significant slowdowns in housing construction have contributed to the rising unemployment rate in Benewah County that reached 15.6 percent in early 2009.

Table A-12: Industry Sectors by Employment in Benewah County⁹⁰

Industry	Employment
Local Government	710
Trade and Transportation	598
Manufacturing	633
Agriculture	334
Education & Health Services	300

Thirty-nine percent of the jobs in Benewah County are in local government which includes the county, school district, and city governments.⁹¹ Other major employers in the county include the Benewah Community Hospital, and Berg Integrated Systems, a company owned by the Coeur d'Alene Tribe. This firm specializes in remote site systems for military, disaster relief, fire-fighter and exploration camps infrastructure needs. The company has 80 employees and has developed specialized shelter systems used for traveling medical units, forensic labs, emergency housing, and other related purposes. Other employers include the Coeur d'Alene Tribe, Jack Buell Trucking, Peet Shoe Dryer a manufacturer of shoe trees, Potlatch Corporation, Stimson Lumber, and Valley Vista Care, a nursing home operation.

⁸⁸ Federal Reserve Bank, 12th District, "Beige Book", June 2009

⁸⁹ "Idaho's Forest Products Industry: Current conditions and Forecast 2009". Inland Northwest Forest Products Research Consortium, January 2009

⁹⁰ Bureau of Economic Analysis, Employment Statistics

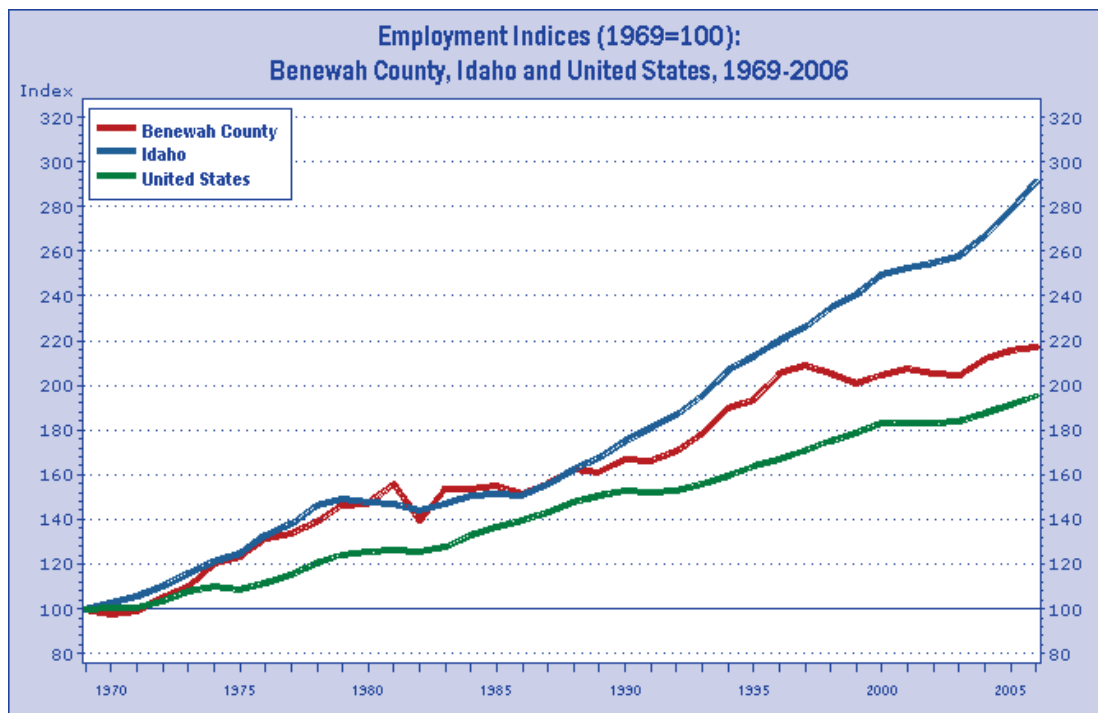
⁹¹ Idaho Department of Labor, "Work Force Trends, June 2009"

The Coeur d'Alene Tribe is a significant economic engine for Benewah County, employing over 540 people at its headquarters, retail stores, farm, and medical clinic and an additional 1,000 are employed at their casino, hotel, and golf course in nearby Worley just inside Kootenai County. The Tribe purchased Berg Integrated Systems several years ago in an effort to retain this employer in the community.

According to the most recent economic impact study for tourism and travel expenditures in Idaho, tourism generated \$17.49 million in visitor spending in 2005 creating 406 jobs and over \$2.5 million in tax revenues.⁹² Although Benewah County has a number of tourism assets, the county lacks the tourism resources to effectively market and advertise these destinations.

Exhibit A-6 compares employment growth in Benewah County for the past 37 years to employment growth in Idaho and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Benewah County's employment increasing by an impressive 121.3 percent during the period, compared to Idaho's employment growth at 200.5 percent and the nation a 98.7 percent.⁹³

Exhibit A-6: Employment Indices for Benewah County



⁹² "The Economic Impact of Travel & Tourism in Idaho", Idaho Division of Tourism, September 2005

⁹³ Pacific Northwest Regional Economic Analysis

There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skill are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. According to the U.S. Census Bureau, 79.8 percent of the residents of Benewah County over the age of 25 graduated from high school, compared to the statewide graduation rate of 84.7 percent.⁹⁴ Only 11.4 percent of the population over the age of 25 have completed a Bachelor’s degree or higher compared with 21.7 percent statewide. Certain industry sectors would not consider Benewah County as a potential location due to the limited availability of a college educated workforce.

Table A-13: Location Quotients for Benewah County

Industry	Location Quotient	2007 Employment
Forestry and Logging	166.46	226
Wood Product Manufacturing	50.83	541
Agriculture, Forestry, and Fishing	11.14	269
Gasoline Stations	3.87	69
Transportation and warehousing	3.21	285
Manufacturing	2.17	622

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. Location quotients, shown in **Table A-13**, compare Benewah County to the State of Idaho as a whole. Benewah County has a substantially higher employment concentration in forestry and logging and wood product manufacturing than the state as a whole and there is a high degree of economic specialization within the county in these two sectors. There are competitive advantages for forestry and wood products in Benewah County and although this industry is facing a number of challenges as a result of the depressed housing construction industry and trends in the forest industry, there are opportunities to help this industry remain as competitive as possible by utilizing the technologies being developed in the region.⁹⁵

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people as never before. Consumers buy fruits at our local market, companies receive supplies from international firms to produce their products, and bulk

⁹⁴ U.S. Census Bureau Comparative Community Profiles, 2008

⁹⁵ “Idaho’s Forest Products Industry”, Inland Northwest Forest Products Research Consortium, January 2009

commodities like grain, coal, or oil move into and out of U.S. ports every day. We expect constant access to the goods available from the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide efficient access to a larger market area in the future.

U.S. Highway 95 runs through Benewah County north to Sandpoint and Canada and to the south to Payette and Oregon. Highway 5 links St. Maries to U.S. Highway 95 at Plummer and Highway 6 in the southern part of the county links cities in Latah County to the City of Santa in Benewah County. The county is connected to I-90 via US 95 and it is approximately 45 miles to the interstate. The Union Pacific Railroad connects to the St. Maries River Railroad that runs from Plummer in Benewah County to Bovill in Latah County. The closest rail intermodal facility serving Benewah County is the BNSF facility in Spokane. There is a municipal general aviation airport at St. Maries. The closest commercial airport is in Spokane.

MAJOR COMMODITIES

Tables A-14 and **A-15** identify the top commodity imports and exports for Benewah County in 2007 and 2027. Amounts shown include tonnage and value of commodities shipped into (imports) or out of (exports) the County. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick-up and deliveries, trans-loading, warehousing, and value added inventory handling.

Benewah County's most significant export in 2007 was lumber or wood products which accounted for almost 60 percent of the goods shipped out of the county. The TRANSEARCH™ data projects exports of lumber and wood products to decline by 17 percent between 2007 and 2027. This decline in lumber and wood products is consistent with regional and statewide trends in the forestry industry. Development of new residential and supporting commercial areas have affected some of the timber availability in Benewah County, however other factors including foreign competition, declines in demand due to the housing marketing, and health of the timber stands contribute to the decline in this sector. The vast majority of the lumber and wood products exported from Benewah County are

transported by truck and the data shows a decline in the rail shipments over the next twenty years.

The growth in miscellaneous manufacturing products over the next twenty years represents a significant economic opportunity for the county. The value of this commodity and the increase in volume may be tied in part to Berg Integrated Systems.

The largest volume commodity being shipped into Benewah County is lumber or wood products. This likely represents the transportation of raw timber into Benewah County for further processing. This commodity shows a slight increase in volume over the next twenty years which is consistent with declines in timber harvests and the importation of timber from adjoining states and British Columbia.⁹⁶

⁹⁶ University of Idaho Extension, Forestry

Table A-14: Inbound Commodities for Benewah County

Top 10 Commodities Shipped Into Benewah County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	62,022	99,759	60.8%										62,022	99,759	60.8%
	Value/Ton	\$246	\$122	(50.2%)										\$246	\$122	(50.2%)
Clay, Concrete, Glass or Stone	Tons	5,321	8,001	50.4%										5,321	8,001	50.4%
	Value/Ton	\$235	\$258	9.7%										\$235	\$258	9.7%
Misc Manufacturing Products	Tons	3,977	8,493	113.6%										3,977	8,493	113.6%
	Value/Ton	\$20,100	\$16,847	(16.2%)										\$20,100	\$16,847	(16.2%)
Primary Metal Products	Tons	3,324	5,603	68.6%										3,324	5,603	68.6%
	Value/Ton	\$2,505	\$2,515	0.4%										\$2,505	\$2,515	0.4%
Petroleum or Coal Products	Tons	3,043	2,888	(5.1%)										3,043	2,888	(5.1%)
	Value/Ton	\$309	\$314	1.7%										\$309	\$314	1.7%
Food or Kindred Products	Tons	2,635	3,305	25.4%										2,635	3,305	25.4%
	Value/Ton	\$1,128	\$1,094	(3.0%)										\$1,128	\$1,094	(3.0%)
Transportation Equipment	Tons	1,413	1,349	(4.5%)										1,413	1,349	(4.5%)
	Value/Ton	\$8,629	\$8,110	(6.0%)										\$8,629	\$8,110	(6.0%)
Furniture or Fixtures	Tons	1,178	894	(24.1%)										1,178	894	(24.1%)
	Value/Ton	\$6,016	\$6,295	4.6%										\$6,016	\$6,295	4.6%
Electrical Equipment	Tons	1,156	1,600	38.4%										1,156	1,600	38.4%
	Value/Ton	\$14,149	\$14,642	3.5%										\$14,149	\$14,642	3.5%
Pulp, Paper or Allied Products	Tons	987	1,029	4.3%										987	1,029	4.3%
	Value/Ton	\$1,286	\$1,239	(3.7%)										\$1,286	\$1,239	(3.7%)
All Commodities In Benewah County, WA	Tons	86,238	134,892	56.4%										86,238	134,892	56.4%
	Value/Ton	\$1,712	\$1,639	(4.3%)										\$1,712	\$1,639	(4.3%)

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

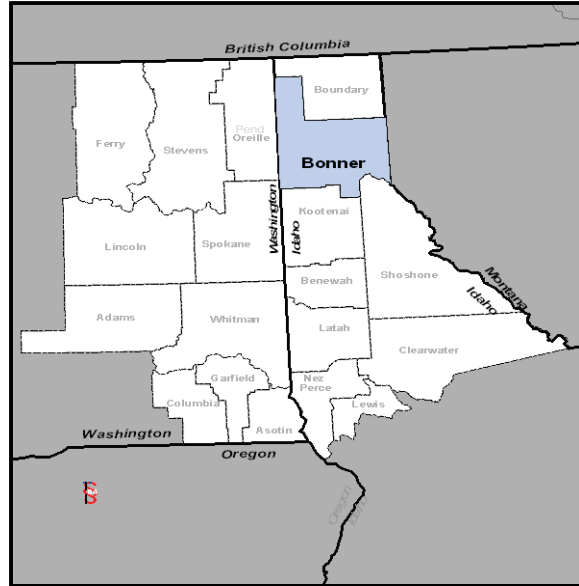
Table A-15: Outbound Commodities for Benewah County

Top 10 Commodities Shipped Out Of Benewah County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	616,815	530,520	(14.0%)	90,280	54,400	(39.7%)							707,095	584,920	(17.3%)
	Value/Ton	\$194	\$173	(10.8%)	\$1,304	\$1,303	(0.1%)							\$336		(100.0%)
Nonmetallic Minerals	Tons	492,337	295,125	(40.1%)										492,337	295,125	(40.1%)
	Value/Ton	\$5	\$5	(0.3%)										\$5	\$5	(0.3%)
Misc Manufacturing Products	Tons	11,472	137,739	1100.6%										11,472	137,739	1100.6%
	Value/Ton	\$12,899	\$12,968	0.5%										\$12,899	\$12,968	0.5%
Clay, Concrete, Glass or Stone	Tons	6,886	23,576	242.4%										6,886	23,576	242.4%
	Value/Ton	\$54	\$50	(6.8%)										\$54	\$50	(6.8%)
Farm Products	Tons	985	991	0.6%										985	991	0.6%
	Value/Ton	\$278	\$371	33.6%										\$278	\$371	33.6%
Metallic Ores	Tons	801	430	(46.3%)										801	430	(46.3%)
	Value/Ton	\$1,860	\$1,860	0.0%										\$1,860	\$1,860	0.0%
Food or Kindred Products	Tons	359	569	58.6%										359	569	58.6%
	Value/Ton	\$1,121	\$1,115	(0.6%)										\$1,121	\$1,115	(0.6%)
Pulp, Paper or Allied Products	Tons	321	676	110.7%										321	676	110.7%
	Value/Ton	\$160	\$160	(0.0%)										\$160	\$160	(0.0%)
Transportation Equipment	Tons	64	133	108.2%										64	133	108.2%
	Value/Ton	\$541	\$541	(0.0%)										\$541	\$541	(0.0%)
Chemicals or Allied Products	Tons	24	59	146.4%										24	59	146.4%
	Value/Ton	\$1,236	\$1,155	(6.6%)										\$1,236	\$1,155	(6.6%)
All Commodities In Benewah County, WA	Tons	1,130,106	989,902	(12.4%)	90,280	54,400	(39.7%)							1,220,386	1,044,302	(14.4%)
	Value/Ton	\$242	\$1,903	686.5%	\$1,304	\$1,303	(0.1%)							\$320	\$1,871	483.9%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

BONNER COUNTY, IDAHO

Located in the northern panhandle of Idaho, Bonner County is home to Schweitzer Mountain Resort, one of the Pacific Northwest's largest ski areas with beautiful views of the lakes and surrounding mountain ranges. The largest lake in the state, Lake Pend Oreille, lies in the center of Bonner County. This county has successfully developed a diverse economic base, a thriving arts community, and the population continues to increase. Entrepreneurial ventures in Bonner County have helped to create a strong employment base in the community with companies such as Coldwater Creek, Quest Aircraft, and Litehouse Foods. Employment is concentrated in the trade, transportation, and utility sector and government. Sandpoint is the county seat of Bonner County and serves as the retail, healthcare, cultural, and business hub of the region.



POPULATION TRENDS

According to the U.S. Census Bureau the population of Bonner County was 41,168 in 2008. The county has experienced very rapid population growth in the past eight years growing by 11.8 percent between 2000 and 2008 primarily due to the natural beauty, recreational opportunities, and quality of life in the county that attracted many new residents. Between 1969 and 2006, the population of Bonner County increased by 161.1 percent exceeding the statewide population growth of 107 percent and significant outpacing the national population growth during this period of 48 percent.

Table A-16: Population Data for Bonner County

Year	Population
1990 ⁹⁷	26,700
2000	37,105
2008 ⁹⁸	41,168
2015	47,120
2020	51,020
2030	58,940

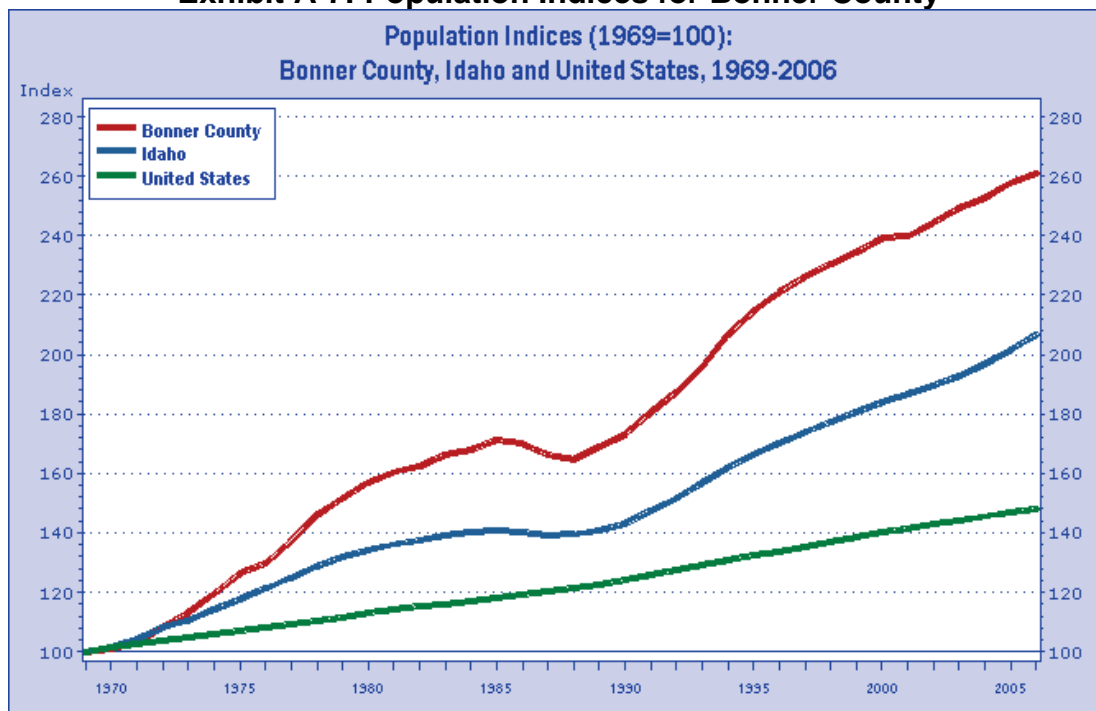
⁹⁷ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

⁹⁸ U.S. Census Bureau 2008 Population Estimates

Only 21 percent of the population in Bonner County is under 18 years of age below the statewide population in this age group at 27.2 percent. Less than 15 percent of the population in Bonner County lives below the poverty level and the 2007 median household income of \$42,420 are below the state median income of \$46,136.

Exhibit A-7 below shows the population growth of Bonner County compared with the growth in Idaho and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. This exhibit compares the differences in population growth in these three geographic areas even though they vary in size. The population growth in Bonner County during this period grew a very impressive 165 percent during this period ahead of Idaho's growth at 111.6 percent and significantly exceeding the national population growth rate of 49.7 percent.⁹⁹

Exhibit A-7: Population Indices for Bonner County



INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Unemployment in Bonner County increased from 5.6 percent in June 2008 to 8.9 percent in June 2009 primarily as a result of jobs lost in forestry manufacturing

⁹⁹ Pacific Northwest Regional Economic Analysis

and construction. More than 600 sawmill and logging jobs have been lost in the Priest River area since 2006.¹⁰⁰

Bonner County has successfully diversified their economic base often through entrepreneurial activities of local residents or visitors who have chosen to move to the community permanently. Manufacturing jobs in Bonner County have increased by an impressive 81 percent in the past ten years from 1,285 in 1997 to 2,322 in 2007. Significant manufacturers include Litehouse Foods the largest producer of blue cheese in the U.S. who also produces salad dressings for Wal-Mart and Sam's Club, Quest Aircraft who manufacturers specialized bush and utility aircraft for humanitarian missions, Unicep Packaging a specialty packaging firm, and Deidrich Manufacturing makers of coffee roasting machines. Other major employers in the county include Bonner General Hospital, Idaho Forest Group a wood products firm, Panhandle State Bank, and Schweitzer Mountain Resort.

Table A-17: Industry Sectors by Employment in Bonner County¹⁰¹

Industry	Employment
Trade, Transportation, & Utilities	3,010
Local Government	2,345
Manufacturing	2,206
Education and Health Services	1,070
Professional & Business Services	857

Trade and transportation is the largest employer in Bonner County. Firms in this sector include over 38 motor freight transportation businesses, local utility companies, wholesale and retail trade businesses, and Quest Aircraft.¹⁰² Government is also a significant employer in Bonner County and includes local schools, public agencies, and local governments.

The largest private employer in the county is Coldwater Creek, a national women's clothing retailer headquartered in Sandpoint. The firm recently closed their Sandpoint distribution facility concentrating this operation in West Virginia. The company maintained their headquarters in Sandpoint and customer service operation in Coeur d'Alene. The resulting job loss inspired the firm to create the Bonner County Economic Development Corporation whose primary mission is to attract new jobs and private investment to the community.

According to the most recent economic impact study for tourism expenditures in Idaho, tourism generated over \$68 million in visitor spending in 2005 creating almost 1,600 jobs and over \$11 million in tax revenues.¹⁰³ The tourism sector

¹⁰⁰ Idaho Department of Labor, Workforce Statistics 2009

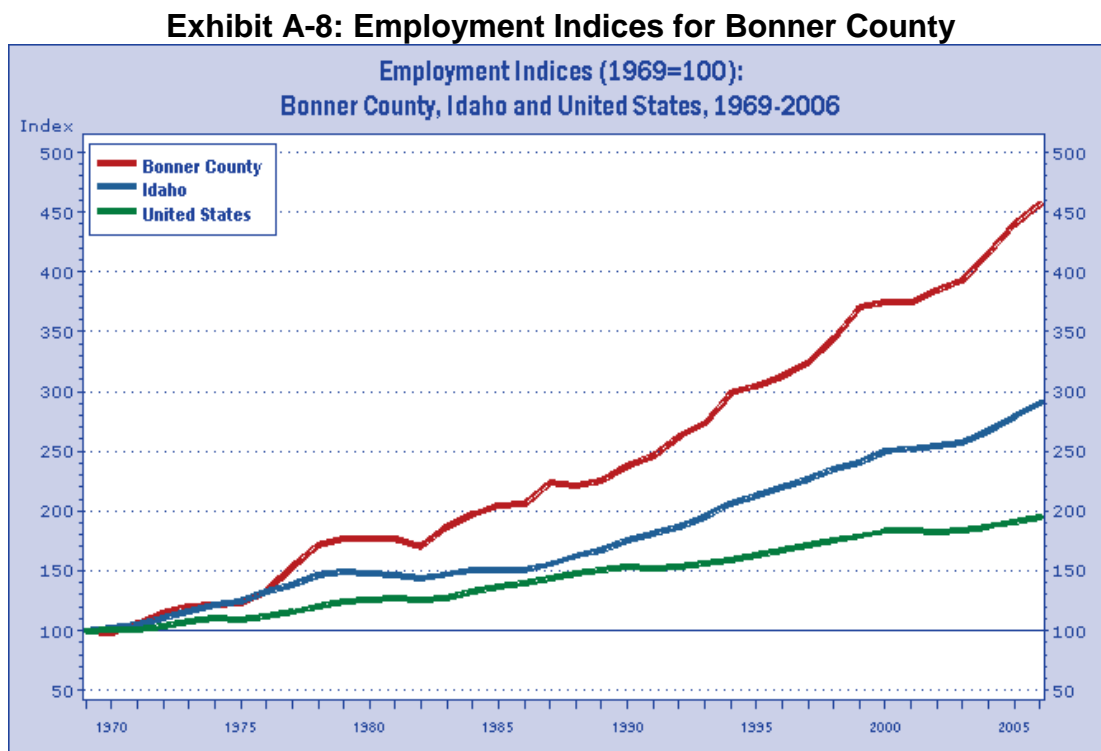
¹⁰¹ Bureau of Economic Analysis, Employment Statistics

¹⁰² Dun & Bradstreet Business Directory, Idaho 2009

¹⁰³ "The Economic Impact of Travel & Tourism in Idaho", Idaho Division of Tourism, September 2005

has grown as a result of the Schweitzer Mountain Resort, additional hotel and restaurant development, expansion of arts activities, and retail development.

Exhibit A-8 compares employment growth in Bonner County for the past 37 years to employment growth in Idaho and the nation as a whole during this same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Bonner County's employment increasing by 373.6 percent well ahead of the state's employment growth at 200.5 percent and the nation at 98.7 percent.¹⁰⁴



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skill are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. Eighty-six percent of the population in Bonner County over the age of 25 has completed high school compared to the statewide average of 84.7 percent and only 17 percent of the population over the age of 25 have completed a Bachelor’s degree or higher compared with 21.7 percent statewide.¹⁰⁵

¹⁰⁴ Pacific Regional Northwest Regional Economic Analysis

¹⁰⁵ U.S. Census Bureau Comparative Community Profile, 2008

Table A-18: Location Quotients for Bonner County

Industry	Location Quotient	2007 Employment
Forestry and Logging	23.46	167
Wood Product Manufacturing	14.98	836
Mining, Except oil and gas	5.02	120
Amusements, Gambling, Recreation	3.08	475
Construction	2.88	552

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotients, shown in **Table A-18**, compare Bonner County to the State of Idaho as a whole. Bonner County has a substantially higher employment concentration in forestry and logging than the state as a whole and there is a high degree of economic specialization within the county in forestry and wood products. While there are competitive advantages for these two industrial sectors in Bonner County, this is not a sector that will foster economic growth for the county going forward. Efforts to diversify the county's economic base have been very successful and additional employment in manufacturing; business services, aerospace, and food processing have improved the county's economic diversification.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people as never before. Consumers buy fruits at local markets; companies receive supplies from international firms to produce their products; and bulk commodities including grain, coal, and oil move into and out of U.S. ports every day. We expect constant access to the goods available from around the world. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

U.S. Highway 95 runs through Bonner County linking the county to Coeur d'Alene, Canada, and to I-90. U.S. Highway 2 provides access to Washington to the west and parallels U.S. Highway 95 to Bonners Ferry. The county is also served by BNSF and Union Pacific railroads, plus the Port of Pend Oreille Railroad and the Montana Rail Link. The closest intermodal facility serving Bonner County is the BNSF facility in Spokane. There are four airports in Bonner County: Priest Lake, a federal facility; Cavanaugh Bay, a state owned facility; and two municipal general aviation airports Sandpoint and Priest River. The closest commercial service airport is in Spokane.

MAJOR COMMODITIES

Tables A-19 and **A-20** identify the top ten commodity imports and exports for Bonner County in 2007 and 2027. Amounts shown indicate tonnage and value of commodities shipped into (imports) or out of (exports) the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

Bonner County's most significant export in 2007 was lumber or wood products followed by food products accounting for the vast majority of the goods shipped out of the county. Although there are two Class I railroads in Bonner County, rail is not used to ship outbound goods and is currently used to import timber from other areas. The TRANSEARCH™ data projects exports of lumber and wood products from Bonner County to decline over the next 20 years by almost 35 percent. The food products sector is projected to decline by only 10 percent during this period. The decline in lumber and wood products is consistent with forest product trends in the IPH study area. The growth in other sectors including electrical equipment, machinery, and primary metal products reflects the economic diversification efforts within Bonner County that have attracted new businesses and helped several existing businesses to grow. These growth projections, along with the lack of outbound rail shipments in the county, will continue the existing and projected dependency on the regional highway network in this region.

Table A-19: Inbound Commodities for Bonner County

Top 10 Commodities Shipped Into Bonner County, ID In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	135,590	88,324	(34.9%)										135,590	88,324	(34.9%)
	Value/Ton	\$281	\$209	(25.5%)										\$281	\$209	(25.5%)
Food or Kindred Products	Tons	30,684	27,593	(10.1%)										30,684	27,593	(10.1%)
	Value/Ton	\$1,254	\$1,185	(5.5%)										\$1,254	\$1,185	(5.5%)
Farm Products	Tons	27,951	24,449	(12.5%)										27,951	24,449	(12.5%)
	Value/Ton	\$959	\$956	(0.3%)										\$959	\$956	(0.3%)
Electrical Equipment	Tons	16,979	30,605	80.3%										16,979	30,605	80.3%
	Value/Ton	\$21,804	\$21,692	(0.5%)										\$21,804	\$21,692	(0.5%)
Clay, Concrete, Glass or Stone	Tons	13,569	22,317	64.5%										13,569	22,317	64.5%
	Value/Ton	\$220	\$236	7.1%										\$220	\$236	7.1%
Primary Metal Products	Tons	10,962	15,621	42.5%										10,962	15,621	42.5%
	Value/Ton	\$2,374	\$2,310	(2.7%)										\$2,374	\$2,310	(2.7%)
Petroleum or Coal Products	Tons	8,852	14,491	63.7%										8,852	14,491	63.7%
	Value/Ton	\$220	\$222	0.9%										\$220	\$222	0.9%
Pulp, Paper or Allied Products	Tons	6,121	6,477	5.8%										6,121	6,477	5.8%
	Value/Ton	\$267	\$287	7.5%										\$267	\$287	7.5%
Machinery	Tons	5,900	14,193	140.6%										5,900	14,193	140.6%
	Value/Ton	\$22,739	\$22,342	(1.7%)										\$22,739	\$22,342	(1.7%)
Chemicals or Allied Products	Tons	5,281												5,281		
	Value/Ton	\$2,311												\$2,311		
Transportation Equipment	Tons		5,057												5,057	
	Value/Ton		\$8,730												\$8,730	
All Commodities In Bonner County, ID	Tons	269,003	260,389	(3.2%)										269,003	260,389	(3.2%)
	Value/Ton	\$2,635	\$4,601	74.6%										\$2,635	\$4,601	74.6%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

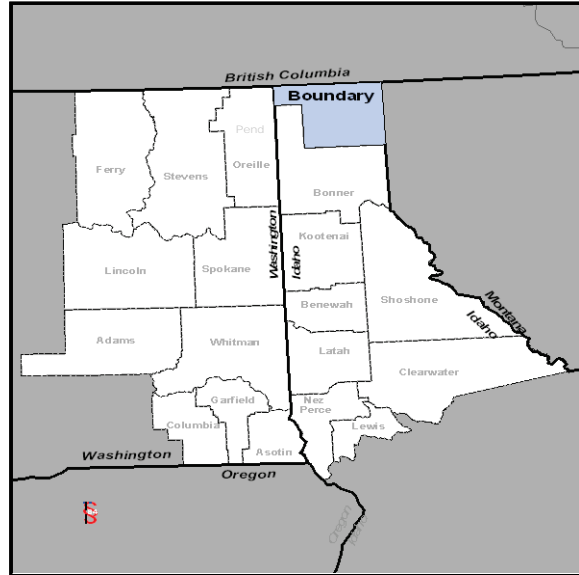
Table A-20: Outbound Commodities for Bonner County

Top 10 Commodities Shipped Out Of Bonner County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	1,082,967	496,095	(54.2%)	320,720	213,204	(33.5%)							1,403,687	709,298	(49.5%)
	Value/Ton	\$272	\$366	34.6%	\$1,368	\$1,368	0.0%							\$523		(100.0%)
Nonmetallic Minerals	Tons	297,516	530,972	78.5%										297,516	530,972	78.5%
	Value/Ton	\$5	\$5	0.1%										\$5	\$5	0.1%
Furniture or Fixtures	Tons	64,613	154,439	139.0%										64,613	154,439	139.0%
	Value/Ton	\$7,366	\$7,364	(0.0%)										\$7,366	\$7,364	(0.0%)
Electrical Equipment	Tons	23,545	40,366	71.4%										23,545	40,366	71.4%
	Value/Ton	\$9,032	\$8,966	(0.7%)										\$9,032	\$8,966	(0.7%)
Clay, Concrete, Glass or Stone	Tons	19,228	25,870	34.5%										19,228	25,870	34.5%
	Value/Ton	\$157	\$186	18.8%										\$157	\$186	18.8%
Food or Kindred Products	Tons	14,992	17,994	20.0%										14,992	17,994	20.0%
	Value/Ton	\$1,060	\$972	(8.3%)										\$1,060	\$972	(8.3%)
Farm Products	Tons	13,326	19,085	43.2%										13,326	19,085	43.2%
	Value/Ton	\$964	\$964	0.0%										\$964	\$964	0.0%
Primary Metal Products	Tons	2,981	1,649	(44.7%)										2,981	1,649	(44.7%)
	Value/Ton	\$4,304	\$4,289	(0.3%)										\$4,304	\$4,289	(0.3%)
Pulp, Paper or Allied Products	Tons	1,820	3,835	110.7%										1,820	3,835	110.7%
	Value/Ton	\$116	\$116	0.0%										\$116	\$116	0.0%
Printed Matter	Tons	1,385	2,480	79.1%										1,385	2,480	79.1%
	Value/Ton	\$1,959	\$1,958	(0.1%)										\$1,959	\$1,958	(0.1%)
All Commodities In Bonner County, WA	Tons	1,523,834	1,294,467	(15.1%)	320,720	213,204	(33.5%)							1,844,554	1,507,671	(18.3%)
	Value/Ton	\$679	\$1,343	97.9%	\$1,368	\$1,368	0.0%							\$799	\$1,347	68.6%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

BOUNDARY COUNTY, IDAHO

Boundary County is Idaho's northern most county, adjacent to Canada to the north, Washington to the west, and Montana to the east. Over 60 percent of the county is owned by the federal government creating a challenge for the county's economic future because of limited land available to support economic development. Although forestry and agriculture have been primary economic drivers in the past, lower lumber prices and mill closings have reduced employment in these sectors. Anheuser-Busch owns a large hops farm in the county and several ornamental tree nurseries have improved agri-business employment.



With an abundance of forested land, mountains, and rivers, the county attracts many outdoor recreation enthusiasts that support almost 700 employees in the tourism industry.¹⁰⁶ The Kootenai Tribe owns the Kootenai River Inn in Bonners Ferry providing lodging to support the growing tourism industry.

POPULATION TRENDS

The population of Boundary County grew by 1,791 from 2000 to 2008 an increase of 11.1 percent.¹⁰⁷ Population growth in the county was lower than the growth statewide during this period which increased by 17.8 percent. Boundary County's population growth over the past 30 years was 95.9 percent, below the statewide increase of 107 percent and substantially higher than the national population growth rate during that period of 48.4 percent.

Twenty-five percent of the population in Boundary County is under 18 years of age slightly below the statewide population in this age group at 27.2 percent. Over 15.6 percent of the population in Boundary County lives below the poverty level and the 2007 median household income of \$37,653 is below the state median income of \$46,136.

¹⁰⁶ "The Economic Impact of Travel and Tourism in Idaho", Idaho Division of Tourism, Sept. 2005

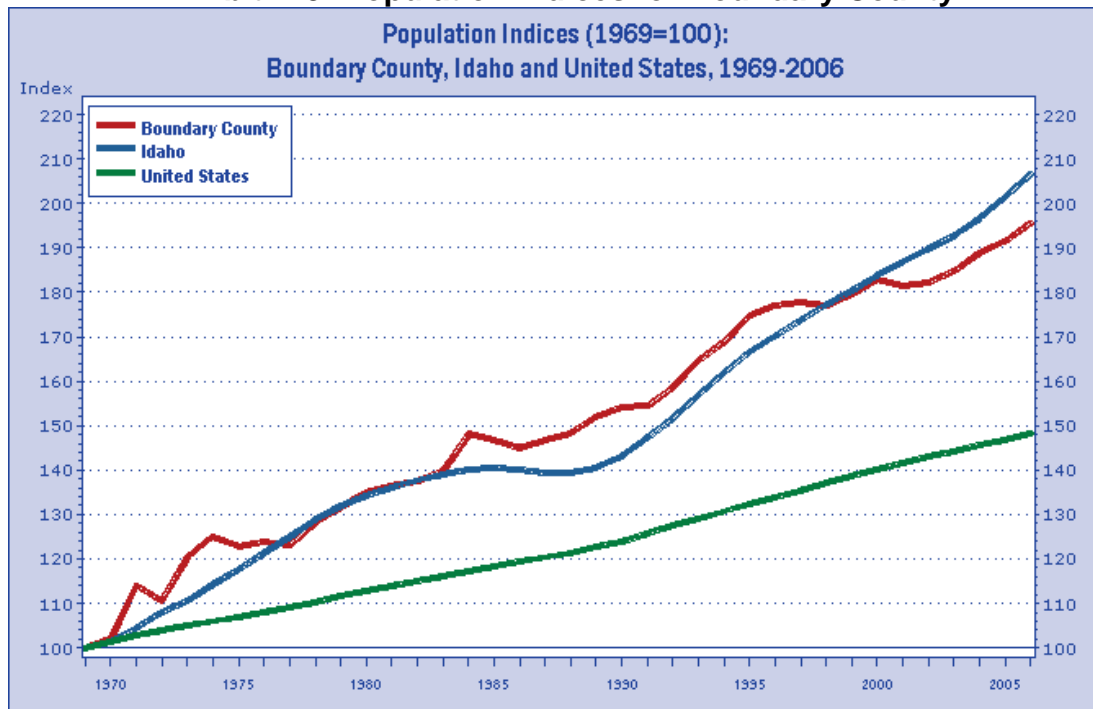
¹⁰⁷ U.S. Census Bureau 2008 projections

Table A-21: Population Data for Boundary County

Year	Population
1990 ¹⁰⁸	7,937
2000	9,171
2008 ¹⁰⁹	10,962
2015	12,440
2020	13,450
2030 ¹¹⁰	15,490

Exhibit A-9 shows the population growth of Boundary County compared with the growth in the State of Idaho and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. This exhibit compares the differences in population growth in these three geographic areas over this period when Boundary County's population grew by 100.2 percent slight behind Idaho's population growth at 111.6 percent and well ahead of the national population growth at 49.7 percent.¹¹¹

Exhibit A-9: Population Indices for Boundary County



¹⁰⁸ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

¹⁰⁹ U.S. Census Bureau Population Estimates 2008

¹¹⁰ 2015, 2020, and 2030 population estimates were gathered from Woods and Poole projections.

¹¹¹ Pacific Northwest Regional Economic Analysis

INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Unemployment in Boundary County increased from 5.6 percent in June 2008 to 9.5 percent in June 2009 primarily as a result of jobs lost in forestry manufacturing and tourism as lumber prices continued to decline and the recession continues to take a toll on tourism. On the positive side the number of private businesses in Boundary County has increased by 33 percent in the past 10 years. Additional jobs and employment have been created in construction, professional and business services, education, healthcare, and transportation.

Table A-22: Industry Sectors by Employment in Boundary County¹¹²

Industry	Employment
Government	1,040
Trade, Utilities, & Transportation	548
Professional & Business Services	412
Construction	336
Manufacturing	303

Government is the largest employer in Boundary County including the local school district and hospital, as well as the local city and county government employees. There are 26 motor freight and transportation firms¹¹³ in the county that are part of the trade and transportation sector the second largest employment sector in the county that also includes wholesale and retail trade. The largest employers in Boundary County are Boundary Community Hospital, Boundary Trading Company food and drug stores, Elk Mountain Farms, a hops producer owned by Anheuser-Busch, Idaho Education Services, a school for troubled youth, Idaho Forest Group lumber mill, and Kootenai River Inn & Casino.

According to the most recent economic impact study for tourism expenditures in Idaho, tourism generated almost \$30 million in travel spending in 2005, creating almost 700 jobs and over \$4 million in taxes from tourism. Travel spending in Boundary County has increased by 5 percent from 2004 to 2005. This may be due in part to the opening of the Kootenai River Inn and casino in Bonners Ferry. The casino is operated by the Kootenai tribe and has successfully stimulated the county's relatively small tourism industry.

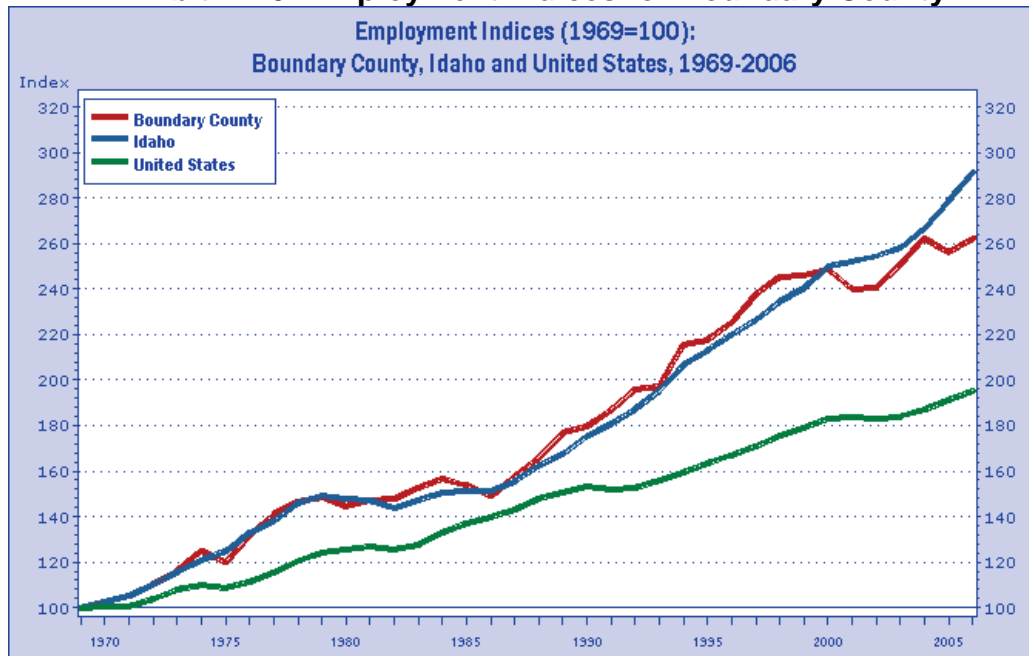
Exhibit A-10 compares employment growth in Boundary County for the past 37 years to employment growth in Idaho and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic

¹¹² Bureau of Economic Analysis, Employment Statistics

¹¹³ Dun & Bradstreet Business Directory, Idaho

areas with Boundary County's employment increasing by 167.2 percent during the period, below Idaho at 200.5 percent and the nation at 98.7 percent.¹¹⁴

Exhibit A-10: Employment Indices for Boundary County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the "Corporate Site Survey" allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skill are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. Eighty percent of the population of Boundary County over the age of 25 completed high school compared to the statewide average of 84.7 percent. However, only 14.7 percent of the population over the age of 25 have completed a Bachelor's degree or higher compared with 21.7 percent statewide. Certain industry sectors would not consider Boundary County as a potential location due to the limited availability of a college educated workforce.

Table A-23: Location Quotients for Boundary County

Industry	Location Quotient	2007 Employment
Forestry and Logging	90.36	131
Crop Production	23.26	277
Wood Product Manufacturing	21.31	241
Gasoline Stores	4.78	91
Heavy and Civil Engineering	3.39	74

¹¹⁴ Pacific Regional Northwest Regional Economic Analysis

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotients, shown in **Table A-23**, compare employment concentration in Boundary County to Idaho as a whole. Boundary County has a substantially higher employment concentration in forestry production and logging, as well as crop production, than the rest of the state as a whole. This would indicate that there is a high degree of economic specialization within the county in forestry and agri-business and as a result there should be competitive advantages for these industries within Boundary County. However, in the case of Boundary County, this significant concentration of employment in these sectors indicates vulnerability within the economy as these sectors are declining overall in the IPH study area. Continuing efforts to diversify the economy are important to this community to create a more stable economic base in the future.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market, companies receive supplies from international firms to produce their products, and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

Boundary County is served by U.S. Highway 95 which runs north to Eastport and crosses into Canada. Highway 95 also provides access to Interstate 90, approximately 80 miles to the southwest. U.S. Highway 2 provides access to Montana to the east and parallels U.S. Highway 95 to Sandpoint. Two Class I railroads move through the county, the BNSF main line from Seattle to Chicago and a Union Pacific line that runs northward into Canada from Spokane. There is a municipal general aviation airport in Bonners Ferry and the closest commercial air services are in Spokane.

MAJOR COMMODITIES

Tables A-24 and **A-25** identify the top commodity imports and exports for Boundary County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the County. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus, a single

product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

Boundary County's most significant export in 2007 was lumber or wood products which accounted for almost 82 percent of the goods shipped out of the county. The TRANSEARCH™ data projects exports of lumber and wood products to decline by nearly 40 percent between 2007 and 2027. This decline in lumber and wood products is consistent with regional and statewide trends in the forestry industry. Shipments of timber from Canada, smaller diameter trees, and other trends affecting this industry are projected to impact the industry and other factors including slower recovery in the construction sector will continue to contribute to the decline in this sector.

Rail transportation currently carries almost 40 percent of the lumber and wood products exported from Boundary County. However, over the next 20 years, that volume is projected to decline by 37.5 percent. Rail transport of farm products is expected to increase by 19 percent over the next 20 years but this increase will not compensate for the loss of lumber and wood products exports.

Table A-24: Inbound Commodities for Boundary County

Top 10 Commodities Shipped Into Boundary County, ID In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	34,190	33,650	(1.6%)	21,440	16,776	(21.8%)							55,630	50,426	(9.4%)
	Value/Ton	\$191	\$144	(24.7%)	\$415	\$423	1.9%							\$277	\$236	(14.6%)
Clay, Concrete, Glass or Stone	Tons	2,669	3,207	20.1%	48,600	45,962	(5.4%)							51,269	49,169	(4.1%)
	Value/Ton	\$195	\$213	8.8%	\$224	\$229	2.4%							\$222	\$228	2.6%
Chemicals or Allied Products	Tons	326	555	70.0%	22,520	20,479	(9.1%)							22,846	21,034	(7.9%)
	Value/Ton	\$753	\$721	(4.3%)	\$458	\$521	13.7%							\$462	\$526	13.8%
Farm Products	Tons	869	1,012	16.5%	7,720	13,608	76.3%							8,589	14,620	70.2%
	Value/Ton	\$162	\$169	4.7%	\$153	\$152	(0.3%)							\$154	\$153	(0.2%)
Transportation Equipment	Tons	74	87	17.5%	6,080	4,770	(21.5%)							6,154	4,857	(21.1%)
	Value/Ton	\$3,891	\$3,798	(2.4%)	\$2,104	\$2,157	2.5%							\$2,126	\$2,186	2.8%
Misc Manufacturing Products	Tons	5,930	20,190	240.5%										5,930	20,190	240.5%
	Value/Ton	\$20,034	\$16,818	(16.1%)										\$20,034	\$16,818	(16.1%)
Rubber or Misc Plastics	Tons	53	134	153.4%	4,080	5,182	27.0%							4,133	5,315	28.6%
	Value/Ton	\$3,211	\$3,210	(0.0%)	\$2,596	\$2,596	0.0%							\$2,604	\$2,611	0.3%
Food or Kindred Products	Tons	3,003	4,181	39.2%										3,003	4,181	39.2%
	Value/Ton	\$902	\$900	(0.2%)										\$902	\$900	(0.2%)
Petroleum or Coal Products	Tons	2,699	3,187	18.1%										2,699	3,187	18.1%
	Value/Ton	\$263	\$268	2.0%										\$263	\$268	2.0%
Primary Metal Products	Tons	577	1,191	106.4%										577	1,191	452.6%
	Value/Ton	\$2,430	\$2,169	(10.7%)										\$2,430	\$2,169	31.2%
All Commodities In Adams County, WA	Tons	51,313	69,507	35.5%	110,440	106,776	(3.3%)							161,753	176,283	9.0%
	Value/Ton	\$2,801	\$5,754	105.5%	\$495	\$507	2.4%							\$1,226	\$2,576	110.0%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

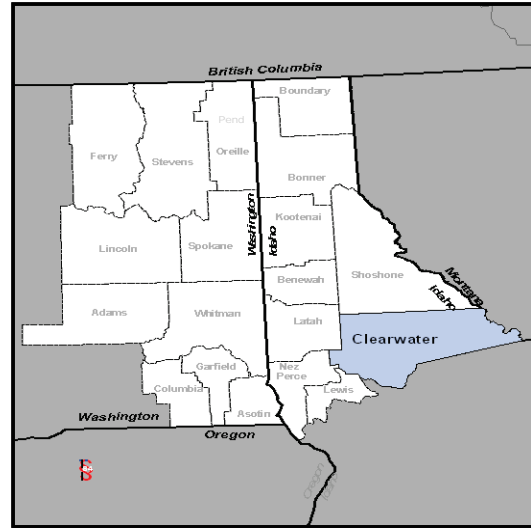
Table A-25: Outbound Commodities for Boundary County

Top 10 Commodities Shipped Out Of Boundary County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	980,479	593,521	(39.5%)	575,880	360,110	(37.5%)							1,556,359	953,632	(38.7%)
	Value/Ton	\$214	\$227	6.1%	\$904	\$926	2.5%							\$469		(100.0%)
Farm Products	Tons	30,624	36,032	17.7%	104,342	124,708	19.5%							134,966	160,740	19.1%
	Value/Ton	\$967	\$967	0.0%	\$257	\$257	(0.2%)							\$418	\$416	(0.5%)
Waste or Scrap Materials	Tons	6	7	24.9%	68,520	80,606	17.6%							68,526	80,612	17.6%
	Value/Ton	\$264	\$264	(0.0%)	\$533	\$533	(0.0%)							\$533	\$533	(0.0%)
Chemicals or Allied Products	Tons	8	15	85.6%	67,640	77,656	14.8%							67,648	77,671	14.8%
	Value/Ton	\$588	\$482	(18.0%)	\$1,828	\$1,830	0.1%							\$1,827	\$1,830	0.1%
Clay, Concrete, Glass or Stone	Tons				26,560	47,008	77.0%							26,560	47,008	77.0%
	Value/Ton				\$113	\$113	0.0%							\$113	\$113	0.0%
Pulp, Paper or Allied Products	Tons	13,214	87,270	560.4%	3,720	4,048	8.8%							16,934	91,318	439.3%
	Value/Ton	\$1,208	\$1,222	1.1%	\$669	\$669	0.0%							\$1,090	\$1,197	9.9%
Transportation Equipment	Tons	38	79	108.2%	11,120	24,687	122.0%							11,158	24,766	122.0%
	Value/Ton	\$554	\$554	0.0%	\$2,161	\$2,161	0.0%							\$2,155	\$2,155	0.0%
Food or Kindred Products	Tons	342	557	62.7%	6,880	7,670	11.5%							7,222	8,227	13.9%
	Value/Ton	\$1,260	\$1,274	1.1%	\$588	\$588	(0.0%)							\$620	\$635	2.3%
Rubber or Misc Plastics	Tons	1	1	77.2%	3,880	7,788	100.7%							3,881	7,789	100.7%
	Value/Ton	\$4,897	\$4,897	(0.0%)	\$5,587	\$5,587	0.0%							\$5,587	\$5,587	0.0%
Primary Metal Products	Tons	10	17	73.2%	3,600	5,761	60.0%							3,610	5,778	60.1%
	Value/Ton	\$202	\$202	0.0%	\$1,856	\$1,856	0.0%							\$1,852	\$1,851	(0.0%)
All Commodities In Boundary County, WA	Tons	1,026,090	719,058	(29.9%)	872,142	740,042	(15.1%)							1,898,232	1,459,100	(23.1%)
	Value/Ton	\$252	\$393	55.8%	\$882	\$906	2.7%							\$542	\$653	20.6%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

CLEARWATER COUNTY, IDAHO

Located in north central Idaho, Clearwater County has diversified their economy based on attracting a number of outdoor recreation companies including Black Dog Tackle and Custom Rods specializing in custom built fishing rods, Nightforce Optics a manufacturer of high precision riflescopes, and Phantom Jet Boats a manufacturer of heavy-duty, light weight aluminum welded boats. Nearly 70 percent of the total land area within the county is held in public ownership, including Clearwater National Forest. With the Clearwater River Canyon and the Bitterroot Mountains the county is also working to expand its tourism industry by focusing on hunting, fishing, skiing, and backcountry air strips. The county seat is the City of Orofino.



POPULATION TRENDS

According to the U.S. Census Bureau the population of Clearwater County was 8,176 in 2008. The county lost more than eight percent of their population from 2000 to 2008 compared with state population growth during this same period of almost 16 percent. From 1969 to 2006 the population of Clearwater County declined by 23 percent compared to the statewide population growth during the same period of 107 percent and a national population growth of 48.4 percent.

Eighteen percent of the population in Clearwater County is under 18 years of age compared to the statewide population in this age group at 27.2 percent. Within Clearwater County 15 percent of the population lives below the poverty level compared to 12.1 percent statewide. The 2007 median household income of \$38,785 is below the state median income of \$46,136.

Table A-26: Population Data for Clearwater County

Year	Population
1990 ¹¹⁵	8,480
2000	8,890
2008 ¹¹⁶	8,176
2015	8,230
2020	8,270
2030 ¹¹⁷	8,330

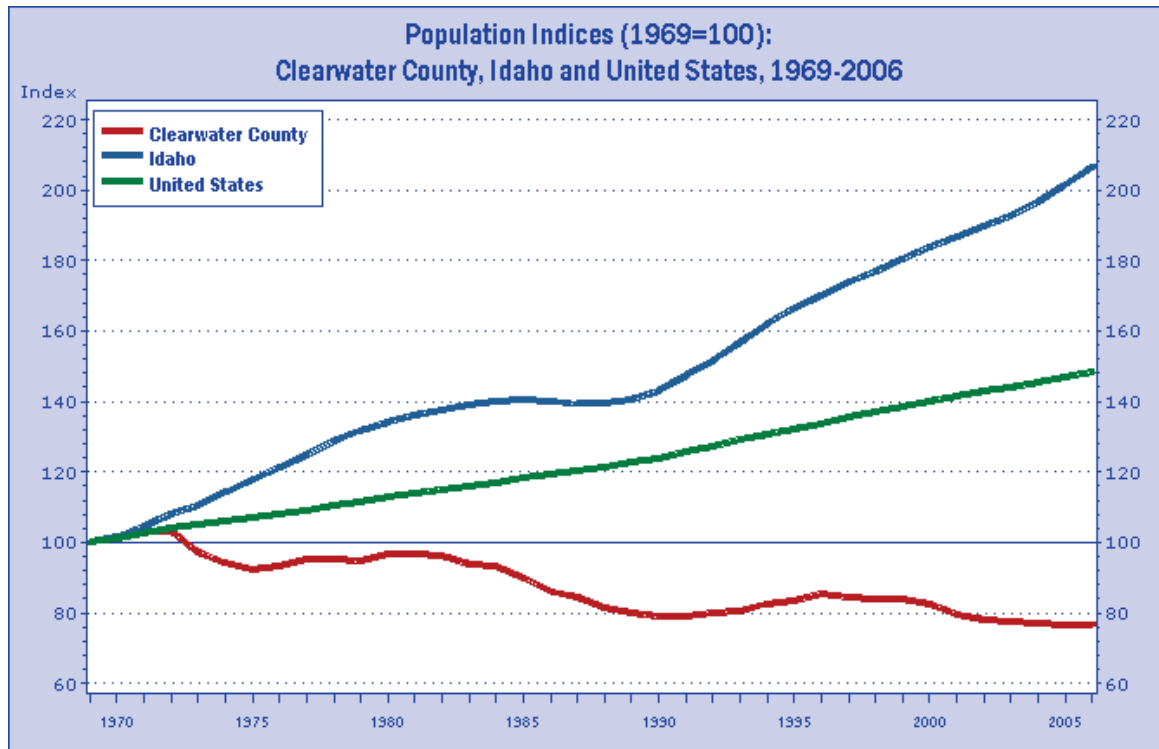
¹¹⁵ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

¹¹⁶ U.S. Census Bureau 2008 Population estimates

¹¹⁷ 2015, 2020, and 2030 population estimates were gathered from Woods and Poole projections.

Exhibit A-11 shows the population growth of Clearwater County compared with the growth in Idaho and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. The population in Clearwater declined by 23.6 percent during this period compared to 111.6 percent population growth in Idaho and 49.7 percent growth nationally.

Exhibit A-11: Population Indices for Clearwater County



INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Unemployment in Clearwater County increased from 7.7 percent in June 2008 to 9.4 percent in June 2009. Declines in forest products and tourism have impacted employment in the county along with decreased employment in agriculture and government. The closure of the Potlatch mill at Jaype in the 1990s began to erode forestry employment in Clearwater County ultimately affecting not only the lumber industry but almost every sector of the economy. Economic development organizations in the region including the Clearwater Economic Development Association are working to diversify the county's economy. An industrial park developed in Orofino attracted Architectural Signs and Engraving Inc. to the community and Phantom Jet Boat opened a manufacturing operation in Clearwater in June 2008.

Industry	Employment
----------	------------

**Table A-27:
Sectors by
Clearwater**

Government	1,094
Education and Health	449
Trade and Transportation	424
Agriculture	222

**Industry
Employment in
County¹¹⁸**

Government is the largest employer in Clearwater County, which includes the city and county governments, the local school district, the Idaho Department of Health & Welfare, and the U.S. Forest Service and U.S. Fish & Wildlife Service, employ 125 people in the county. The Idaho State Penitentiary in Clearwater employs 230 people. There are two healthcare facilities in the county Clearwater Healthcare LLC and Clearwater Valley Hospital & Clinic. Other private employers include: Black Dog Tackle and Custom Rods, designers and manufacturers of customized fishing rods; Night Force Optics, manufacturers of high precision rifle scopes; Phantom Jet Boats, manufacturers of heavy-duty, light weight aluminum welded boats; and the Lodge at River's Edge.

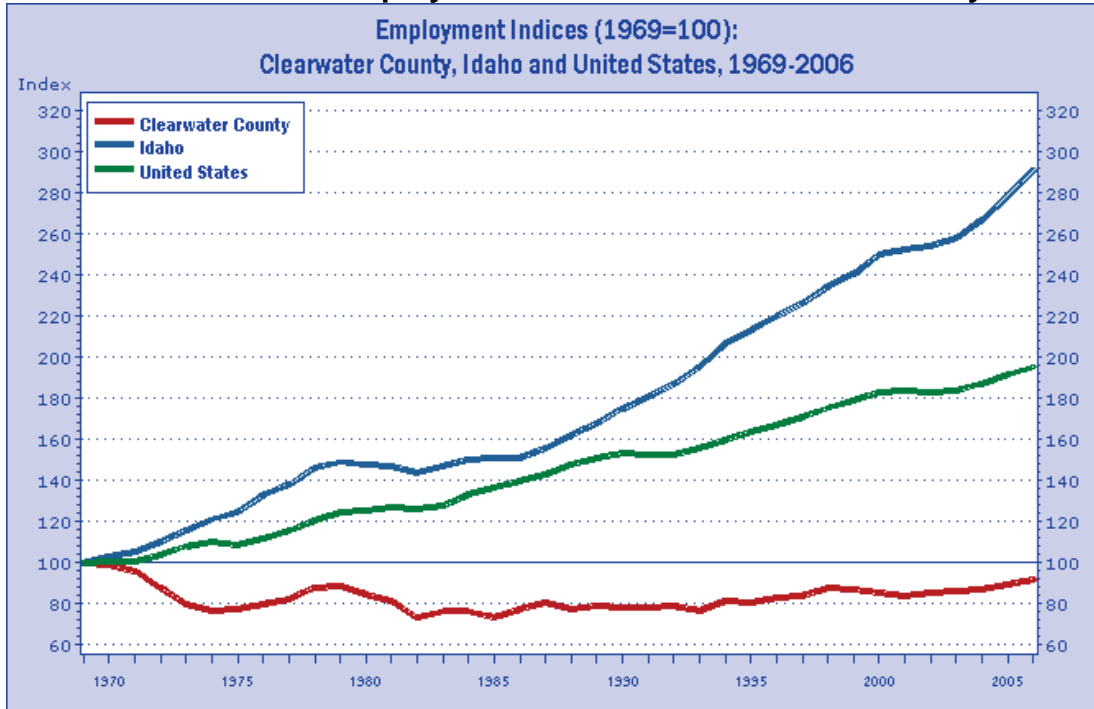
According to the most recent economic impact study for tourism expenditures in Idaho, tourism generated \$9.6 million in travel spending in 2005 creating a total of 223 jobs in the county. Tourism represents only 7 percent of the county's total employment, but it is an economic opportunity for Clearwater County as the Lodge at River's Edge in Orofino now provides upscale lodging to attract more visitors to the area. The Lewis and Clark Expedition anniversary attracted additional tourists to the area and the attraction of excellent hunting, fishing, and boating in the county can continue to draw visitors to the community. Building the tourism industry in Clearwater County will require development of additional visitor services including lodging and restaurants to promote more overnight visitors, a key requirement for increasing revenues from tourism.

Exhibit A-12 compares employment growth in Clearwater County for the past 37 years to employment growth in Idaho and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Clearwater County's employment declining 9.1 percent during the period, substantially below the 200.5 percent growth in Idaho and well below the nation at 98.7 percent.¹¹⁹

¹¹⁸ Bureau of Economic Analysis, Employment Statistics

¹¹⁹ Pacific Northwest Regional Economic Analysis

Exhibit A-12: Employment Indices for Clearwater County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skill are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. Eighty percent of the population in Clearwater County over the age of 25 completed high school compared to the statewide average of 84.7 percent. However, only 13.4 percent of the population over the age of 25 have completed a Bachelor’s degree or higher compared with 21.7 percent statewide.

Table A-28: Location Quotients for Clearwater County

Industry	Location Quotient	2007 Employment
Forestry and Logging	183.84	207
Agriculture and Forestry Support	11.78	67
Wood Product Manufacturing	10.99	97
Miscellaneous Manufacturing	5.36	59
Civil Engineering and Construction	4.37	74

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotients, shown in **Table A-28**, compare Clearwater County's employment concentration to the State of Idaho and the nation as a whole. Clearwater County has a substantially higher employment concentration in forestry and logging than the state indicating there is a high degree of economic specialization within the county in this industry sector. Generally this indicates competitive advantages for forestry products within the county and opportunities for additional growth. However, in this instance, the significant employment concentration in forestry and logging indicates the economic vulnerability of this county. Downturns in this industry over almost 20 years have contributed to the declining population and economic growth in Clearwater and industry trends indicate that this industry will not produce future job growth that could lead to improvement in population or employment growth.

Potential opportunities exist in the specialized manufacturing niche that has emerged related to the fishing and hunting industry in Clearwater County. Black Dog Tackle, Night Force Optics, and Phantom Jet Boats represent excellent examples of unique industries that were drawn to Clearwater County because of the available recreational opportunities. The Clearwater Economic Development Association has developed a small business loan fund and is pursuing other resources to assist other small companies that could locate in the area.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market, companies receive supplies from international firms to produce their products, and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

Clearwater County has very few transportation assets. According to the State railroad map, the Great Northwest Railroad runs to Orofino east to Pierce with a segment that runs south to Kooskia. There is a municipal general aviation airport in Orofino and a federal facility at Cayuse Creek primarily used for firefighting and forestry management activities. The closest commercial airport is in Lewiston. U.S. Highway 12 links Orofino to Lewiston to the west and Missoula, Montana to the east. The county has poor access to Interstate 90, which is approximately 150 miles via US Highways 12 and 95. There are a few county roads and the few remaining roads in Clearwater are primarily unpaved and impassable during certain weather conditions.

MAJOR COMMODITIES

Tables A-29 and **A-30** identify the top commodity imports and exports for Clearwater County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such, as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

Clearwater County's most significant export in 2007 was lumber or wood products, representing 92 percent of all commodities exported from the county. The TRANSEARCH™ data projects exports of these products from Clearwater County to decline by over 50 percent from 2007 to 2027. Similar declines are projected for nonmetallic minerals however the volume of those products is nominal. Less than 2 percent of the lumber and wood products exported out of the county move by rail.

Table A-29: Inbound Commodities for Clearwater County

Top 10 Commodities Shipped Into Clearwater County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	44,057	29,135	(33.9%)										44,057	29,135	(33.9%)
	Value/Ton	\$213	\$170	(20.1%)										\$213	\$170	(20.1%)
Primary Metal Products	Tons	7,522	15,705	108.8%										7,522	15,705	108.8%
	Value/Ton	\$2,162	\$2,166	0.2%										\$2,162	\$2,166	0.2%
Petroleum or Coal Products	Tons	3,203	5,110	59.5%										3,203	5,110	59.5%
	Value/Ton	\$322	\$326	1.3%										\$322	\$326	1.3%
Clay, Concrete, Glass or Stone	Tons	2,932	4,401	50.1%										2,932	4,401	50.1%
	Value/Ton	\$218	\$238	9.4%										\$218	\$238	9.4%
Food or Kindred Products	Tons	2,702	3,263	20.8%										2,702	3,263	20.8%
	Value/Ton	\$1,892	\$2,021	6.8%										\$1,892	\$2,021	6.8%
Transportation Equipment	Tons	763	1,112	45.8%	1,840	2,142	16.4%							2,603	3,254	25.0%
	Value/Ton	\$8,126	\$7,896	(2.8%)	\$1,996	\$1,996	0.0%							\$3,793	\$4,013	5.8%
Nonmetallic Minerals	Tons		1,992												1,992	
	Value/Ton		\$175												\$175	
Chemicals or Allied Products	Tons	994	1,116	12.3%										994	1,116	12.3%
	Value/Ton	\$2,236	\$1,978	(11.5%)										\$2,236	\$1,978	(11.5%)
Farm Products	Tons	901	1,178	30.7%										901	1,178	30.7%
	Value/Ton	\$166	\$175	5.0%										\$166	\$175	5.0%
Electrical Equipment	Tons	380	1,045	174.7%										380	1,045	174.7%
	Value/Ton	\$13,309	\$13,357	0.4%										\$13,309	\$13,357	0.4%
Pulp, Paper or Allied Products	Tons	293												293		
	Value/Ton	\$725												\$725		
All Commodities In Clearwater County, WA	Tons	64,330	64,949	1.0%	1,840	2,142	16.4%							66,170	67,091	1.4%
	Value/Ton	\$739	\$1,167	57.9%	\$1,996	\$1,996	0.0%							\$774	\$1,194	54.2%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

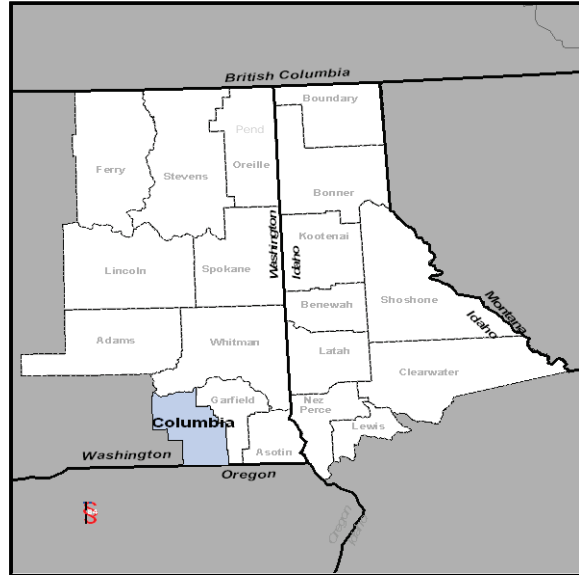
Table A-30: Outbound Commodities for Clearwater County

Top 10 Commodities Shipped Out Of Clearwater County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	306,076	144,594	(52.8%)	6,480	6,694	3.3%							312,556	151,288	(51.6%)
	Value/Ton	\$438	\$622	41.9%	\$1,368	\$1,368	0.0%							\$457		(100.0%)
Nonmetallic Minerals	Tons	15,690	7,817	(50.2%)										15,690	7,817	(50.2%)
	Value/Ton	\$5	\$5	0.0%										\$5	\$5	0.0%
Farm Products	Tons	6,459	8,371	29.6%										6,459	8,371	29.6%
	Value/Ton	\$964	\$964	0.0%										\$964	\$964	0.0%
Clay, Concrete, Glass or Stone	Tons	4,021	9,540	137.3%										4,021	9,540	137.3%
	Value/Ton	\$48	\$48	(0.9%)										\$48	\$48	(0.9%)
Metallic Ores	Tons	327	176	(46.3%)										327	176	(46.3%)
	Value/Ton	\$1,860	\$1,860	(0.0%)										\$1,860	\$1,860	(0.0%)
Transportation Equipment	Tons	116	259	123.2%										116	259	123.2%
	Value/Ton	\$5,197	\$5,401	3.9%										\$5,197	\$5,401	3.9%
Food or Kindred Products	Tons	73	110	51.6%										73	110	51.6%
	Value/Ton	\$1,443	\$1,447	0.3%										\$1,443	\$1,447	0.3%
Misc Manufacturing Products	Tons	49	120	143.5%										49	120	143.5%
	Value/Ton	\$70	\$57	(18.4%)										\$70	\$57	(18.4%)
Pulp, Paper or Allied Products	Tons	4	9	110.7%										4	9	110.7%
	Value/Ton	\$1,275	\$1,275	0.0%										\$1,275	\$1,275	0.0%
Fresh Fish or Marine Products	Tons	4	6	44.9%										4	6	44.9%
	Value/Ton	\$3,811	\$3,811	(0.0%)										\$3,811	\$3,811	(0.0%)
All Commodities In Clearwater County, WA	Tons	332,824	171,013	(48.6%)	6,480	6,694	3.3%							339,304	177,707	(47.6%)
	Value/Ton	\$426	\$587	37.7%	\$1,368	\$1,368	0.0%							\$444	\$617	38.7%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

COLUMBIA COUNTY, WASHINGTON

Columbia County has worked aggressively to diversify their economy since the early 1980s when the loss of a local food processing industry resulted in significant local unemployment. The county's employment has increased as the result of new investments in tourism, wind energy, and custom food manufacturing industries. Located on the Snake River, the Port of Columbia connects Columbia County with the coast. The port is adjacent to Highway 12 and currently houses 13 companies including: Gemmell's Machine Works, Dayton Tractor and Machine providing service and parts for all types of machinery and vehicles, Coyote Engineering an export management company, and Vestas a wind turbine maintenance shop. The Blue Mountain Railroad links the largest city, Dayton to the hump yards of two major railroads.



The county's economy is dominated by agriculture, although employment in construction and support services for wind farms represents a new source of employment opportunity as new projects continue to be planned. There is a growing wine cluster in Columbia County and custom food processing is projected to grow according to the Washington Department of Agriculture as a result of increasing recognition of the wine and agricultural products industry in adjoining Walla Walla County.

POPULATION TRENDS

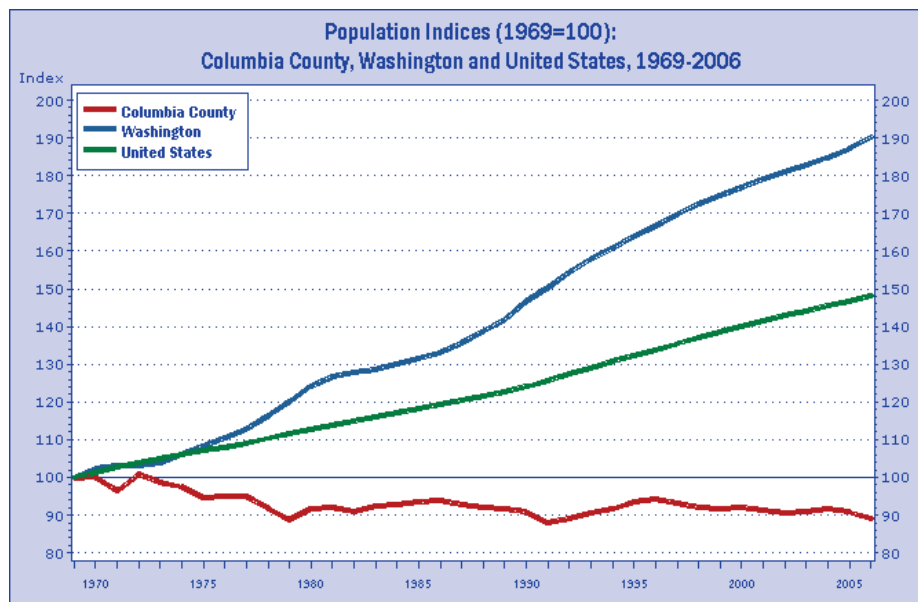
The population of Columbia County has remained almost unchanged for the past 18 years. Between 2000 and 2008 the population of Columbia County declined by 1.8 percent. In 2008 the population was 3,990 and is projected to decline slightly over the next 22 years. Slightly over nineteen percent of the population of Columbia County is under the age of 18 compared to 23.8 percent of the population statewide. Over 14.3 percent of the population lives below the poverty level and the 2007 median household income was \$39,699 compared to the state median income of \$55,628.

Table A-31: Population Data for Columbia County

Year	Population
1990 ¹²⁰	4,024
2000	4,064
2008 ¹²¹	3,990
2015	3,920
2020	3,900
2030	3,840

Exhibit A-13 shows the population growth of Columbia County compared with the growth in Washington and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. The population of Columbia County declined 10.5 percent during this period compared to 92.9 percent population growth statewide and 49.7 percent growth nationally.¹²²

Exhibit A-13: Population Indices for Columbia County



INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Total employment in Columbia County has decreased by 28 percent since 2000.¹²³ Columbia County continues to have one of the highest unemployment rates in the state with 11.7 percent of the workforce unemployed in January, 2009. According to the Washington Department of Employment Security the

¹²⁰ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

¹²¹ U.S. Census Bureau Population Estimates 2008

¹²² Pacific Northwest Regional Economic Analysis

¹²³ Washington Labor Market and Economic Analysis, Columbia County, March 2009

population decline in Columbia County will continue to impact job growth particularly given the employment concentration in government and retail trade. The aging population and the percentage of the population over the age of 65 will also affect employment in the health care sector. Forty-eight percent of those employed in Columbia County work in the governmental sector. The retail and wholesale trade sector employees 12.1 percent of the workforce and eight percent of the workforce is employed in the construction industry.

Employment is not increasing in Columbia County. Seneca Foods Corporation formerly a large asparagus canning operation in Columbia County has closed and the building is available for lease. Although construction employment has increased over the past 3 years as a result of construction of large wind farms and the renovation of a local hospital, these jobs are primarily seasonal and decreased in late 2008.

Table A-32: Industry Sectors by Employment in Columbia County¹²⁴

Industry	Employment
Government	442
Retail and Wholesale Trade	161
Construction	126
Agriculture, Forestry, and Fishing	113

Government is the largest employer in Columbia County however the overall employment in this sector has remained virtually unchanged over the past 10 years.¹²⁵ In 2007 approximately 37 percent of the total employment in the county was in the government sector which includes local and county government, schools, and state and federal government. The largest private employers in Columbia County is Ski Bluewood with 125 employees, Vestas Americas a company servicing area wind farm operations with 36 employees, and Dayton General Hospital with 135 employees.

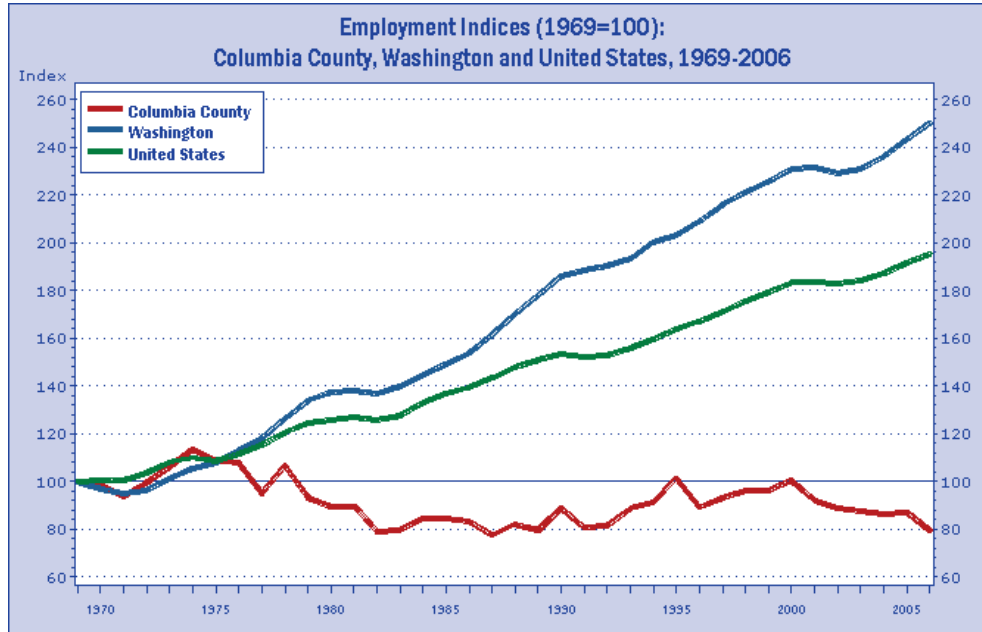
Exhibit A-14 compares employment growth in Columbia County for the past 37 years to employment growth in Washington and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Columbia County's employment decreasing by 18.4 percent during the period compared to Washington growth at 156.6 percent and the nation at 98.7percent.¹²⁶

¹²⁴ Bureau of Economic Analysis, Employment Statistics

¹²⁵ Washington Labor Market and Economic Analysis, 2009

¹²⁶ Pacific Northwest Regional Economic Analysis

Exhibit A-14: Employment Indices for Columbia County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporation location decisions. Workforce availability and skill are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. Almost eighty-three percent of the population over the age of 25 graduated from high school in Columbia County. Those with a Bachelor’s degree or higher is substantially below the statewide rate of 27.7 percent; with only 17.5 percent of the population completing a college education.

Table A-33: Location Quotients for Columbia County

Industry	Location Quotient	2007 Employment
Crop Production	28.64	112
Heavy Construction and Civil Engineering	10.88	78
Animal Production	5.57	9
Gasoline Stations	5.44	34
Merchant Wholesalers, non-durable goods	3.36	50

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotient, shown in

Table A-33, compares Columbia County to the State of Washington as a whole. Columbia County has a substantially higher employment concentration in crop production than the state as a whole and there is a relatively high degree of economic specialization within the county in crop production. Generally this would indicate competitive advantages for agri-business in Columbia County and opportunities for additional growth in this sector; however given the relatively small employment in this sector and the dominance of governmental employment in this county the location quotient does not provide evidence of specific competitive opportunities in the county.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market; companies receive supplies from international firms to produce their products; and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

U.S. Highway 12 runs through Columbia County linking the county to Lewiston to the east and to Walla Walla to the south. Columbia County has fair access to Interstate 90 via State Highway 261, which is approximately a 100 mile drive to the Interstate. The Port of Columbia County owns several industrial buildings at their industrial park on Highway 12. There are no Class I railroads operating in the county, but the Union Pacific line run 22 miles north of the county. There is one short line railroad operating in the county, the Palouse River & Coulee City Railroad.¹²⁷ The Lewiston Regional Airport is 32 miles east of Dayton and the Walla Walla Regional Airport is 32 miles southwest. The closest rail intermodal facility is located in Spokane.

MAJOR COMMODITIES

Tables A-34 and **A-35** identify the top commodity imports and exports for Columbia County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

¹²⁷ Washington Department of Transportation Rail System Map

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

The vast majority of Columbia County's agricultural exports are shipped via water from the Port of Columbia County. Declines in farm product volumes from 2007 to 2027 are somewhat offset by the increased volumes in nonmetallic minerals. Rail shipments of farm products are projected to increase over the next 20 years by 19.1 percent however the actual volume of goods shipped is very small. The significant increase in electrical equipment may be the result of Vestas Americas, a wind farm operation. Over the next 20 years the commodity volumes begin exported from Columbia County are projected to increase by only 4.0 percent.

Table A-34: Inbound Commodities for Columbia County

Top 10 Commodities Shipped Into Columbia County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Chemicals or Allied Products	Tons	21,422	40,710	90.0%										21,422	40,710	90.0%
	Value/Ton	\$468	\$473	1.0%										\$468	\$473	1.0%
Lumber or Wood Products	Tons	21,038	19,323	(8.1%)										21,038	19,323	(8.1%)
	Value/Ton	\$252	\$281	11.5%										\$252	\$281	11.5%
Food or Kindred Products	Tons	19,099	29,999	57.1%										19,099	29,999	57.1%
	Value/Ton	\$827	\$796	(3.8%)										\$827	\$796	(3.8%)
Clay, Concrete, Glass or Stone	Tons	12,003	16,993	41.6%										12,003	16,993	41.6%
	Value/Ton	\$278	\$280	0.6%										\$278	\$280	0.6%
Pulp, Paper or Allied Products	Tons	7,358	7,928	7.7%										7,358	7,928	7.7%
	Value/Ton	\$552	\$584	5.9%										\$552	\$584	5.9%
Nonmetallic Minerals	Tons	3,909	4,760	21.8%										3,909	4,760	21.8%
	Value/Ton	\$9	\$10	14.8%										\$9	\$10	14.8%
Petroleum or Coal Products	Tons	2,449	5,590	128.2%										2,449	5,590	128.2%
	Value/Ton	\$259	\$241	(7.0%)										\$259	\$241	(7.0%)
Primary Metal Products	Tons	1,867	5,364	187.3%										1,867	5,364	187.3%
	Value/Ton	\$2,022	\$1,844	(8.8%)										\$2,022	\$1,844	(8.8%)
Waste or Scrap Materials	Tons	1,765	2,743	55.5%										1,765	2,743	55.5%
	Value/Ton	\$265	\$261	(1.7%)										\$265	\$261	(1.7%)
Fabricated Metal Products	Tons	1,613	4,246	163.3%										1,613	4,246	163.3%
	Value/Ton	\$4,906	\$5,018	2.3%										\$4,906	\$5,018	2.3%
All Commodities In Columbia County, WA	Tons	94,338	140,840	49.3%										94,338	140,840	49.3%
	Value/Ton	\$678	\$807	19.1%										\$678	\$807	19.1%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

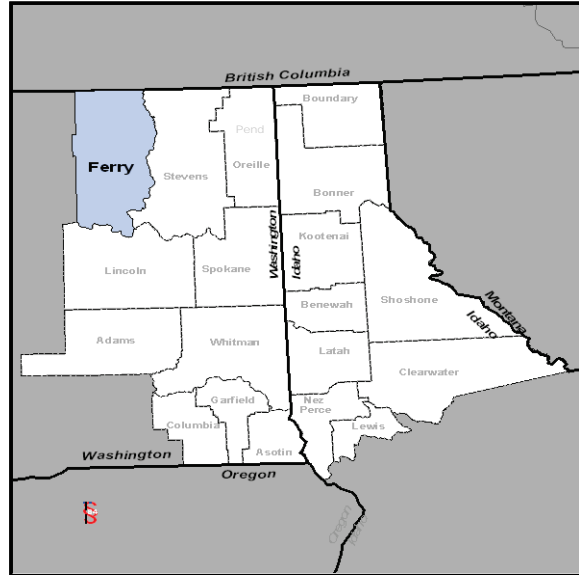
Table A-35: Outbound Commodities for Columbia County

Top 10 Commodities Shipped Out Of Columbia County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Farm Products	Tons	85,064	60,461	(28.9%)	3,440	4,096	19.1%	349,587	332,513	(4.9%)				438,091	397,070	(9.4%)
	Value/Ton	\$268	\$301	12.3%	\$148	\$148	0.0%	\$295	\$282	(4.2%)				\$288		(100.0%)
Nonmetallic Minerals	Tons	128,657	146,012	13.5%										128,657	146,012	13.5%
	Value/Ton	\$6	\$6	0.1%										\$6	\$6	0.1%
Chemicals or Allied Products	Tons	925	1,204	30.2%										925	1,204	30.2%
	Value/Ton	\$53	\$68	26.9%										\$53	\$68	26.9%
Lumber or Wood Products	Tons	644	878	36.5%										644	878	36.5%
	Value/Ton	\$477	\$579	21.5%										\$477	\$579	21.5%
Waste or Scrap Materials	Tons	197	400	102.9%										197	400	102.9%
	Value/Ton	\$180	\$201	11.4%										\$180	\$201	11.4%
Food or Kindred Products	Tons	170	323	89.6%										170	323	89.6%
	Value/Ton	\$922	\$787	(14.6%)										\$922	\$787	(14.6%)
Metallic Ores	Tons	50	27	(46.3%)										50	27	(46.3%)
	Value/Ton	\$387	\$387	0.0%										\$387	\$387	0.0%
Fresh Fish or Marine Products	Tons	31	44	44.9%										31	44	44.9%
	Value/Ton	\$5,833	\$5,833	0.0%										\$5,833	\$5,833	0.0%
Electrical Equipment	Tons	15	29	95.2%										15	29	95.2%
	Value/Ton	\$10,411	\$10,411	(0.0%)										\$10,411	\$10,411	(0.0%)
Machinery	Tons	6	11	83.8%										6	11	83.8%
	Value/Ton	\$1,404	\$1,404	(0.0%)										\$1,404	\$1,404	(0.0%)
All Commodities In Columbia County, WA	Tons	215,760	209,394	(3.0%)	3,440	4,096	19.1%	349,587	332,513	(4.9%)				568,788	546,003	(4.0%)
	Value/Ton	\$114	\$99	(13.3%)	\$148	\$148	0.0%	\$295	\$282	(4.2%)				\$225	\$211	(6.3%)

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

FERRY COUNTY, WASHINGTON

Access to Republic, the county seat of Ferry County requires passage over the highest year-round mountain pass in Washington, a ferry ride, or travel into Canada. The county covers 2,200 square miles of mountainous territory, a portion of which is in the Colville National Forest. Ferry County has the lowest population density in Washington.¹²⁸ Less than 18 percent of the land in Ferry County is privately owned. The southern portion of the county is owned by the Colville Confederated Tribe. The county is home to the internationally known Stonerose Fossil site. With limited access into the area and an abundance of outdoor recreational opportunities, tourism is an important part of the county's economy. The largest employer in the county is the Colville Confederated Tribes whose tribal business employs over 921.



In 2008 the Buckhorn Mountain Gold Mine reopened and is projected to create up to 200 new jobs when the mine is fully operational. In January 2009, unemployment in Ferry County had reached 13.8 percent. The limited availability of infrastructure and the isolation will continue to affect employment and population within the county. As a result in Ferry County a higher proportion of the community's total income is generated from home-based businesses than average in the state. Home-based businesses are an important component of many family incomes in Ferry County.

POPULATION TRENDS

The population of Ferry County was 7,353 in 2008 increasing by only 1.3 percent since 2000. The county's population growth was substantially lower than the State of Washington which grew by 11.1 percent between 2000 and 2008. Between 1990 and 2008 the population of Ferry County grew by only increased by 1,058 people.

Twenty-two percent of the population in Ferry County is under 18 years of age, similar to the statewide population under the age of 18 at 23.8 percent. Almost 21 percent of the population lives below the poverty level, almost twice the rate statewide and substantially higher than the national rate of 13 percent. The

¹²⁸ Ferry County Conservation District

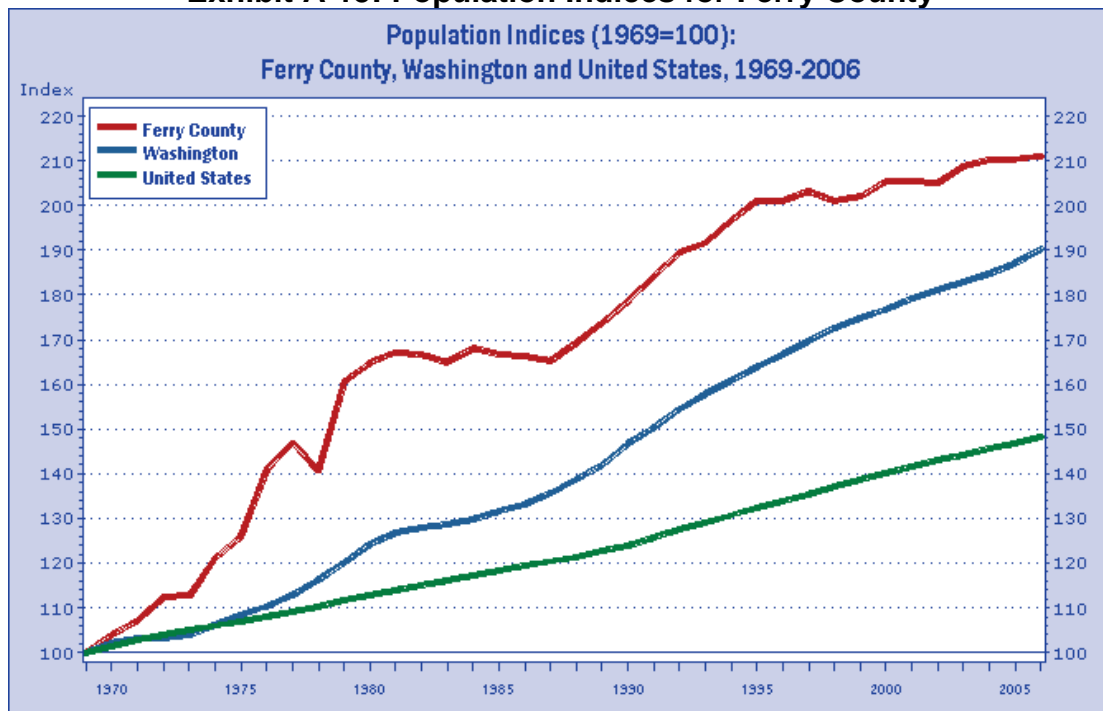
county's median household income was \$35,121 in 2007. American Indians compose 18 percent of the county's population.¹²⁹

Table A-36: Population Data for Ferry County

Year	Population
1990 ¹³⁰	6,295
2000	7,260
2008 ¹³¹	7,353
2015	7,790
2020	8,070
2030	8,630

Exhibit A-15 shows the population growth of Ferry County compared with the growth in Idaho and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population of Ferry County was 3,543 in 1969 and had increased to 7,344 in 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. The population of Ferry County increased by 107.3 percent during this period compared to 92.9 percent population growth statewide and 49.7 percent growth nationally.

Exhibit A-15: Population Indices for Ferry County



¹²⁹ U.S. Census Bureau Community Data 2008

¹³⁰ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

¹³¹ U.S. Census Bureau Population Estimates 2008

INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Unemployment in Ferry County increased over the past year primarily as a result of declines in mining, forestry, and manufacturing jobs within the county. Unemployment in Ferry County was 13.8 percent in January 2009 up from 10.7 percent in December 2008. While unemployment increased in 2008 there were some employment gains primarily in support of mining activities in the region. Retail sales actually increased 21.6 percent in the third quarter of 2008 compared to 2007.

Employment in the county has become heavily dependent upon government operations and retail trade as the economy has shifted from natural resources to more service jobs. There are no existing industrial or business parks in the county and most investments to support economic development are focused on outdoor recreation and other tourism related operations. The largest employers in Ferry County are: Colville Confederated Tribes with 921 employees, other government employment including the U.S. Border Patrol, the school district, and county government, Columbia Cedar a timber company with 96 employees, Kinross Gold a mining operation with 92 employees, and Ferry County Memorial Hospital with 139 employees.

Table A-37: Industry Sectors by Employment in Ferry County¹³²

Industry	Employment
Government	1190
Retail Trade	135
Agriculture, Forestry, and Fishing	108
Construction	59
Finance and Insurance	43

Government employment includes the employees of the Colville Confederated Tribes as well as other federal, state, and local government employees.¹³³ According to the most recent economic impact study for tourism expenditures in Washington State, tourism generated \$14.8 million in travel spending in 2007 creating 250 jobs throughout a number of sectors including retail.¹³⁴ Within Ferry County the majority of the travel spending occurred in food and beverage services and accommodations accounting for almost 50 percent of tourism spending in the county.

Exhibit A-16 compares employment growth in Ferry County for the past 37 years to employment growth in Idaho and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic

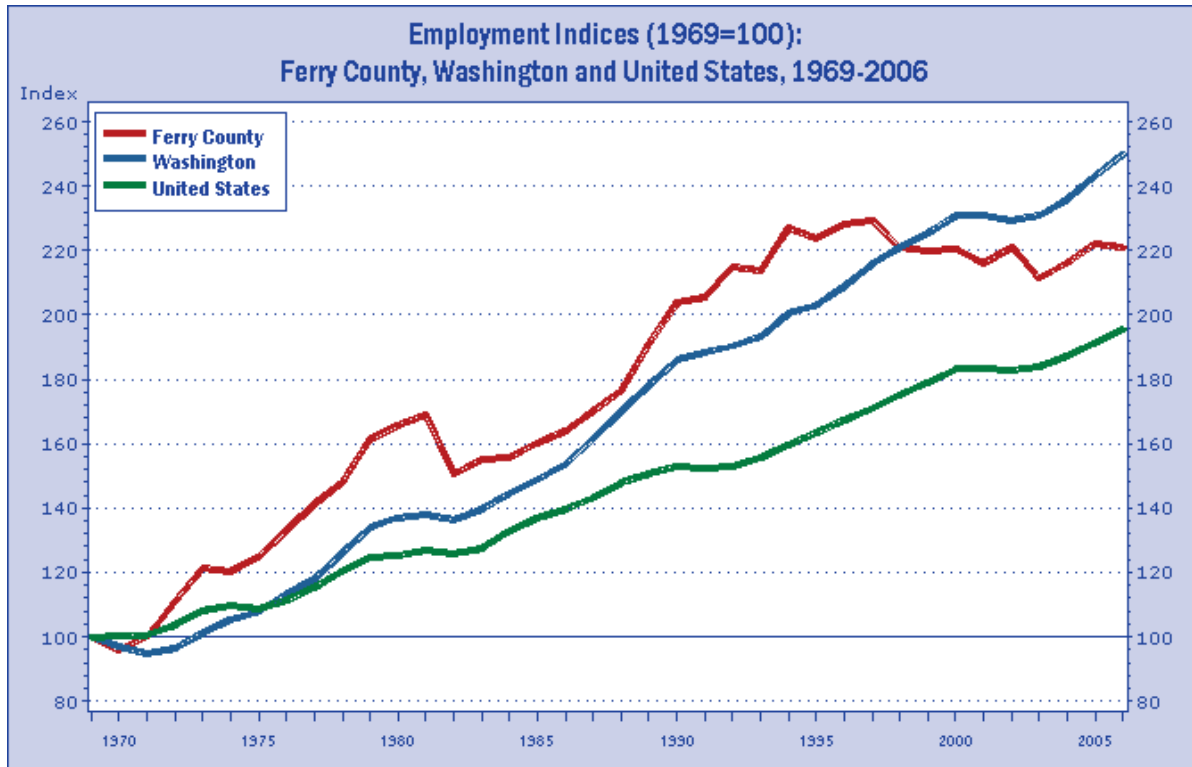
¹³² Bureau of Economic Analysis, Employment Statistics

¹³³ Washington Department Employment Security, Labor Market and Economic Analysis Oct. 2008

¹³⁴ Washington State County Travel Impacts 1991 – 2007, Washington Division of Tourism

areas with Ferry County's employment increasing by 121.6 percent during the period below the 156.9 percent employment growth in Washington and above the nation's employment growth at 98.7 percent.¹³⁵

Exhibit A-16: Employment Indices for Ferry County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the "Corporate Site Survey" allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skill are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. Eighty-three percent of the population of Ferry County over the age of 25 has completed high school but only 13.5 percent of the population completed a Bachelor's degree or higher. Education attainment in this county is significantly lower than the statewide college graduation rate which approaches 30 percent. Those businesses that require a significant number of technical or college educated employees would not consider Ferry County has a potential business location because of the limited availability of this type of workforce.

¹³⁵ Pacific Northwest Regional Economic Analysis

Table A-38: Location Quotients for Ferry County

Industry	Location Quotient	2007 Employment
Forestry and Logging	173.21	76
Gasoline Stations	5.38	31
Construction	1.86	22
Services	1.75	52
Specialty Trade Contractors	1.62	52
Retail Trade	1.38	143

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotient, shown in **Table A-38**, compares Ferry County to the State of Washington as a whole. Ferry County has substantially higher employment concentration in forestry and logging than the state as a whole and there is a high degree of economic specialization within the county in this sector. While there may be some additional opportunities for growth within this sector, declines in forest products and logging due to current conditions in the housing industry, imports of timber from other states and Canada, and health conditions in eastern Washington forests do not bode well for the future of this industry. This high location quotient actually demonstrates the vulnerability of the economy in Ferry County when compared to the state as a whole. Forestry and logging represent almost 6.5 percent of the total employment in the county while government represents over 55 percent of total employment.¹³⁶

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market; companies receive supplies from international firms to produce their products; and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

U.S. Highway 395 runs along the eastern boundary of Ferry County from Kettle Falls into Cascade, Canada. Highway 20 bisects the county and runs east through Stevens and Pend Oreille Counties. Highway 21 runs north into Canada and to the south it links Republic with the Tri-Cities. Ferry County is not well-

¹³⁶ State of Washington Average Monthly Employment and Wages, Office of Financial Management

positioned for access to Interstate 90. Via US 395, the distance to I-90 is approximately 120 miles. There are no railroads in Ferry County. The closest rail line is the Kettle Falls International Railroad, a short-line railroad runs just east of Ferry County in Stevens County. There are no general aviation airports in the county; the closest commercial airport is the Spokane International Airport approximately 120 miles south of Republic. The nearest rail intermodal facility according to the Washington Department of Commerce is the BNSF facility in Spokane, approximately 120 miles.

MAJOR COMMODITIES

Tables A-39 and **A-40** identify the top commodity imports and exports for Ferry County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

The export of lumber and wood products from Ferry County is projected to increase 341.1 percent over the next twenty years. To some extent the forecasted increases may be driven by the vast, but hard to access timberlands in the county. However, due to the outlier nature of the forecast, the consultant team contacted a representative of U.S. Timber knowledgeable with the area.¹³⁷ While some mills in the county have recently retooled to produce plywood, which will likely increase tonnages in the future, the forecast appears to be overly optimistic.

The lack of rail service does not seem to be an issue; mainly because trucks are the dominant mode of transporting the County's major commodities. Other commodities produced within the county show minimal growth in volume. The isolation, lack of multimodal transportation assets, and limited privately owned land will continue to constrain economic growth and diversification in this county.

¹³⁷ Phone contact with Mike Ebert, US Timber and Eagle Forest Products, Boise, ID

Table A-39: Inbound Commodities for Ferry County

Top 10 Commodities Shipped Into Ferry County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	53,859	55,178	2.4%										53,859	55,178	2.4%
	Value/Ton	\$275	\$319	15.9%										\$275	\$319	15.9%
Furniture or Fixtures	Tons	35,486	69,674	96.3%										35,486	69,674	96.3%
	Value/Ton	\$4,209	\$4,214	0.1%										\$4,209	\$4,214	0.1%
Clay, Concrete, Glass or Stone	Tons	17,931	26,741	49.1%										17,931	26,741	49.1%
	Value/Ton	\$230	\$231	0.4%										\$230	\$231	0.4%
Food or Kindred Products	Tons	10,767	14,295	32.8%										10,767	14,295	32.8%
	Value/Ton	\$905	\$907	0.3%										\$905	\$907	0.3%
Petroleum or Coal Products	Tons	5,092	7,000	37.5%										5,092	7,000	37.5%
	Value/Ton	\$417	\$372	(10.9%)										\$417	\$372	(10.9%)
Waste or Scrap Materials	Tons	3,358	5,184	54.4%										3,358	5,184	54.4%
	Value/Ton	\$277	\$273	(1.5%)										\$277	\$273	(1.5%)
Chemicals or Allied Products	Tons	2,345	4,304	83.5%										2,345	4,304	83.5%
	Value/Ton	\$773	\$833	7.8%										\$773	\$833	7.8%
Farm Products	Tons	2,185	2,226	1.9%										2,185	2,226	1.9%
	Value/Ton	\$2,192	\$2,365	7.9%										\$2,192	\$2,365	7.9%
Transportation Equipment	Tons	393	1,710	335.4%	1,080	1,257	16.4%							1,473	1,794	21.8%
	Value/Ton	\$11,367	\$1,255	(89.0%)	\$2,161	\$2,161	0.0%							\$4,616	\$4,638	0.5%
Pulp, Paper or Allied Products	Tons	1,180	537	(54.5%)										1,180	1,710	44.9%
	Value/Ton	\$1,040	\$10,441	903.9%										\$1,040	\$1,255	20.6%
All Commodities In Ferry County, WA	Tons	135,488	192,303	41.9%	1,080	1,257	16.4%							136,568	193,560	41.7%
	Value/Ton	\$1,507	\$1,944	29.0%	\$2,161	\$2,161	0.0%							\$1,512	\$1,946	28.7%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

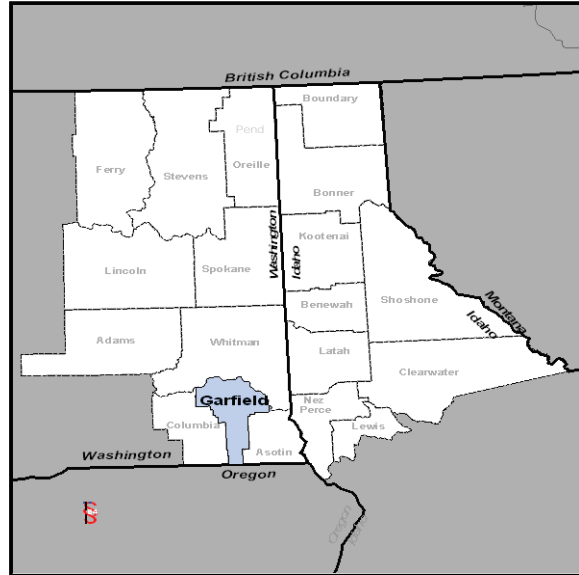
Table A-40: Outbound Commodities for Ferry County

Top 10 Commodities Shipped Out Of Ferry County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	407,705	1,798,474	341.1%										407,705	1,798,474	341.1%
	Value/Ton	\$576	\$636	10.3%										\$576		(100.0%)
Farm Products	Tons	22,163	21,900	(1.2%)										22,163	21,900	(1.2%)
	Value/Ton	\$702	\$695	(1.1%)										\$702	\$695	(1.1%)
Nonmetallic Minerals	Tons	276	359	29.7%										276	359	29.7%
	Value/Ton	\$34	\$34	(0.0%)										\$34	\$34	(0.0%)
Waste or Scrap Materials	Tons	260	528	102.9%										260	528	102.9%
	Value/Ton	\$180	\$201	11.4%										\$180	\$201	11.4%
Fresh Fish or Marine Products	Tons	40	58	44.9%										40	58	44.9%
	Value/Ton	\$5,833	\$5,833	(0.0%)										\$5,833	\$5,833	(0.0%)
Metallic Ores	Tons	32	17	(46.3%)										32	17	(46.3%)
	Value/Ton	\$633	\$633	0.0%										\$633	\$633	0.0%
Pulp, Paper or Allied Products	Tons	24	19	(22.7%)										24	19	(22.7%)
	Value/Ton	\$157	\$157	0.0%										\$157	\$157	0.0%
Food or Kindred Products	Tons	17	26	51.9%										17	26	51.9%
	Value/Ton	\$1,886	\$1,905	1.0%										\$1,886	\$1,905	1.0%
Machinery	Tons	14	25	81.4%										14	25	81.4%
	Value/Ton	\$2,215	\$2,193	(1.0%)										\$2,215	\$2,193	(1.0%)
Chemicals or Allied Products	Tons	5	7	43.3%										5	7	43.3%
	Value/Ton	\$1,524	\$1,524	0.0%										\$1,524	\$1,524	0.0%
All Commodities In Ferry County, WA	Tons	430,537	1,821,413	323.1%										430,537	1,821,413	323.1%
	Value/Ton	\$583	\$636	9.2%										\$583	\$636	9.2%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

GARFIELD COUNTY, WASHINGTON

Garfield County is the least populated county in the state. Located between the Snake River and the Blue Mountains, farms still dominate two-thirds of the county. In the past agriculture was the primary economic driver, today the governmental sector is the largest employer with over 60 percent of the total non-farm employment. Agriculture employment has declined as more grain-production tends to need fewer people each year to secure maximum results.¹³⁸ Wheat is the primary crop but other grains and seeds are also grown including barley and bluegrass. In 2007 Garfield County's total agricultural production was over \$26.4 million.



The lower Snake River energy project could generate almost 100 jobs in Garfield County with over 50 percent of the turbines to be located within this county. Employment from construction, retail sales, and recreational employment will result in temporary job opportunities and approximately 100 permanent jobs will be created.

POPULATION TRENDS

According to the U. S. Census the population of Garfield County was 2,060 in 2008 a 14.1 percent decline from the population of 2,397 in 2000. Between 1990 and 2007 the county's population increased by only 802 people and projections for future years assume a relatively flat or declining population rate in this county. Population growth will impact job growth in agriculture, retail trade, government, and the service industry, with virtually no population growth these non-traded sector industries will experience little or no growth as well.

Over 23 percent of the county population is over the age of 65 compared with 11.7 percent statewide. Eighteen percent of the county's population is under the age of 18. The median household income in Garfield County is \$39,649 compared with the state's median income of \$55,628 and 14 percent of those living in the county have incomes below the poverty level.

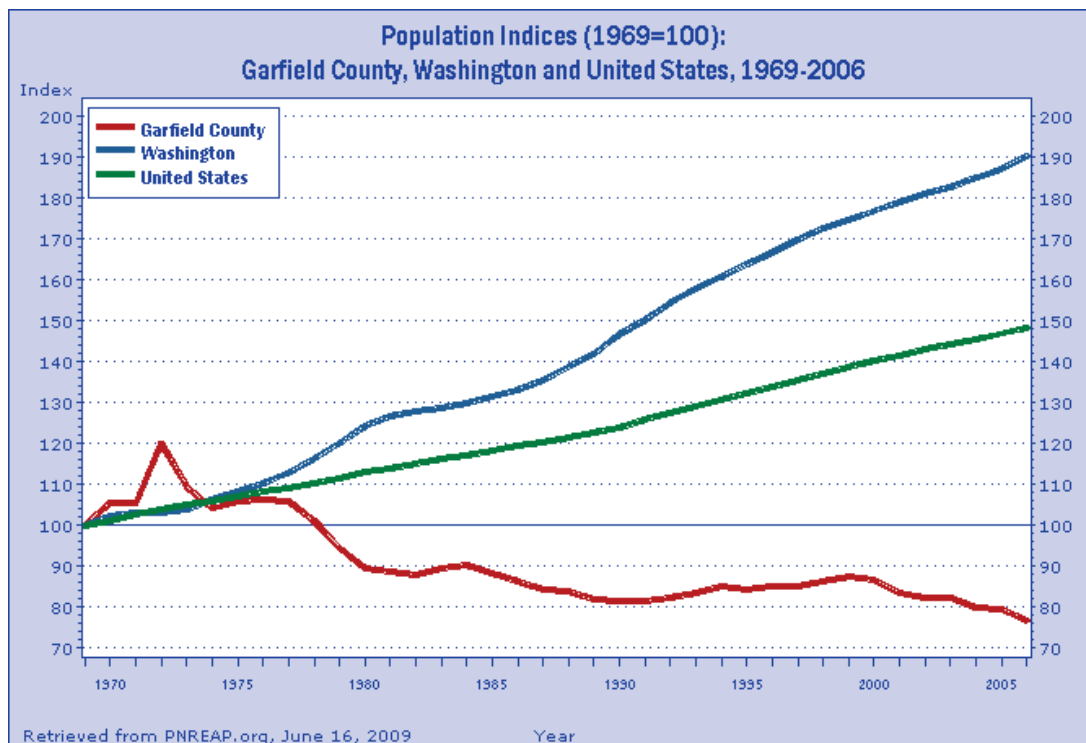
¹³⁸ Washington State Employment Security, Labor Market and Economic Analysis, July 2009

Table A-41: Population Data for Garfield County

Year	Population
1990 ¹³⁹	2,248
2000	2,397
2008	2,060
2015	2,012
2020	1,970
2030	1,920

Exhibit A-17 shows the population growth of Garfield County compared with the growth in Washington and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. The population of Garfield County increased by 25.8 percent during this period compared to 92.9 percent population growth statewide and 49.7 percent growth nationally.¹⁴⁰

Exhibit A-17: Population Indices for Garfield County



¹³⁹ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

¹⁴⁰ Pacific Northwest Regional Economic Analysis

INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Unemployment in Garfield County was 7.8 percent in January 2009 up slightly from 6.4 percent in December 2008. Garfield County however, has a lower unemployment rate than Washington State as a whole (9.5 percent in January 2009). Total nonfarm industry employment remained unchanged for 2008. The civilian labor force of 980 declined by 6.5 percent between December 2007 and December 2008, losses were primarily in the goods producing sector. Over the past 40 years, Garfield County has experienced a 15.9 percent loss of employment compared to the employment growth in Washington of 151.4 percent and 95 percent nationally. According to the Bureau of Labor Statistics,

A substantially percentage of the Garfield population leave the county each day for work outside the county. In 2006, 33.6 percent of the county's income was earned by residents who worked in adjoining counties.¹⁴¹

Table A-42: Industry Sector by Employment in Garfield County¹⁴²

Industry	Employment
Government	458
Wholesale Trade	127
Retail Trade	57
Agriculture, Forestry, & Fishing	43
Finance & Insurance	16

The economy of Garfield County is heavily dependent upon government and agricultural related operations. The largest employers in the county include federal and local governments with 350 employees, Dye Seed Ranch an agricultural processing operation, and several small banks. There are no industrial or business parks in the community and given the primary nature of the economy, the focus of investments for economic development are centered on crop production and support services.

According to the most recent economic impact study for tourism expenditures in Washington State, tourism generated \$1.7 million in travel spending in 2007 creating 20 jobs and approximately \$100,000 in tax revenues. Garfield County has the lowest volume of travel spending of any county in the state in 2007.¹⁴³

Exhibit A-18 compares employment growth in Garfield County for the past 37 years to employment growth in Washington and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allow for a comparison of long-term employment growth between these three geographic areas with Garfield County's employment increasing by a modest 19.6 percent

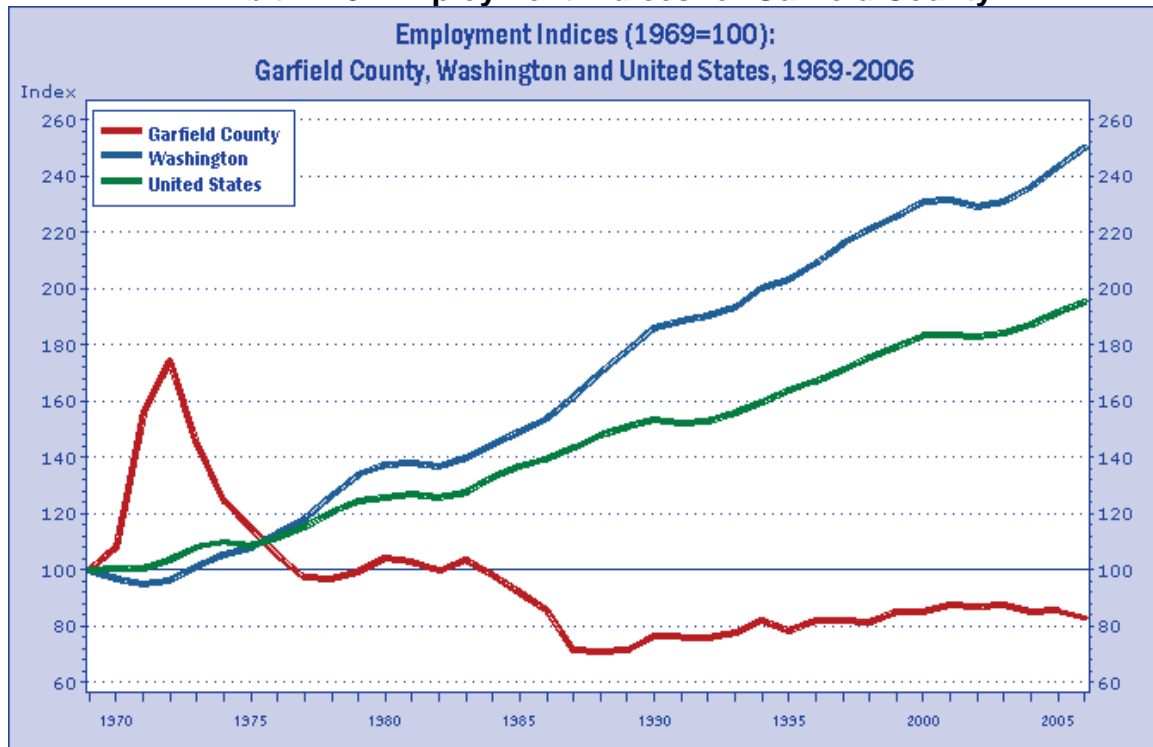
¹⁴¹ Washington State Employment Security, Labor Market and Economic Analysis, 2009.

¹⁴² Bureau of Economic Analysis, Employment Statistics

¹⁴³ Washington State County Travel Impacts 1991 – 2007, Washington Division of Tourism

during the period substantially below the 156.7 percent growth in Washington and well below the nation at 98.7 percent.¹⁴⁴

Exhibit A-18: Employment Indices for Garfield County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skills are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. While only 17 percent of the population of Garfield County completed a college degree, almost 85 percent of the population over the age of 25 graduated from high school compared with the statewide rate of 87 percent.

¹⁴⁴ Pacific Northwest Regional Economic Analysis

Table A-43: Location Quotients for Garfield County

Industry	Location Quotient	2007 Employment
Crop Production	29.61	47
Merchant Non-durable Goods	16.88	102
Agriculture, Forestry, and Fishing	14.26	49
Wholesale Trade	7.14	126
Building Material and Garden Supply	3.38	29
Construction	3.08	16

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotient, shown in **Table A-43**, compares Garfield County to the State of Washington as a whole. Garfield County has a substantially higher employment concentration in crop production than the state as a whole and there is a relatively high degree of economic specialization within the county in agriculture and related businesses. Competitive advantages for crop products result from the availability of suitable land and access to a river port facility to move grains cheaply. Additional agricultural opportunities for value-added businesses include identify-preserved grains, organic food production, food processing, and additional employment from energy operations.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market; companies receive supplies from international firms to produce their products; and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

U.S. Highway 12 bisects Garfield County running east from Pomeroy to Clarkston and Lewiston and to the west to Walla Walla. Highway 12 connects to U.S. Highway 95 at Lewiston approximately 30 miles east of Pomeroy. It also connects to US 195 approximately 30 miles west of Pomeroy. The county is connected to Interstate 90 via State Highway 261 (approximately 90 miles) and via US 195 (approximately 140 miles). The Great Northwest Railroad, a short-line railroad, connects to the Union Pacific west of Garfield County and is the only rail line in the county according to the Washington State Department of Transportation Rail System map. A small state-owned general aviation airport is located in Garfield, Lower Granite State Airport. The closest commercial airport

is the Lewiston Regional Airport 35 miles to the east and Pullman/Moscow Airport located approximately 70 miles from Pomeroy. The Walla Walla Regional Airport is approximately 63 miles from Pomeroy. The Port of Garfield plays a major role in the transportation of goods into and out of the county and the port is also served by overland truck transportation. The Port of Columbia is approximately 37 miles from Pomeroy.

MAJOR COMMODITIES

Tables A-44 and **A-45** identify the top ten commodity imports and exports for Garfield County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

Consistent with other counties in the IPH, farm products, the largest export from Garfield County, is projected to decline by 28.7 percent over the next twenty years. The majority of farm products are shipped by water through the Port of Garfield. These commodities are projected to decline by nearly 30 percent over the next twenty years. As noted previously for some other agriculture dependent counties, the decline in farm exports is consistent with predicted trends nationally for agriculture as more crops are consumed locally for value-added activities such as livestock production, locally based food processing and production of ethanol and other bio-fuels. U.S. farmers are also facing increasing foreign competition, fluctuations in the value of the U.S. dollar and greater environmental regulations, all of which can impact price competitiveness of U.S. agriculture exports. These national trends however may not hold true for the IPH study area due to its diverse agricultural production capabilities, access to low cost transportation by rail and barge, and close proximity to major export gateways such as Seattle, Tacoma and Portland.

Table A-44: Inbound Commodities for Garfield County

Top 10 Commodities Shipped Into Garfield County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Chemicals or Allied Products	Tons	2,817	5,384	91.2%	100,800	161,347	60.1%							103,617	166,731	60.9%
	Value/Ton	\$624	\$602	(3.5%)	\$615	\$633	2.9%							\$615	\$632	2.7%
Lumber or Wood Products	Tons	10,996	24,861	126.1%										10,996	24,861	126.1%
	Value/Ton	\$371	\$312	(16.0%)										\$371	\$312	(16.0%)
Primary Metal Products	Tons	5,757	9,369	62.7%										5,757	9,369	62.7%
	Value/Ton	\$2,184	\$2,184	0.0%										\$2,184	\$2,184	0.0%
Food or Kindred Products	Tons	4,137	7,344	77.5%										4,137	7,344	77.5%
	Value/Ton	\$982	\$893	(9.0%)										\$982	\$893	(9.0%)
Clay, Concrete, Glass or Stone	Tons	3,230	5,505	70.4%										3,230	5,505	70.4%
	Value/Ton	\$343	\$333	(2.7%)										\$343	\$333	(2.7%)
Petroleum or Coal Products	Tons	2,079	3,822	83.9%										2,079	3,822	83.9%
	Value/Ton	\$467	\$379	(18.8%)										\$467	\$379	(18.8%)
Pulp, Paper or Allied Products	Tons	1,582	1,705	7.8%										1,582	1,705	7.8%
	Value/Ton	\$671	\$703	4.9%										\$671	\$703	4.9%
Waste or Scrap Materials	Tons	1,506	2,323	54.2%										1,506	2,323	54.2%
	Value/Ton	\$261	\$257	(1.4%)										\$261	\$257	(1.4%)
Transportation Equipment	Tons	380	513	34.9%										380	513	34.9%
	Value/Ton	\$11,867	\$10,989	(7.4%)										\$11,867	\$10,989	(7.4%)
Fabricated Metal Products	Tons		384												384	
	Value/Ton		\$3,429												\$3,429	
Crude Petrol. or Natural Gas	Tons	206												206		
	Value/Ton	\$496												\$496		
All Commodities In Garfield County, WA	Tons	33,409	62,615	87.4%	100,800	161,347	60.1%							134,209	223,962	66.9%
	Value/Ton	\$1,068	\$951	(10.9%)	\$615	\$633	2.9%							\$728	\$722	(0.8%)

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

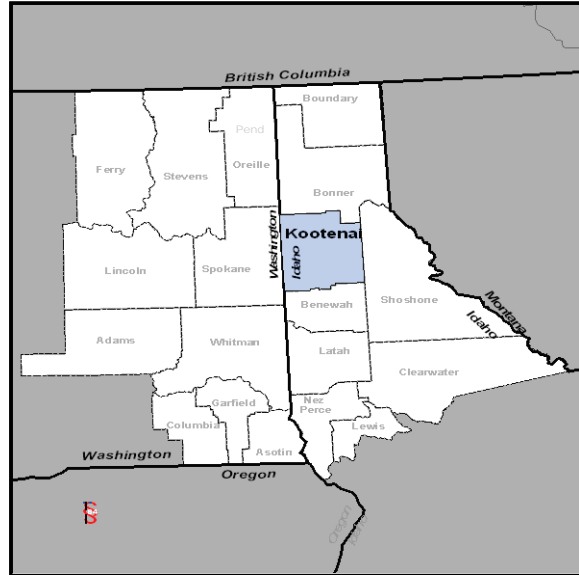
Table A-45: Outbound Commodities for Garfield County

Top 10 Commodities Shipped Out Of Garfield County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Farm Products	Tons	19,983	18,075	(9.5%)				296,700	207,811	(30.0%)				316,683	225,885	(28.7%)
	Value/Ton	\$421	\$412	(2.0%)				\$295	\$282	(4.2%)				\$303		(100.0%)
Rail Intermodal Drayage to Ram	Tons	1,789	3,279	83.3%										1,789	3,279	83.3%
	Value/Ton	\$4,619	\$4,619	0.0%										\$4,619	\$4,619	0.0%
Chemicals or Allied Products	Tons	885	1,322	49.4%										885	1,322	49.4%
	Value/Ton	\$515	\$647	25.7%										\$515	\$647	25.7%
Nonmetallic Minerals	Tons	275	356	29.7%										275	356	29.7%
	Value/Ton	\$34	\$34	(0.0%)										\$34	\$34	(0.0%)
Waste or Scrap Materials	Tons	152	309	102.9%										152	309	102.9%
	Value/Ton	\$180	\$201	11.4%										\$180	\$201	11.4%
Metallic Ores	Tons	40	22	(46.3%)										40	22	(46.3%)
	Value/Ton	\$348	\$348	(0.0%)										\$348	\$348	(0.0%)
Fresh Fish or Marine Products	Tons	17	25	44.9%										17	25	44.9%
	Value/Ton	\$5,833	\$5,833	(0.0%)										\$5,833	\$5,833	(0.0%)
Machinery	Tons	1	2	83.8%										1	2	83.8%
	Value/Ton	\$2,087	\$2,087	0.0%										\$2,087	\$2,087	0.0%
All Commodities In Garfield County, WA	Tons	23,142	23,389	1.1%				296,700	207,811	(30.0%)				319,842	231,200	(27.7%)
	Value/Ton	\$747	\$1,013	35.6%				\$295	\$282	(4.2%)				\$327	\$356	8.8%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

KOOTENAI COUNTY, IDAHO

Kootenai County is located in the northern panhandle of Idaho and is surrounded by Bonner, Shoshone, Benewah and Spokane counties. Beautiful Lake Coeur d'Alene continues to serve as the central focus of Kootenai County just as it did many years ago when the Coeur d'Alene Tribe settled in the area. In the 1890's Coeur d'Alene was a rail and steamboat transfer point between the mining operations and the processing operations to the east. A boom in the timber industry stimulated significant population growth in the early 1900s when the population of the county increased significantly.



For the past thirty years Kootenai County has experienced remarkable population growth due in part to the many retirees who moved to the county to enjoy the scenery, quality of life, and proximity to Spokane's cultural amenities and health care. With the opening of the Coeur d'Alene Resort in the late 1980's the tourism industry in Kootenai County expanded dramatically. For the past thirty years the economy of the county has expanded and been diversified to include manufacturing, business operations, healthcare, and construction as well as tourism.

Companies including Buck Knives, Center Partners (a call center operation), and Esterline Advanced Input Systems (a designer and manufacturer of advanced input systems applications) have helped to diversify the Kootenai economy. Tourism and call centers continue to be an important employer in the community with six call centers employing nearly 2,000 people.

POPULATION TRENDS

According to the U.S. Census Bureau the population of Kootenai County was 137,475 in 2008. The county experienced significant population growth in the past thirty years and in the past eight years alone grew by 26.5 percent. During the same period the population of the state as a whole grew by 17.8 percent and the national population increased 11 percent.

Almost twenty-five percent of the population of Kootenai County is below the age of 18 compared to the statewide average of 27 percent. Only 11.3 percent of the population lives below the poverty level, slightly below the statewide rate of 12.1

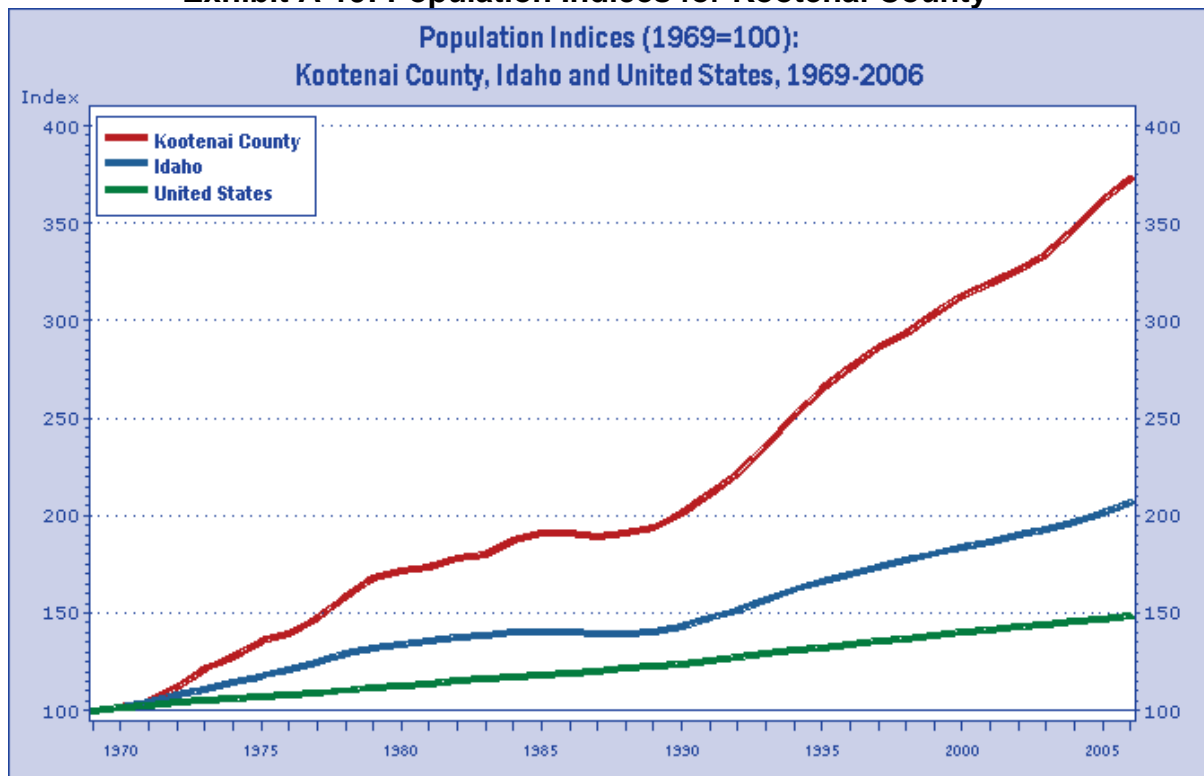
percent and the median household income in 2007 for Kootenai County was \$46,724, slightly above the statewide rate of \$46,136.

Table A-46: Population Data for Kootenai County

Year	Population
1990 ¹⁴⁵	70,440
2000	108,685
2008 ¹⁴⁶	137,475
2015	167,920
2020	189,280
2030	210,870

Exhibit A-19 shows the population growth of Kootenai County compared with the growth in Idaho and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. The population of Kootenai County increased by 283.4 percent during this period compared to 111.6 percent population growth statewide and 49.7 percent growth nationally.¹⁴⁷

Exhibit A-19: Population Indices for Kootenai County



¹⁴⁵ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

¹⁴⁶ U.S. Census Bureau Population Estimates 2008

¹⁴⁷ Pacific Northwest Regional Economic Analysis

INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Kootenai County is creating jobs faster than almost anywhere else in the country. In 2004 and 2005, Kootenai County was in the top 5 fastest job creating metro areas in the country. The county has successfully diversified their economic base in the past 20 years through manufacturing, expansion of the tourism sector, and professional and business services. The tourism and population growth generated significant growth in construction, retail, healthcare, services, and government sectors. Kootenai County's employment growth increased 496 percent over the past thirty years. The county's unemployment rate increased from June 2008 with 4.8 percent unemployment to 8.6 percent unemployment in June 2009. The Statewide unemployment in December 2009 was 9.1 percent.

The Coeur d'Alene Tribe opened a casino in the county in 1994, and further development of a hotel and golf course by the Tribe along with the expansion of the Coeur d'Alene Resort has created a tourist destination that employs over 8,800 people in the county. Kootenai County has become a year-round tourist destination in part due to the diversity of their tourism assets and outdoor recreational opportunities in the surrounding region.

Table A-47: Industry Sectors by Employment in Kootenai County¹⁴⁸

Industry	Employment
Trade, Transportation, & Utilities	10,937
Government	9,529
Leisure and Hospitality	8,141
Professional and Business Services	5,994
Construction	5,220

The trade and transportation sector includes all wholesale and retail trade in the county whose growth and prosperity is tied to "rooftops" and the significant population and employment growth within the county in recent years. Other major employers include: the government sector with U.S. Forest Service, school districts, and local governments; Kimball Office and furniture manufacturer, the Coeur d'Alene Resort and other tourism operations that employ almost 9,000 people, various manufacturers who employ 4,500 in the county and Buck Knives with more than 200 employees. Sysco Systems opened a distribution center in 2005 serving the food service industry that employs 180 people and U.S. Bank has located a customer service center in the county that employs 500.

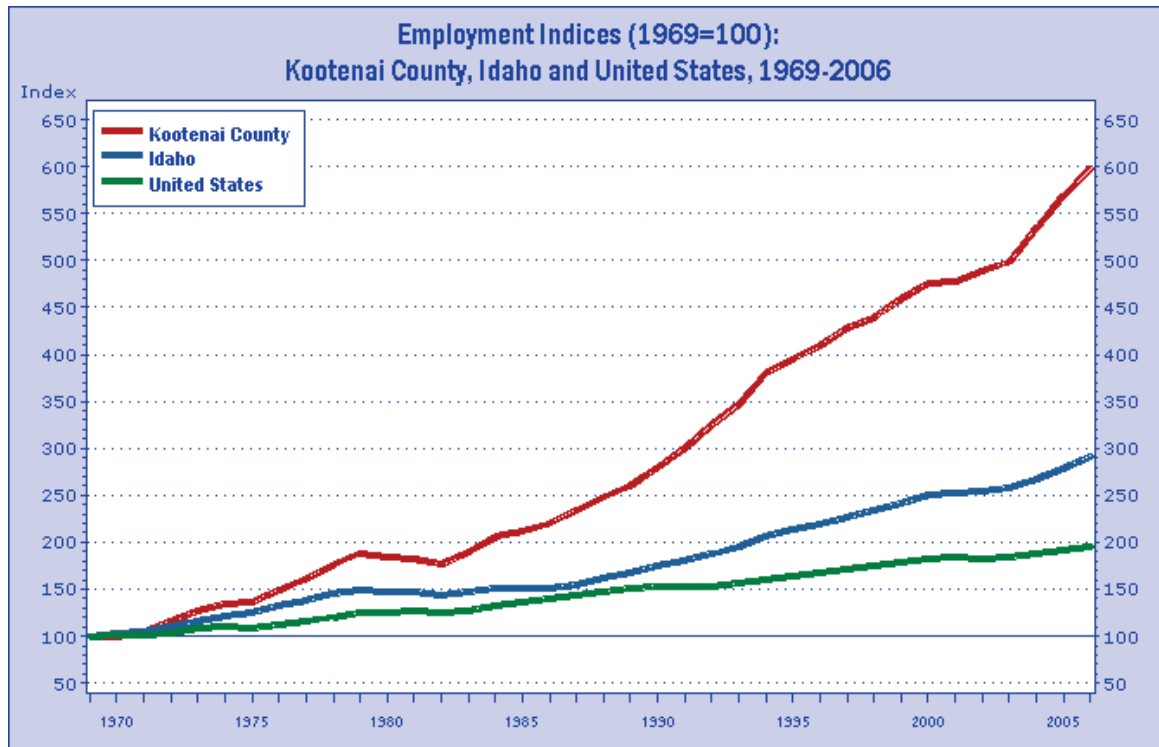
According to the most recent economic impact study for tourism expenditures in Idaho, tourism generated \$287.6 million in travel spending in 2005 creating over 8,800 jobs and over \$42 million in tourism taxes. Travel spending has increased by 12.8 percent over the past 5 years.¹⁴⁹

¹⁴⁸ Bureau of Economic Analysis, Employment Statistics

¹⁴⁹ "The Economic Impacts of Travel & Tourism in Idaho", Idaho Department of Tourism, Sept. 2005

Exhibit A-20 compares employment growth in Kootenai County for the past 37 years to employment growth in Idaho and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Kootenai County's employment increased by 522.1 percent during the period compared to Idaho's growth at 200.5 percent and the nation at 98.7 percent.¹⁵⁰

Exhibit A-20: Employment Indices for Kootenai County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skills are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. Eighty-seven percent of the population in Kootenai County over the age of 25 graduated from high school compared to the statewide average of 84.7 percent. Nineteen percent of the population over the age of 25 completed a Bachelor’s degree or higher compared with 21.7 percent statewide. The workforce skill in Kootenai County is an important factor in the county’s impressive employment growth.

¹⁵⁰ Pacific Northwest Regional Economic Analysis

Table A-48: Location Quotients for Kootenai County

Industry	Location Quotient	2007 Employment
Logging & Forestry	8.40	214
Wood Products Manufacture	4.36	819
Furniture Manufacture	2.81	557
Amusement, Gambling, recreation	2.63	1563
Arts, Entertainment, Recreation	1.99	1628

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotients, shown in **Table A-48**, compare Kootenai County to the State of Idaho as a whole. Kootenai County has a substantially higher employment concentration in logging and forestry, wood products manufacture, and furniture manufacture than the state as a whole and there is a high degree of economic specialization within the county. There may be competitive advantages for amusements and gambling as well as arts and entertainment in Kootenai County, however the county has a significant number of location quotients over 1.0 within the county including construction, retail trade, specialty trade construction, accommodations and food, primary metals manufacturing, and heavy construction which indicates a very strong and diversified economic base.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market; companies receive supplies from international firms to produce their products; and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

Interstate 90 runs through Kootenai County linking the county to Spokane and Seattle to the west and Butte, Montana to the east. The county is also served by Highway 95 that runs north to Canada and south to Moscow. BNSF and Union Pacific, both Class I railroads, run through Kootenai County with service north to Canada and west to the west coast ports and east to Chicago. Coeur d'Alene Airport provides air cargo facilities. Commercial air service is available at Spokane International Airport. According to the BNSF and Union Pacific web sites, the closest intermodal facilities servicing Kootenai County is in Spokane.

MAJOR COMMODITIES

Tables A-49 and **A-50** identify the top commodity imports and exports for Kootenai County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

The decline in exports of lumber and wood products from Kootenai County mirrors similar declines throughout the IPH study area. A number of trends discussed in this report are influencing these declines; some of the trends such as the slowdown in housing construction are beyond the study area's control. Other trends affecting lumber and forest products particularly in Kootenai County may be the result of greater economic diversification within the county where other employment opportunities are now available that provide year-round income and other benefits.

Table A-49: Inbound Commodities for Kootenai County

Top 10 Commodities Shipped Into Kootenai County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Primary Metal Products	Tons	342,137	523,111	52.9%										342,137	523,111	52.9%
	Value/Ton	\$2,233	\$2,114	(5.3%)										\$2,233	\$2,114	(5.3%)
Lumber or Wood Products	Tons	283,623	196,844	(30.6%)	6,880	2,343	(65.9%)							290,503	199,187	(31.4%)
	Value/Ton	\$356	\$237	(33.3%)	\$1,089	\$1,124	3.2%							\$373	\$248	(33.6%)
Petroleum or Coal Products	Tons	138,236	195,284	41.3%	75,268	68,742	(8.7%)							213,504	264,026	23.7%
	Value/Ton	\$716	\$714	(0.2%)	\$772	\$773	0.1%							\$736	\$730	(0.8%)
Clay, Concrete, Glass or Stone	Tons	183,421	160,110	(12.7%)										183,421	160,110	(12.7%)
	Value/Ton	\$340	\$312	(8.1%)										\$340	\$312	(8.1%)
Chemicals or Allied Products	Tons	137,990	170,614	23.6%	27,040	43,119	59.5%							165,030	213,734	29.5%
	Value/Ton	\$4,431	\$4,001	(9.7%)	\$884	\$1,051	18.9%							\$3,850	\$3,406	(11.5%)
Food or Kindred Products	Tons	92,852	138,544	49.2%										92,852	138,544	49.2%
	Value/Ton	\$1,131	\$1,172	3.6%										\$1,131	\$1,172	3.6%
Electrical Equipment	Tons	46,884	107,269	128.8%										46,884	107,269	128.8%
	Value/Ton	\$29,920	\$32,636	9.1%										\$29,920	\$32,636	9.1%
Transportation Equipment	Tons	40,409	76,298	88.8%										40,409	76,298	88.8%
	Value/Ton	\$6,600	\$5,718	(13.4%)										\$6,600	\$5,718	(13.4%)
Machinery	Tons	32,161	68,559	113.2%										32,161	68,559	113.2%
	Value/Ton	\$16,244	\$19,380	19.3%										\$16,244	\$19,380	19.3%
Fabricated Metal Products	Tons	20,756	27,145	30.8%										20,756	27,145	30.8%
	Value/Ton	\$3,512	\$3,487	(0.7%)										\$3,512	\$3,487	(0.7%)
All Commodities In Kootenai County, WA	Tons	1,342,741	1,694,092	26.2%	117,028	122,149	4.4%							1,459,769	1,816,240	24.4%
	Value/Ton	\$3,174	\$4,610	45.3%	\$775	\$837	8.0%							\$2,981	\$4,356	46.1%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

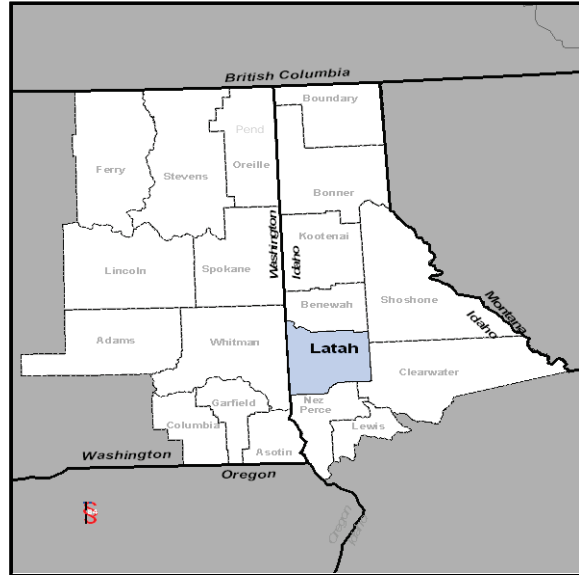
Table A-50: Outbound Commodities for Kootenai County

Top 10 Commodities Shipped Out Of Kootenai County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	929,622	522,140	(43.8%)	328,520	245,289	(25.3%)							1,258,142	767,429	(39.0%)
	Value/Ton	\$450	\$510	13.4%	\$1,238	\$1,257	1.5%							\$656	\$749	14.2%
Chemicals or Allied Products	Tons	364,773	769,493	111.0%										364,773	769,493	111.0%
	Value/Ton	\$2,636	\$2,625	(0.4%)										\$2,636	\$2,625	(0.4%)
Clay, Concrete, Glass or Stone	Tons	313,506	434,256	38.5%										313,506	434,256	38.5%
	Value/Ton	\$234	\$255	8.7%										\$234	\$255	8.7%
Primary Metal Products	Tons	119,293	146,273	22.6%										119,293	146,273	22.6%
	Value/Ton	\$402	\$403	0.3%										\$402	\$403	0.3%
Machinery	Tons	56,265	151,604	169.4%										56,265	151,604	169.4%
	Value/Ton	\$6,308	\$9,033	43.2%										\$6,308	\$9,033	43.2%
Food or Kindred Products	Tons	28,741	74,381	158.8%										28,741	74,381	158.8%
	Value/Ton	\$644	\$652	1.2%										\$644	\$652	1.2%
Fabricated Metal Products	Tons	28,580	74,439	160.5%										28,580	74,439	160.5%
	Value/Ton	\$4,613	\$4,607	(0.1%)										\$4,613	\$4,607	(0.1%)
Misc Manufacturing Products	Tons		28,045												28,045	
	Value/Ton		\$10,736												\$10,736	
Electrical Equipment	Tons	26,540	70,202	164.5%										26,540	70,202	164.5%
	Value/Ton	\$8,645	\$8,499	(1.7%)										\$8,645	\$8,499	(1.7%)
Farm Products	Tons	20,160												20,160		
	Value/Ton	\$1,110												\$1,110		
Rubber or Misc Plastics	Tons	19,276	26,756	38.8%										19,276	26,756	38.8%
	Value/Ton	\$5,563	\$5,547	(0.3%)										\$5,563	\$5,547	(0.3%)
All Commodities In Kootenai County, WA	Tons	1,955,237	2,369,192	21.2%	331,800	253,803	(23.5%)							2,287,037	2,622,995	14.7%
	Value/Ton	\$1,348	\$2,310	71.4%	\$1,227	\$1,220	(0.6%)							\$1,330	\$2,204	65.7%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

LATAH COUNTY, IDAHO

The University of Idaho employs fully one-third of the workforce in Latah County today. The presence of the University of Idaho, with student enrollment approaching 12,000, is the major economic driver in the county. The University is an important research institution in the northwest and technology transfer activities centered around the university have helped to create new technology based businesses such as Comtech AHA Corporation, a microelectronics company focused on technologies for improving data transfer and storage, Amplicon Express, a DNA sequencing laboratory, and Digilent Inc., an electronic engineering design and manufacturing firm for microcontroller technologies.



The county is located in the northern panhandle of Idaho east of Whitman County, WA. These two counties are the heart of a region encompassing parts of southeastern Washington and north central Idaho known as “the Palouse”. Together for their size they produce a significant share of the wheat, lentils, peas, oats, and barley consumed in the United States and exported to Asia. Moscow is the county seat and the largest city in Latah County.

POPULATION TRENDS

The population of Latah County was 35,906 in 2008 and 23,200 of those residents lived in the City of Moscow.¹⁵¹ The county experienced significantly lower population growth in the past eight years than the state as a whole with only 2.8 percent growth in Latah County compared to 17.8 percent statewide. In the past 30 years Latah County’s population has only increased 48 percent. Based upon driver’s license registration, it appears that 6 percent of the new residents of Latah County are from foreign countries.

Slightly over nineteen percent of the population of Latah County is below the age of 18 compared to the statewide average of 27 percent. Seventeen percent of the population lives below the poverty level which is significantly higher than the average statewide of 12.1 percent. This is due in part to the fact that students at the University of Idaho represent approximately one third of the county’s population. The median household income in 2007 in Latah County was \$42,031, below the statewide rate of \$46,136.

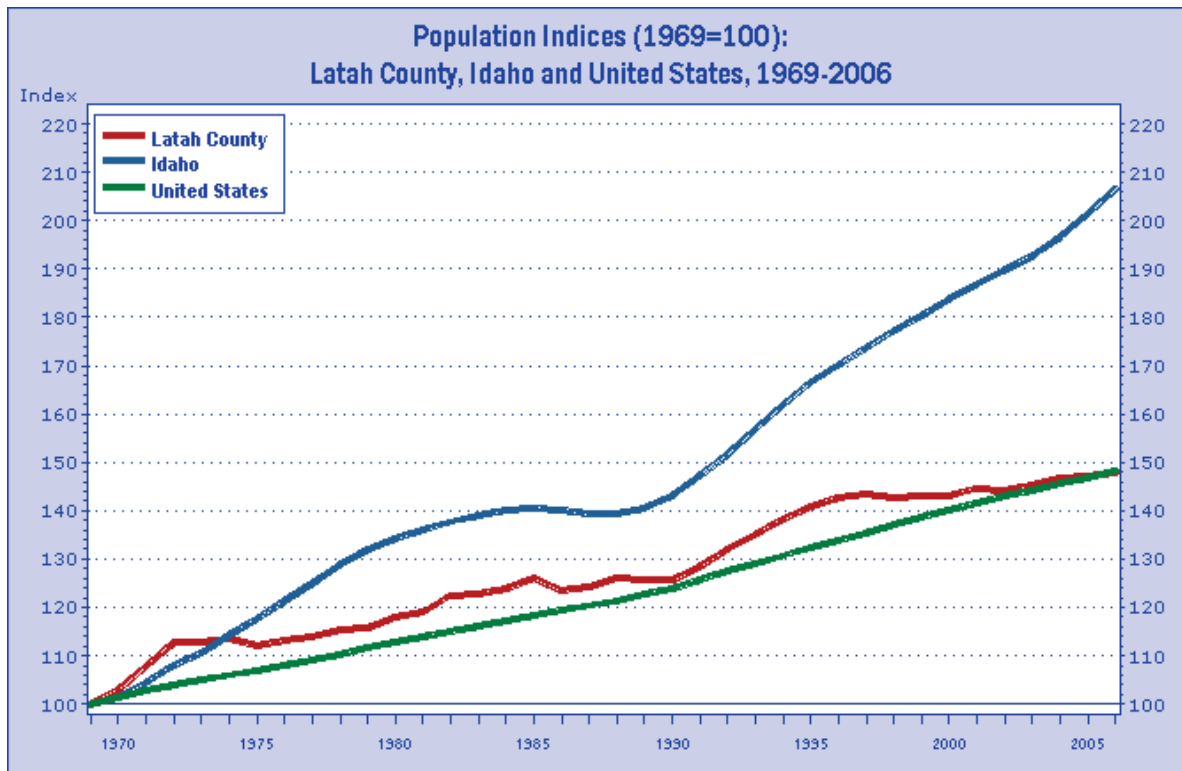
¹⁵¹ U.S. Census Bureau, Population Estimates 2008

Table A-51: Population Data for Latah County

Year	Population
1990 ¹⁵²	30,617
2000	34,935
2008 ¹⁵³	35,906
2015	39,360
2020	41,350
2030	45,410

Exhibit A-21 shows the population growth of Latah County compared with the growth in Idaho and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. The population of Latah County increased by 46.5 percent during this period compared to 111.6 percent in Idaho and 49.7 percent growth nationally.

Exhibit A-21: Population Indices for Latah County



¹⁵² Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

¹⁵³ U.S. Census Bureau Population Estimates 2008

INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Unemployment in Latah County has increased over the past twelve months from 3.9 percent to 5.5 percent, substantially lower than the state unemployment rate of 8.3 percent and the national unemployment at 9.5 percent. The presence of the University of Idaho insulates Latah County to some degree from downturns in the economic cycle and continues to provide relatively stable employment in the region. The county's efforts to diversify their economy have met with some success in recent years as several new manufacturing and technology firms have chosen to locate in Latah County. The Alturas Technology Park a technology based business incubator affiliated with the university has outgrown their facility and moved into larger quarters.

Non-traded sector businesses benefit from the student enrollment at University of Idaho and Washington State University (WSU) in Whitman County, WA due west of Latah County in Pullman. WSU has an enrollment of 18,000 students bringing the total student population in these two counties to over 30,000, a significant economic force with strong buying power for retail trade, restaurants, and other services.

Table A-52: Industry Sectors by Employment in Latah County¹⁵⁴

Industry	Employment
Government	5,229
Trade, Transportation, & Utilities	2,251
Leisure and Hospitality	1,835
Education and Health Services	1,525
Professional and Business Services	682

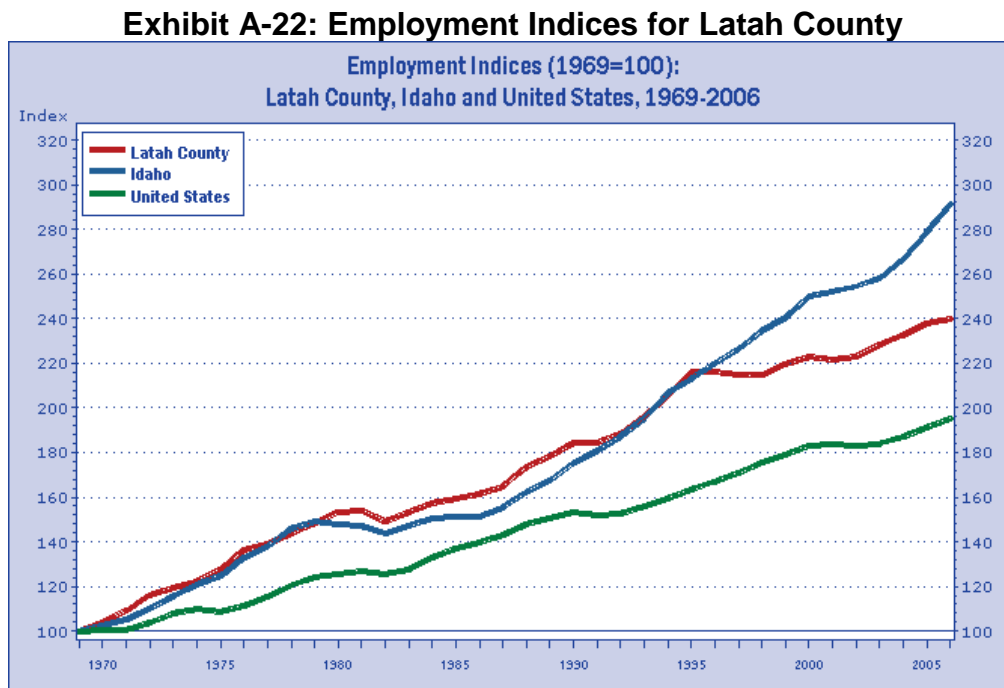
The University of Idaho is the largest employer in Latah County with over 3,000 employees. Government employment includes the university staff, local governments, school districts, and the U.S. Forest Services. Other significant employers in Latah County include Gritman Medical Center with 450 employees, Wal-Mart with 200 employees, Bennett Lumber Products, Rosauers Super Markets, and Winco Foods. Manufacturing, construction, health services, and retail trade have generated new job opportunities in the county in recent years. Manufacturing is projected to increase in the future as computer software and hardware companies in Alturas Technology Park's business incubator continue to expand and move out of the incubator into market rate space.

According to the most recent economic impact study for tourism expenditures in Idaho, tourism generated \$35 million in travel spending in 2005 creating 812 jobs and over \$5 million in tax revenues.¹⁵⁵ Tourism spending in Latah County increased 11.3 percent from 2001 to 2005.

¹⁵⁴ Bureau of Economic Analysis, Employment Statistics

¹⁵⁵ "The Economic Impact of Travel & Tourism in Idaho" Idaho Division of Tourism, September 2005

Exhibit A-22 compares employment growth in Latah County for the past 37 years to employment growth in Idaho and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Latah County's employment increasing by 141.9 percent during the period compared to Idaho's growth at 200.5 percent and the nation at 98.7 percent.¹⁵⁶



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skills are critical factor in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. Ninety-one percent of the population in Latah County over the age of 25 completed high school compared to the statewide average of 84.7 percent and 41 percent of the population over the age of 25 completed a Bachelor’s degree or higher compared with 21.7 percent statewide.

The Palouse Knowledge Corridor is a partnership of Latah and Palouse Economic Development Councils to build upon the resources of the two major research institutions located only eight miles apart. This partnership between Washington State University and the University of Idaho has defined five industry clusters including electronics, biotech, environmental services, advanced

¹⁵⁶ Pacific Northwest Regional Economic Analysis

materials, and information services that are linked to research and development programs within the universities. In these two counties over 53 percent of the population has at least an Associate's degree or higher compared to 38 percent of the population in Washington and Idaho and 24 percent nationally. Many of the technology businesses located in this area have ties to these universities, yet another example of the entrepreneurial linkages that are helping to diversify the economy of the IPH study area.

Table A-53: Location Quotients for Latah County

Industry	Location Quotient	2007 Employment
Forestry and Logging	50.73	255
Sporting Goods, Hobby, Book Stores	3.72	190
Accommodations	2.38	1,394
Social Assistance	2.27	395
Electronics and Appliance Stores	2.20	92

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotients, shown in **Table A-53**, compare Latah County to the State of Idaho as a whole. Latah County has a substantially higher private employment concentration in forestry and logging and books stores than the state as a whole. Given the presence of the University of Idaho the employment concentration in books stores is to be expected and the employment concentration in forestry and logging is the result of over 402,300 acres of forest land in the county. Many of the service sector location quotients are the result of the large student population in the region.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market; companies receive supplies from international firms to produce their products; and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

U.S. Highway 95, a principal arterial highway that runs from north to south in western Latah County from Canada and Coeur d'Alene to Moscow and south to Lewiston and southern Idaho. There are two minor arterial roads serving Latah County, Highway 3 linking U.S. Highway 12 north to I-90 and Highway 8 linking Moscow to Deary, ID. The Palouse River and Coulee City Railroad, a short line rail operation run through Moscow west to Pullman linking to the Washington & Idaho Railroad that runs north to Spokane. (The rail line into Moscow has

recently been approved for abandonment by the STB.) The closest commercial airport is the Pullman/Moscow Airport located in Pullman, Washington just west of Latah County.

MAJOR COMMODITIES

Tables A-54 and A-55 identify the top commodity imports and exports for Latah County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

The decline in exports of lumber and wood products from Latah County over the next twenty years reflects significant changes in the county economic base as well as trends in the forestry sector. Lumber and wood products exports are projected to decline by 62.4 percent off set to some degree by increases in chemicals or allied products. Chemical and allied products refer to firms producing basic chemicals and manufacturing products that are created predominately by chemical processes. There are three primary classes of products included in this category: basic chemicals including acids, salts, and organic chemicals; chemical products used in further manufacture such as plastics materials, pigments, and synthetic fibers; and, finished chemical products for consumption such as drugs, soaps, or cosmetics.

Table A-54: Inbound Commodities for Latah County

Top 10 Commodities Shipped Into Latah County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Primary Metal Products	Tons	127,173	216,891	70.5%										127,173	216,891	70.5%
	Value/Ton	\$2,162	\$2,162	(0.0%)										\$2,162	\$2,162	(0.0%)
Lumber or Wood Products	Tons	107,991	70,022	(35.2%)										107,991	70,022	(35.2%)
	Value/Ton	\$291	\$181	(37.7%)										\$291	\$181	(37.7%)
Electrical Equipment	Tons	85,801	260,954	204.1%										85,801	260,954	204.1%
	Value/Ton	\$41,282	\$44,242	7.2%										\$41,282	\$44,242	7.2%
Food or Kindred Products	Tons	26,635	40,431	51.8%										26,635	40,431	51.8%
	Value/Ton	\$1,126	\$1,178	4.6%										\$1,126	\$1,178	4.6%
Clay, Concrete, Glass or Stone	Tons	17,294	16,808	(2.8%)										17,294	16,808	(2.8%)
	Value/Ton	\$567	\$501	(11.8%)										\$567	\$501	(11.8%)
Printed Matter	Tons	14,548	17,433	19.8%										14,548	17,433	19.8%
	Value/Ton	\$6,307	\$6,315	0.1%										\$6,307	\$6,315	0.1%
Transportation Equipment	Tons	13,843	33,873	144.7%										13,843	33,873	144.7%
	Value/Ton	\$10,441	\$10,117	(3.1%)										\$10,441	\$10,117	(3.1%)
Petroleum or Coal Products	Tons	9,444	13,247	40.3%										9,444	13,247	40.3%
	Value/Ton	\$214	\$216	0.8%										\$214	\$216	0.8%
Machinery	Tons	4,947	12,608	154.9%										4,947	12,608	154.9%
	Value/Ton	\$20,207	\$22,968	13.7%										\$20,207	\$22,968	13.7%
Chemicals or Allied Products	Tons	4,434	6,535	47.4%										4,434	6,535	47.4%
	Value/Ton	\$2,468	\$2,461	(0.3%)										\$2,468	\$2,461	(0.3%)
All Commodities In Latah County, WA	Tons	426,913	711,918	66.8%										426,913	711,918	66.8%
	Value/Ton	\$10,154	\$18,268	79.9%										\$10,154	\$18,268	79.9%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

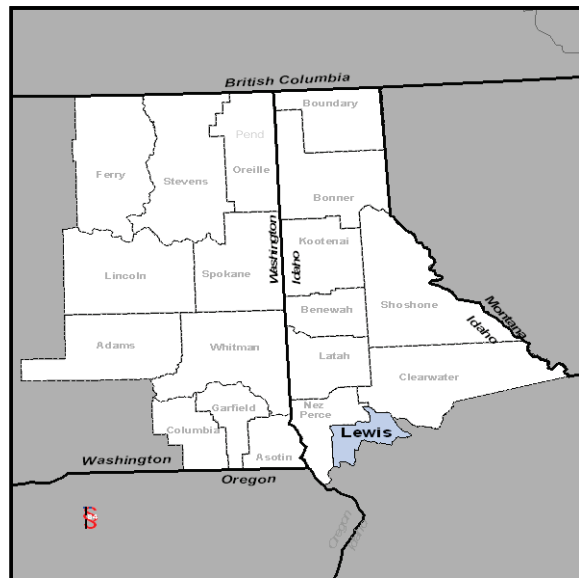
Table A-55: Outbound Commodities for Latah County

Top 10 Commodities Shipped Out Of Latah County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	213,696	71,559	(66.5%)	32,360	20,922	(35.3%)							246,056	92,481	(62.4%)
	Value/Ton	\$364	\$499	37.0%	\$1,368	\$1,368	(0.0%)							\$496	\$696	40.2%
Chemicals or Allied Products	Tons	35,560	278,138	682.2%										35,560	278,138	682.2%
	Value/Ton	\$19,045	\$19,065	0.1%										\$19,045		
Nonmetallic Minerals	Tons	29,185	48,669	66.8%										29,185	48,669	66.8%
	Value/Ton	\$5	\$5	(0.0%)										\$5	\$5	(0.0%)
Misc Manufacturing Products	Tons	14,583	27,508	88.6%										14,583	27,508	88.6%
	Value/Ton	\$12,986	\$12,986	(0.0%)										\$12,986	\$12,986	(0.0%)
Farm Products	Tons	13,076	11,787	(9.9%)										13,076	11,787	(9.9%)
	Value/Ton	\$892	\$887	(0.6%)										\$892	\$887	(0.6%)
Printed Matter	Tons	11,532	26,701	131.5%										11,532	26,701	131.5%
	Value/Ton	\$4,228	\$4,221	(0.2%)										\$4,228	\$4,221	(0.2%)
Food or Kindred Products	Tons	5,200	8,947	72.1%										5,200	8,947	72.1%
	Value/Ton	\$1,147	\$1,157	0.9%										\$1,147	\$1,157	0.9%
Machinery	Tons	524	804	53.6%										524	804	53.6%
	Value/Ton	\$20,868	\$20,775	(0.4%)										\$20,868	\$20,775	(0.4%)
Metallic Ores	Tons	455	245	(46.3%)										455	245	(46.3%)
	Value/Ton	\$1,860	\$1,860	0.0%										\$1,860	\$1,860	0.0%
Furniture or Fixtures	Tons	292	1,061	263.4%										292	1,061	263.4%
	Value/Ton	\$6,425	\$6,593	2.6%										\$6,425	\$6,593	2.6%
All Commodities In Latah County, WA	Tons	324,173	475,552	46.7%	32,360	20,922	(35.3%)							356,533	496,474	39.3%
	Value/Ton	\$3,161	\$12,309	289.4%	\$1,368	\$1,368	(0.0%)							\$2,998	\$11,848	295.2%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

LEWIS COUNTY, IDAHO

Lewis County is located in the north central panhandle of Idaho, north and west of Idaho County, and east of Nez Perce County. Lewis County is heavily dependent upon natural resource industries primarily agriculture and forestry products. The county has lost significant employment since the 1980's as a result of sawmills closing, which caused a number of families to leave the area. The recent decline nationally in housing construction has further eroded forestry employment in Lewis County. Because of the scenic beauty of the area and the availability of land for development, Lewis County has become something of a bedroom community for Lewiston.



POPULATION TRENDS

According to the U.S. Census Bureau the population of Lewis County was 3,594 in 2008. The population of the county peaked in 1997 at 3,856 and for the next ten years the population of the county declined by seven percent. In the past eight years this county has lost 4.1 percent of its population base. During this period the statewide population grew by 17.8 percent. In the past thirty years the population of Lewis County increased by 28 percent while the statewide population growth grew at 190 percent.

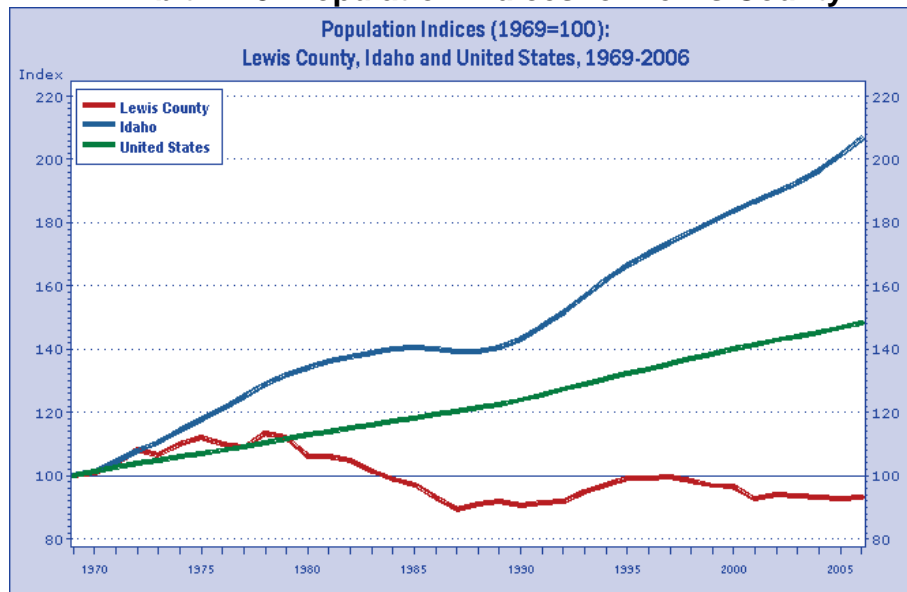
Thirteen percent of the population in Lewis County lives below the poverty level and the median household income of \$36,089 is substantially below the statewide median income of \$46,136. The community is aging faster than the balance of the state as 22.5 percent of the population is over the age of 65 and statewide the population over 65 only makes up 11.7 percent of the population.

Table A-56: Population Data for Lewis County

Year	Population
1990 ¹⁵⁷	3,516
2000	3,747
2008 ¹⁵⁸	3,594
2015	3,660
2020	3,720
2030	3,840

Exhibit A-23 shows the population growth of Lewis County compared with the growth in Idaho and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. The population of Lewis County declined 8.0 percent during this period compared to Idaho's 111.6 percent population growth statewide and 49.7 percent growth nationally.

Exhibit A-23: Population Indices for Lewis County



INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Unemployment in Lewis County increased from 3.7 percent in June 2008 to 4.6 percent in June 2009 significantly below the statewide unemployment of 8.3 percent and the national unemployment rate of 9.5 percent.¹⁵⁹ Employment declined in mining, financial activities, and “other services” and increased in manufacturing, trade and transportation, and education and health services.

¹⁵⁷ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

¹⁵⁸ U.S. Census Bureau Population Estimates 2008

¹⁵⁹ Idaho Department of Labor

Manufacturing in Lewis County is primarily concentrated in forest products and sawmills.

Table A-57: Industry Sectors by Employment for Lewis County¹⁶⁰

Industry	Employment
Government	448
Trade, transportation, & utilities	359
Manufacturing	156
Education & health services	142
Agriculture	102

The dependence on agriculture and forestry in Lewis County has created significant volatility and seasonality in employment over the years. Agriculture jobs have decreased by a third in the past 30 years but in recent years higher prices for wheat and other grains have enabled farms to add some additional jobs. The forest products sector has remained a source of employment in Lewis County but the recent declines in the housing industry have depressed lumber prices and several mills in the county have reduced jobs and the hours for remaining employees.

The largest non-forestry manufacturing firm in Lewis County is Hillco Technologies which makes an instrument to keep farm combines level while in operation. Seeds Inc. is a green pea and snap bean seed company. This company was originally a small regional supplier started in Moscow that has grown and now ships seed products throughout the U.S and to 26 countries. Other employers in the county include the Flying B Ranch (an Orvis endorsed hunting and fishing lodge located on the Clearwater River), It'se-Ye-Ye-Casino owned by the Nez Perce Tribe, and Kamiah Mills.

Tourism currently represents a small part of the county's economy and there are few existing businesses that could support the tourism sector in the near term. According to the most recent economic impact study for tourism expenditures in Idaho, tourism generated \$3.4 million in travel spending in 2005 creating 83 jobs and \$526,000 in state and local tax revenues.¹⁶¹ Tourism declined significantly in Lewis County, decreasing by 24.3 percent, the largest decline in tourism spending in the state during this period. The Nez Perce Tribe is investing in Lewis County to enhance the tourism opportunities in the county and plays an important role in the economic and community development activities of Lewis, Clearwater, and Nez Perce Counties.

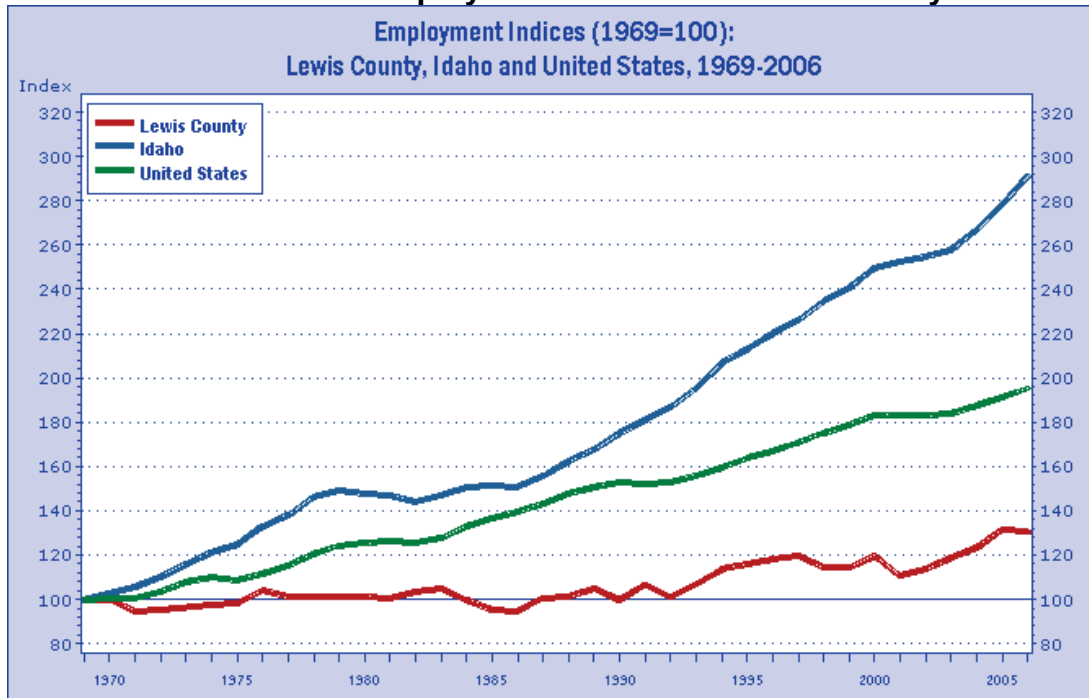
Exhibit A-24 compares employment growth in Lewis County for the past 37 years to employment growth in Idaho and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic

¹⁶⁰ Bureau of Economic Analysis, Employment Statistics

¹⁶¹ "The Economic Impact of Travel and Tourism in Idaho", Division of Tourism, September 2005

areas with Lewis County's employment decreasing by 29.8 percent during the period compared to Idaho's growth at 200.5 percent and the nation at 98.7percent.¹⁶²

Exhibit A-24: Employment Indices for Lewis County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skills are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. Eighty-four percent of the population in Lewis County over the age of 25 completed high school compared to the statewide average of 84.7 percent, while only 15 percent of the population over the age of 25 completed a Bachelor’s degree or higher compared with 21.7 percent statewide.

Employment and population in Lewis County are significant challenges in the county. There are few job opportunities in the county that require a college education outside of those in local government and the school district. Per capita income in the county is not significantly lower than the state average largely as a result of the average wages reported in the agricultural sector.¹⁶³

¹⁶² Pacific Northwest Regional Economic Analysis

¹⁶³ Idaho Department of Labor, Workforce Trends, July 2009

Table A-58: Location Quotients for Lewis County

Industry	Location Quotient	2007 Employment
Forestry and Logging	74.97	41
Wood Product Manufacturing	26.17	112
Wholesale and Non-durable Goods	4.33	74
Food and Beverage	4.09	97

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotient, shown in **Table A-58**, compares Lewis County to the State of Idaho as a whole. Lewis County has a substantially higher employment concentration in forestry and logging than the state as a whole. This employment concentration in forestry and logging highlights the vulnerability of this county as declines in this industry resulting from foreign competition, slow recovery in the housing industry, and related trends will most certainly affect employment in this county.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market; companies receive supplies from international firms to produce their products; and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

U.S. Highway 95 runs through Lewis County north to Coeur d'Alene and Canada and south to Payette and southern Idaho. U.S. 95 is the county's major connection to Interstate 90, approximately 180 miles. A major rural collector Highway 62/162 runs from east to west through the county linking Kamiah to U.S. 95. A short line railroad bisects the county north to Craigmont and south to Cottonwood. The Bountiful Grain & Craig Mountain (BG&CM) railroad links to the Great Northwest Railroad, another short line, but the BG&CM line to Craigmont is not in service at this time, although the BG&CM does serve Kamiah. There are three municipal general aviation airports in Lewis County in Craigmont, Nez Perce, and Kamiah. The closest commercial airport is the Lewiston-Nez Perce County Regional Airport in Lewiston.

MAJOR COMMODITIES

The commodities in **Tables A-59** and **A-60** identify the top imports and exports for Lewis County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into or out of the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

The decline in exports of lumber and wood products from Lewis County over the next twenty years reflects significant changes in the county economic base as well as trends in the forestry sector. Lumber and wood products exports are projected to decline by 59.2 percent. The export of primary metal products and metallic ores are also expected to decline significantly in the next 20 years; 45 percent, and 46.3 percent respectively. In contrast, machinery exports are expected to nearly double in Lewis County over the next 20 year period.

Table A-59: Inbound Commodities for Lewis County

Top 10 Commodities Shipped Into Lewis County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	21,222	28,576	34.7%										21,222	28,576	34.7%
	Value/Ton	\$265	\$177	(33.3%)										\$265	\$177	(33.3%)
Transportation Equipment	Tons	15,674	38,289	144.3%										15,674	38,289	144.3%
	Value/Ton	\$9,460	\$9,136	(3.4%)										\$9,460	\$9,136	(3.4%)
Petroleum or Coal Products	Tons	1,041	1,929	85.4%	5,160	5,485	6.3%							6,201	7,414	19.6%
	Value/Ton	\$213	\$214	0.5%	\$762	\$762	(0.0%)							\$670	\$619	(7.5%)
Primary Metal Products	Tons	2,022	3,238	60.1%										2,022	3,238	60.1%
	Value/Ton	\$2,407	\$2,414	0.3%										\$2,407	\$2,414	0.3%
Clay, Concrete, Glass or Stone	Tons	1,642	4,706	186.6%										1,642	4,706	186.6%
	Value/Ton	\$224	\$246	10.0%										\$224	\$246	10.0%
Nonmetallic Minerals	Tons		1,176												1,176	
	Value/Ton		\$174												\$174	
Chemicals or Allied Products	Tons	982	1,860	89.4%										982	1,860	89.4%
	Value/Ton	\$2,385	\$2,170	(9.0%)										\$2,385	\$2,170	(9.0%)
Farm Products	Tons	832	1,074	29.2%										832	1,074	29.2%
	Value/Ton	\$166	\$174	5.0%										\$166	\$174	5.0%
Food or Kindred Products	Tons	630	840	33.4%										630	840	33.4%
	Value/Ton	\$804	\$793	(1.5%)										\$804	\$793	(1.5%)
Instrum, Photo, Optical Equip	Tons	191	485	153.4%										191	485	153.4%
	Value/Ton	\$40,297	\$40,285	(0.0%)										\$40,297	\$40,285	(0.0%)
Pulp, Paper or Allied Products	Tons	191												191		
	Value/Ton	\$847												\$847		
All Commodities In Lewis County, WA	Tons	44,909	82,921	84.6%	5,160	5,485	6.3%							50,069	88,405	76.6%
	Value/Ton	\$3,806	\$4,709	23.7%	\$762	\$762	(0.0%)							\$3,492	\$4,464	27.8%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

Table A-60: Outbound Commodities for Lewis County

Top 10 Commodities Shipped Out Of Lewis County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	165,266	69,272	(58.1%)	14,400	3,960	(72.5%)							179,666	73,232	(59.2%)
	Value/Ton	\$458	\$287	(37.3%)	\$1,368	\$1,368	0.0%							\$531		
Farm Products	Tons	18,681	22,259	19.2%										18,681	22,259	19.2%
	Value/Ton	\$951	\$961	1.0%										\$951	\$961	1.0%
Primary Metal Products	Tons	988	543	(45.0%)										988	543	(45.0%)
	Value/Ton	\$4,311	\$4,311	0.0%										\$4,311	\$4,311	0.0%
Metallic Ores	Tons	204	110	(46.3%)										204	110	(46.3%)
	Value/Ton	\$1,860	\$1,860	(0.0%)										\$1,860	\$1,860	(0.0%)
Machinery	Tons	33	67	102.1%										33	67	102.1%
	Value/Ton	\$653	\$658	0.8%										\$653	\$658	0.8%
Food or Kindred Products	Tons	25	37	49.5%										25	37	49.5%
	Value/Ton	\$1,498	\$1,498	(0.0%)										\$1,498	\$1,498	(0.0%)
Transportation Equipment	Tons	9	18	108.2%										9	18	108.2%
	Value/Ton	\$555	\$555	0.0%										\$555	\$555	0.0%
Fresh Fish or Marine Products	Tons	2	3	44.9%										2	3	44.9%
	Value/Ton	\$3,811	\$3,811	0.0%										\$3,811	\$3,811	0.0%
All Commodities In Lewis County, WA	Tons	185,208	92,309	(50.2%)	14,400	3,960	(72.5%)							199,608	96,269	(51.8%)
	Value/Ton	\$530	\$476	(10.2%)	\$1,368	\$1,368	0.0%							\$591	\$513	(13.2%)

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

LINCOLN COUNTY, WASHINGTON

Lincoln County is a rural county that continues to try and diversify their economic base, capitalizing on biotechnology, agricultural processing, proximity to Spokane, and logistics and distribution. The county's agricultural production includes some of the highest soft white wheat yields in the country and a number of agricultural enterprises and support operations that have located in the county as a result. Lincoln County produces the second highest quantity of wheat (after Whitman County) in Washington. Eighty percent of the county's land area is farmland and thirty percent of that land is planted in wheat.



POPULATION TRENDS

The population of Lincoln County was 10,344 in 2008.¹⁶⁴ The county's population growth was substantially lower than the State of Washington as a whole from 2000 to 2008 with Lincoln County experiencing population growth of only a 1.6 percent population compared to 11.1 percent population growth for the state. During the past 30 years, the population of Lincoln County has been virtually stagnant and in the last 10 years the population has only increased 0.7 percent.¹⁶⁵

Nearly 21 percent of the population of Lincoln County is under the age of 18 compared with nearly 24 percent statewide. The county's population over the age of 65 is nearly 21 percent which is substantially higher than the state's at 11.7 percent. This aging population will impact workforce availability and the need for health care and supportive services in the county. The percent of the population living below the poverty level in Lincoln County is 11.7 percent compared to a statewide rate of 11.4 percent.

¹⁶⁴ U.S. Census Bureau Population Estimates 2008

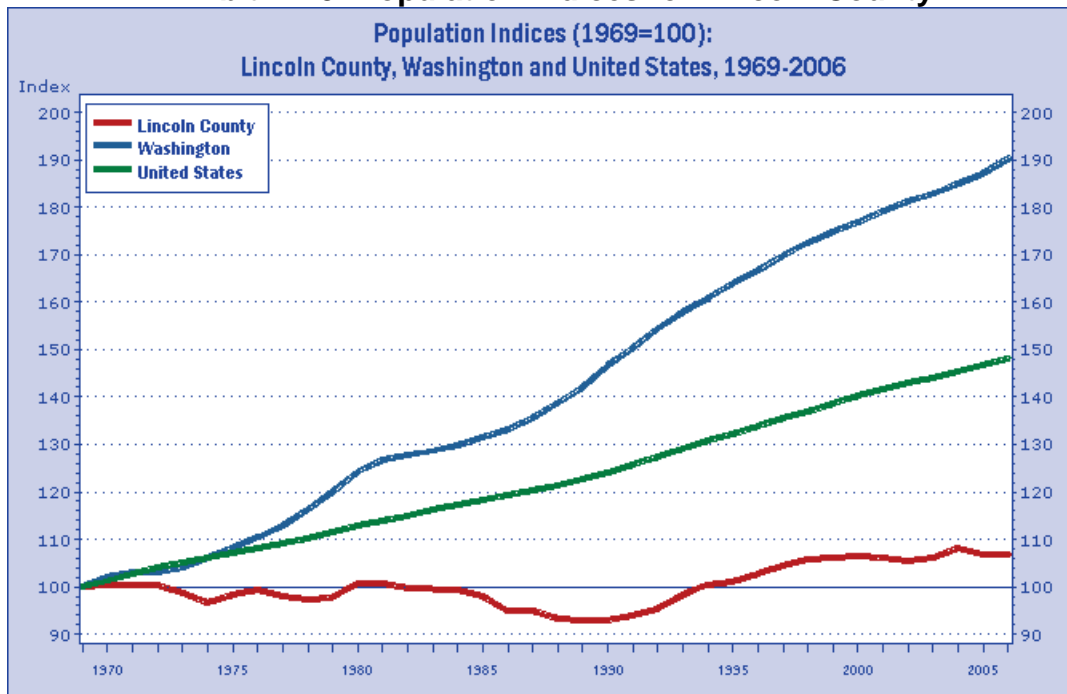
¹⁶⁵ Washington State Office of Financial Management, 2008

Table A-61: Population Data for Lincoln County

Year	Population
1990 ¹⁶⁶	8,864
2000	10,184
2008 ¹⁶⁷	10,344
2015	10,440
2020	10,580
2030	10,860

Exhibit A-25 show the population growth of Lincoln County compared with the growth in Washington and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. The population of Lincoln County increased a modest 7.3 percent during this period compared to 92.9 percent population growth statewide and 49.7 percent growth nationally.

Exhibit A-25: Population Indices for Lincoln County



INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Unemployment in Lincoln County increased from 5.1 percent in June of 2008 to 8.1 percent in June 2009. In December 2009, the Washington State unemployment rate was 9.5 percent. Most of the decline in employment was the result of job losses in construction and government. The Lincoln County

¹⁶⁶ Population data for 1990, 2000, 12015, 2020, 2030 Woods and Poole Economics

¹⁶⁷ U.S. Census Bureau Population Estimates 2008

economy is tied to agriculture, more specifically to wheat. Serious challenges in 2008 affecting the wheat industry included high input costs, rising fuel costs, and record prices for wheat which should translate into better returns for farmers but in today's global marketplace often means increased foreign competition. Although Lincoln County's unemployment is lower than a number of other eastern Washington counties, the county experienced a decline in virtually every employment sector in 2008 except for trade, transportation, and utilities. Today 30 percent of those employed in the county work for either the federal or local government.

Two new industrial parks have been developed one in Odessa and one in Creston and a biodiesel fuel operation has located in Creston. The largest employers in Lincoln County includes the federal, state, and local governments, Odessa Trading a farm machinery company with 26 employees, Rainier Seed and seed clearing company with 25 employees, Leffel, Ottis, & Warwick a CPA firm with 33 employees, Western Farmer a fertilizer and chemical company with 14 employees, and Columbia Bio Energy a feed supplement company with 10 employees.

Table A-62: Industry Sectors by Employment in Lincoln County¹⁶⁸

Industry	Employment
Government	1,384
Retail Trade	248
Agriculture, Forestry, and Fishing	247
Wholesale Trade	194
Construction	134
Finance and Insurance	85
Manufacturing	33

The area around Lake Roosevelt is continuing to realize growth from increased tourism and construction of homes for retirees. According to the most recent economic impact study for tourism expenditure in Washington, tourism generated only \$16.7 million in travel spending in 2007 creating 170 jobs and \$1,1 million in state and local tax revenues.¹⁶⁹

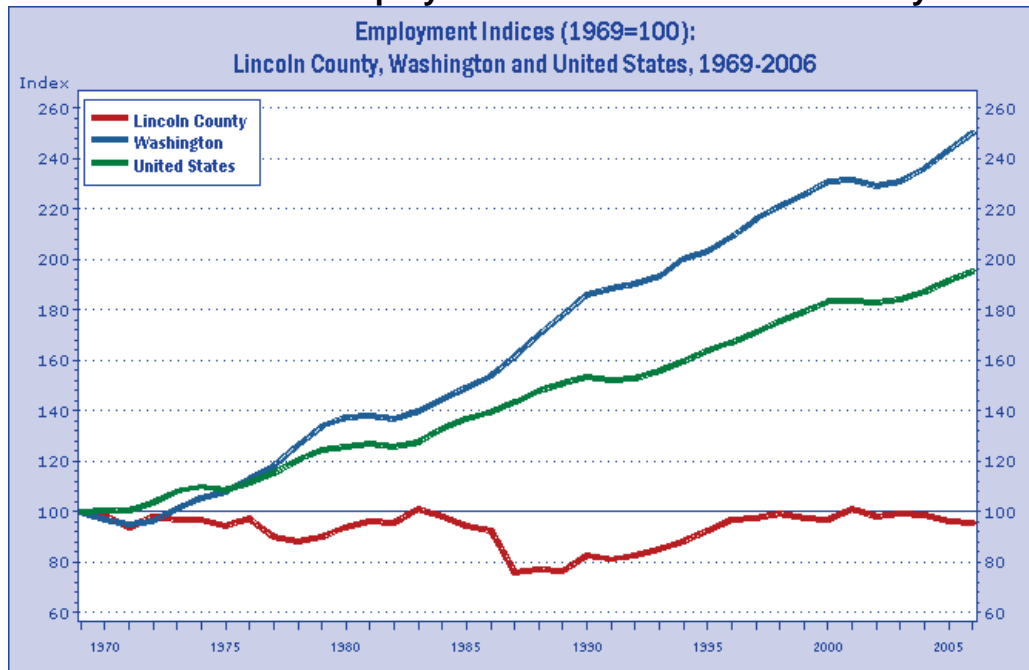
Exhibit A-26 compares employment growth in Lincoln County for the past 37 years to employment growth in Washington and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Lincoln County's employment decreasing by 3.7 percent during the period compared to Washington growth at 156.6 percent and the nation at 98.7 percent.¹⁷⁰

¹⁶⁸ Bureau of Economic Analysis, Employment Statistics

¹⁶⁹ "Washington State County Travel Impacts 1991 – 2007", Washington State Tourism Office, September 2008

¹⁷⁰ Pacific Northwest Regional Economic Analysis

Exhibit A-26: Employment Indices for Lincoln County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skill are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. The percentage of high school graduates in Lincoln County mirrors the statewide rate, however only 19 percent of the population over 25 years of age have received a Bachelor’s degree or higher compared to 28 percent of the population statewide.

Table A-63: Location Quotients for Lincoln County

Industry	Location Quotient	2007 Employment
Crop Production	29.86	221
Merchant Non-durable Goods	6.57	185
Agriculture, Forestry, and Fishing	6.15	28
Health and Professional Care Stores	3.07	42
Food and Beverage Stores	2.86	112

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotient, shown in

Table A-63, compares Lincoln County to the State of Washington as a whole. Lincoln County has a substantially higher employment concentration in crop production than the state as a whole and there is a high degree of economic specialization within the county in agri-business. To optimize the value of this economic specialization, the county should identify value-added agricultural businesses such as identity-preserved grains for foreign markets, processing opportunities, and the potential for organics to increase revenues from agriculture.

Lincoln County ranks 14th in agricultural production in the state with over \$126 million in crops and livestock sold in 2007, however there was only \$400,000 generated from food processing in the county in 2007. There may be competitive advantages in Lincoln County to realize additional revenues from identity preserved crops, diversification of crop to include some organic or alternative products, and efforts to identify other value-added agri-businesses to help support the county's economy.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market; companies receive supplies from international firms to produce their products; and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

Interstate 90 runs through the southeast corner of the county at Sprague. U. S. Highway 2 runs east to Spokane and links the county to the Columbia River and to Everett to the west. Highway 28 links Davenport to Ephrata northwest of Moses Lake. The county is served by BNSF Railway, a Class I rail line that links Odessa to Spokane. The Eastern Washington Gateway, a short line railroad, runs from Coulee City west of Lincoln through Davenport to Chesney.¹⁷¹ The closest commercial airport serving Lincoln County is the Spokane International Airport 36 miles to the east of Davenport.

MAJOR COMMODITIES

The commodities in **Tables A-64** and **A-65** identify the top imports and exports for Lincoln County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be

¹⁷¹ Washington Department of Transportation Rail System Map

shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

The decline in exports of farm products from Lincoln County over the next twenty years reflects significant changes in the county economic base as well as trends in the agricultural sector. Farm product exports are projected to decline by 22.7 percent off set to some degree by very large increases in exports of machinery products, which are projected to increase by more than 400 percent over the next 20 years. Lincoln County's largest import is food and kindred products which are expected to grow by more than 40 percent over the next 20 years. The county's next largest import, lumber or wood products, is expected to increase by more than 225 percent over the same period.

Table A-64: Inbound Commodities for Lincoln County

Top 10 Commodities Shipped Into Lincoln County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Food or Kindred Products	Tons	236,430	333,821	41.2%										236,430	333,821	41.2%
	Value/Ton	\$1,155	\$1,120	(3.0%)										\$1,155	\$1,120	(3.0%)
Lumber or Wood Products	Tons	152,418	497,121	226.2%										152,418	497,121	226.2%
	Value/Ton	\$241	\$189	(21.5%)										\$241	\$189	(21.5%)
Farm Products	Tons	69,195	110,029	59.0%										69,195	110,029	59.0%
	Value/Ton	\$367	\$365	(0.6%)										\$367	\$365	(0.6%)
Primary Metal Products	Tons	28,678	94,579	229.8%										28,678	94,579	229.8%
	Value/Ton	\$2,101	\$1,848	(12.1%)										\$2,101	\$1,848	(12.1%)
Chemicals or Allied Products	Tons	6,660	8,114	21.8%	7,080	11,073	56.4%							13,740	19,187	39.6%
	Value/Ton	\$1,881	\$1,784	(5.2%)	\$393	\$393	(0.0%)							\$1,114	\$981	(12.0%)
Petroleum or Coal Products	Tons	13,593	26,708	96.5%										13,593	26,708	96.5%
	Value/Ton	\$505	\$466	(7.7%)										\$505	\$466	(7.7%)
Nonmetallic Minerals	Tons	12,118	33,397	175.6%										12,118	33,397	175.6%
	Value/Ton	\$66	\$88	33.2%										\$66	\$88	33.2%
Rubber or Misc Plastics	Tons	11,086	24,850	124.2%										11,086	24,850	124.2%
	Value/Ton	\$4,432	\$4,441	0.2%										\$4,432	\$4,441	0.2%
Clay, Concrete, Glass or Stone	Tons	11,026	17,592	59.6%										11,026	17,592	59.6%
	Value/Ton	\$1,270	\$1,464	15.2%										\$1,270	\$1,464	15.2%
Transportation Equipment	Tons	9,318	52,615	464.7%										9,318	52,615	464.7%
	Value/Ton	\$12,920	\$12,316	(4.7%)										\$12,920	\$12,316	(4.7%)
All Commodities In Lincoln County, WA	Tons	572,503	1,238,624	116.4%	7,080	11,073	56.4%							579,583	1,249,697	115.6%
	Value/Ton	\$1,248	\$1,427	14.4%	\$393	\$393	(0.0%)							\$1,237	\$1,418	14.6%

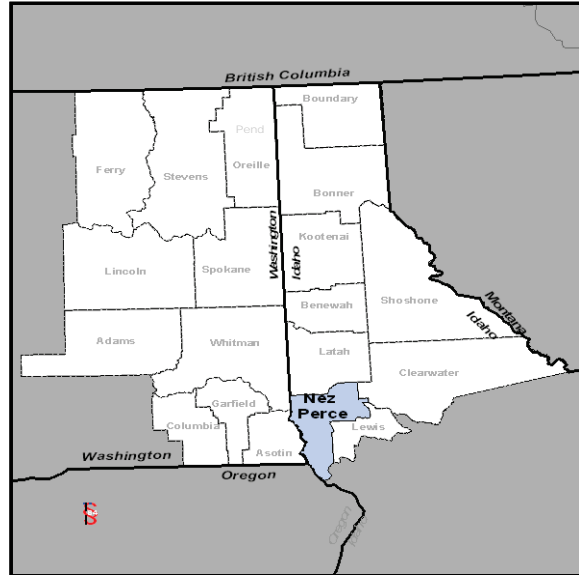
Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

Table A-65: Outbound Commodities for Lincoln County

Top 10 Commodities Shipped Out Of Lincoln County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Farm Products	Tons	326,768	307,711	(5.8%)	198,204	97,937	(50.6%)							524,972	405,648	(22.7%)
	Value/Ton	\$648	\$615	(5.1%)	\$151	\$151	0.0%							\$461	\$503	9.3%
Machinery	Tons	88,516	469,932	430.9%										88,516	469,932	430.9%
	Value/Ton	\$3,419	\$3,398	(0.6%)										\$3,419	\$3,398	(0.6%)
Food or Kindred Products	Tons	1,741	2,680	53.9%										1,741	2,680	53.9%
	Value/Ton	\$1,388	\$1,364	(1.7%)										\$1,388	\$1,364	(1.7%)
Clay, Concrete, Glass or Stone	Tons	1,415	2,515	77.8%										1,415	2,515	77.8%
	Value/Ton	\$399	\$399	0.0%										\$399	\$399	0.0%
Waste or Scrap Materials	Tons	947	1,906	101.4%										947	1,906	101.4%
	Value/Ton	\$180	\$200	11.4%										\$180	\$200	11.4%
Metallic Ores	Tons	310												310		
	Value/Ton	\$448												\$448		
Lumber or Wood Products	Tons	287	288	0.1%										287	288	0.1%
	Value/Ton	\$106	\$115	9.1%										\$106	\$115	9.1%
Nonmetallic Minerals	Tons	276	359	29.7%										276	359	29.7%
	Value/Ton	\$34	\$34	(0.0%)										\$34	\$34	(0.0%)
Chemicals or Allied Products	Tons		190												190	
	Value/Ton		\$1,964												\$1,964	
Printed Matter	Tons	154	268	74.4%										154	268	74.4%
	Value/Ton	\$1,837	\$1,837	0.0%										\$1,837	\$1,837	0.0%
Fresh Fish or Marine Products	Tons	146	212	44.9%										146	212	44.9%
	Value/Ton	\$5,949	\$5,949	(0.0%)										\$5,949	\$5,949	(0.0%)
All Commodities In Lincoln County, WA	Tons	420,767	786,363	86.9%	198,204	97,937	(50.6%)							618,971	884,300	42.9%
	Value/Ton	\$1,234	\$2,281	84.9%	\$151	\$151	0.0%							\$887	\$2,045	130.5%

NEZ PERCE COUNTY, IDAHO

Nez Perce County is located in north central Idaho and serves as a regional hub for retail, health care, media, transportation, and government. Lewiston, the county seat, is located at the confluence of the Snake and Clearwater Rivers and offers commercial air service to north central Idaho and nearby areas of Washington. U.S. Highway 12 links Nez Perce County to Asotin County, Washington to the west and Lewiston collaborates with Clarkston, WA on a variety of projects. Many residents from Asotin County work in Lewiston. Lewiston is home to Lewis-Clark State College with an enrollment of almost 3,400 students.



Recreational opportunities abound in this region including whitewater rafting, fishing, hunting, as well as the Lewis and Clark trail. The tourism industry employs over 1,800 people in Nez Perce County. Clearwater Paper employs over 1,700 making tissue, paperboard, and wood products. The Ports of Lewiston and nearby Clarkston and Wilma offer important transportation links for grain shippers and manufacturers to the west coast.

POPULATION TRENDS

According to the U.S. Census Bureau the population of Nez Perce County was 38,975 in 2008.¹⁷² The population grew by 4.2 percent in the past eight years compared to Idaho's population growth in the same period of 17.8 percent. Slightly over 22 percent of the population of Nez Perce County is below the age of 18 compared to the statewide average of 27 percent. Almost 18 percent of the county is over the age of 65 compared to 12 percent statewide. Almost 13 percent of the population lives below the poverty level compared to the statewide rate of 12.1 percent. The median household income in 2007 for Nez Perce County was \$40,726, which is below the statewide rate of \$46,136.

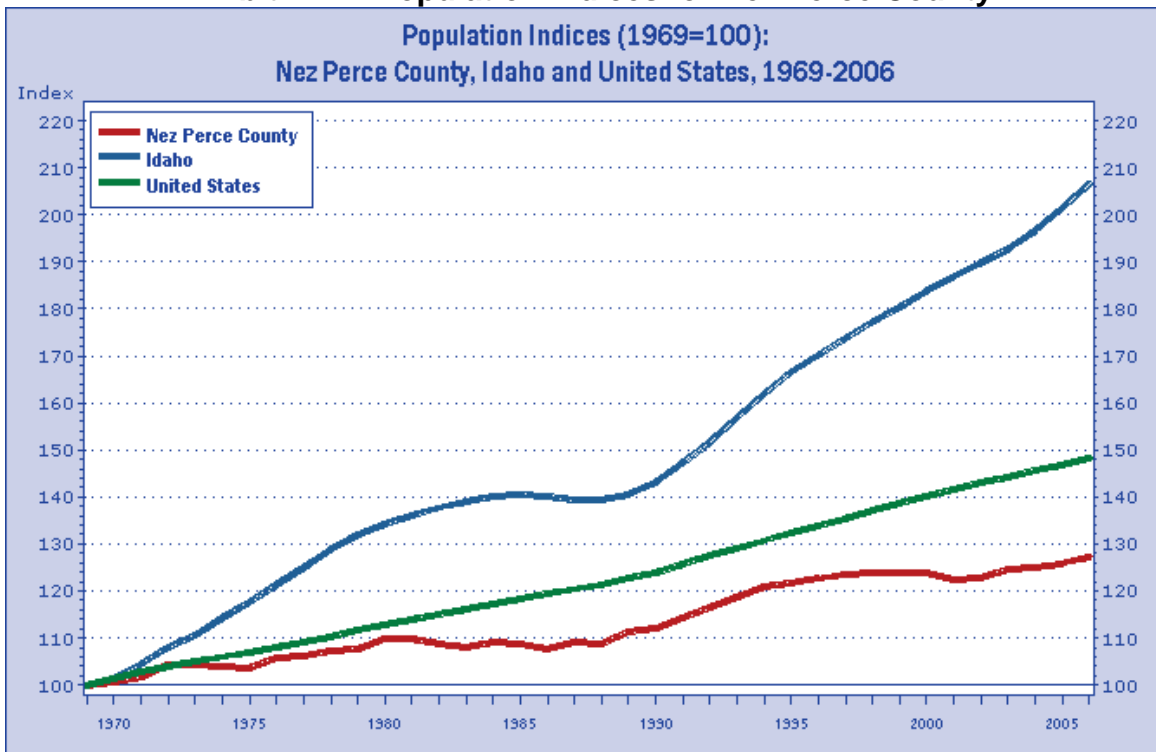
¹⁷² U.S. Census Bureau Population Estimates 2008

Table A-66: Population Data for Nez Perce County

Year	Population
1990 ¹⁷³	33,754
2000	37,410
2008 ¹⁷⁴	38,975
2015	40,270
2020	41,190
2030	43,120

Exhibit A-27 show the population growth of Nez Perce County compared with the growth in Idaho and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. The population of Nez Perce County declined 8.0 percent during this period compared to Idaho's 111.6 percent population growth statewide and 49.7 percent growth nationally.¹⁷⁵

Exhibit A-27: Population Indices for Nez Perce County



¹⁷³ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

¹⁷⁴ U.S. Census Population Estimates 2008

¹⁷⁵ Pacific Northwest Regional Economic Analysis

INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Unemployment in Nez Perce County increased from 4.3 percent in June 2008 to 5.8 percent in June 2009. The overall unemployment rate in Idaho in December 2009 was 9.1 percent. The decline in employment was primarily the result of job losses in construction, trade and transportation, and information technology. There were some employment gains in 2008 in manufacturing, education and health services, and leisure and hospitality. The largest employers in Nez Perce County are ATK ammunition manufacturer, Lewis-Clark State College, the Nez Perce Tribe with over 500 employees at their headquarters and 220 employees at the casino and resort near Lewiston, Clearwater Paper Inc., and Swift Transportation Company with 430 employees

Table A-67: Industry Sectors by Employment in Nez Perce County¹⁷⁶

Industry	Employment
Trade and Transportation	4,587
Government	3,726
Education and Health Services	3,302
Manufacturing	2,793
Leisure and Hospitality	1,839

Clearwater Paper is the largest employer in Nez Perce County with 1,700 employees. The company manufactures paper tissue, paperboard, and lumber. Other employers in Nez Perce County include Nez Perce County, Regence Blue Shield insurance, St. Joseph Regional Medical Center, and Tribune Publishing Co. Several jet boat manufacturers in the county also offer employment. An important player in the economic development of Nez Perce County is the 3,500 member Nez Perce Tribe headquartered in Lapwai.

The Lewiston area is a major gateway to Hells Canyon, the deepest river gorge in North America. According to the most recent economic impact study for tourism expenditures in Idaho, tourism generated \$102.5 million in travel spending in 2005 creating over 400 jobs and \$15 million in tourism taxes.¹⁷⁷ Traveling spending has increased by 3.8 percent in Nez Perce County over the past few years.

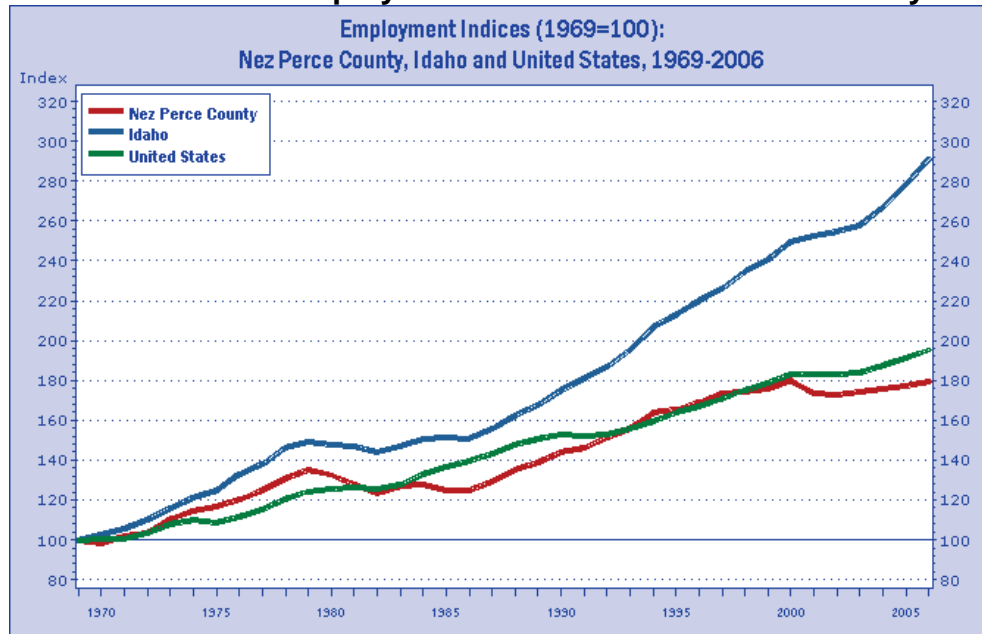
Exhibit A-28 compares employment growth in Nez Perce County for the past 37 years to employment growth in Idaho and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Nez Perce County's employment increasing by 29.8 percent during the period compared to Idaho's employment growth at 200.5 percent and the nation at 98.7 percent.¹⁷⁸

¹⁷⁶ Bureau of Economic Analysis, Employment Statistics

¹⁷⁷ "The Economic Impact of Travel & Tourism in Idaho", Idaho Division of Tourism, September 2005

¹⁷⁸ Pacific Northwest Regional Economic Analysis

Exhibit A-28: Employment Indices for Nez Perce County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skill are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. Eighty-five percent of the population in Nez Perce County over the age of 25 completed high school compared to the statewide average of 84.7 percent. Nearly 19 percent of the population over the age of 25 completed a Bachelor’s degree or higher compared with 21.7 percent statewide.

Table A-68: Location Quotients for Nez Perce County

Industry	Location Quotient	2007 Employment
Forestry and Logging	12.01	120
Wood Product Manufacturing	5.16	404
Fabricated Metal Products	4.40	1,043
Broadcasting except Internet	3.21	160
Truck Transportation	3.02	663

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotient, shown in **Table A-68**, compares Nez Perce County to the State of Idaho as a whole. Nez Perce County has a substantially higher employment concentration in forestry and logging than the state as a whole. The manufacturing sector in Nez Perce

County has a location quotient of 1.32 and represents over 16 percent of employment in the county. Clearwater Paper is included in this sector and as a result the concentration of manufacturing employment in Nez Perce is relatively consistent with the employment concentration statewide. However, this company is strongly tied to the forestry industry and the other location quotients in forestry and wood product manufacture indicate a strong linkage and vulnerability for this county's economy as lumber and forestry face many challenges.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market; companies receive supplies from international firms to produce their products; and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

U.S. Highway 95 links Nez Perce County to Payette and Oregon to the south and to Sandpoint and Canada to the north. The county has access to Interstate 90 through U.S. Highway 95, approximately 100 miles north of Lewiston. U.S. Highway 12 links Lewiston to Clarkston and Walla Walla to the west and Missoula, Montana to the east. Two short line railroads serve Nez Perce County, the Great Northwest Railroad and the Bountiful Grain & Craig Mountain Railroad (BG&CM)¹⁷⁹, but the BG&CM is not in service at this time to Craigmont. The Lewiston/Nez Perce County Regional Airport provides commercial air service and there is a federal airport facility at the Snake River. The Port of Lewiston is Idaho's only seaport, an 85 acre facility on the Columbia/Snake River system with barge and rail service to the Port of Portland and other west coast ports. This port has warehousing and distribution facilities, grain elevator dock, mobile crane and three 35-ton lifts.

MAJOR COMMODITIES

Tables A-69 and A-70 identify the top commodity imports and exports for Nez Perce County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

¹⁷⁹ Idaho Railroad Location Map

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

According to the TRANSEARCH data Nez Perce County's largest import and export is lumber or wood products. Imports of lumber and wood products are expected to total nearly 300,000 tons by 2027, while exports from the local industry are forecast to decline by nearly 23 percent by volume, to approximately 723,000 tons. The county's next largest import, chemicals or allied products, is expected to increase almost 14 percent over the next 20 years to more than 120,000 tons. The decline in exports of lumber or wood products from Nez Perce County over the next twenty years will significantly change the major export commodities in the county. By 2027, non-metallic minerals are expected to become the county's dominant export, totaling more than 1 million exported tons annually.

As previously noted Nez Perce County is home to the Port of Lewiston, a major commerce center in the southern region of the study area. Comparisons of shipment data from the Port of Lewiston with the information presented by TRANSEARCH suggests that agricultural commodity movements in Nez Perce County are not fully captured. **Exhibit A-29** displays historical wheat shipments from the Port of Lewiston which have fluctuated from a high of over 900,000 tons in 1995 to just under 400,000 tons in 2008. Farm product shipments shown in **Tables A-69** and **A-70** suggest imports and exports of approximately 329,000 tons for all crops. While it appears that TRANSEARCH has under-estimated the total magnitude of farm product exports from the region, the forecast of declining volumes seems to be supported by recent historical data.

Exhibit A-29: Port of Lewiston Wheat and Container Volumes 1990 - 2009

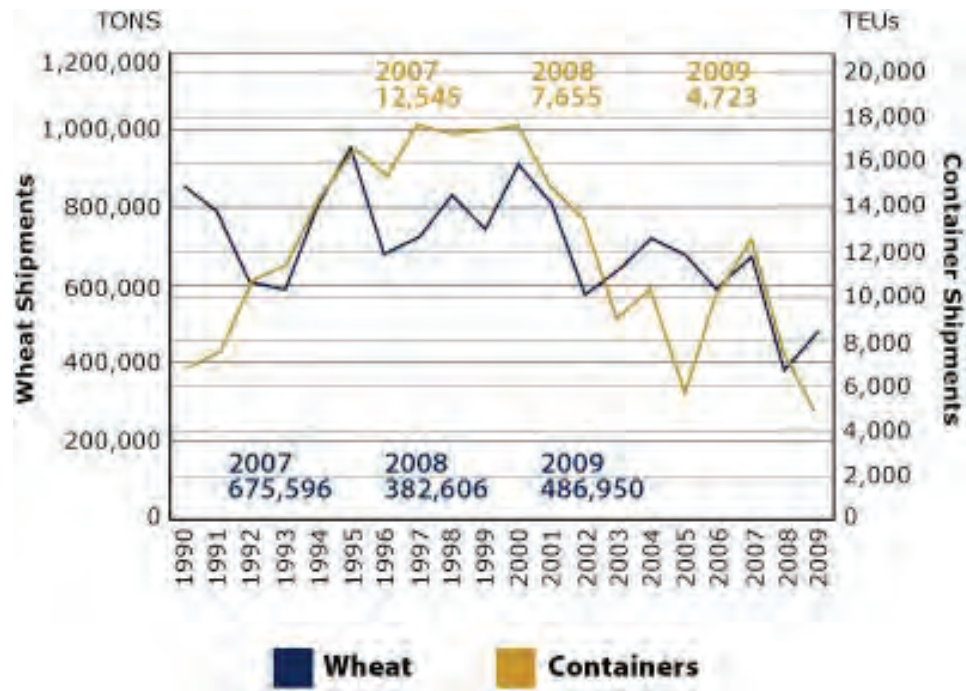


Table A-69: Inbound Commodities for Nez Perce County

Top 10 Commodities Shipped Into Nez Perce County, ID In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	276,750	299,311	8.2%										276,750	299,311	8.2%
	Value/Ton	\$590	\$353	(40.2%)										\$590	\$353	(40.2%)
Chemicals or Allied Products	Tons	9,356	12,542	34.1%	97,520	109,127	11.9%				1	1	10.4%	106,877	121,670	13.8%
	Value/Ton	\$2,559	\$2,314	(9.6%)	\$1,314	\$1,014	(22.8%)				\$4,180	\$3,305	(20.9%)	\$1,423	\$1,148	(19.3%)
Pulp, Paper or Allied Products	Tons	509	610	19.7%	92,768	98,282	5.9%							93,277	98,892	6.0%
	Value/Ton	\$1,754	\$1,672	(4.7%)	\$593	\$591	(0.4%)							\$599	\$597	(0.3%)
Waste or Scrap Materials	Tons	62	114	83.1%	12,600	16,244	28.9%	63,830	100,544	57.5%				76,492	116,902	52.8%
	Value/Ton	\$953	\$813	(14.6%)	\$169	\$169		\$143	\$144	0.3%				\$148	\$148	(0.2%)
Farm Products	Tons	63,694	86,579	35.9%							0	0	20.4%	63,694	86,579	35.9%
	Value/Ton	\$815	\$815	0.0%										\$815	\$815	0.0%
Food or Kindred Products	Tons	33,640	54,699	62.6%	10,000	12,052	20.5%							43,640	66,751	53.0%
	Value/Ton	\$1,054	\$1,052	(0.1%)	\$515	\$520	1.0%							\$930	\$956	2.8%
Clay, Concrete, Glass or Stone	Tons	4,902	4,266	(13.0%)	35,560	47,354	33.2%							40,462	51,620	27.6%
	Value/Ton	\$147	\$142	(3.3%)	\$295	\$279	(5.5%)							\$277	\$268	(3.4%)
Petroleum or Coal Products	Tons	11,840	15,548	31.3%	19,800	20,737	4.7%							31,640	36,285	14.7%
	Value/Ton	\$213	\$215	1.1%	\$673	\$674	0.1%							\$501	\$477	(4.7%)
Transportation Equipment	Tons	27,578	40,079	45.3%	2,480	2,887	16.4%				0	0	54.0%	30,058	42,966	42.9%
	Value/Ton	\$8,432	\$7,722	(8.4%)	\$1,996	\$1,996					\$18,022	\$18,022		\$7,901	\$7,338	(7.1%)
Primary Metal Products	Tons	26,492	52,191	97.0%										26,492	52,191	97.0%
	Value/Ton	\$3,428	\$3,467	1.1%										\$3,428	\$3,467	1.1%
All Commodities In Nez Perce County, ID	Tons	502,526	659,303	31.2%	270,728	306,682	13.3%	64,581	101,976	57.9%	13	19	45.3%	837,848	1,067,981	27.5%
	Value/Ton	\$2,737	\$3,757	37.2%	\$810	\$687	(15.2%)	\$172	\$178	3.7%	\$4,852	\$6,900	42.2%	\$1,917	\$2,534	32.2%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

Table A-70: Outbound Commodities for Nez Perce County

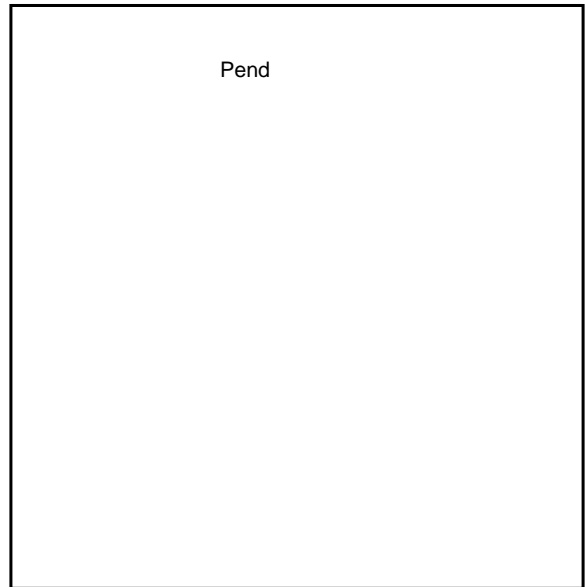
Top 10 Commodities Shipped Out Of Nez Perce County, ID In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	933,499	722,973	(22.6%)	103,000	65,503	(36.4%)							1,036,499	788,476	(23.9%)
	Value/Ton	\$451	\$444	(1.6%)	\$1,368	\$1,368	(0.0%)							\$542	\$521	(4.0%)
Nonmetallic Minerals	Tons	1,023,194	1,194,537	16.7%										1,023,194	1,194,537	16.7%
	Value/Ton	\$5	\$5	0.0%										\$5		
Waste or Scrap Materials	Tons	114	156	36.5%	18,640	29,668	59.2%	419,788	661,244	57.5%				438,542	691,067	57.6%
	Value/Ton	\$123	\$117	(5.2%)	\$376	\$435	15.6%	\$143	\$144	0.3%				\$153	\$156	2.0%
Farm Products	Tons	15,213	17,796	17.0%	6,960	4,904	(29.5%)	243,138	205,225	(15.6%)				265,312	227,925	(14.1%)
	Value/Ton	\$880	\$894	1.6%	\$395	\$575	45.7%	\$228	\$219	(3.8%)				\$269	\$279	3.7%
Pulp, Paper or Allied Products	Tons	13,897	18,029	29.7%	164,400	151,124	(8.1%)							178,297	169,153	(5.1%)
	Value/Ton	\$1,323	\$1,312	(0.8%)	\$769	\$808	5.1%							\$812	\$862	6.1%
Food or Kindred Products	Tons	14,823	52,351	253.2%	7,280	17,004	133.6%	71,148	182,803	156.9%				93,251	252,158	170.4%
	Value/Ton	\$1,028	\$1,180	14.8%	\$1,022	\$1,022	(0.0%)	\$675	\$661	(2.0%)				\$758	\$793	4.6%
Clay, Concrete, Glass or Stone	Tons	21,568	37,328	73.1%										21,568	37,328	73.1%
	Value/Ton	\$48	\$48	0.1%										\$48	\$48	0.1%
Fabricated Metal Products	Tons	7,031	16,021	127.9%										7,031	16,021	127.9%
	Value/Ton	\$4,785	\$4,890	2.2%										\$4,785	\$4,890	2.2%
Machinery	Tons	6,310	13,109	107.8%										6,310	13,109	107.8%
	Value/Ton	\$5,229	\$5,123	(2.0%)										\$5,229	\$5,123	(2.0%)
Fresh Fish or Marine Products	Tons	23	33	44.9%				6,276	13,537	115.7%				6,299	13,570	115.4%
	Value/Ton	\$3,811	\$3,811	0.0%				\$3,666	\$3,644	(0.6%)				\$3,667	\$3,645	(0.6%)
All Commodities In Nez Perce County, WA	Tons	2,039,616	2,077,587	1.9%	300,280	268,203	(10.7%)	740,351	1,062,809	43.6%				3,080,246	3,408,598	10.7%
	Value/Ton	\$272	\$287	5.4%	\$948	\$913	(3.7%)	\$252	\$292	15.8%				\$333	\$338	1.4%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

PEND OREILLE COUNTY, WASHINGTON

Located in the northeastern corner of Washington adjacent to British Columbia, Canada Pend Oreille County was formed in part due to the lack of transportation connections. The county was created in 1911 because of the 4-day round trip train ride that was required to travel to the county seat in then Stevens County, thus creating a need for a new county that allowed for better access to the seat of local government for local citizens.

The majority of the land in Pend Oreille County is owned by the federal government who own 58 percent of the county's land mass. Less than 37 percent of land in the county is held in private ownership. Pend Oreille County is the home of the Kalispell Indian Reservation. Residents and visitors to Pend Oreille County enjoy beautiful scenery and an abundance of outdoor recreational opportunities. Pend Oreille County has grown faster than the state and the nation primarily from increased employment in natural resources, mining, construction, and government. Light manufacturing, wood products, and recreational products provide additional employment opportunities within the region.



POPULATION TRENDS

According to the U.S. Census Bureau the population of Pend Oreille County was 12,760 in 2008, increasing by almost 3,700 since 1990.¹⁸⁰ The county's population growth was slightly lower than the State of Washington as a whole from 2000 to 2007, with Pend Oreille County experiencing 8.8 percent population growth compared to a 9.7 percent population growth for the state as a whole. The county's population is projected to continue to grow in the future.

Twenty-one percent of the population in Pend Oreille County is under 18 years of age, similar to the statewide population. Nearly 16 percent of the population in Pend Oreille County lives below the poverty level, and the 2007 median household income of \$39,352 is substantially below the state median income of \$55,628.

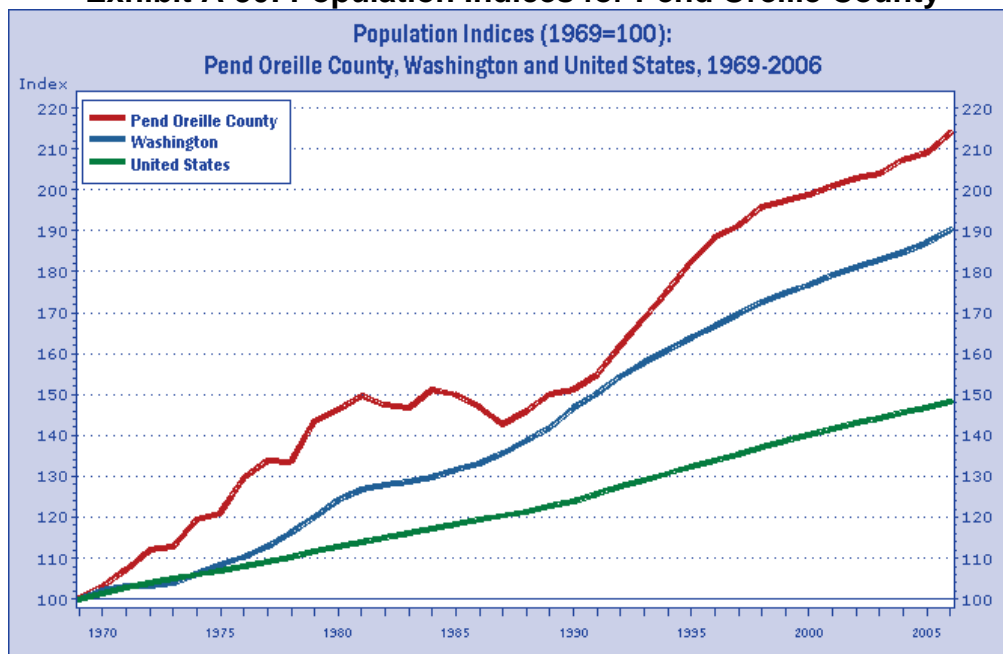
¹⁸⁰ U.S. Census Bureau Population Estimates 2008

Table A-71: Population Data for Pend Oreille County

Year	Population
1990 ¹⁸¹	8,915
2000	11,732
2008 ¹⁸²	12,760
2015	14,150
2020	15,050
2030	16,880

Exhibit A-30 shows the population growth of Pend Oreille County compared with the growth in Washington and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. The population of Pend Oreille County increased 115.5 percent during this period compared to Washington's 92.9 percent population growth statewide and 49.7 percent growth nationally.¹⁸³

Exhibit A-30: Population Indices for Pend Oreille County



INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Unemployment in Pend Oreille County was the highest in the state in June 2009 at 13.4 percent, up from 7.3 percent in June 2008, primarily as a result of jobs lost from the closure of a mine.¹⁸⁴ The statewide unemployment rate is 9.5

¹⁸¹ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

¹⁸² U.S. Census Bureau 2008 population estimates

¹⁸³ Pacific Northwest Regional Economic Analysis

¹⁸⁴ Washington Department of Employment Security

percent. A zinc mining operation in the county owned by Canadian company Teck Cominco announced in January 2009, that it was laying off 165 people, and temporarily closing the mine, due to the lack of demand for zinc. These layoffs are the result of increased competition from both domestic and foreign mines and the resulting price volatility. Forest related industries continue to experience slow growth, affecting availability job opportunities in this sector. Limited infrastructure and isolated geography will continue to limit job growth in this county.

The in-migration of retirees has helped to create job opportunities in construction and health care. The largest employers in Pend Oreille County include C & D Zodiac, an aerospace components company with 50 employees, Ponderay Newsprint Co., a company that fabricates newsprint with 194 employees, Ponderay Valley Fiber, who fabricates fiber products and has 75 employees, Seattle City Light, an electric utility company with 64 employees.

Table A-72: Industry Sectors by Employment in Pend Oreille County¹⁸⁵

Industry	Employment
Government	1,273
Manufacturing	333
Retail Trade	230
Transportation and Warehousing	54
Finance and Insurance	61

The Kalispell Tribal Reservation is located 55 miles north of Spokane. The Tribe owns over 4,600 acres along The Pend Oreille River near Usk and over 3,500 acres of Tribal Trust Land. The Tribe also owns 300 acre in Airway Heights including 40 acres for the Northern Quest Casino. The tribe employs over 1,600 people, some of whom work at the Casino in Spokane. The government sector includes local school districts, the county government, city governments, and federal government employees.

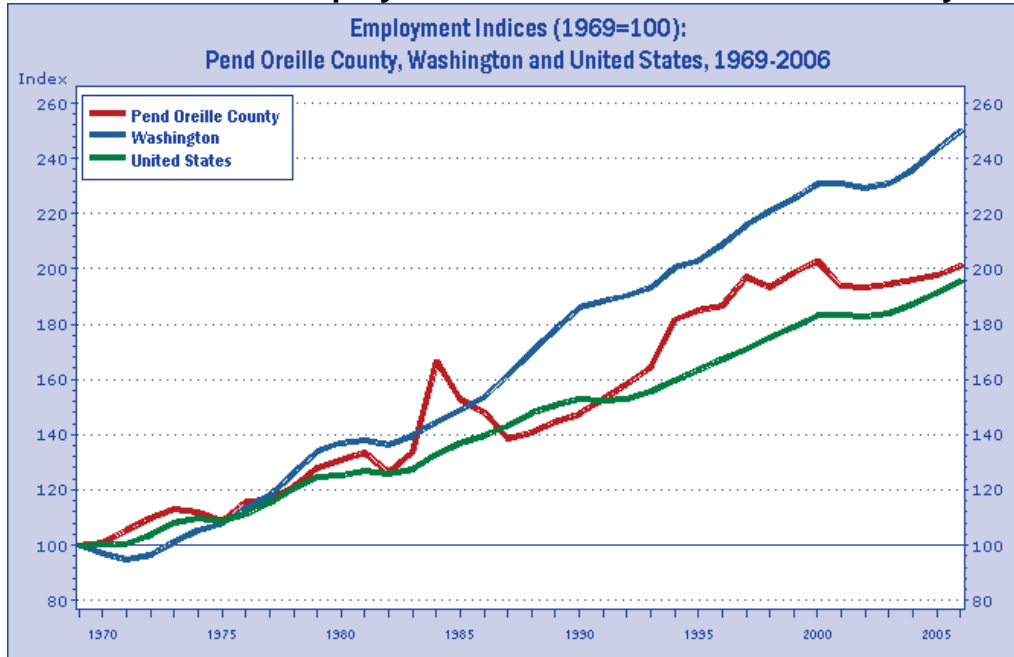
According to the most recent economic impact study for tourism expenditures in Washington, tourism generated \$22.4 million in travel spending in 2007 creating 320 jobs and \$1.2 million in state and local tourism taxes.¹⁸⁶ Travel spending has increased 3.6 percent over the past seven years.

Exhibit A-31 compares employment growth in Pend Oreille County for the past 37 years to employment growth in Washington and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Pend Oreille County's employment increasing by 105 percent during the period compared to Washington's employment growth at 156.6 percent and the nations at 98.7 percent.

¹⁸⁵ Bureau of Economic Analysis, Employment Statistics

¹⁸⁶ Washington State County Travel Impacts 1991 – 2007, Washington State Tourism Office

Exhibit A-31: Employment Indices for Pend Oreille County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skill are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. Almost 81 percent of the population of Pend Oreille County has completed high school compared to the statewide average of 87.1 percent. Only 12.3 percent of the population over the age of 25 have completed a Bachelor’s degree or higher compared with 27.7 percent statewide. An initiative begun by the Kalispell Indian Tribe is focused on improving higher education for all people in the community.

Table A-73: Location Quotients for Pend Oreille County

Industry	Location Quotient	2007 Employment
Mining, except oil and gas	68.99	241
Forestry and Logging	45.13	47
Food and Beverage Stores	3.07	139
Gasoline Stores	2.63	36

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotient, shown in

Table A-73, compares Pend Oreille County to the state of Washington as a whole. Pend Oreille County has a substantially higher employment concentration in mining and forestry than the state as a whole. Mining provides a smaller portion of the state's overall employment accounting for this employment concentration in Pend Oreille County. Some additional employment from mining may be possible but is highly dependent upon the price of metals mined in the county. The isolation and limited availability of infrastructure will continue to limit the types of employment opportunities available in this county. Approximately 280 residents of Pend Oreille County drive to Bonner County, Idaho to work each day and almost 450 residents of Bonner County drive to Pend Oreille County to work.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market; companies receive supplies from international firms to produce their products; and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

Highway 20/Highway 31 runs north into Canada and south to Highway 202/U.S. Highway 2 to Spokane linking Pend Oreille County. Much of Pend Oreille County north of Cusick is contained in national forests, wilderness areas, and the Kalispell Tribal Reservation Lands. The highway follows a narrow corridor along the Pend Oreille River with little private held land available outside of this narrow valley until the City of Cusick. According to the Washington Department of Commerce the closest active intermodal facility serving Pend Oreille County is in Spokane. There are two airports serving the county, a state owned facility at Sullivan Lake and a general aviation strip between Lone and Tiger. Commercial air service is available at Spokane International Airport. The Pend Oreille Valley Railroad is owned by the Port of Pend Oreille and was purchased by the citizens of the county to save the railroad and the two mills that were dependent on it for rail service at that time. This short line operates between Metaline Falls and Newport Washington. The companies that precipitated the rail line's purchase have now closed; however the Port has leased trackage rights on a segment of BNSF track that runs to Sandpoint, ID in order to interchange with BNSF. The port currently serves 10 companies and several weeks each year the Lions Club runs scenic rail excursions on this line.

MAJOR COMMODITIES

Tables A-74 and A-75 identify the top commodity imports and exports for Pend Oreille County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the county. The

tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

Pend Oreille County's largest import is lumber or wood products (56,000 tons annually), but are expected to decrease by 24 percent to 42,000 tons by 2027. In 2007 the gap between the County's largest and second largest commodities was more than 35,000 tons, but by 2027 this gap is expected to decrease significantly due to a 428 percent growth in the import of primary metal products. In 2007, Pend Oreille County's largest export was lumber or wood products with more than 200,000 tons shipped annually. This tonnage is projected to remain nearly constant over the next 20 years, with approximately 209,000 tons exported in 2027. The county's next largest exports are nonmetallic minerals and pulp, paper, and allied products; both of which are expected to decline over the next 20 years (12 percent and 18 percent respectively).

Table A-74: Inbound Commodities for Pend Oreille County

Top 10 Commodities Shipped Into Pend Oreille County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	55,653	42,274	(24.0%)										55,653	42,274	(24.0%)
	Value/Ton	\$401	\$428	6.7%										\$401	\$428	6.7%
Primary Metal Products	Tons	20,406	30,252	48.3%										20,406	30,252	48.3%
	Value/Ton	\$1,960	\$1,800	(8.1%)										\$1,960	\$1,800	(8.1%)
Food or Kindred Products	Tons	13,095	13,726	4.8%										13,095	13,726	4.8%
	Value/Ton	\$869	\$925	6.4%										\$869	\$925	6.4%
Pulp, Paper or Allied Products	Tons	11,265	10,867	(3.5%)										11,265	10,867	(3.5%)
	Value/Ton	\$976	\$960	(1.6%)										\$976	\$960	(1.6%)
Petroleum or Coal Products	Tons	4,540	6,474	42.6%	5,040	4,648	(7.8%)							9,580	11,122	16.1%
	Value/Ton	\$268	\$260	(3.0%)	\$748	\$751	0.3%							\$521	\$465	(10.7%)
Clay, Concrete, Glass or Stone	Tons	9,442	13,636	44.4%										9,442	13,636	44.4%
	Value/Ton	\$258	\$264	2.4%										\$258	\$264	2.4%
Waste or Scrap Materials	Tons	4,008	6,218	55.1%	2,840	2,023	(28.8%)							6,848	8,241	20.3%
	Value/Ton	\$274	\$270	(1.3%)	\$98	\$98	0.0%							\$201	\$228	13.5%
Nonmetallic Minerals	Tons	6,384	14,084	120.6%										6,384	14,084	120.6%
	Value/Ton	\$47	\$42	(10.6%)										\$47	\$42	(10.6%)
Chemicals or Allied Products	Tons	3,647	6,440	76.6%										3,647	6,440	76.6%
	Value/Ton	\$1,652	\$1,826	10.5%										\$1,652	\$1,826	10.5%
Transportation Equipment	Tons		2,496												2,496	
	Value/Ton		\$16,776												\$16,776	
Farm Products	Tons	733												733		
	Value/Ton	\$2,930												\$2,930		
All Commodities In Pend Oreille County, WA	Tons	132,838	153,322	15.4%	7,880	6,671	(15.3%)							140,718	159,992	13.7%
	Value/Ton	\$961	\$1,384	44.0%	\$514	\$553	7.5%							\$936	\$1,349	44.2%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

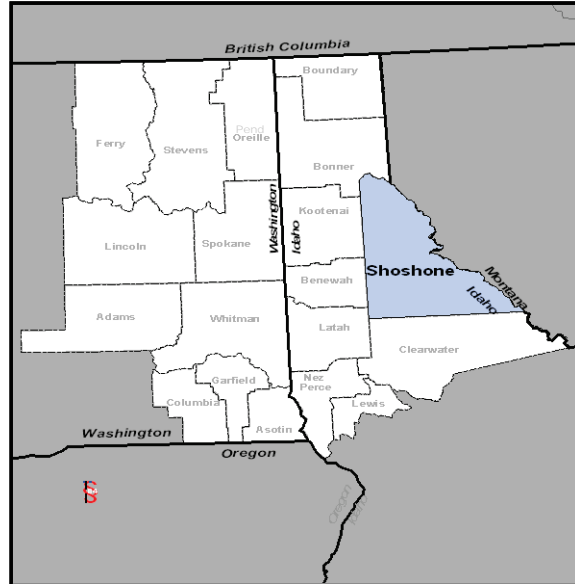
Table A-75: Outbound Commodities for Pend Oreille County

Top 10 Commodities Shipped Out Of Pend Oreille County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	204,137	209,007	2.4%										204,137	209,007	2.4%
	Value/Ton	\$70	\$68	(2.7%)										\$70		
Nonmetallic Minerals	Tons	163,257	143,339	(12.2%)										163,257	143,339	(12.2%)
	Value/Ton	\$6	\$6	0.4%										\$6	\$6	0.4%
Pulp, Paper or Allied Products	Tons	91,944	77,721	(15.5%)	69,760	53,914	(22.7%)							161,704	131,634	(18.6%)
	Value/Ton	\$1,841	\$1,821	(1.1%)	\$1,869	\$1,869	0.0%							\$1,853	\$1,841	(0.7%)
Farm Products	Tons	22,915	24,396	6.5%										22,915	24,396	6.5%
	Value/Ton	\$710	\$715	0.7%										\$710	\$715	0.7%
Rubber or Misc Plastics	Tons	3,873	3,241	(16.3%)										3,873	3,241	(16.3%)
	Value/Ton	\$4,354	\$4,313	(1.0%)										\$4,354	\$4,313	(1.0%)
Waste or Scrap Materials	Tons	579	1,178	103.5%										579	1,178	103.5%
	Value/Ton	\$181	\$201	11.3%										\$181	\$201	11.3%
Printed Matter	Tons	263	1,733	559.6%										263	1,733	559.6%
	Value/Ton	\$1,891	\$1,847	(2.4%)										\$1,891	\$1,847	(2.4%)
Fresh Fish or Marine Products	Tons	89	129	44.9%										89	129	44.9%
	Value/Ton	\$5,833	\$5,833	(0.0%)										\$5,833	\$5,833	(0.0%)
Food or Kindred Products	Tons	72	110	52.3%										72	110	52.3%
	Value/Ton	\$1,959	\$1,979	1.0%										\$1,959	\$1,979	1.0%
Transportation Equipment	Tons	67	122	80.2%										67	122	80.2%
	Value/Ton	\$3,477	\$3,480	0.1%										\$3,477	\$3,480	0.1%
All Commodities In Pend Oreille County, WA	Tons	487,338	461,178	(5.4%)	69,760	53,914	(22.7%)							557,098	515,091	(7.5%)
	Value/Ton	\$450	\$419	(6.9%)	\$1,869	\$1,869	0.0%							\$628	\$571	(9.1%)

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

SHOSHONE COUNTY, IDAHO

Shoshone County is located in the northern panhandle of Idaho on its eastern border with Montana. It shares its western border with Bonner, Kootenai, Benewah, and Latah Counties, and its southern border with Clearwater County. Shoshone County lost over 28 percent of their population after mine and smelter closures in the 1980s. Over 4,200 employees worked in the mines at their peak in the early 1980s. In the past ten years the county has experienced further population loss as its population declined by nine percent while statewide population increased by 22 percent. Rising prices for silver have recently recreated an increased interest in silver mining in the county. Exploration efforts are ongoing and new technologies may make several mines closed in recent years economically feasible to reopen.



The recreational opportunities in the county have stimulated a small but growing tourism industry in Shoshone County. The world's longest gondola opened here in 1990 linking Kellogg to the Silver Mountain Ski area. The Silver Mountain Resort attracts over 100,000 people annually and the new Silver Rapids Indoor Water Park creates additional year-round tourism venues. The new Galena Ridge Championship Golf Course and the expansion of Lookout Pass Ski Resort will further enhance tourism in the county. Another recreation activity driving tourism growth in the county is the Trail of the Coeur d'Alene's bike path. The Trail of the Coeur d'Alene's follows the Union Pacific Railroad right-of-way from Mullan, ID to Plummer, ID. The more than 72 miles of paved bike trail winds through picturesque mountain areas and the historic Silver Valley area of Shoshone County.

The economy in Shoshone County is largely dependent upon government employment, tourism, mining, and the trade and transportation sector, the latter partially due to a major automobile dealership in Kellogg, Dave Smith Motors, who employs more than 300 people and is the county's largest employer.

POPULATION TRENDS

The population of Shoshone County was 12,913 in 2008.¹⁸⁷ In the past eight years the population of Shoshone County decreased 6.2 percent from 13,771 to 12,913. As the economic outlook for the county improves and additional job

¹⁸⁷ U.S. Census Bureau Population Estimates 2008

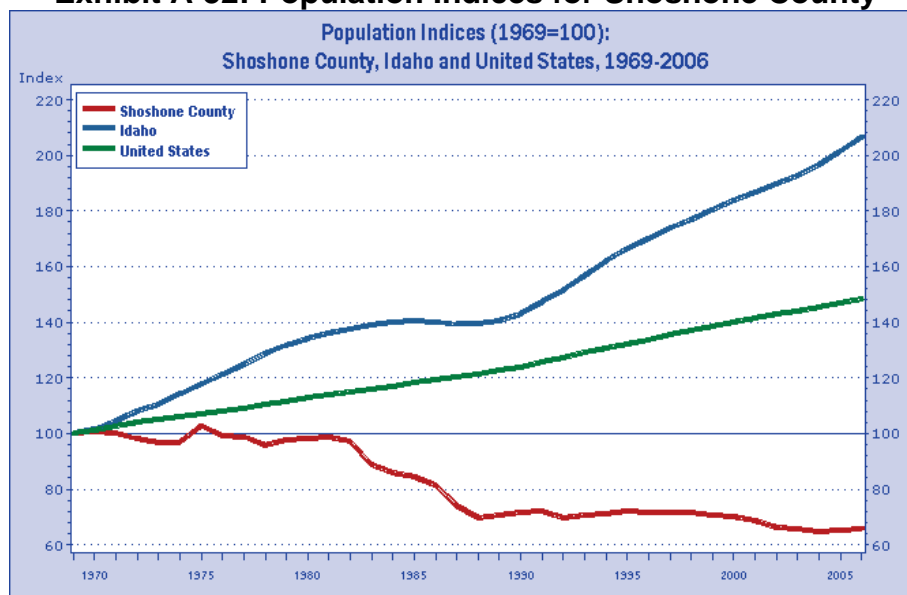
opportunities are created, the county's population should increase in the next few years. In the past 30 years the county's population has declined by 34 percent compared to statewide population growth of 111 percent during the same period. Slightly over 20 percent of the population of Shoshone County is below the age of 18 compared to the statewide average of 27 percent. Over 17 percent of the population lives below the poverty level compared to the statewide rate of 12.1 percent. The median household income in 2007 for Shoshone County is \$35,095, which is below the statewide rate of \$46,136.

Table A-76: Population Data for Shoshone County

Year	Population
1990 ¹⁸⁸	13,931
2000	13,771
2008 ¹⁸⁹	12,913
2015	12,770
2020	12,750
2030	12,710

Exhibit A-32 show the population growth of Shoshone County compared with the growth in Idaho and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each area's population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. The population of Shoshone County declined 34.5 percent during this period compared to Idaho's 111.6 percent population growth statewide and the 49.7 percent growth nationally.¹⁹⁰

Exhibit A-32: Population Indices for Shoshone County



¹⁸⁸ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

¹⁸⁹ U.S. Census Bureau Population Estimates 2008

¹⁹⁰ Pacific Northwest Regional Economic Analysis

INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Unemployment in Shoshone County increased from 6.3 percent in June 2008 to 11.6 percent in June 2009, eclipsing the statewide rate of 9.1 percent, primarily as a result of jobs lost when the Sunshine Mine shutdown and the Galena Mine laid off workers in late 2008. Jobs also declined in agriculture and education and health services. During 2008 employment increased in several sector including tourism, government, construction, and professional and business services. The largest employer in Shoshone County is Dave Smith Motors. Other large employers in the county include the Galena Mine, Lucky Friday mine, the Shoshone Medical Center, and Wal-Mart.

Table A-77: Industry Sectors by Employment in Shoshone County¹⁹¹

Industry	Employment
Trade and Transportation	1,282
Government	1,032
Mining	711
Leisure and Hospitality	480
Education and Health Services	358

Higher silver prices have stimulated increased employment in the existing silver mines including the Galena Mine and the Lucky Friday Mine which were the only major mines that remained open and today employ twice as many people as they did three years ago. Several other mines have reopened and additional exploration efforts are underway. At the present time mining operations employ over 700 people with average annual wages of \$59,789.¹⁹²

A developing tourism sector has helped to diversify the county's economy. The Lookout Pass ski area near Montana has doubled its employment in the past few years. Hikers, cyclists, and snowmobiling are attracting more visitors to the region and additional tourism facilities including lodges, restaurants, and bars help to enhance tourism and bring additional employment. According to the most recent economic impact study for tourism expenditures in Idaho, tourism generated \$41 million in travel spending in 2005 creating almost 200 jobs at that time and \$6 million in tax revenues from tourism.¹⁹³ Travel spending increased by 4.4 percent from 2000 to 2005 in Shoshone County.

Exhibit A-33 compares employment growth in Shoshone County for the past 37 years to employment growth in Idaho and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Shoshone County's employment decreasing by 22.3 percent during

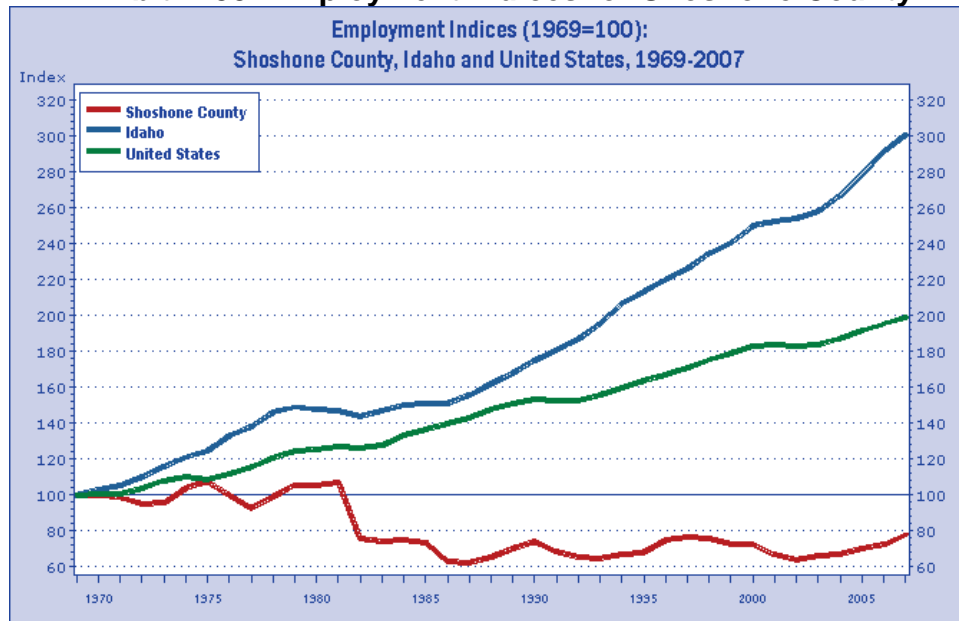
¹⁹¹ Bureau of Economic Analysis, Employment Statistics

¹⁹² Idaho Department of Labor, Workforce Trends June 2009

¹⁹³ "The Economic Impact of Travel & Tourism in Idaho", Idaho Division of Tourism, September 2005

the period compared to Idaho's growth at 200.5 percent and the nation employment growth at 98.7 percent.¹⁹⁴

Exhibit A-33: Employment Indices for Shoshone County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the "Corporate Site Survey" allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skill are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. Seventy-eight percent of the population in Shoshone County over the age of 25 completed high school compared to the statewide average of 84.7 percent and slightly over ten percent of the population over the age of 25 have completed a Bachelor's degree or higher compared with 21.7 percent statewide.

Table A-78: Location Quotients for Shoshone County¹⁹⁵

Industry	Location Quotient	2007 Employment
Mining	26.24	569
Forestry and Logging	10.68	23
Motor and Parts Dealers	7.35	460
Agriculture and Forest support services	5.79	63
Waste Management and remediation	3.70	43

¹⁹⁴ Pacific Northwest Regional Economic Analysis

¹⁹⁵ 2007 employment data, U.S. Department of Labor, Bureau of Labor Statistics

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotient, shown in **Table A-78**, compares Shoshone County to the State of Idaho as a whole. Shoshone County has a substantially higher employment concentration in mining than the state as a whole and there is a high degree of economic specialization within the county in this industry. The stability of this employment sector is largely dependent upon the price of metals and foreign competition as efficiencies from technology and productivity have already been instituted. While this employment sector pays well and will continue to play a role in Shoshone's economy, the county is wise to diversify their economic base as price fluctuations in metals will certainly affect future employment.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market; companies receive supplies from international firms to produce their products; and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

Interstate 90 runs through Shoshone County linking the county to Spokane and Seattle to the west and Missoula, Montana and points east. With the exception of the interstate and numerous forest service roads, some of the remaining roadways in the county are local and unpaved roads of varying conditions and some are not passable during winter months. The only rail line in the county is located in the southwestern corner of the county, where there is a small section of the St. Maries River Railroad, a short line linking the City of Bovill in Latah County to the City of Plummer in Benewah County, but it is out of service. The City of Kellogg operates a municipal airport and the closest commercial airport is in Spokane.

MAJOR COMMODITIES

Tables A-79 and **A-80** identify the top commodity imports and exports for Shoshone County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single

product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

Shoshone County's largest import is lumber or wood products (nearly 60,000 tons annually), and is expected to increase slightly over the next 20 years to 67,000 tons. The county's second largest import in 2007, transportation equipment with more than 20,000 tons, is projected to grow by more than 272 percent to become the county's largest import in 2027, with more than 80,000 tons. The County's largest exports in 2007 were nonmetallic minerals and lumber or wood products, exporting 159,000 and 156,000 tons respectively. These commodities are projected to decline significantly by 2027 however, and are the major contributors to the reduction in future export opportunities in the county. Overall, Shoshone County's total exports are expected to decrease by more than 40 percent over the next 20 years.

Table A-79: Inbound Commodities for Shoshone County

Top 10 Commodities Shipped Into Shoshone County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	59,945	67,394	12.4%										59,945	67,394	12.4%
	Value/Ton	\$296	\$229	(22.8%)										\$296	\$229	(22.8%)
Transportation Equipment	Tons	21,727	81,030	272.9%										21,727	81,030	272.9%
	Value/Ton	\$10,137	\$9,824	(3.1%)										\$10,137	\$9,824	(3.1%)
Primary Metal Products	Tons	19,126	46,714	144.2%										19,126	46,714	144.2%
	Value/Ton	\$2,221	\$2,201	(0.9%)										\$2,221	\$2,201	(0.9%)
Food or Kindred Products	Tons	17,458	18,540	6.2%										17,458	18,540	6.2%
	Value/Ton	\$2,057	\$2,200	7.0%										\$2,057	\$2,200	7.0%
Clay, Concrete, Glass or Stone	Tons	7,358	17,153	133.1%										7,358	17,153	133.1%
	Value/Ton	\$307	\$285	(6.9%)										\$307	\$285	(6.9%)
Electrical Equipment	Tons	6,181	23,014	272.3%										6,181	23,014	272.3%
	Value/Ton	\$12,917	\$13,204	2.2%										\$12,917	\$13,204	2.2%
Petroleum or Coal Products	Tons	5,426	9,340	72.1%										5,426	9,340	72.1%
	Value/Ton	\$365	\$9,340	2459.9%										\$365	\$372	1.9%
Rubber or Misc Plastics	Tons	4,505	9,717	115.7%										4,505	9,717	115.7%
	Value/Ton	\$4,092	\$4,122	0.7%										\$4,092	\$4,122	0.7%
Fabricated Metal Products	Tons		4,012												4,012	
	Value/Ton		\$4,164												\$4,164	
Machinery	Tons	2,883	4,012	39.2%										2,883	10,505	264.4%
	Value/Ton	\$20,642	\$4,164	(79.8%)										\$20,642	\$22,160	7.4%
Chemicals or Allied Products	Tons	2,555												2,555		
	Value/Ton	\$3,407												\$3,407		
All Commodities In Shoshone County, WA	Tons	150,605	294,291	95.4%										150,605	294,291	95.4%
	Value/Ton	\$3,431	\$5,429	58.2%										\$3,431	\$5,429	58.2%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

Table A-80: Outbound Commodities for Shoshone County

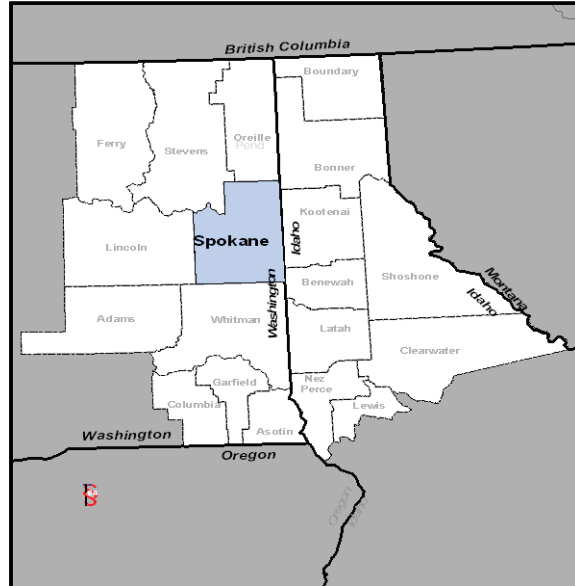
Top 10 Commodities Shipped Out Of Shoshone County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Nonmetallic Minerals	Tons	158,932	65,006	(59.1%)										158,932	65,006	(59.1%)
	Value/Ton	\$5	\$5	(0.1%)										\$5	\$5	(0.1%)
Lumber or Wood Products	Tons	155,650	105,683	(32.1%)										155,650	105,683	(32.1%)
	Value/Ton	\$397	\$521	31.2%										\$397		
Rubber or Misc Plastics	Tons	3,739	6,813	82.2%										3,739	6,813	82.2%
	Value/Ton	\$5,521	\$5,500	(0.4%)										\$5,521	\$5,500	(0.4%)
Misc Manufacturing Products	Tons	2,378	5,890	147.7%										2,378	5,890	147.7%
	Value/Ton	\$1	\$1	(16.3%)										\$1	\$1	(16.3%)
Pulp, Paper or Allied Products	Tons	1,601	2,776	73.3%										1,601	2,776	73.3%
	Value/Ton	\$27	\$27	0.0%										\$27	\$27	0.0%
Machinery	Tons	632	545	(13.9%)										632	545	(13.9%)
	Value/Ton	\$25,585	\$25,585	(0.0%)										\$25,585	\$25,585	(0.0%)
Clay, Concrete, Glass or Stone	Tons	556	988	77.8%										556	988	77.8%
	Value/Ton	\$161	\$161	0.0%										\$161	\$161	0.0%
Farm Products	Tons	432	709	64.0%										432	709	64.0%
	Value/Ton	\$59	\$46	(21.1%)										\$59	\$46	(21.1%)
Metallic Ores	Tons	129	69	(46.3%)										129	69	(46.3%)
	Value/Ton	\$1,860	\$1,860	0.0%										\$1,860	\$1,860	0.0%
Petroleum or Coal Products	Tons	100	97	(3.0%)										100	97	(3.0%)
	Value/Ton	\$475	\$475	0.0%										\$475	\$475	0.0%
All Commodities In Shoshone County, WA	Tons	324,213	188,676	(41.8%)										324,213	188,676	(41.8%)
	Value/Ton	\$309	\$570	84.6%										\$309	\$570	84.6%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

SPOKANE COUNTY, WASHINGTON

Spokane County is the heart of the Inland Northwest, serving as the regional hub for health care and specialized health services, retail, education, business and industry, and cultural activities in a largely rural region. Seven institutions of higher education are located in Spokane County supporting a range of research and technology transfer while providing outstanding educational opportunities.

Like many other metropolitan areas in the United States, Spokane has experienced a decline in manufacturing employment since the mid 1990's at the same time the value of manufacturing production increased as a result of improved productivity from new technologies. From 2001 to 2005, manufacturing output in Spokane County increased by 4.4 percent compared with other MSA's where manufacturing output increased by only 3.1 percent. Between 2002 and 2005 the Spokane economy created 19,000 new jobs primarily in the construction, manufacturing, and trade sectors.¹⁹⁶



A high technology manufacturing cluster has developed to the east of the City of Spokane in Orchard Park and Liberty Lake. Other manufacturing firms have concentrated east near Liberty Lake and to the west near Highway 2 and I-90.¹⁹⁷ The growth of technology businesses and research and development activities has resulted in an expansion of employment in firms like Itron Inc. and Signature Genomic Laboratories, and Pacinian Inc. The University District, Sirti, and research collaborations with the Department of Energy, Department of Defense, and other university institutions have created a growth cluster of technology excellence in Spokane.

POPULATION TRENDS

The population of Spokane County grew by 10.7 percent between 2000 and 2008 outpacing the national population growth of 7.1 percent and on par with population growth statewide. According to the U.S. Census Bureau, the county's population in 2008 was 462,677, increasing by over 100,000 people since the 1990 census. Over the past 30 years Spokane's County's population has growth at a slightly slower pace than growth statewide but substantially higher than the national population growth rate.

¹⁹⁶ Washington Department of Labor, 2008 Labor Area Summary

¹⁹⁷ Beyers, William B., et al, "Washington State Workforce Development Areas", November, 2008

Table A-81: Population Data for Spokane County

Year	Population
1990 ¹⁹⁸	361,333
2000	417,939
2008 ¹⁹⁹	462,677
2015	509,610
2020	544,060
2030	614,080

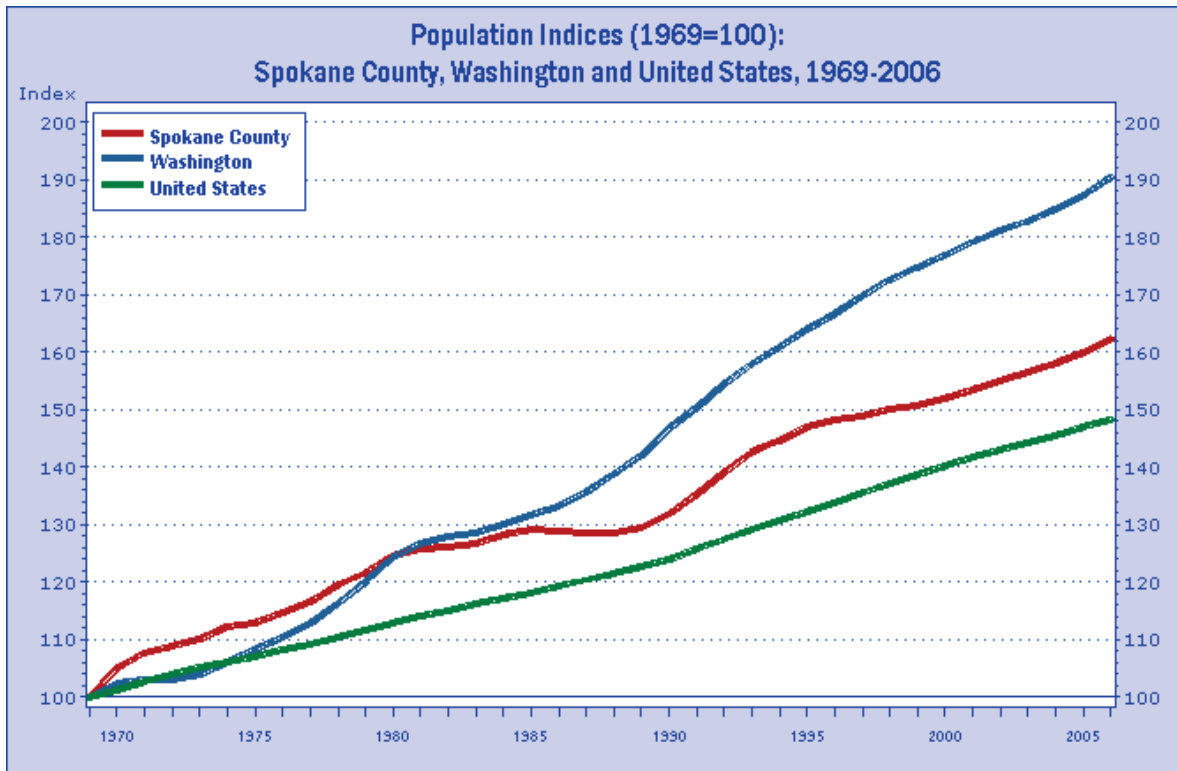
Thirteen percent of the population in Spokane County lives below the poverty level compared to 11.4 percent statewide. The City of Spokane and Spokane County are aggressive in their efforts to address affordable housing, workforce training, and economic diversification to insure broad participation in the economic prosperity of the community.

Exhibit A-34 show the population growth of Spokane County compared with the growth in Washington and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. The population of Spokane County increased 65.5 percent during this period compared to Washington's 92.9 percent population growth statewide and 49.7 percent growth nationally.

¹⁹⁸ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

¹⁹⁹ U.S. Census Bureau Population Estimates 2008

Exhibit A-34: Population Indices for Spokane County



INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Employment and job growth in Spokane County grew at a rate of 2.6 percent in 2007 and remained generally flat in 2008.²⁰⁰ The county's cumulative job growth between January 2006 and September 2008 was 3.4 percent, the lowest of the metro areas in the state compared to Seattle-Everett with 7.6 percent and the Tri-Cities with 8.3 percent job growth during the same period. Job losses have been concentrated in construction and financial sectors. Employment in healthcare and education are projected to remain stable in 2009 and are anticipated to increase slightly as the national economy improves. Growth in bio-fuels and related "green energy" companies may create a new dynamic growth sector for Spokane in future years linking the production of agriculture in the rural areas around Spokane to new processing operations and technologies.

Unemployment in Spokane County increased to 9.6 percent in January 2009 with 23,610 people out of work up from the 7.6 percent rate in December 2008. The declining national economy and severe weather that closed a number of businesses during December influenced these economic results. Manufacturing employment has also been impacted by the Boeing strike and other production delays particularly for those firms in Spokane that supply Boeing with parts.

²⁰⁰ Washington Department of Employment Security, Labor Market Report

The largest employers in Spokane County include Fairchild Air Force Base with over 4,992 employees in Spokane County, Sacred Heart Medical Center with 3,040 employees, local, state, and federal government operations with over 33,000 employees; URM Stores Inc. a wholesale grocery distributor, Dakotah Direct Headquarters a telemarketing and customer services firm with 1,600 employees, Kaiser Aluminum & Chemical with 800 employees, and Honeywell Electronics Materials with 371 employees.²⁰¹

Table A-82: Industry Sectors Employment Spokane County²⁰²

Industry	Employment
Government	33,272
Retail Trade	25,355
Manufacturing	18,136
Construction	11,829
Wholesale Trade	10,278

Government is the largest employer in Spokane County due in part to the location of Fairchild Air Force Base and several major state employers including Eastern Washington University, and the State of Washington offices for eastern Washington which are located in Spokane. The June 2009 unemployment rate remained at 8.9 percent with two sectors experiencing job losses in June, education and retail trade. Some of this decline may be due to the summer break; however the recession has taken a toll even in the education sector. The statewide unemployment rate in June was similar to Spokane County, but by December 2009, had risen to 9.5 percent.

According to the most recent economic impact study for tourism expenditures in Washington State, tourism generated \$859 million in travel spending in 2007 creating over 10,000 jobs and \$60 million in tax revenues.²⁰³ Travel spending has increased by 4.8 percent over the past seven years in Spokane County. Tourism is big business in Spokane, the county ranked 4th in the state in terms of travel spending in 2007 behind Snohomish, Pierce, and King Counties.

Exhibit A-35 compares employment growth in Spokane County for the past 37 years to employment growth in Washington and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Spokane County's employment increased by 131.9 percent during the period compared to Washington growth at 156.6 percent and the nation at 98.7 percent.²⁰⁴

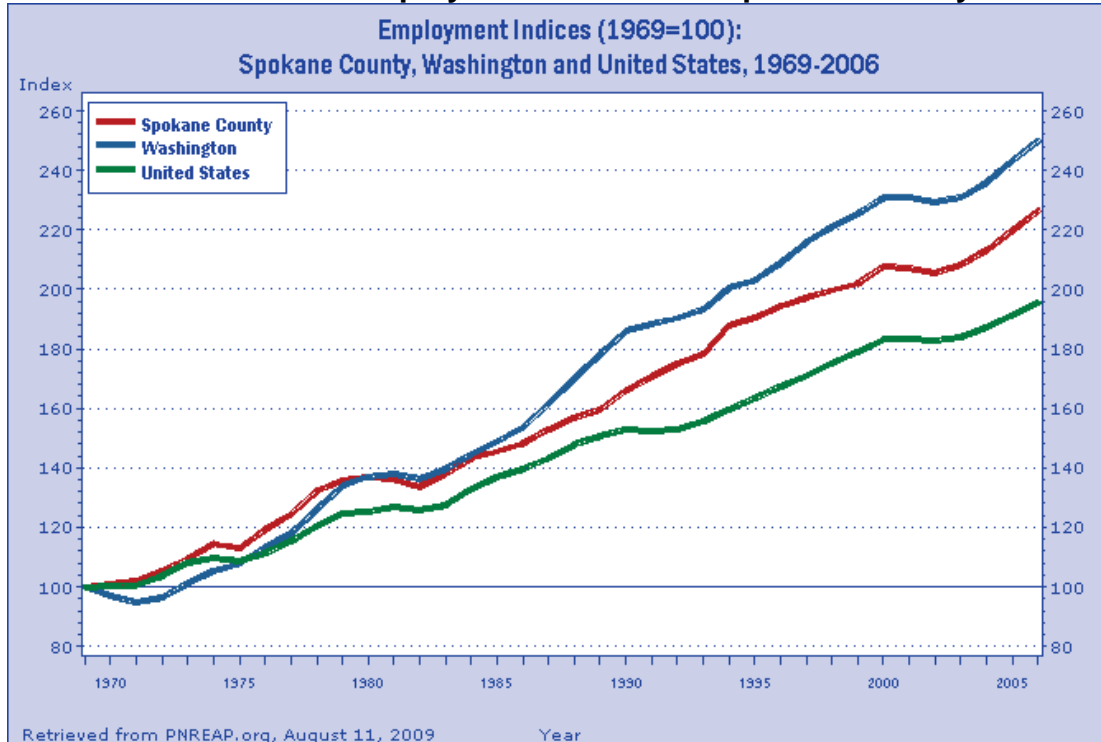
²⁰¹ Washington Department of Commerce, County Profiles, July 2009

²⁰² Washington Department of Labor, Workforce Explorer, July 2009

²⁰³ Washington State County Travel Impacts 1991 – 2007, Washington Tourism Office, September 2008

²⁰⁴ Pacific Northwest Regional Economic Analysis

Exhibit A-35: Employment Indices for Spokane County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skills are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. Spokane County equals or exceeds the statewide graduation rates for high school and college. Nearly 90 percent of the population over 25 years of age has graduated from high school and 25 percent have a Bachelor's degree or higher. Nine percent of the population has a graduate or professional degree. Five of the colleges within 50 miles of Spokane offer graduate degrees and the two community colleges had enrollments in excess of 22,000 students in 2005. Spokane County offers business and industry a skilled and well educated workforce, a crucial component of economic competitiveness in the future.

Table A-83: Location Quotients for Spokane County²⁰⁵

Industry	Location Quotient	2007 Employment
Primary Metal Manufacturing	2.86	2,011
Sporting Goods, Book & Music Stores	2.11	2,156
Furniture and Related Manufacturing	1.6	1,306
Nonmetallic Mineral Products	1.52	1,175
Insurance Carriers	1.38	4,605
Broadcasting, except internet	1.37	691

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotients, shown in **Table A-83**, compare Spokane County to the State of Washington as a whole. Spokane County has higher employment concentration in primary metal manufacturing than the state as a whole which indicates a degree of economic specialization within the county in this type of manufacturing. The location of firms such as Kaiser, Honeywell Electronic Materials, Travis Patter & Foundry, and Wagstaff, an aluminum casting company, suggest that there are competitive advantages for this sector in Spokane.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market; companies receive supplies from international firms to produce their products; and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

Interstate 90 runs through Spokane County linking the county to Seattle and west coast ports and Chicago and points east. U.S. Highway 395 runs north to Canada and U.S. Highways 195 and 95 link Spokane to the Snake River and Lewiston. U.S. Highway 2 runs west to Everett and east to Sandpoint and points east. There are five rail lines that converge in Spokane, two BNSF lines, one Union Pacific line, the Montana Rail Link and the Palouse River and Coulee City short line rail system.²⁰⁶ The Spokane International Airport provides commercial and cargo service to the region. According to the Washington Department of Commerce the closest intermodal facility is the BNSF facility in Spokane which is classified as a “non-daily intermodal services facility.”²⁰⁷

²⁰⁵ U.S. Department of Labor, 2007 Bureau of Labor Statistics

²⁰⁶ Washington Department of Transportation Rail System Map

²⁰⁷ BNSF Intermodal Network Map

MAJOR COMMODITIES

Tables A-84 and A-85, identify the top commodity imports and exports for Spokane County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

However, in the case of Spokane County it is also likely that some products such as inbound electrical equipment are being counted as secondary traffic. Based on interviews conducted for the study, some businesses in Spokane are bringing in electrical equipment such as circuit boards by air freight container or expedited carrier shipments. In both instances this traffic may be classified as secondary traffic if the containers hold a mix of electrical equipment, or the expedited carrier has other shipments in addition to electrical component shipments on the plane or truck.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

Spokane County is by far the largest importer in the study area. Its import commodities are widely dispersed. The county's largest import is lumber or wood products (nearly 2.3 million tons annually in 2007), but is expected to decrease by 37 percent over the next 20 years to 1.5 million tons. Though lumber or wood products will remain the county's largest import, there is expected to be a much smaller gap between its first and second largest imported commodities by 2027. The county's second largest import in 2007, petroleum or coal products with more than 1.2 million tons in 2007, is projected to grow by almost 17 percent to 1.4 million tons in 2027. The petroleum or coal products category maybe be worthy of further investigation, but this commodity group generally includes refined petroleum products such as gasoline, diesel (including bio-diesel) and products such as asphalt and roofing material. This group of products also tends to be heavy with a low value per ton.

Spokane County's largest export in 2007 was lumber or wood products, exporting more than 1.4 million tons. The county's next largest exports in 2007 were food or kindred products (807,000 tons), chemicals or allied products (741,000 tons), clay, concrete, glass or stone (624,000 tons), and farm products (554,000 tons). By 2027, the county's top five exports are all projected to decrease. Two commodities, however, show significant export growth over this

20 year period; machinery and transportation equipment (44 and 73 percent growth respectively). These industries might most benefit from continued and future investment to realize their future growth potential in the county. Overall, Spokane County exports are projected to decrease very slightly over the next 20 years.

Table A-84: Inbound Commodities for Spokane County

Top 10 Commodities Shipped Into Spokane County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	2,264,274	1,392,326	(38.5%)	102,680	107,006	4.2%				7	6	(24.6%)	2,366,961	1,499,338	(36.7%)
	Value/Ton	\$375	\$425	13.3%	\$505	\$451	(10.7%)				\$926	\$950	2.6%	\$381	\$427	12.1%
Petroleum or Coal Products	Tons	817,750	1,013,039	23.9%	383,448	385,770	0.6%							1,201,198	1,398,809	16.5%
	Value/Ton	\$638	\$592	(7.3%)	\$712	\$720	1.2%							\$662	\$627	(5.2%)
Chemicals or Allied Products	Tons	1,042,827	1,269,027	21.7%	84,840	113,441	33.7%				1,809	1,479	(18.3%)	1,129,475	1,383,947	22.5%
	Value/Ton	\$2,116	\$2,250	6.4%	\$582	\$611	5.0%				\$5,020	\$4,963	(1.1%)	\$2,005	\$2,119	5.7%
Food or Kindred Products	Tons	1,022,476	1,177,216	15.1%	47,720	72,402	51.7%				236	256	8.4%	1,070,432	1,249,874	16.8%
	Value/Ton	\$893	\$912	2.2%	\$814	\$770	(5.3%)				\$2,451	\$2,860	16.7%	\$890	\$904	1.7%
Clay, Concrete, Glass or Stone	Tons	427,225	371,295	(13.1%)	504,068	497,763	(1.3%)				28	17	(38.8%)	931,322	869,075	(6.7%)
	Value/Ton	\$2,850	\$2,757	(3.3%)	\$80	\$80	(0.1%)				\$268	\$257	(4.4%)	\$1,350	\$1,223	(9.4%)
Primary Metal Products	Tons	308,315	325,354	5.5%	110,820	83,738	(24.4%)				18	5	(71.4%)	419,153	409,097	(2.4%)
	Value/Ton	\$2,596	\$2,294	(11.6%)	\$1,442	\$1,436	(0.4%)				\$2,132	\$2,323	9.0%	\$2,291	\$2,118	(7.5%)
Transportation Equipment	Tons	204,988	329,483	60.7%	104,000	153,068	47.2%				1,187	2,279	92.0%	310,175	484,830	56.3%
	Value/Ton	\$13,080	\$12,755	(2.5%)	\$8,839	\$8,941	1.2%				\$45,672	\$24,384	(46.6%)	\$11,782	\$11,606	(1.5%)
Electrical Equipment	Tons		325,019			2,906						965			328,889	
	Value/Ton		\$19,925			\$9,038						\$16,476			\$19,818	
Farm Products	Tons	67,894			233,904						519			302,316		
	Value/Ton	\$1,131			\$139						\$952			\$363		
Fabricated Metal Products	Tons	294,976	349,523	18.5%							204	251	23.3%	295,180	349,775	18.5%
	Value/Ton	\$4,110	\$4,077	(0.8%)							\$5,523	\$5,684	2.9%	\$4,111	\$4,078	(0.8%)
Pulp, Paper or Allied Products	Tons	252,989	281,508	11.3%	25,824	24,237	(6.1%)				339	363	7.3%	279,151	306,108	9.7%
	Value/Ton	\$1,593	\$1,630	2.3%	\$1,113	\$1,018	(8.6%)				\$1,594	\$1,656	3.9%	\$1,549	\$1,581	2.1%
All Commodities In Spokane County, WA	Tons	7,634,188	7,961,269	4.3%	1,923,864	2,114,152	9.9%				18,852	22,580	19.8%	9,576,905	10,098,001	5.4%
	Value/Ton	\$2,889	\$3,974	37.6%	\$1,551	\$1,785	15.1%				\$9,205	\$10,512	14.2%	\$2,633	\$3,530	34.1%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

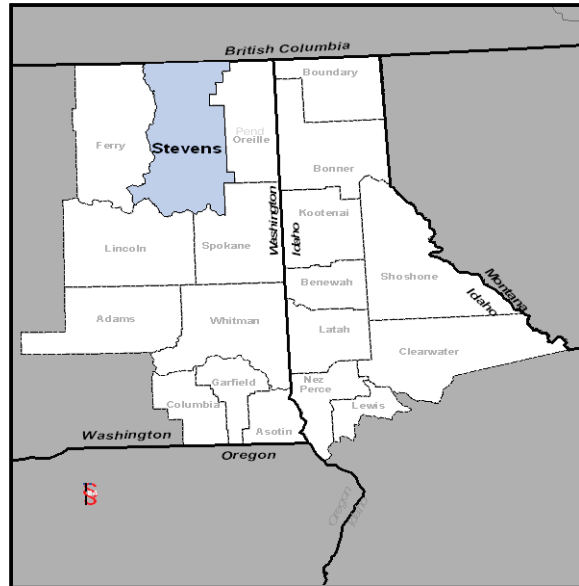
Table A-85: Outbound Commodities for Spokane County

Top 10 Commodities Shipped Out Of Spokane County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	1,245,535	949,715	(23.8%)	180,960	113,095	(37.5%)				403	564	40.0%	1,426,898	1,063,374	(25.5%)
	Value/Ton	\$423	\$387	(8.5%)	\$1,041	\$1,065	2.3%				\$875	\$923	5.4%	\$501	\$459	(8.4%)
Food or Kindred Products	Tons	721,752	613,451	(15.0%)	83,560	77,853	(6.8%)				1,968	3,234	64.4%	807,280	694,538	(14.0%)
	Value/Ton	\$827	\$854	3.3%	\$443	\$443	0.2%				\$1,668	\$1,719	3.0%	\$789	\$812	2.9%
Chemicals or Allied Products	Tons	711,983	625,989	(12.1%)	27,280	29,478	8.1%				2,131	2,165	1.6%	741,395	657,632	(11.3%)
	Value/Ton	\$3,025	\$2,937	(2.9%)	\$988	\$1,009	2.1%				\$4,607	\$5,909	28.3%	\$2,954	\$2,861	(3.2%)
Clay, Concrete, Glass or Stone	Tons	593,016	445,110	(24.9%)	31,000	35,379	14.1%				59	70	17.8%	624,075	480,559	(23.0%)
	Value/Ton	\$283	\$295	4.1%	\$1,346	\$1,178	(12.5%)				\$5,232	\$7,271	39.0%	\$337	\$361	7.2%
Farm Products	Tons	154,033	170,173	10.5%	398,684	221,568	(44.4%)				1,966	2,246	14.2%	554,683	393,988	(29.0%)
	Value/Ton	\$674	\$677	0.5%	\$214	\$234	9.3%				\$221	\$134	(39.4%)	\$342	\$425	24.3%
Fabricated Metal Products	Tons	515,441	548,197	6.4%	800	1,018	27.3%				704	1,284	82.4%	516,945	550,498	6.5%
	Value/Ton	\$3,687	\$3,648	(1.1%)	\$4,130	\$4,130	0.0%				\$6,539	\$6,363	(2.7%)	\$3,691	\$3,655	(1.0%)
Machinery	Tons	508,637	728,843	43.3%							2,930	5,774	97.0%	511,567	734,617	43.6%
	Value/Ton	\$13,966	\$14,245	2.0%							\$25,589	\$26,418	3.2%	\$14,033	\$14,341	2.2%
Waste or Scrap Materials	Tons		19,802			490,250						6			510,058	
	Value/Ton		\$206			\$179						\$2,796			\$180	
Transportation Equipment	Tons	411,684	713,562	73.3%	2,040	2,375	16.4%				11	13	27.1%	413,735	715,951	73.0%
	Value/Ton	\$7,861	\$8,714	10.9%	\$2,161	\$2,161					\$12,066	\$18,430	52.7%	\$7,833	\$8,692	11.0%
Primary Metal Products	Tons	385,067									784			385,851		
	Value/Ton	\$2,230									\$10,952			\$2,248		
Petroleum or Coal Products	Tons		324,956			13,145						302			338,403	
	Value/Ton		\$695			\$642						\$249			\$693	
Electrical Equipment	Tons	314,669									1,139			315,808		
	Value/Ton	\$15,249									\$20,368			\$15,268		
All Commodities In Spokane County, WA	Tons	6,497,425	6,473,287	(0.4%)	1,126,956	1,104,775	(2.0%)				44,248	56,570	27.8%	7,668,629	7,634,632	(0.4%)
	Value/Ton	\$4,199	\$5,351	27.4%	\$688	\$728	5.9%				\$4,529	\$6,476	43.0%	\$3,685	\$4,691	27.3%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

STEVENS COUNTY, WASHINGTON

Stevens County is located in northeastern Washington between Ferry and Pend Oreille Counties, bordering British Columbia, Canada. These three Washington counties are known collectively as the Tri-Counties. Stevens County is the fifth largest county in terms of land size among all Washington Counties. The Colville National Forest takes up much of the northern half of the county. Sixty percent of the Tri-County land area is publically owned. The Colville National Forest and the Little Pend Oreille National Wildlife Refuge are located in eastern Stevens County. The Spokane Indian Tribal Lands are located in the southern end of the county.



Stevens County has six incorporated cities ranging in population from 169 to 4,965. Colville is the county's largest city and is located 68 miles north of Spokane. Colville is also the county's retail and distribution center, and is home to several of its largest companies. The primary economic drivers in Stevens County are retail trade, manufacturing, and government employment.

Stevens County has a higher than average number of sole proprietorship businesses compared to the balance of the state. As a result small businesses make up a higher percentage of employment activity in Stevens County. Forestry, wood products, and mining continue to play a role in the county's economy but employment in these sectors continues to decline throughout the IPH study area.

POPULATION TRENDS

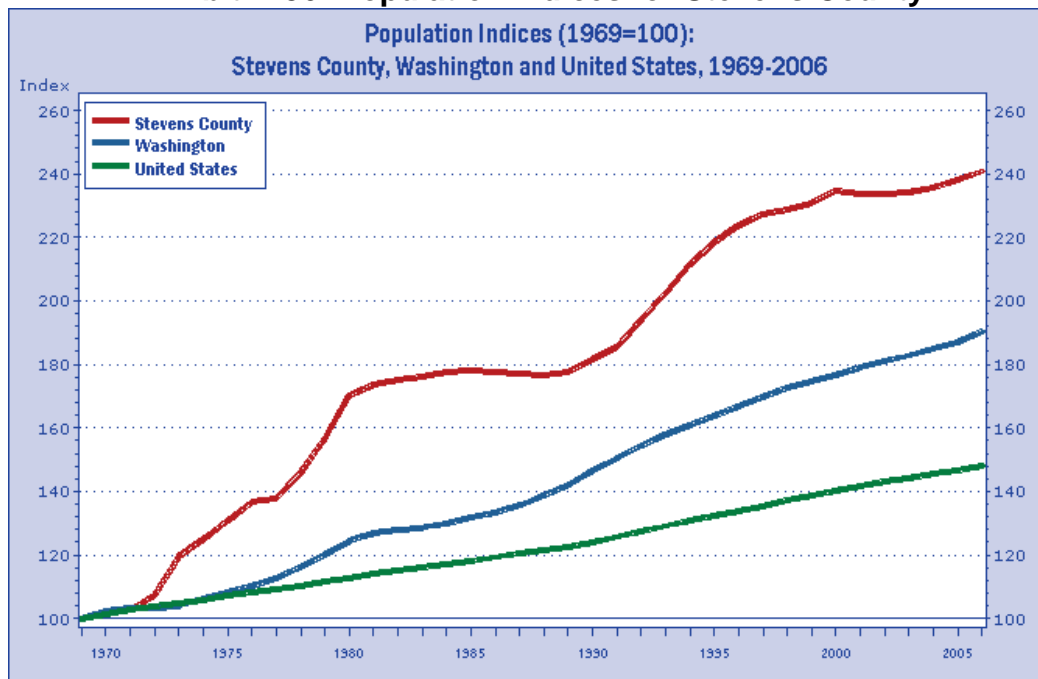
According to the U.S. Census Bureau the population of Stevens County was 42,050 in 2008, increasing by over 11,000 since 1990. The county's population growth was lower than the State of Washington as a whole from 2000 to 2007 as Stevens County's population grew 5 percent compared to an 11.1 percent population growth for the state as a whole. Twenty-three percent of the population in Stevens County is under 18 years of age very similar to the statewide population in this age group at 23.8 percent. Over 16 percent of the population in Stevens County lives below the poverty level and the 2007 median household income of \$41,861 is substantially below the state median income of \$55,628.

Table A-86: Population Data for Stevens County

Year	Population
1990 ²⁰⁸	30,948
2000	40,066
2008 ²⁰⁹	42,050
2015	45,390
2020	47,700
2030	52,410

Exhibit A-36 shows the population growth of Stevens County compared with the growth in Washington and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year, 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. The population of Stevens County increased by 143.8 percent during this period compared to 92.9 percent population growth statewide and 49.7 percent growth nationally.²¹⁰

Exhibit A-36: Population Indices for Stevens County



INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Unemployment in Stevens County reached 14.1 percent in January 2009, eclipsing the state average of 9.5 percent, primarily as a result of jobs lost in mining, forestry, and retail. The unemployment rate in December 2008 was 11.1

²⁰⁸ Population data for 1990, 2000, 2015, 2020, 2030 Woods and Poole Economics

²⁰⁹ U.S. Census Bureau Population Estimates 2008

²¹⁰ Pacific Northwest Regional Economic Analysis

percent increasing from 7.7 percent in December 2007. Total employment increased by only 40 jobs in 2008 and existing labor market conditions recently have not improved. Retail sales have declined by 2.7 percent in 2008.

The largest employers in Stevens County include Hearth & Home, a manufacturer of wood and pellet stoves with 340 employees, Boise Lumber with 395 employees, Wal-Mart with 233 employees, and Mt. Carmel Hospital with 170 employees. In-migration of retirees is projected to continue and should result in increased jobs in the construction sector once the recession ends.

Table A-87: Industry Sectors by Employment Stevens County²¹¹

Industry	Employment
Government	2,283
Manufacturing	1,333
Retail Trade	1,171
Construction	417
Transportation and Warehousing	265
Finance and Insurance	156

Government is the largest employer in Stevens County including federal, state, and local governments. Colmac Coil designs and manufacturers heating and cooling coils for Colmac Industries, a nationally recognized manufacturer of laundry equipment. Hewes Marine is a regional boat manufacturer. The manufacturing sector in Stevens County is relatively diversified and the niche heating cluster has been identified by a recent Washington Industrial Cluster study referenced in the IPH Profile.

According to the most recent economic impact study for tourism expenditures in Washington State, tourism generated \$52.3 million in travel spending in 2007 creating 960 jobs and \$3 million in state and local tax revenues.²¹² Travel spending has increased by 3.4 percent over the past seven years in Stevens County.

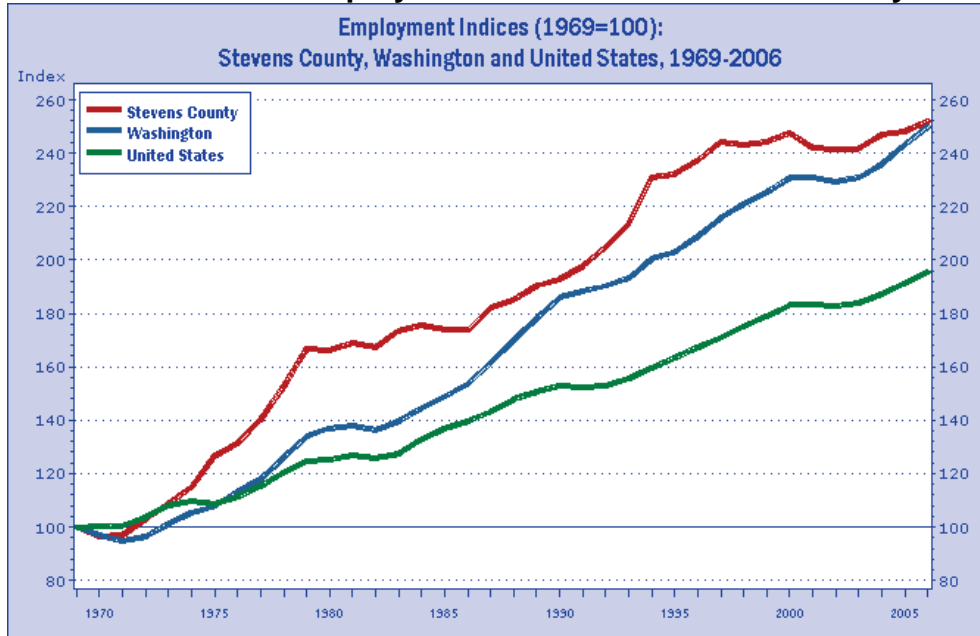
Exhibit A-37 compares employment growth in Stevens County for the past 37 years to employment growth in Washington and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Stevens County's employment increasing by 155.9 percent during the period compared to Washington growth at 156.6 percent and the nation at 98.7 percent.²¹³

²¹¹ Bureau of Economic Analysis, Employment Statistics

²¹² "Washington State County Travel Impacts 1991 – 2007, Washington Division of Tourism

²¹³ Pacific Northwest Regional Economic Analysis

Exhibit A-37: Employment Indices for Stevens County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce availability and skills are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. Over 85 percent of the population of Stevens County over the age of 25 completed high school compared to the statewide average of 87.1 percent. However, only 15.3 percent of the population over the age of 25 have completed a Bachelor’s degree or higher compared with 27.7 percent statewide.

Table A-88: Location Quotients for Stevens County

Industry	Location Quotient	2007 Employment
Forestry and Logging	52.66	225
Wood Product Manufacturing	22.60	757
Mining, except oil and gas	5.44	78
Machinery Manufacturing	5.07	391
Agriculture and Forestry Support	2.69	58
Truck Transportation	1.97	185

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotients shown

in **Table A-88** compare Stevens County to the State of Washington as a whole. Stevens County has a substantially higher employment concentration in forestry and logging and wood product manufacturer than the state as a whole and there is a degree of economic specialization within the county in these two businesses. Unfortunately, employment concentration in these two sectors is generally an indication of economic vulnerability rather than potential competitive advantages as both of these sectors continue to decline and long term trends do not indicate sustainable employment growth within these two sectors.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market; companies receive supplies from international firms to produce their products; and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

U.S. Highway 395 links Stevens County to Spokane and Interstate 90 to the south and Kettle Falls and Canada to the north. State Route 20 runs from east to west linking the county to U.S. Highway 2, the cities of Newport and Sandpoint to the east and Tonasket and U.S. Highway 97 to the west. Stevens County is served by a BNSF rail line that links to the Kettle Falls International short line rail road that runs into Canada.²¹⁴ The closest commercial airport is the Spokane International Airport and there is state owned airport at Avery and a municipal airport at Colville.

MAJOR COMMODITIES

Tables A-89 and **A-90** identify the top commodity imports and exports for Stevens County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary

²¹⁴ Washington Department of Transportation Rail System Map

traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

Stevens County's largest import in 2007 was lumber or wood products with almost 370,000 tons imported annually. There is a large gap between its first and second largest import, food and kindred products with 58,000 tons annually. Over the next 20 years, lumber or wood products, is projected to decrease significantly, almost 63 percent, to about 137,000 tons. The county's largest export is also lumber or wood products, totaling more than 1.8 million tons in 2007. Its second largest export is nonmetallic minerals with about 526,000 tons exported annually in 2007. By 2027, Stevens County's lumber or wood product exports will decrease by more than 43 percent, while nonmetallic minerals is projected to increase by 40 percent, to approximately 736,000 tons annually.

Table A-89: Inbound Commodities for Stevens County

Top 10 Commodities Shipped Into Stevens County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	368,784	137,238	(62.8%)										368,784	137,238	(62.8%)
	Value/Ton	\$344	\$413	19.9%										\$344	\$413	19.9%
Food or Kindred Products	Tons	57,894	83,054	43.5%										57,894	83,054	43.5%
	Value/Ton	\$885	\$887	0.2%										\$885	\$887	0.2%
Primary Metal Products	Tons	27,108	40,307	48.7%										27,108	40,307	48.7%
	Value/Ton	\$2,982	\$2,371	(20.5%)										\$2,982	\$2,371	(20.5%)
Clay, Concrete, Glass or Stone	Tons	25,828	29,820	15.5%										25,828	29,820	15.5%
	Value/Ton	\$383	\$386	0.5%										\$383	\$386	0.5%
Pulp, Paper or Allied Products	Tons	22,705	29,916	31.8%										22,705	29,916	31.8%
	Value/Ton	\$1,233	\$1,374	11.4%										\$1,233	\$1,374	11.4%
Petroleum or Coal Products	Tons	18,753	25,812	37.6%										18,753	25,812	37.6%
	Value/Ton	\$238	\$230	(3.3%)										\$238	\$230	(3.3%)
Fabricated Metal Products	Tons	18,691	28,828	54.2%										18,691	28,828	54.2%
	Value/Ton	\$3,646	\$3,664	0.5%										\$3,646	\$3,664	0.5%
Chemicals or Allied Products	Tons	14,187	22,724	60.2%										14,187	22,724	60.2%
	Value/Ton	\$1,265	\$1,258	(0.5%)										\$1,265	\$1,258	(0.5%)
Nonmetallic Minerals	Tons		15,042												15,042	
	Value/Ton		\$313												\$313	
Waste or Scrap Materials	Tons	8,751												8,751		
	Value/Ton	\$282												\$282		
Transportation Equipment	Tons	8,227	17,523	113.0%										8,227	17,523	113.0%
	Value/Ton	\$15,304	\$14,997	(2.0%)										\$15,304	\$14,997	(2.0%)
All Commodities In Stevens County, WA	Tons	595,740	471,081	(20.9%)										595,740	471,081	(20.9%)
	Value/Ton	\$1,142	\$2,059	80.3%										\$1,142	\$2,059	80.3%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

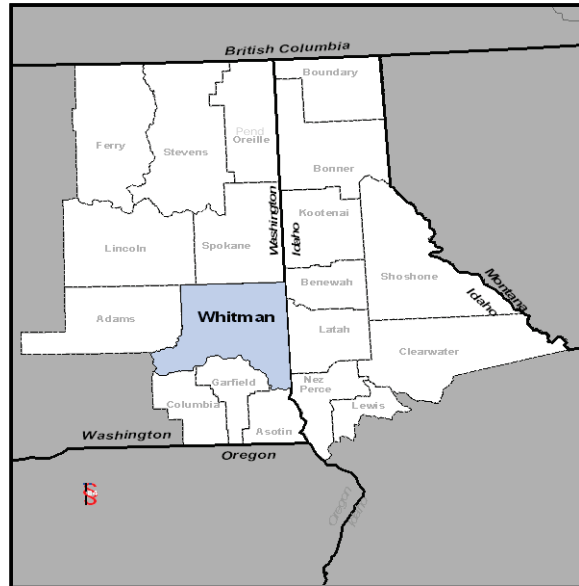
Table A-90: Outbound Commodities for Stevens County

Top 10 Commodities Shipped Out Of Stevens County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Lumber or Wood Products	Tons	1,664,802	908,851	(45.4%)	229,120	165,704	(27.7%)							1,893,922	1,074,555	(43.3%)
	Value/Ton	\$442	\$485	9.6%	\$1,005	\$1,005	0.0%							\$510	\$565	10.7%
Nonmetallic Minerals	Tons	151,336	236,737	56.4%	374,844	499,915	33.4%							526,180	736,652	40.0%
	Value/Ton	\$24	\$21	(11.3%)	\$6	\$6	(0.0%)							\$11	\$11	(2.4%)
Fabricated Metal Products	Tons	108,521	167,154	54.0%										108,521	167,154	54.0%
	Value/Ton	\$4,547	\$4,622	1.7%										\$4,547	\$4,622	1.7%
Farm Products	Tons	89,304	93,099	4.2%										89,304	93,099	4.2%
	Value/Ton	\$700	\$697	(0.4%)										\$700	\$697	(0.4%)
Clay, Concrete, Glass or Stone	Tons	46,258	52,326	13.1%										46,258	52,326	13.1%
	Value/Ton	\$325	\$323	(0.6%)										\$325	\$323	(0.6%)
Furniture or Fixtures	Tons	21,650	27,478	26.9%										21,650	27,478	26.9%
	Value/Ton	\$4,058	\$4,057	(0.0%)										\$4,058	\$4,057	(0.0%)
Waste or Scrap Materials	Tons	18,335	37,266	103.3%										18,335	37,266	103.3%
	Value/Ton	\$184	\$205	11.1%										\$184	\$205	11.1%
Primary Metal Products	Tons	8,527												8,527		
	Value/Ton	\$1,610												\$1,610		
Pulp, Paper or Allied Products	Tons	5,585	9,144	63.7%										5,585	9,144	63.7%
	Value/Ton	\$21	\$18	(14.4%)										\$21	\$18	(14.4%)
Fresh Fish or Marine Products	Tons		4,122											4,122		
	Value/Ton		\$5,893											\$5,893		
Apparel or Related Products	Tons	3,148	10,161	222.8%										3,148	10,161	222.8%
	Value/Ton	\$12,129	\$12,109	(0.2%)										\$12,129	\$12,109	(0.2%)
All Commodities In Stevens County, WA	Tons	2,126,728	1,557,878	(26.7%)	603,964	665,619	10.2%							2,730,692	2,223,496	(18.6%)
	Value/Ton	\$717	\$1,059	47.7%	\$385	\$255	(33.9%)							\$644	\$818	27.1%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

WHITMAN COUNTY, WASHINGTON

Whitman County is located in southeast Washington. Its largest city is Pullman which was rated second in a list of “Best Cities for Business” in Washington in 2005. Much of the business activity in Whitman County is centered on agriculture and higher education. The county is the home of Washington State University and its 18,000 students, and eight miles away in Moscow, Idaho, is the University of Idaho. Both of these research universities are part of the Palouse Research Corridor. Companies including Schweitzer Engineering Laboratories and Decagon Devices have chosen to locate their technology based firms here. Whitman County produces the highest quantity of wheat of any county in Washington.



Efforts to diversify the county’s economy have focused on manufacturing and tourism. Access to an abundant electrical power, a well educated workforce, and available industrial park sites have supported the attraction and growth of new businesses to the community. The Port of Whitman County headquartered in the county seat of Colfax manages three industrial parks in the county as well as several port operations. One of the industrial parks has been designated as an Innovation Partnership Zone by the state and a Green Grid Infrastructure Center of Excellence has been located in this park. The Center of Excellence is a public-private partnership focusing on research and green energy technology for IT data centers.

POPULATION TRENDS

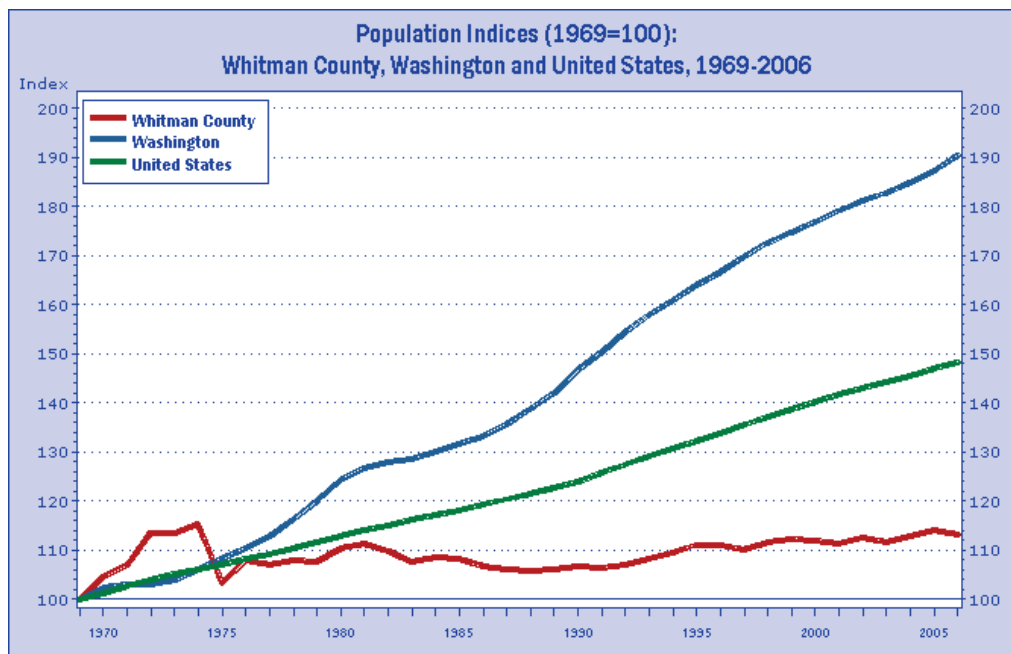
According to the U.S. Census Bureau, the population of Whitman County was 41,664 in 2008, increasing by almost 2,900 since 1990. The county’s population growth was significantly lower than the State of Washington as a whole from 2000 to 2008 with Whitman County realizing only 2.3 percent population growth during this period compared to an 11.1 percent population growth for the state as a whole. Only 15.7 percent of the population of Whitman County is under 18 years of age, which is below the statewide population for this age group at 23.8 percent. Over 26.7 percent of the population in Whitman County lives below the poverty level, which is the highest poverty rate within the study area. This is likely due in part to the fact that the students at Washington State University represent approximately 43 percent of the county’s population. The 2007 median household income of \$36,538 is substantially below the state median income of \$55,628.

Table A-91: Population Data for Whitman County

Year	Population
1990 ²¹⁵	38,775
2000	40,740
2008 ²¹⁶	41,664
2015	42,450
2020	43,290
2030	44,990

Exhibit A-38 shows the population growth of Whitman County compared with the growth in Washington and the nation as a whole for a thirty-seven year period from 1969 to 2006. The population growth indices express each areas population as 100 in the initial year of 1969 and the population growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term population growth between these three geographic areas. The population of Whitman County increasing by 12.0 percent during this period compared to Washington's 92.9 percent population growth statewide and 49.7 percent growth nationally.

Exhibit A-38: Population Indices for Whitman County



INDUSTRY EMPLOYMENT AND WORKFORCE TRENDS

Unemployment in Whitman County increase from 5.1 percent in June 2008 to 6.2 percent in June 2009 primarily as a result of jobs lost in the service and government sector. Whitman County unemployment is still less than the state average, which by December 2009 had risen to 9.5 percent. There were some

²¹⁵ Population data for 1990, 2000, 2010, 2020, 2030 Woods and Poole Economics

²¹⁶ U.S. Census Bureau Population Estimates 2008

modest employment gains in early 2009 in manufacturing, mining, wholesale trade, and information and financial services. The most significant job losses for the first six months of 2006 were in the government sector. The largest employers in Whitman County include Schweitzer Engineering who designs and manufactures power system electronics with 1,465 employees, McGregor's a fertilizer manufacturer with 240 employees, Pullman Hospital with 270 employees, and the largest employer in the county, Washington State University, with 4,321 employees.

Table A-92: Industry Sectors by Employment in Whitman County²¹⁷

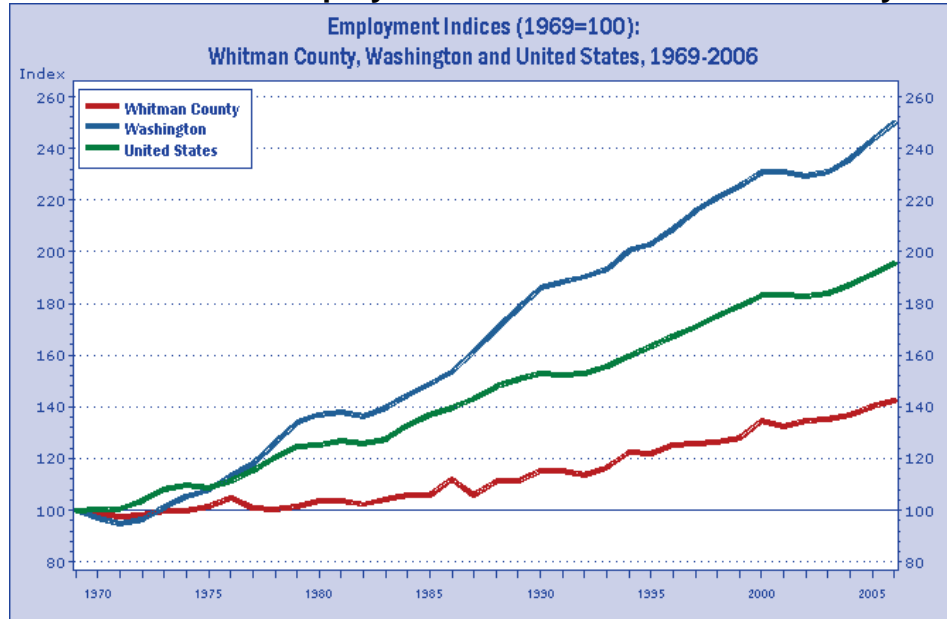
Industry	Employment
State Government	5,139
Local Government	2,001
Retail Trade	1,223
Construction	389
Agriculture, Forestry, and Fishing	368

State government is the largest employer in Whitman County as a result of the large number of state employees at Washington State University's main campus. Other government employers in the county include the city governments, Whitman County government, and the school districts. Retail trade is substantially supported by the student population on campus at the University where enrollment is approaching 18,000 students.

Exhibit A-39 compares employment growth in Whitman County for the past 37 years to employment growth in Washington and the nation as a whole during the same period. The indices show employment in 1969 as 100 and the employment growth in subsequent years as a percentage of 1969. This allows for a comparison of long-term employment growth between these three geographic areas with Whitman County's employment increasing by 41.6 percent during the period compared to Washington growth at 156.6 percent and the nation at 98.7percent.

²¹⁷ Bureau of Economic Analysis, Employment Statistics

Exhibit A-39: Employment Indices for Whitman County



There are a number of key factors that influence businesses when they consider expanding existing facilities or locating new operations. These site selection factors are assessed annually in the “Corporate Site Survey” allowing economic developers to track the most important factors that affect corporate location decisions. Workforce accessibility and skill are critical factors in retaining and attracting corporate investments and new employment. Education attainment is frequently used to assess workforce skill based in a community. Over 92.8 percent of the population in Whitman County over the age of 25 has completed high school compared to the statewide average of 87.1 percent. Forty-four percent of the population over the age of 25 have completed a Bachelor’s degree or higher.

Table A-93: Location Quotients for Whitman County

Industry	Location Quotient	2007 Employment
Crop Production	8.73	341
Merchant Non-durable Goods	3.22	479
Sporting Goods	2.55	122
Animal Production	2.41	39
Food and Beverage Stores	1.81	374
Building Materials and Gardening Stores	1.81	171

A location quotient (LQ) greater than 1.0 indicates that an area has proportionately more workers than the larger comparison area employed in a specific industrial sector. This generally means that an area is producing more of a product or service than is consumed by area residents and the excess is available for sale or export beyond the local area. The location quotients, shown in **Table A-93**, compare Whitman County to the State of Washington as a whole.

Whitman County has a substantially higher employment concentration in crop production than the state as a whole. There are potential opportunities for developing additional economic specialization in the county from this sector primarily in the form of value-added agricultural operations such as food processing, organics, and bio-mass.

TRANSPORTATION ACCESS

Businesses today depend upon transportation networks to move goods and people around as never before. We buy exotic fruits at our local market; companies receive supplies from international firms to produce their products; and bulk commodities like grain, lumber, coal, or oil move into and out of U.S. ports every day. We have come to expect constant access to the global marketplace. While transportation alone is not a sufficient condition to cause economic development to occur, it is a crucial link to both sustainable existing businesses, to attracting new business opportunities to the Inland Pacific Hub study area, and to provide effective access to a larger market area in the future.

U.S. Highway 195 links Whitman County to Lewiston and the Snake River to the south and Spokane and U.S. Highway 395 to Canada to the north. The county is served by two short line railroads, the Washington & Idaho RR and Palouse River & Coulee City RR. These two short lines connect to the Union Pacific Railroad and the BNSF Railway at Spokane. The closest commercial airports are the Pullman-Moscow Regional Airport located in Whitman County, the Lewiston/Nez Perce County airport about 40 miles south of Pullman and the Spokane International Airport 75 miles north. The closest rail intermodal facility serving Whitman County is the BNSF intermodal facility in Spokane. The Port of Wilma is a 2,275 acre port operation on the Snake River at the southeastern corner of the county. The Port of Whitman County manages three on-water industrial parks on the river including Wilma and two additional industrial parks in Pullman and Colfax.

MAJOR COMMODITIES

Tables A-94 and **A-95** identify the top commodity imports and exports for Whitman County in 2007 and 2027. Amounts shown include both the tonnage and value of commodities shipped into (imports) or out of (exports) the county. The tables exclude internal traffic that circulates within the IPH study area. It also excludes the commodity labeled secondary traffic. Secondary traffic represents shipments that can be composed of a single or multiple commodities, that can be shipped one or multiple times between production facilities, a production facility to a distribution center, or a distribution center to a retail outlet. Thus a single product may be counted several times as it moves through a supply chain. For this reason, secondary traffic is omitted.

Inbound traffic represents commodities shipped into the county with funds being sent out to cover the purchase. Outbound traffic represents commodities sent out to other areas with funds sent back to the county to cover the sale. Secondary

traffic represents movement of goods within the area and is an indicator of logistics economic activity such as pick up and deliveries, trans-loading, warehousing, and value added inventory handling.

Whitman County's largest import in 2007 was petroleum or coal products with almost 1.3 million tons imported annually. By 2027, the total is expected to rise to more than 2.3 million tons, mostly due to a 94 percent increase in the transportation of these products being transported by water. The petroleum or coal products commodity group generally includes refined petroleum products such as gasoline, diesel (including bio-diesel) and products such as asphalt, roofing materials and other petroleum based products. While the petroleum or coal products category maybe be worthy of further investigation, the forecasted robust growth of these high weight, low value materials is likely based on predicted increases in fuel prices, making water transport options for these products more attractive.

The county's next largest imports are farm products and lumber or wood products, importing 186,685 and 185,504 tons respectively in 2007. Overall, the county is expected to grow imports by more than 74 percent over the 20 year period. The strongest growth is expected to occur in the water mode for low value – high weight products, suggesting the Port of Whitman County and the surrounding industrial parks will see increased activity.

Whitman County's largest export was farm products totaling more than 1.1 million tons annually. The TRANSEARCH forecast suggests that by 2027, the county will experience a 51 percent reduction in its farm product exports to just over 550,000 tons annually. The decline in farm exports is consistent with predicted trends nationally for agriculture as more crops are consumed locally for value-added activities such as livestock production, locally based food processing and production of ethanol and other bio-fuels. U.S. farmers are also facing increasing foreign competition, fluctuations in the value of the U.S. dollar and greater environmental regulations, all of which can impact price competitiveness of U.S. agriculture exports. These national trends however may not hold true for the IPH study area due to its diverse agricultural production capabilities, access to low cost transportation by rail and barge, and close proximity to major export gateways such as Seattle, Tacoma and Portland.

The county's second largest export in 2007 was food or kindred products with nearly 781,000 tons exported annually. By 2027, food or kindred products are expected to grow by almost 60 percent and become the county's largest export with more than 1.2 million tons.

Table A-94: Inbound Commodities for Whitman County

Top 10 Commodities Shipped Into Whitman County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Petroleum or Coal Products	Tons	173,551	169,052	(2.6%)				1,113,993	2,161,061	94.0%				1,287,544	2,330,112	81.0%
	Value/Ton	\$716	\$679	(5.2%)				\$690	\$704	2.1%				\$693	\$703	1.3%
Farm Products	Tons	20,456	30,521	49.2%				166,228	245,523	47.7%	0	1	32.0%	186,685	276,045	47.9%
	Value/Ton	\$991	\$1,010	2.0%				\$295	\$282	(4.2%)				\$371	\$363	(2.2%)
Lumber or Wood Products	Tons	173,676	316,113	82.0%				11,829	40,991	246.5%				185,504	357,103	92.5%
	Value/Ton	\$289	\$269	(7.0%)				\$987	\$987	(0.0%)				\$334	\$351	5.3%
Nonmetallic Minerals	Tons	3,874	5,873	51.6%				114,049	169,571	48.7%				117,924	175,445	48.8%
	Value/Ton	\$153	\$151	(1.2%)				\$7	\$7	0.6%				\$11	\$11	0.6%
Food or Kindred Products	Tons	76,864	118,122	53.7%				35,411	51,859	46.4%				112,276	169,981	51.4%
	Value/Ton	\$926	\$919	(0.8%)				\$688	\$679	(1.3%)				\$851	\$846	(0.6%)
Chemicals or Allied Products	Tons	15,185	25,172	65.8%	53,680	70,263	30.9%	2,123	11,449	439.4%	1	1	23.9%	70,988	106,885	50.6%
	Value/Ton	\$1,461	\$1,458	(0.2%)	\$488	\$525	7.7%	\$767	\$769	0.3%	\$4,629	\$4,629		\$704	\$771	9.5%
Electrical Equipment	Tons	67,339	122,340	81.7%										67,339	122,340	81.7%
	Value/Ton	\$10,371	\$10,983	5.9%										\$10,371	\$10,983	5.9%
Clay, Concrete, Glass or Stone	Tons	37,220	52,087	39.9%										37,220	52,087	39.9%
	Value/Ton	\$1,235	\$1,249	1.1%										\$1,235	\$1,249	1.1%
Transportation Equipment	Tons		30,632								1				25,797	
	Value/Ton		\$15,082								\$18,022				\$178	
Pulp, Paper or Allied Products	Tons	17,496												17,496		
	Value/Ton	\$1,058												\$1,058		
Waste or Scrap Materials	Tons	4,337	6,694	54.4%				12,127	19,103	57.5%				16,464	25,797	56.7%
	Value/Ton	\$277	\$275	(1.0%)				\$143	\$144	0.3%				\$179	\$178	(0.5%)
All Commodities In Whitman County, WA	Tons	624,933	945,194	51.2%	53,680	70,263	30.9%	1,464,624	2,715,575	85.4%	6	9	36.1%	2,143,243	3,731,042	74.1%
	Value/Ton	\$2,277	\$2,919	28.2%	\$488	\$525	7.7%	\$605	\$637	5.3%	\$6,117	\$7,580	23.9%	\$1,090	\$1,213	11.3%

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

Table A-95: Outbound Commodities for Whitman County

Top 10 Commodities Shipped Out Of Whitman County, WA In 2007 Compared To 2027																
Commodity	Data	Truck			Rail			Water			Air			Cumulative		
		2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change	2007	2027	% Change
Farm Products	Tons	86,820	91,872	5.8%	45,472	19,395	(57.3%)	1,010,060	439,449	(56.5%)				1,142,352	550,716	(51.8%)
	Value/Ton	\$473	\$407	(13.8%)	\$178	\$196	10.1%	\$209	\$212	1.4%				\$228	\$244	7.1%
Food or Kindred Products	Tons	204,822	315,191	53.9%				576,172	932,948	61.9%				780,994	1,248,138	59.8%
	Value/Ton	\$633	\$631	(0.3%)				\$671	\$658	(1.9%)				\$661	\$652	(1.5%)
Electrical Equipment	Tons	334,265	266,369	(20.3%)										334,265	266,369	(20.3%)
	Value/Ton	\$36,566	\$36,607	0.1%										\$36,566	\$36,607	0.1%
Fresh Fish or Marine Products	Tons	138	200	44.9%				35,480	29,857	(15.8%)				35,618	30,057	(15.6%)
	Value/Ton	\$5,833	\$5,833	0.0%				\$3,617	\$3,578	(1.1%)				\$3,626	\$3,593	(0.9%)
Clay, Concrete, Glass or Stone	Tons							4,891	9,483	93.9%				4,891	9,483	93.9%
	Value/Ton							\$65	\$65	(0.0%)				\$65	\$65	(0.0%)
Nonmetallic Minerals	Tons	4,019						215						4,233		
	Value/Ton	\$8						\$7						\$8		
Lumber or Wood Products	Tons	4,164	6,734	61.7%										4,164	6,734	61.7%
	Value/Ton	\$180	\$244	35.4%										\$180	\$244	35.4%
Transportation Equipment	Tons	4,106	17,727	331.7%										4,106	17,727	331.7%
	Value/Ton	\$5,592	\$6,307	12.8%										\$5,592	\$6,307	12.8%
Instrum, Photo, Optical Equip	Tons	3,067	11,800	284.8%										3,067	11,800	284.8%
	Value/Ton	\$55,265	\$28,464	(48.5%)										\$55,265	\$28,464	(48.5%)
Waste or Scrap Materials	Tons		2,351												2,351	
	Value/Ton		\$187												\$187	
Printed Matter	Tons	1,689	3,246	92.2%										1,689	3,246	92.2%
	Value/Ton	\$4,021	\$4,065	1.1%										\$4,021	\$4,065	1.1%
All Commodities In Whitman County, WA	Tons	646,049	720,000	11.4%	45,472	19,395	(57.3%)	1,627,483	1,412,125	(13.2%)	1	0	(19.1%)	2,319,005	2,151,521	(7.2%)
	Value/Ton	\$19,499	\$14,522	(25.5%)	\$178	\$196	10.1%	\$447	\$577	29.2%	\$42,590	\$42,590	0.0%	\$5,749	\$5,240	(8.9%)

Source: IHS Global Insight, Inc., 2007 TRANSEARCH database

INLAND PACIFIC HUB

Transportation Study



Stakeholder Outreach Summary

Final

May, 2010

WilburSmith
ASSOCIATES

In Association with

Halcrow

and

HNTB

The study was supported by the US Department of Transportation, Office of the Secretary, Grant No. DTOS59-08-G-00105

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STAKEHOLDER INTERVIEW SUMMARIES

The purpose of in-person interviews with both public and private transportation professions is twofold:

1. Information gathered from private sector businesses is used as a high-level “reality check” on third party data sources such as TRANSEARCH. This information includes understanding the primary directional flows of product movements, key markets (for both source materials and finished products) and the use of and access to modal services.
2. Interviews are also used to explore the influence of transportation systems in the IPH study area on the competitive position of businesses in the region. The interview guide developed for this outreach examines the sufficiency of the transportation network, potential obstacles or facilitators of growth, and perceptions about future growth opportunities.

The consultant team had an initial goal of conducting at least 25 agencies from a broad cross-section of business activities geographically dispersed across the study area. Ultimately the consultant team visited in-person or by phone 48 public and private sector entities. The list of initial target areas included:

- Major businesses (shippers/receivers) in key industries that rely on the region’s transportation system
- Service / utility providers
- Major carriers from trucking and rail modes
- Air freight forwarders and integrated air cargo companies
- Operators of major intermodal / freight facilities (e.g., rail yards, airports)
- Warehouse and distribution facilities
- Logistics service providers
- Metropolitan Planning Organizations (MPOs) and local governments

During the initiation of the Inland Pacific Hub (IPH) Transportation Study, the IPH Advisory Board requested the consultant team consider key entities and facilities in a broader “area of influence” beyond the nineteen-county study area. As part of the broader outreach effort covering the area of influence, the consultant team interviewed representatives from the Ports of Seattle and Tacoma, as well as officials from British Columbia, Canada.

The interview guide used for meeting with stakeholders is presented in **Appendix A**. Note that one of the conditions specifically stated on the cover of the interview guide is an assurance of confidentiality:

All information provided by this survey will remain strictly confidential. No statements or other information will be linked directly to individual respondents in any publication without the express permission of the respondent (i.e., the respondent would be contacted after the survey for permission to attribute any data or quotations). Demographic, organizational, and other individual information collected from survey respondents will be released only to members of the project team and staff acting on

their behalf in the course of project-related activities, including for record-keeping and follow-up purposes. Demographic, organizational, or data related to respondents will be reported only in aggregate formats with other survey responses.

To meet our commitment to interview participants for maintaining anonymity in the reporting of interview results, the consultant team has broken this summary report into three elements:

Transportation Operations: The first section presents, anonymously, the types of transportation services and shipment volumes for different industry groups, information about key markets in the IPH study area, and discussion of supply chains common to companies interviewed in the region.

Transportation Issues: The second section presents, anonymously, specific comments related to freight infrastructure, access to freight services and other comments about perceptions of the transportation system in the region.

Companies/Agencies Interviewed: The final section presents a summary of companies, public agencies and transport facilities (including ports, local agencies/government and Canadian businesses) contacted for interviews with general information about the type of business each entity represents. The information presented in the first section is generally publicly available and often accessible on company websites, etc.

AGRICULTURE AND FOOD COMPANIES

Companies interviewed in this industry group ranged from a bio-diesel production facility to nationwide producers/distributors of perishable food products. One issue all of the companies in this group had in common is that they are heavy users of transportation services: all of the companies interviewed had their own transportation assets, primarily truck fleets; however, some companies also owned railroad equipment such as railcars. Nearly all of the companies in this group generated significant numbers of truck trips on a daily basis. Most of the companies in this group shipped products to domestic markets, regionally and nationally. A few companies shipped products internationally and only one participated in any cross-border trade with Canada. The company representatives interviewed in this group also tended to be very transportation savvy. Managing transportation resources and practices was a significant element of their overall business operations.

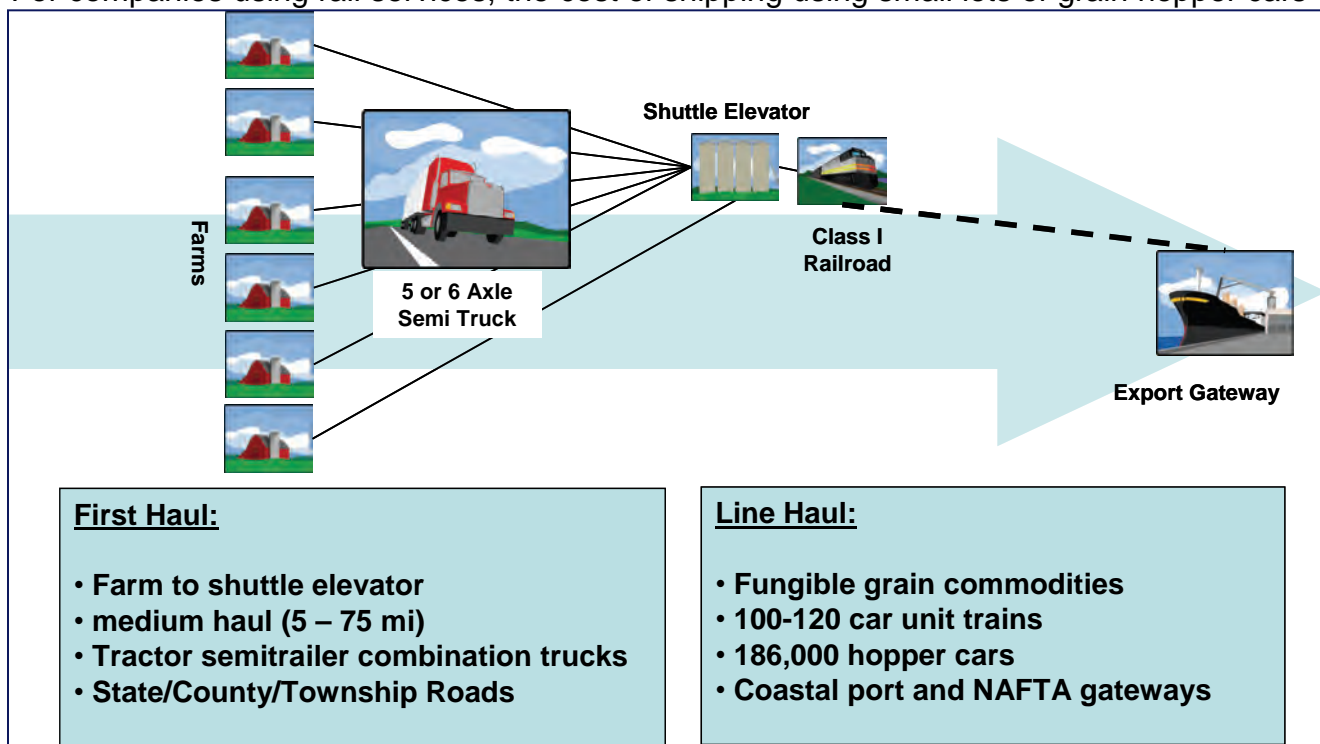
Rail/Truck Freight Modal Issues

Generally, accessing for-hire transportation services and/or transportation equipment for this group of stakeholders was not a significant issue. However, one company representative indicated that economic deregulation of the trucking industry was a mistake because carriers were too free to move assets and drivers to more profitable loads on a seasonal basis, creating a gap in available for-hire commercial truck drivers in the region. But overall, manufacturers were far more likely to raise access to transportation services as a significant issue.

A number of companies in this group also voiced concerns about equipment and service access issues from Class I railroads as well. A number of companies in this group tended to generate small batches of loaded rail cars, ranging from one to two per day. They indicated in the past that the railroads offered unit train rates for car sets of 20 to 26 car. However, more recently Class I railroads have upped the minimum car sets for unit train rates to 100 cars or more, making it more difficult to generate the number of loads required by the Class I carriers. The Class I railroad consolidation of loading facilities known as shuttle train elevators was discussed previously in *Working Paper 3.4 - Trade Opportunities* and the associated supply chain is displayed in **Exhibit 1**.

Exhibit 1: Grain Shuttle Train Supply Chain

For companies using rail services, the cost of shipping using small lots of grain hopper cars



has increased significantly. As a result, more grain shippers will likely truck their grain further to shuttle train elevators like the one operating in Ritzville, WA. Several companies in this group felt that their business could migrate toward the use of rail containers, but saw access to containers and lift costs as problematic. If more affordable containerized services were available that provided efficient transportation access for loading and unloading, local shippers would likely migrate towards such a service.

Highway Modal Issues

When operating on the regional highway system most of the companies indicated that rural highways in the region were “adequate” with snow and fog being the only issues they sometimes encounter. A number of companies indicated the need for better highway facilities running north-south through the region. County roads, especially those that are gravel were a significant issue for some companies because weight restrictions often close these roads for long periods of time.

The largest number of comments about the regional highway system focused on the regional population centers. “Getting through Spokane” was an issue for operators of large truck fleets, citing traffic and outdated facilities. Some companies in this group had even moved their hours of operation to avoid traffic in Spokane as much as possible. These companies also cited a number of specific highway facilities that they saw as particularly problematic, including:

- Market Street
- Division Street
- Maple Street
- Ash Street
- Francis Street
- Trent Street
- Bigelow Gulch Road

Air Modal Issues

Most of the companies in this group, even many in the more traditional grain handling companies indicated that their delivery schedules were quite tight – with hours typically being the metric used for “on-time” delivery. For companies dealing with perishable products, on-time delivery is a crucial issue in their business. To this extent some companies raised the issue of wanting to see wide-body air cargo service to and from Spokane International Airport. This issue is discussed in detail in *Working Paper 3.5 - Modal Issues*.

WOOD, PAPER AND PRINTING INDUSTRIES

This group of companies included producers of timber and lumber products, paper and paper products. One of the more distinctive comments from this group of companies was a recurring sentiment that overall demand in these associated industries was in decline. Diminishing demand in the sector was attributed to greater international competition and competition that was being subsidized in various manners by the country of origin, as well as an overall trend toward more electronic media.

The primary market focus of the companies in this group is domestic markets with a heavy emphasis on the Pacific Northwest (PNW). Companies in this group, however, have a tendency to include the western Canadian markets as part of the PNW. And, a number of companies in this group shipped products nationwide and internationally, primarily to Asia.

Rail/Truck Freight Modal Issues

Similar to the agriculture and food group, companies interviewed in the wood, paper and printing group are apparently apt to be intensive users of transportation services. Nearly all the companies in this group use both rail and trucking transportation services. Many of these companies also operated their own truck fleets. Producers of finished products in this group typically shape transportation decisions contingent on on-time delivery, cost, shipment visibility and equipment availability. However, on-time delivery for this group of companies was more likely to be “the same day” as opposed to hours. Overall, companies in this group rated access to markets and transit time very high for the region. Few companies in this group used air cargo services; however, a few used integrator services such as FedEx or UPS to ship samples and other occasional product needs.

Overall the companies in this group tended to rate rail services provided in the region very high, and indicated that services had improved in recent years. While rail service rated high, rail rates were a concern to nearly all the interviewed companies. Some companies indicated rail rates were getting worse. A specific issue raised by this group with respect to railroad capacity concerned the segment between Spokane and Plummer on the Union Pacific (UP) Railroad line that could not carry higher weight cars. Most of the network in the study supports the new higher weight standard of 286,000 pounds, however the segment between Plummer and Spokane was rated for 263,000 pounds. Some of the companies in this group used intermodal services available in the region. While generally satisfied with region intermodal services, they believe service would improve access if double-stack container services were available.

Highway Modal Issues

The companies in this group generally took advantage of the ability to operate longer combination vehicles (LCVs) at gross weight limits up to 105,500 pounds. Several of these companies stated the ability to operate LCVs in the region offered them a significant competitive advantage over companies in the same industry in other parts of the U.S. However, while operating LCVs was seen as an advantage, operating these large vehicles also created challenges such as getting trucks off mainline routes into company shipping facilities. They indicated it was difficult for large trucks to navigate some streets that had numerous uncontrolled access points. Companies operating LCVs in Idaho IPH study area counties also indicated their drivers sometimes get warnings for crossing over the centerline while negotiating curves on some regional highways. This group of companies also cited the lack of a major north-south freeway through the region as the most significant highway issue in the IPH study area.

Air Modal Issues

None of the companies interviewed in this segment raised issues related to air cargo.

GENERAL MANUFACTURING COMPANIES

This group of companies represented the largest group of companies interviewed and most were involved in the fabrication of products from metals or plastics. The markets for this group of companies were the most diverse among the categories of companies interviewed. Nearly all of the companies interviewed were shipping products or receiving inputs from across North America (primarily the U.S. and Canada), Japan, China and Northern Europe. Many also indicated shipping products to Australia, countries in the Middle East, India, Pakistan and a variety of other locations.

Most of the companies in this group did not own and operate their own transportation assets. Most relied on for-hire transportation services and several worked with third-party logistics firms or freight forwarders to make their transportation and routing decisions. In many cases customers dictated the company's transportation choices. Among the most important factors shaping transportation decisions for these companies was transit time, reliability/on-time delivery and cost. Other key factors included loss and damage, and safety. Most of the companies in this group considered just-in-time as arriving on the same day the shipments were scheduled to arrive. Many of the companies in this group shipped

products into Canada and several complained about lengthy delays due to paperwork issues.

Rail/Truck Freight Modal Issues

Most of the companies in this group relied heavily on trucking services to meet their outbound transportation needs. Several also sourced inputs to their process via containers typically trucked from Seattle after arriving in the port. The close proximity to West Coast ports, Seattle in particular, was viewed as a significant benefit by most of the companies in this group. Conversely, the devaluation of the U.S. dollar in European markets had created new opportunities for product exports for these companies, but the physical distance and lack of timely, reliable eastbound transportation connections to East Coast ports made capitalizing on these new market opportunities difficult. Several companies in this group were searching for more effective, efficient ways to move products to Europe. Some companies were trucking shipments to Vancouver where products were loaded on to eastbound Canadian railroads connecting with ocean vessels in Montreal.

A number of companies expressed opinions that a direct highway route north from the study area through the Canadian border might facilitate a connection to intermodal rail services on Canadian railroads. A number of representatives indicated they had heard “rumors” of a potential intermodal development in Revelstoke, B.C. and/or Trail, B.C. But none of the companies contacted was able to identify specific studies or provide any details about these proposals. (Subsequent discussions with the Class I railroads operating in these areas also failed to identify any plans for intermodal facilities planned for either of these locations. An economic development organization in the city of Kamloops, B.C. has studied and proposed an intermodal facility in Kamloops, but currently the railroads do not support this development). There was also some divergence among companies, primarily regarding their company’s existing location in relation to any proposed north-south highway corridor route alignment and the access they would have to such a proposed route.

While few companies in this group currently used LCV configurations to meet their trucking needs, several indicated that they were looking more closely at how LCVs might increase their productivity.

One of the major issues raised repeatedly by general manufacturing firms was the lack of backhauls and carrier availability. Most of the companies interviewed stated that the lack of backhauls often made it difficult to attract carriers to the study area. Most felt they had to pay a premium for trucking services due to the proportion of one-way loaded trips in the region and these companies also indicated that the seasonality of agriculture sometimes “steals” drivers and equipment from their available pool.

Overall, the companies in this group were more likely to raise concerns over carrier safety and environmental emissions. Many of the representatives interviewed were concerned about cap and trade¹ and other carbon reduction proposals. Most of these companies were taking some steps to reduce their supply chain impacts on the environment, through measures such as shipment consolidation or reducing unnecessary packaging.

¹ Cap and Trade refers to an environmental policy that requires a mandatory cap on emissions but allows flexibility in how agencies comply, and would allow companies to trade carbon credits.

Air Modal Issues

Most of the companies in this group, express “on-time” as being measured in hours but for some it on-time was receiving the package the same day it was promised. Most of the companies in this segment were occasional users of air cargo services for samples, parts replacement or other non-ordinary operations. Most of these companies used integrated express carriers such as Fed Ex or UPS for these shipments and did not often know what airport was used or how the shipments were actually routed.

MED-TECHNOLOGY / HI-TECH

This group of companies tended to have very diverse markets for both their input materials and finished products, including medicine and computers. More than any other group these companies relied almost exclusively on for-hire transportation services, primarily integrated express and less-than-truckload carriers. For these companies transit time, reliability and shipment visibility were crucial, as well as loss and damage, as many of their shipments, though light weight, were of very high value.

For these companies, issues such as bad weather, winter road maintenance, and the order of a carrier’s stops were considered important due to the higher time variability introduced into the supply chains, raising the chance for product expiration or holding up a scheduled process. Some companies in this group also expressed the desire to see more wide body cargo aircraft land at Spokane International Airport.

TRANSPORTATION, WAREHOUSING AND DISTRIBUTION

The companies in this group included for-hire and private trucking operations, railroad companies and third-party logistics providers.

Service providers in this group that utilize commercial vehicles tend to focus on three primary issues: 1) Identifying opportunities to increase their lane balance (i.e., reduce empty backhauls); 2) Specific infrastructure deficiencies or bottlenecks; and, 3) Regulatory issues.

Specific facilities and bottlenecks that were cited as being problematic included:

- Bigelow Gulch Road (Spokane County) dangerous – especially during the winter months
- Coeur d’Alene, ID - low bridges and oversize load limits
- Highway 200 – no oversize loads
- Idaho and Montana will often limit widths or prohibit wide loads during construction
- Some roads restricted on size – e.g., US-2 Idaho to Montana; Lewiston, ID to Boise, ID on US-95
- Mountain Passes to Seattle often closed (more in recent years) - old hands say more pass closures in last 3 years than in the prior 20 years
- Need better driver rest area facilities: Many rest stops open only seasonally, with limited hours. Need more facilities close to Seattle (nearly 30 miles to any truck stops from Seattle). Rest stops or parking areas should be more frequent since driver service hour regulations have changed to more strictly regulate driving and rest hours for long-haul operators. (Until recently the regulations allowed truck

drivers to drive 10 hours, followed by 8 hours off, then essentially the cycle could be repeated. The new regulations are now based on a 24 hour clock, they stipulate drivers can be on-duty for up to 14 hours, with an 11 hour driving limit, followed by 10 consecutive hours off duty). The need for facilities should also extend to drivers stuck during road closures, as rest stops are often closed in winter

- US-395 in Kennewick, WA (Blue Bridge) – slow, hard to see coming over bridge, poor lane markings, a bypass would be good
- Market Street in Spokane
- Need the Huetter Bypass in Idaho to avoid congestion

Among the regulatory and other issues raised by companies operating commercial vehicles:

- Better communications are needed on highway closures (drivers have web access but sites are not updated as soon as roads are opened – can be up to two hours or more) – suggest email notification system – this also includes Idaho
- Load limits on federal system and lack of uniformity in regulations between state jurisdictions cost time and resources
- Infrastructure seems adequate, but potholes are an issue in many places
- Building codes regarding loading zones and access routes to many customers can be problematic, especially in snowy weather and drivers have to hand truck or hand carry product. Docks at Gonzaga University are one example of outdated facilities that make it difficult to load / unload
- Border crossing is very frustrating. Crossing the border between the U.S. and Canada results in a lot of paperwork and delays. Intimidation and harassment of drivers by both jurisdictions (U.S. and Canada) – but worst coming back into U.S. Eastport crossing in Idaho isn't too bad (US-95) – as agents tend to know the companies trucks. I-5 in Blaine, WA is the worst
- Idaho and Montana will often limit widths or prohibit wide loads during construction, and some states require two pilots for large loads

The rail carriers interviewed with regard to service to the study area differed widely in their views. The U.S. Class I carriers view certain types of rail service as simply a business decision. The railroads have and continue to rationalize their networks for efficiency and are attempting to limit the number of stops for certain train types, such as double-stack train container units. The railroads have prioritized their investment dollars out into the future and contend there are simply many more projects of higher priority than providing double-stack intermodal service to a region less than 300 miles from deep water ports.

With regard to making rail connections to the Port of Prince Rupert, none of the railroads contacted believed it would ever happen, simply because there was little or no value proposition given the existing geography of the railroads. Canadian National is currently running dedicated trains from the Port of Prince Rupert to major cities such as Chicago and Memphis. Even though the rail segment is longer than from Seattle/Tacoma to these inland locations, the service is competitive because these trains run non-stop between Prince Rupert and the destination city, reducing the overall transit time. Trying to tap into Prince Rupert and then run a circuitous route through the IPH study area has no value over existing, more direct routes from the port to Chicago. RailEx offers direct service over the

UP line to New York for specialty products, but has expressed a willingness to consider other goods. BNSF has proposed eastbound container service from the Port of Quincy.

The fact that several railroads operate and provide service in the IPH study area appears to be raising the level of innovation and service competition. A number of shippers had raised concerns over the difficulty and cost of moving products to East Coast markets and East Coast ports for export to Europe. Yet, a number of services that serve East Coast markets are either operating or have been proposed by existing carriers (e.g. Railex and Port of Quincy).

AIRPORTS / PORTS

The airports interviewed for the study focused much of their discussion on the opportunities for economic development afforded by reasonably priced land on or adjacent to the primary air facilities in Spokane, WA and Coeur d'Alene, ID. These airports acknowledged that each serves a particular air service market and that to some extent synergies may be gained from each focusing on what it is best at providing, but both also expressed a desire to expand industrial parks and increase air cargo opportunities. Coeur d'Alene acknowledged that their primary business segment is tourism and private leisure. Spokane international is the regional commercial hub. The airports also echoed the sentiments of many businesses regarding the need for improvements in the local road network, particularly access routes to/from airport facilities. The representative of Fairchild Air Force Base did not believe their operations had much impact on the study because for the most part they do not use the surface transportation system in the study area for their refueling operations.

The Columbia/Snake River System Ports that were contacted also primarily discussed the opportunities for economic development with the availability of inland water and rail services to the coast markets that region affords. The 465 miles of river navigation between Lewiston, ID and the coast provides a channel depth of 14 feet that moves 10 million tons of commercial cargo each year. Concerns were raised about an extended lock outage that would require freight from Lewiston to move by alternate modes during the outage.

The coastal gateway ports of Seattle and Tacoma indicated many of their most pressing capacity issues concerned road and bridge improvements that provided access to their facilities:

The Port of Seattle (POS) is adjacent to mainline rail yards for UP and BNSF and several of the terminals have direct rail access. Imports are about 30 percent local (truck) and 70 percent intermodal (rail). Total port traffic is about 40 percent local. Port catchment area is about the same as Port of Tacoma – U.S. Midwest and nearby distribution centers in Fife, Centralia, Kent, Auburn, Sumner, Chehalis, etc. POS is a discretionary port for sea carriers. Rail is a major function of the port. POS was at about 2 million twenty-foot equivalent units (TEUs), but has dropped to about 1.8 million in 2008 and expected 1.7 million in 2009, forecasts then trend back up at about 3 percent per year. The port's capacity is about 3 million to 3.5 million TEUs annually. The port has virtually no land to build new terminals, but access improvements will increase capacity. UP is moving some domestic traffic south and freeing up yard space for more international traffic. BNSF has added four rail

gantries which span multiple railroads and truck lanes and the port is converting a cruise terminal back to freight.

Most trucks flow from the port east on I-90 and south on SR 99. Movement south on I-5 and SR 167 also exists to access the distribution centers in the south Puget Sound area. Current access projects to the Port include: SR 519 westbound (eastbound is done) will eliminate another major at-grade rail crossing; south end of Alaskan Way Viaduct reconstruction will affect Port operations during the reconstruction, but when completed will be better for the Port; East Marginal Way grade separation/overpass will give better access to terminal (removes an at-grade railroad crossing); S. Spokane Street Viaduct widening will add an eastbound ramp to 4th Street.

Port of Tacoma - Port officials covered a wide range of issues, from operations to thoughts of an inland hub development in the IPH study area. Recent improvements had been made to the Port of Bellingham, and the BNSF Railway had recently made investments between Tacoma, Everett and Bellingham. Representatives estimated that in 2008, the port handled 1.9 million TEUs, down from the historic high of two years prior of 2.1 million. At the time of the interview rail traffic was down 12.5 percent for the year. But, on the other hand more cars were coming back from the Midwest full (they used to be empty). Intermodal is the Port's business; 65 to 70 percent of the Port's cargo moves directly from ship to rail. The long term capacity limit of the port is projected to be seven million TEUs. The Port of Tacoma has plenty of capacity on-site; they currently have four rail yards and are adding a fifth. The railroads serving the port now run double-stack container trains more than 8,000 feet long north to Everett and east over the pass. Bulk products make up 8 to 10 percent of the port's business by weight, with 6 million tons of bulk grain moving through the port each year.

All rail traffic funnels to one old bridge (south of Bull Frog Junction, between SR 99 and SR 509). The Tacoma to Everett rail corridor is very important and the busiest within the Port, as it handles freight, Amtrak, and commuter trains. This year BNSF Railway is sending more trains across the northern route. The railroad used to send most trains south, even though the south route is 120 miles longer to Spokane. This route is now slow, ponderous, and busy. The Port representatives said the largest congestion issues they face are not inside the port gates, but are associated with bottlenecks on the regional roadway and railway systems, such as:

- I-5 corridor connections and I-5 flow congestion problems, primarily access to and from the north is a problem (not to south)
- Age of bridges is a big problem
 - 11th Street bridge closed (northeast part of port) it is a draw span which is literally stuck in the open position
 - Murray Morgan Bridge (11th Street further west of viaduct) – historic bridge which used to carry Route 99 and is now closed to vehicular traffic
 - SR 509 – newer 4-lane cable stay bridge
 - I-5 – Interstate bridge
 - SR 99 – City of Tacoma and FHWA

- Lincoln Ave – City owned – narrow two lane truss bridge
- 167 West extension I-5 to Port – long term extension planned

Both ports also acknowledged that competition from other developments such as Prince Rupert, lengthening the locks in the Panama Canal and improvements at Vancouver will increase their level of competition and impact their container volumes in the future. The possibility of an all-water Northwest Passage in the future was also raised as another uncertainty that could significantly impact demand.

Regarding the proposition of an “Inland Hub” or “Port” in eastern Washington/northern Idaho, the port representatives interviewed were somewhat divided as to the value the proposition concept offered. Both ports agreed that the Class I railroads would not want to stop eastbound trains to pick-up containers after just clearing the mountains and getting trains up to speed. However, there was some disagreement as to whether an inland port to fill empty containers moving back to the coast, and/or to sort containers between train before arriving at the port, was feasible. There were also comments that growing volumes of export volumes might afford the opportunity to fill empty containers moving west as they passed through the IPH study area. On the other hand, the true value of a sort depot at this point was questioned. It was also argued that filling an empty container and moving it to the port by truck required several fewer lifts than moving the container from rail to truck, filling the container, then lifting it back to rail, and lifting it from rail to ship. Both ports acknowledged that there were both good and bad examples of how transportation assets were currently being creatively leveraged within the IPH study area. Ritzville, WA and Walla-Walla, WA were cited as good examples, while Quincy, WA was seen as an example to be avoided. Officials in both ports also recommended that the best way to improve services in the IPH study area was to find opportunities to consolidate freight volumes.

SERVICE COMPANIES

The companies in this group were either modest users of transportation services or did not use commercial transportation services to any real extent at all. These companies did, however, have a vested interest in the study and the future economic vitality of the region and believed that investments in regional transportation networks could have a significant impact on their businesses. Generally these businesses focused on macro issues such as the need to develop better transportation connections to markets north and south of the study area as a means of competing with other economic regions.

PUBLIC AGENCIES

Generally the public agency interviews tended to focus on specific projects, but a wide variety of topics were covered from the need for public agencies to ensure reasonable railroad rates to the lack of diversity in the regional economy.

Currently Spokane, WA and Coeur d'Alene, ID have two Metropolitan Planning Organizations (MPOs). During the last census when Standard Metropolitan Statistical Areas (SMSA) were redefined Coeur d'Alene, ID did not meet the definition of an SMSA (Post Falls was still considered a rural area at the time of the 2000 Census), but two Idaho cities, Post Falls and Coeur d'Alene, had the option of voluntarily combining into a single SMSA. In the end, the single SMSA designation was derailed by community leaders who feared losing their independent identities. Today the Spokane Regional Transportation

Council does the long range planning in both states for two counties (Spokane, WA and Kootenai, ID) and as a result, planners interviewed indicated there is a much dimmer line between the planning activities for the two urbanized areas.

Other topics included how the region is growing and the fact that older urbanized areas in the study area are having a more difficult time maintaining a healthy tax base as development occurs outward. There was also a discussion of port districts or port authorities. The Idaho counties in the study area have been empowered to form Intermodal Commerce Authorities. Many counties in Washington have formed port districts under state legislative code: RCW Title 53, Section 53.04.010:

(1) Port districts are hereby authorized to be established in the various counties of the state for the purposes of acquisition, construction, maintenance, operation, development and regulation within the district of harbor improvements, rail or motor vehicle transfer and terminal facilities, water transfer and terminal facilities, air transfer and terminal facilities, or any combination of such transfer and terminal facilities, and other commercial transportation, transfer, handling, storage and terminal facilities, and industrial improvements.

While the formation of a port district has come up in the Spokane area from time to time, public officials indicated the concept has never achieved widespread support for two reasons: 1) The question of why has never been clearly explained to community leaders and the public, and 2) The question of the impact to local taxation has never been clearly detailed, including benefits that would be derived.

The last comprehensive plan for Spokane County does include the formation of a port authority/port district as one of the Economic Development strategies under the goal of creating a healthy and sustainable regional economy.²

The public agencies interviewed within the study area discussed a variety of rail and highway projects in progress or planned for the region. The projects discussed include:

- The Geiger railroad spur and proposed railroad transload facility
- Bigelow Gulch Road improvements
- US-395 North Spokane Corridor (NSC) - The segment US-395 NSC from the US-395 Wandermere Interchange to north of Francis Avenue is scheduled to be completed in 2011. The completion of the remaining segments of the US-395 NSC is contingent on funding. The WSDOT is funded to acquire some right-of-way in the remaining segments
- Idaho pursuing better north-south connections on US-95 (the goat trail); south of Lewiston to Boise is very dangerous. US-95 through Kootenai County is a nightmare - cutting over to US-2 makes more sense
- Rehabilitation of the Dover Bridge in Sandpoint, ID with federal stimulus funding (project underway)
- Plans to construct a Coeur d'Alene, ID bypass called the Huetter Bypass
- Bridging the Valley railroad crossing grade separation

² Spokane County Comprehensive Plan (2008 Printing), Chapter 8 Economic Development, Pg. ED-3
<http://www.spokanecounty.org/data/buildingandplanning/lrp/documents/Internet%20version%20comp%20plan%202009.pdf>

Prior to meeting with researchers from Washington State University (WSU) the study team examined their extensive library of transportation research in the region. The professors interviewed at WSU viewed their role in helping the study area extend its global reach as residing squarely in the area of policy and research, as opposed to actively creating projects to implement concepts like an inland hub. When asked about a presentation found on-line attributed to one of the professors that seemed to lay-out the concept for an “Inland Hub” they indicated that the inland hub concept was born from a request by regional leaders to “think outside the box.” They said they had been invited to speak at a regional economic forum and encouraged to think creatively about how the region might leverage existing transportation attributes. At this conference they presented the inland hub concept as a potential way forward. When asked about opportunities for greater involvement by WSA, the professors acknowledged that WSU could play a role as facilitator and educator on regional trade and transportation issues.

Canadian provincial transportation officials contacted for the study noted that for the most part highway investments have gone into improvements in Trans Canada #1, Provincial Highway 3 and the border crossing at Kingsgate, ID. They noted in part the findings of the West Kootenai – Northeast Washington Joint Highway Corridor Study completed in 2005. This study investigated opportunities to enhance highway corridor access between the West Kootenay Region of British Columbia and the Tri-County Region of Washington State. The study examined the costs and projected benefits from three route alternatives north of the border between Trail, BC and Northport, WA, and three alternatives south of the border between Northport, WA and Colville, WA. For the preferred alternative the study found a positive benefit/cost (B/C) ratio of 2.06 and a positive net present value of \$9.4 million (Canadian dollars) would accrue to British Columbia. However, most of the preferred option was geographically located in Washington State, and the economic performance of the proposed improvements were poor: The B/C ratio was -0.07 and the net present value of the investment was -\$25.7 million (U.S. dollars):

“The results of this technical evaluation generally support the conclusion that the existing Hwy 22A route from Trail, BC to the US Border, the Northport-Boundary Road from the Canadian Border to Northport, WA, and State Route 25 from Northport, WA to US 395 offers the most logical route choice. While this conclusion is derived from a number of key technical considerations, it is fundamentally based on attempting to balance the public benefits associated with this investment with the public costs associated with its implementation. The selected corridor(s) offers reduced travel times, vehicle operating costs and enhanced safety performance, and most closely approximates the benefits with the costs. This approach to route selection and justification is standard practice for both the BC Ministry of Transportation and the Washington State Department of Transportation.

The results are, however, also indicative of challenging project justification circumstances (again from a technical perspective), as the measured public benefits do not approach the anticipated cost of implementation. These conclusions are consistent with expectation, given the divergent situation in this area related to the difficult (and thus costly) topographical conditions being traversed and the relatively low traffic volumes under consideration. These conclusions have been proven resilient to a series of sensitivity tests on the cost estimates, traffic growth rate, discount rate and vehicle operating costs.”³

³ West Kootenay – Northeast Washington Joint Highway Corridor Study, Executive Summary, March 2005. Wilbur Smith Associates and Urban Systems for WSDOT and BC Ministry of Transportation. Pg. ES – 7 <http://www.wsdot.wa.gov/NR/rdonlyres/74339811-5617-4B86-879C-534DC0DFD621/0/TableofContentsFinalReport.pdf>

ECONOMIC DEVELOPMENT AGENCIES

Generally, most of the economic development organizations indicated transportation services had not been a major deterrent to attracting or retaining employers. However, they presented there are improvements to the existing transportation network that would be beneficial. Most frequently mentioned was an improved north-south connection to Canada.

Moving traffic away from more congested areas of towns and cities would improve the conditions in the downtown areas and allow for better flow of traffic. Quality of life is a crucial component of the region's economic development as many of the businesses have located in the region because the owner wants to live in the area. Maintaining the quality of life is very important to retaining these businesses. Also, freight traffic frequently conflicts with tourist traffic and in many of the smaller counties tourism is increasingly important to the area's economy.

Several organizations mentioned that there were few complaints about rail service in the region and stated that Burlington Northern Santa Fe (BNSF) Railway has effective intermodal service in the area particularly given the area's location in the BNSF network.

There are a number of competitiveness issues in the IPH study area including:

- Regulatory and tax environment in Washington State
- Cost of land throughout the study area
- Lack of broadband connectivity in the non-metro areas
- Lack of workforce skills in some of the non-metro areas
- A need for additional developed industrial parks.

Communities outside of Spokane, WA indicated that they do not often see Spokane, WA as a collaborative partner. While often expressing a desire for collaboration on issues such as economic development and transportation, several rural communities indicated that they believed economic development and transportation actions mostly focus on improving the status of the Spokane metro area.

Workforce issues are a problem throughout the IPH study area; not everyone has a college degree and many companies do not need employees with four-year college degrees. There is a need for more emphasis on workforce training and Associate's degree programs throughout the rural areas of the study area.

Water resources seem to be a universal concern in both metro and non-metro areas, and could become a critical economic development issue, but must be addressed at a bi-state level.

Many entities in the region claim economic development as part of their mission but there is not a consistent vision about the economic development of the broader IPH study area that everyone endorses. While there is regional business recruiting there is also a need to have regional collaboration between Spokane, WA, Coeur d'Alene, ID and the rural communities in the study area.

Power availability and power quality are generally not an issue; Avista is considered to be an excellent partner for economic development.

Many outstanding colleges and universities in the region are a significant asset for many reasons including; access to research, student populations, attracting quality faculty, and also the quality of life resulting from cultural activities that colleges and universities bring to the area.

INTERVIEW SUMMARY OF ISSUES BY MODE

The table in **Exhibit 2** provides a comprehensive listing of the transportation issues raised during stakeholder interviews. These issues are also assembled in the following categories:

- Capacity / Capability
- Performance / Efficiency
- Condition / Safety
- Proximity / Accessibility

Appendix 2 also presents this information in several alternative formats.

Exhibit 2: Summary of Transportation Issues by Mode

Summary of Transportation Issues by Mode		Legend: ● =Strength/Asset ▲ = Challenge/Need ■ = Unclear classification							
TRUCKING Network			Capacity/Capability		Performance/Efficiency		Condition/Safety		Proximity/Accessibility
Border Crossings		▲	Improve Kingsgate Crossing to Canada at Eastport	▲	Only 2-Lanes w/8 parking spots for commercial vehicle	▲	Route through Sandpoint is difficult		
East-West Alternative Route to I-90				●	Hwy 200 is 25 miles shorter and saves 15 gals of fuel, cuts drive time by 1 hr	▲	Narrow and Winding		Improve Bridge Clearance on Hwy 200 from Sandpoint east to Montana (Bridge in Clark Ford)
I-90 to Plant - Connector Routes		▲	Congestion			▲	Access Management	▲	Designated Connector Routes to plants
North Spokane Corridor		▲	Significant Issue - Need U.S. 395 North South Corridor		The current 45 to 50 minute trip - would take 6 minutes	▲	Slow Processes for improvements		Helps access into Northern Idaho and US95
Road Condition		▲	Overall condition of the regional network	▲	Have to adjust weight in winter for chains & utilize serving yards to disconnect plant from line-haul	▲	Poor Road Condition on Key Routes Lack of maintenance, Excessive Ruts, Safety of Regional Highway Network "2 out of 10"		
Make U.S.-95 4-Lane (Border to Boise)		▲	Major Congestion with 400 trucks per day and Summer tourists in Sandpoint (thru-town)						
Gross Vehicle Weight Limits		●	Impacts infrastructure maintenance and longer life	●	105,500 lbs provides a significant regional advantage	▲	Idaho State Patrol issues off-tracking warnings when running double configurations on some regional hwy's.	▲	California is 80K
Trucking Service				▲	Inefficient connections			▲	Equipment Balance & circuitry? (**lane balance/network?)
North-South Freeway		▲	Need Trade route connector – lack of North/South Freeway is the weakest link	▲	LCV's don't fit well, e.g. through small towns. A freeway would save time				
Bypass Routes						▲	Dangerous Francis Ave/Bigelow Gulch Rd Drivers told to avoid Bigelow Gulch in winter	▲	2 primary routes pass directly through Spokane

Summary of Transportation Issues by Mode		Legend: ● =Strength/Asset ▲ = Challenge/Need ■ = Unclear classification							
TRUCKING Network cont.			Capacity/Capability		Performance/Efficiency		Condition/Safety		Proximity/Accessibility
Local Roadways		▲	Bottlenecks in Spokane Downtown Area	▲	Market Street intersection difficult to negotiate				
Cell Phone Coverage								▲	Better coverage for communication which Truckers rely on
Key Radials		●	Anything to California					▲	395 to Tri-Cities
Road Condition (U.S. v. Canada)						▲	Canada pavement better, but all 2-Lane, Hilly, and Narrow		
Coeur d'Alene		▲	Low Bridges					▲	Oversize load limits
Construction related Limits								▲	ID & MT limit widths/wide loads during construction
Large Load Pilots								▲	Some States require 2 pilots for large loads
Road Restrictions on Size								▲	US 2 and Hwy 200 Idaho to Montana, Lewiston, ID to Boise, ID on US 95
Winter Weather Pass Closures				▲	Design Life is reached for this level of traffic				
Real-time 'Telecom' Traffic Info		▲	JIT information					▲	Just In Time information
Rest Stop & Stranded Facilities						▲	Stuck during closures and rest stops often closed in winter		
Stranded driver facilities since alternative routing is rarely an option						▲	Many rest stops open only seasonally, limited hours		
US 395 in Kennewick-Bypass (Blue Bridge)				▲	Need to slow down	▲	Hard to see coming over bridge, poor lane markings		

Summary of Transportation Issues by Mode			Legend: ● =Strength/Asset ▲ = Challenge/Need ■ = Unclear classification						
RAIL Network			Capacity/Capability		Performance/Efficiency		Condition/Safety		Proximity/Accessibility
Intermodal Rail Service				▲	+10 days longer to use U.S. Rail Service over Canada rail and port				
Railroad Bottleneck between Plummer/Spokane						▲	Replace substandard track on stretch of UP		
Network Position & Density			Density is problematic					▲	Network positioning is problematic
Weight Limits			Low track weight on UP from Spokane to Plummer						
WATERWAY Network			Capacity/Capability		Performance/Efficiency		Condition/Safety		Proximity/Accessibility
Port of Seattle Access								●	Major Regional Strength
AIR CARGO Network			Capacity/Capability		Performance/Efficiency		Condition/Safety		Proximity/Accessibility
Supply Chain Reliability at GEG			Lengthen runway, enable direct Intl flights Asia/Spokane						
Wide Body Jet Service at GEG			Important for perishable cherry products to Japan						
Runway Length			GEG limits on plane size						
INTERMODAL Network			Capacity/Capability		Performance/Efficiency		Condition/Safety		Proximity/Accessibility
Lack of Intermodal			Need a container facility in Spokane	▲	Would increase the use of rail	▲	Would increase the use of rail	▲	Need a container facility in Spokane

REGIONAL FREIGHT FORUMS

As part of the stakeholder outreach conducted for the IPH Transportation Study three regional freight forums were held around the study area in early December:

- Pullman, Washington: Tuesday, December 1, 2009 – Schweitzer Engineering Laboratories Event Center from 12:30 p.m. to 4:30 p.m.
- Sandpoint, Idaho: Wednesday, December 2, 2009 – Sandpoint Community Hall from 8:00 a.m. to 12:00 p.m.
- Spokane Valley, Washington: Thursday, December 3, 2009 – Center Place from 8:00 a.m. to 12:00 p.m.

The purpose of these meetings was to provide an overview of the study process to interested stakeholders, allow stakeholders who had participated in an interview to hear feedback about the issues they raised, and to provide an additional opportunity for any stakeholders to provide additional input. **Exhibit 3** shows the typical agenda for these regional meetings.

Exhibit 3: Regional Forum Agenda Topics



Agenda Topics

- Registration
- Introductions and Welcome
- Regional Freight Plan Overview and Purpose
- Overview of study process and Technical Reports:
 - Stakeholder outreach process and feedback
 - Regional Freight Network Inventory: Nodes Networks and Bottlenecks
 - Economic/commodity profile of the region
 - Community and technology assets
 - Issues/Potential Solutions
- Break
- Work Group Breakout Sessions (Potential Topics):
 - Highway Issues (Infrastructure and Policy)
 - Non-Highway Modes (rail service, air cargo, water/port access)
 - Economic Development Issues
- Work Group report out and wrap-up

PULLMAN, WA FREIGHT FORUM SUMMARY

Comments/Questions

There were several comments and questions that were fielded and responded to during the presentation portion of the freight forums. The following sentences summarize the comments received from forum participants. It was suggested that the study team include tribes in the study and future implementation efforts. It was made clear that they may be interested in providing funding support for economic development initiatives in the area. There was also a general suggestion that the study team talk with the Port of Portland. The consultant team responded to a question about capturing all freight movements in the study

area and elaborated on freight movements and the future predictions of freight movements in the region. There were participants that clarified the verbiage of the Lewiston Valley ports and the Columbia-Snake River System as well as new crop technologies that could potentially increase yields in the study area. It was suggested that the project team be aware of the complexities in setting up Foreign Trade Sub-zones. It was also stated that the team should be aware of the philosophy of build it and they will come and the opportunity for public-private partnerships. Another participant suggested the team address tourism from air traffic and cruise ships (7 lines) on the Columbia and Snake Rivers as well as an extended lock outage. A group of individuals asked the project team to explain in more detail the commodity mix and inbound/outbound commodities charts and an explanation was given that answered the participant's question. It was also stated that the TRANSEARCH data works best for regional or statewide analysis, and is less accurate at the County level and should be communicated before it is released to anyone. Lastly, the Inland Northwest Partners Association was referenced by an attendee.

Highway Issues Breakout Session

The Highway Issues freight session was well attended by local transportation officials and system users who were focused on suggesting current infrastructure deficiencies and directing future transportation investments in the IPH study area. There was a strong emphasis during the lengthy conversations about preserving existing infrastructure and developing regional trade corridors that could efficiently move freight during all seasons. Participants did an exceptional job of identifying the major freight highways in the region and discussing the infrastructure constraints that they encounter when they ship goods in and around Pullman, WA.

Much of the early group discussion was focused on recent developments of the north-south corridors from Spokane, WA and Coeur d'Alene, ID to Pullman, WA and growing southern markets. One participant mentioned that "this has been an issue for 20 years," and expressed optimism for future freight infrastructure development within the study area. Some of this optimism has been fostered by ongoing progress being made on projects such as the development of a continuous four-lane highway on US-95, from Coeur d'Alene, ID to Lewiston, ID.

Further discussions identified major freight highways in the region and the deficiencies that might limit the efficiency of shipping goods on these routes. Bigelow Gulch Road and its recent improvements were one of the first freight connector routes discussed. Access to the Port of Almota via Highway 194 was identified as an access constraint. State Route 26 was identified as a major regional freight route because it has no stop lights from Colfax, WA to Seattle, WA. US-12 was also identified as a major freight route, and participants explained that it currently has very narrow lane widths, limited shoulder space, and short turning radii through many small communities. State Route 194 was identified as a major freight route for the region's agricultural products. Forum participants suggested this regional route could become more important in the near future; local lands are increasingly expected to come out of the Conservation Reserve Program (CRP)⁴ and will likely be used to grow more agricultural products and may create more pronounced impact on local highways. Future agricultural movements could further be impacted by the removal of the four lower

⁴ For more information visit: <http://www.nrcs.usda.gov/programs/CRP/> and <http://www.fsa.usda.gov/FSA/webapp?area=home&subject=copr&topic=crp>

Snake River dams, which would channel significant freight growth traveling on the regions' already congested highways.

Shippers in attendance identified several route segments that are detrimentally impacted by congestion. US-195 in Colfax is a major congestion point, as well as US-95 in Plummer and Moscow located in the Idaho portion of the study area. Participants agreed there are several physical and geometric highway design issues on freight dependant highways in the region.⁵ They elaborated that there are many issues related to the typical 'cut and fill' road construction that is common in the area. They said it often creates snow drifting problems during winter months and sometimes are impacted by dust problems in summer months. One suggestion to combat this was to create buffer zones along highways with sufficient CRP rights-of-way.

Forum participants eagerly discussed growing potential for the movement of super loads throughout the study area, such as wind turbines and blades. Much growth is expected in this area in the near future, as oil rig equipment is being transported through Vancouver ports to the Port of Lewiston. One participant estimated that 196 modules are expected to be moved in the next 18 months and that this issue demanded immediate regional attention because it is a primary gateway for over-dimension loads.

The discussion of over-dimension loads led participants into an evaluation of regional spring-load restrictions. It was suggested that Whitman County, in particular, pay considerable attention to regulatory restrictions (primarily differences in truck size and weight among states and provinces) and should investigate the potential to develop a priority system for determining which roads may most benefit from near-term infrastructure investments. Participants suggested that there be more cross-border cooperation to most easily facilitate the growth in over-dimension and super-haul loads in the study area.

Technology and communications issues also generated lively discussions between group members. One participant discussed the potential benefits of inserting a fiber-optic line between Pullman and Spokane to help connect the southern portions of the study area. The group also discussed future technologies such as "Intellidrive," an initiative by the USDOT that the Idaho Transportation Department (ITD) is participating in. Intellidrive is working to implement real-time communication technologies between vehicles and between vehicles and the infrastructure. Several shippers discussed the benefits of implementing a freight notification system that would help shippers with route planning and the identification of alternative routes within the study area.

Shippers in attendance welcomed the opportunity to establish a regional freight shippers' group to bring vested local individuals together to discuss transportation issues and evaluate the potential for consolidating loads and creating lane balance. Participants explained that there was currently no such group in place, and could coordinate with such groups as the Washington Trucking Association and would benefit from some sort of representation at their annual conference.

⁵ Note: Ryan Stewart WSDOT is in the process of updating their design standards including roundabouts.

Economic Development and Other Modal Issues Breakout Session

Attendees to this breakout session included economic development professionals, transportation planners, carrier representatives and shippers. The emphasis was on how the multimodal transportation infrastructure can foster a stronger economy throughout the entire region.

Many in the group stated the focus of agencies in the IPH study area should be on maintaining and enhancing the transportation infrastructure to support the existing economy. One person stated the current transportation infrastructure is not set up to attract new and diverse businesses and that attracting a major new enterprise, such as another Schweitzer Engineering Laboratories, will not occur very often. Many believed more economic benefit would be generated through essential and continual improvements to the existing infrastructure such as the north/south US-95 and US-395 corridors that will enable local businesses to better compete regionally, in Canada and in global markets. Creating a network of all-weather roads is necessary to get the region's agricultural products to the river ports in the spring.

One person discussed the need for executives from the larger and medium-sized regional businesses to travel by corporate jet because of the limited passenger service out of Spokane International Airport. However, another person did not understand why commercial service was offered at both the Moscow and Lewiston airports when they are only 35 miles apart. One busier airport with better roads leading to it may be able to attract more airlines with larger aircraft and more frequent service connections.

Discussion about river freight transportation involved the imbalance of equipment availability. Because of the large tonnage of agricultural products shipped from the region to Portland/Vancouver, a significant number of empty barges need to be transported to the ports in Lewiston, ID and Clarkston, WA. There is not much inbound product shipped from Portland/Vancouver to the study area. A shippers association may be able to identify opportunities to bring more freight into the area via river barges. Transportation rates for bulk grain shipments have dropped significantly as a result of the recent economic recession and this has reduced the demand for shipping grain by container on the highways to rail terminals for delivery to the Pacific ports.

Several participants in the group stated that this stakeholder meeting was the first time they had become aware of the IPH project for the region. They were encouraged by the amount of integration that has been achieved and the extent of the study results to date and some expressed interest in further involvement. The general consensus was that the effort should continue and be expanded to include more local economic development agencies, tribal agencies, private commerce, educational institutions, carriers, and shippers. They believed public and private sources of project funding should also be included. A regional shipper association should be incubated to enable local shippers and carriers to jointly explore common challenges and share success strategies. Resources such as the Innovative Partnership Zone (IPZ) and the Idaho Regional Optical Network (IRON) could receive marketing support from a regional transportation and economic development association. Additional economic development comments included the potential to develop bedroom communities to provide residential opportunities for commuters to travel in and out for technology based companies.

The WSA project team identified a strong correlation between infrastructure preservation and regional mobility. In addition, there was a strong local interest in developing all-season trade corridors to foster national and global freight connections, including river transport.

Pullman, WA Forum Final Ranking of Issues

- Infrastructure Preservation and Improvement – 43
- Existing Transportation Networks – 20
- Business Retention – 19
- Regional Freight Mobility – 11
- National/Global Connections – 8
- Trade Corridors - 1

Individual Breakout Session Rankings based on Transportation Policy Goals

Highway Issues

- Preserve What Exists – 29
- Trade Corridors – 23
- All-Season Roads – 9
- Improved Communication – 9
- Safety - 7

Economic Development / Other Modal Issues

- Highway Preservation and Improvement – 19
- Existing Transportation Networks – 16
- Support River Transport – 14
- Support Passenger Airline Service – 8
- Insure Adequate Rail Transportation – 5
- Help Maintain Competitive Transportation Costs – 3

SANDPOINT, ID FREIGHT FORUM SUMMARY

Comments/Questions Fielded and Responses

There were several comments and questions that were fielded and responded to during the presentation portion of the freight forums. The following sentences summarize the comments received from forum participants. One participant questioned “Secondary Traffic” (from Inbound and Outbound Commodity charts) and the consultant team explained what secondary traffic is. Another participant raised the question related to through movements and the extent that they are being accurately captured in the study and the consultant team expanded on what constitutes a through movement and thought they were accurately captured. The Pacific Northwest Economic Region (PNWER) was mentioned and there was a statement of support for multiple north-south corridors from a past Chair. An additional participant questioned the presentation where the consultant stated the region is not positioned for trade with Europe. The consultant team responded that Vancouver-Montreal is more direct route, and the current route is circuitous due to the current configuration of U.S. rail lines and congestion at Chicago (min. 2 days to get through). Possible solutions offered included coordination with intermodal facility being planned for

Revelstoke, B.C, and north-south corridor improvements in the U.S. One participant suggested that the project team not try to hit a “home run” with this project, and rather focus on incremental freight planning projects to reach the region’s goals. The final question from participants in the Sandpoint forum eluded to the feasibility of a facility in between Seattle and Chicago (potentially in our region) for full trains to on/offload and the consultant team felt the answer was “no”.

Highway Issues Breakout Session

The Highway Issues break-out group at the Sandpoint, ID freight forum came well prepared to discuss several of the region’s transportation bottlenecks and deficient highway connections. Participants energetically discussed urban bypasses and their likely impacts on regional freight mobility in the near future. In addition to extensive discussion about the proposed bypasses around Sandpoint, ID and Spokane, WA the Wilbur Smith Associates (WSA) consultant project team gained a good understanding of the routes that shippers, receivers, and public officials felt most negatively affected freight movement in the region.

Much of the group discussion focused on freight routes and their connections to local freight-generating facilities. Several participants thought that if the Huetter Bypass was completed it would have trickle down effects to alleviate many transportation bottlenecks in Coeur d’Alene area, and that combined with the current work on US-95 to bypass Sandpoint this could be a very good truck route. They felt that several roads were currently being used (the diagonal road bypass, connecting US-95 to SR-41) to bypass signals on US-95 north of Coeur d’Alene. Participants also indicated that there were significant flow issues on US-2 in Newport and Priest River, the US-2 link from Newport to Sandpoint, the trip through Sandpoint to connect with US-95, as well as trucking issues on SH-53 in Rathdrum.

Several participants discussed border crossing constraints at the Eastport/Kingsgate crossing on US-95. In general, they said that southbound traffic was delayed more often than northbound traffic, and at times there have been more than 30 trucks waiting to cross the border. Participants alluded to the potential for pre-screening vehicles at this port; a viable solution that has seen success to help speed border crossings at the Pembina facility in North Dakota. It was mentioned that there may already be investment occurring at the Eastport/Kingsgate crossing in the form of Canadian economic development dollars.

The border crossing discussions led into group discussions of the potential for technology solutions in the region. It was suggested that the Eastport/Kingsgate facility invest in x-ray vehicle screening technology to make trans-border freight transport more efficient. Other technology discussions focused on the development of a public awareness campaign to create signage that educates drivers of other vehicles about the presence of large trucks.

The Sandpoint, ID highway forum discussions ended with an open-ended evaluation of regional truck size and weight restrictions. One participant suggested that shipping freight through the intersection of US-2 and SH-57 is extremely difficult due to the centerline restrictions there and the general geometry of that particular intersection. Another group participant suggested improving the last 25 miles of US-95 towards Canada.

Economic Development and Other Modal Issues Breakout Session

Attendees participating in the Economic Development and Other Modal Issues breakout session included economic development professionals as well as transportation and regional planners from the surrounding communities. The focus was on how the transportation and utilities infrastructure can influence economic growth and the quality of life in the region.

There was a concern about the movement of people and workforce mobility. There is a big concern about connectivity for getting people to and from their jobs and enabling visitors to circulate to support the tourist economy without much congestion from north/south truck traffic on US-95. For example, approximately 100 cattle trucks per day can use the highway and create congestion. The new bypass will help alleviate the problem but not eliminate it.

Grade crossings over rail lines can be obstructed or closed for maintenance or when trains stop, waiting to pass through the area. There can be up to 80 trains per day passing through the area. This can hinder workforce mobility, school attendance, emergency vehicle access and other routine surface transportation. The issue is more prominent during the spring when maintenance work is being conducted.

The local airport has easements to the runway from private properties situated around the airport. The FAA does not allow this type of easement and to further develop the airport the easements will have to be abandoned. The City of Sandpoint does not have the funds to acquire those easements. There was some discussion about the need for an additional runway or parallel taxiway. Also, concern was voiced about retaining valued employers (Quest Aircraft, Litehouse) due to transportation limitations in the area. An example was given about Quest having to truck parts to Spokane to be flown to the Puget Sound area for coating and then flown back to Spokane and be trucked back to Sandpoint.

Utilities should be considered a major constraint on economic growth. Of the 50,000 people in the two-county area around Sandpoint, approximately 50 percent live outside of the incorporated areas. Providing utilities becomes more expensive to those living further away from the incorporated areas. To make a return on investment for their shareholders the utilities may only provide limited services. There is not enough population and business density to produce enough revenue to provide service to remote locations. Government grants or other funding options will be required to provide 100 percent coverage to remote areas.

Broadband communication is very limited outside of the main populated areas. For those households with internet access it was stated that less than 25 percent have broadband access, while most households in the region have dial-up connections. The national average cost to provide a fiber-optic broadband access is \$1,000 per connection per household while in the less densely populated areas around Sandpoint the cost is closer to \$1,700 per connection. Lower speed communications hinders cost effective communication capabilities of small businesses outside of the incorporated areas.

The group session concluded with a conversation about regionalizing planning efforts to share ideas, information, costs and benefits. Meetings similar to the IPH format and a unified planning approach will enable local stakeholders to begin to see the benefits of regional strategies for the common good of the economy. The tri-state water agency and

other agencies should start to share in projects and costs because it will be less expensive to do joint projects compared to each community doing their own. It was suggested that there are watershed conflicts between Washington and Idaho regarding outflows and regional plans. On multi-jurisdiction efforts, it will be best to commence with smaller projects so the teams can learn to successfully cooperate before large projects are engaged. Team members will also learn to recognize the external consequences of the project's outcomes that may occur beyond the project's scope. There are at least two organizations in the area that are starting to look at issues from a regional perspective: the Inland Northwest Partners and the Inland Economic Alliance.

The WSA project team identified a strong correlation between urban bypass routes and regional freight mobility during the highway issues ranking process in Sandpoint. It was very clear that bypass routes through the urban areas of Spokane and Coeur d'Alene had significant impacts on freight movement within the Sandpoint region. The participants also identified trade corridors and local connectors as major regional transportation issues.

Sandpoint Final Ranking of Issues

- Communications - 12
- Infrastructure - 10
- Joint Participation -10
- Urban Bypasses – 3
- Trade Corridors - 1

Individual Breakout Session Rankings based on Transportation Policy Goals

Highway Issues

- Urban Bypass Routes – 18
- Trade Corridors – 10
- Local Connectors – 7
- Regional Truck Routes – 4
- Border Crossing Improvements – 2
- Communications/Technology – 1

Economic Development/Other Modal Issues

- Regional Participation in Planning - 24
- Availability of Water, Sewer, Power and Communications Infrastructure – 16
- North/South Connection – 12
- Business Retention – 10
- Local Mobility Enhancements – 6
- Airport Improvements – 4

SPOKANE VALLEY, WA FREIGHT FORUM

Highway Issues Breakout Session

The Spokane Valley stakeholders' forum drew the largest group of highway officials and local transportation users that helped shape a very informative discussion. There was a strong group emphasis on discussing regional freight mobility among national/international trade corridors, urban bypasses, and preserving the existing freight transportation network. There were extensive discussions among a wide-ranging group of topics including: north-south corridors, regional truck routes, access management, border crossings, truck parking, truck size and weight, and communications and technology issues.

Several participants offered their opinions on the need to identify and prioritize freight planning efforts on a preferred North/South corridor; either US-395 or US-95. They agreed that whichever corridor may become a preferred route, it will be imperative to link it to existing bypasses north of Spokane, in Sandpoint, and elsewhere. Participants agreed that Highway 2 will serve as a regional freight corridor once construction on several urban bottlenecks is completed in 2011.⁶ Several participants discussed the Sandpoint bypass route and the implications it will have on relieving urban congestion and fostering economic development there. These improvements, in conjunction with improvements at the Eastport border crossing are expected to accommodate increased volumes of freight traffic. One participant suggested that the corridor could then be primed to handle over-dimension loads traveling through the study area.

Comments were made that overall increased or improved access to I-90 was critical. Several participants agreed that the completion of the North Spokane Corridor would alleviate much of the congestion or access issues.

Freight corridor discussions led to an evaluation of the region's most important regional truck routes and their interoperability. Currently, congestion on I-90 between Spokane and Coeur d'Alene has led regional freight carriers to use several local alternatives including Bigelow Gulch Road and the Huetter Bypass to get a more continuous, uninterrupted flow of goods through the region's metro areas. Greensferry Road and Beck Road were discussed as possible interchange locations. Comments were made that overall increased or improved access to I-90 was critical. Several agreed that the completion of the North Spokane Corridor would alleviate much of the congestion and access issues. The freight corridor discussions also included mention of the possible impacts that may arise from planning on the CANAMEX corridor.

Participants in the highway breakout group identified several locations with access and design issues. One participant explained that the Dover Bridge currently has height and

⁶ One example of an existing bottleneck on US 2 is the Dover Bridge constructed in 1937. It is the most restrictive Idaho bridge on the U.S. 2 corridor, and has a sufficiency rating of three (on a scale of one to 100). Continued structural deterioration has forced ITD to impose height and width restrictions. The speed limit over the bridge has been reduced to 25 mph for safety. Vehicles must make a 2-mile detour when the bridge is closed. The existing 72-year-old trestle bridge will be replaced with a new steel bridge. The new structure will be 1,200 feet long and 72 feet wide. Five traffic lanes will accommodate future expansion of U.S. 2. The scheduled completion is 2011. http://itd.idaho.gov/accountability/US_2_Dover_Bridge.htm

weight restrictions that limit its use for transporting freight. The bridge, however, is currently scheduled to receive stimulus money through ITD to alleviate some of these issues. Other freight bottlenecks identified included Trent Avenue where it ties into Idaho SH-53 (SR-290 in WA) the Pleasant View/SR-41 corridor where it interchanges with I-90, Market Street in Francis, and Airway Heights connections on US-2.

Several participants debated border crossing needs to facilitate growing north-south trade with Canadian provinces. They stated that historically, the US-395 and SR-25 border crossings have lacked improvements and future needs planning. In addition, participants suggested that there may need to be adjustments in hours of operation at several ports of entry depending on the potential for future freight growth in the study area.

Several shipping/receiving representatives elaborated on truck parking issues in the study area. One participant explained that the bulk of the parking issues are related to a lack of truck parking within and near the Spokane and Coeur d'Alene metropolitan areas. Several shippers have noticed an increasing number of trucks parking along on and off ramps, presenting a serious safety concern to general motorists. In particular, there was consensus that there is a lack of parking at the Sprague Lake, WA and Huetter, ID (especially eastbound) rest stops.

One local shipper spoke eagerly about truck size and weight restrictions in the study area. In particular, this shipper raised issue with state regulations that do not allow operation of triple trailers or double 53-foot trailer combinations. The highway breakout group discussed this issue and spoke about the potential for operating triple trailers on an exemption or permit that would allow them limited access only into and out of Spokane. One participant suggested that this could bring increased freight traffic from Montana, where shippers are currently required to break up triple trailer combinations at the border for transport into the study area. Another shipper discussed a specific highway size and weight issue on SR-21, north of Republic, WA. He expressed concerns over the current quality of the road and its potential to haul over-dimension loads to the Port of Almota, WA.

The highway breakout group finished its discussion with communications and technology improvements that could benefit freight moving in the region. Several participants suggested installing and providing online access to mountain pass cameras and webcams. Others suggested a better weather notification system that included email and twitter alerts for system users. Also, the suggestion to create a "Spokane Transportation Club" was discussed. Currently, there is a "club" that is not very effective. The project team asked if shippers would be receptive to the effort being spearheaded by a public agency to improve its organization and effectiveness. No opposition to this idea was expressed. However, the Washington State Good Roads and Transportation Association is working to coordinate something similar.

Economic Development and Other Modal Issues Breakout Session

Participants in the economic and modal breakout group discussed transportation, trade flows, and organizational issues that could have an economic impact on the region.

Several participants discussed enhancing personal mobility within the region. Studies on Bus Rapid Transit, bike paths, and passenger rail connectivity were proposed as potential modes that could be supported with funding programs for analysis and planning to improve

personal mobility, which in turn could generate economic development and public benefits, while at the same time reducing traffic congestion and highway maintenance costs. If the planning was executed for the entire nineteen-county region, it would help integrate the outlying communities and extend the public benefits to those areas.

An enthusiastic group of supporters from Canada discussed creating a trade corridor that would link Spokane and the central IPH study area to Revelstoke, BC. Their proposal was to improve SR-25 along the Columbia River between Kettle Falls, WA and Trail, BC and rename the route as US-395A. This new route would be shorter and avoid the grade issues of the current US-395 route. The corridor would continue to Revelstoke, BC where freight could be loaded onto CN intermodal trains for shipment to Prince Rupert or to the eastern Canadian markets. They stated the corridor could also accommodate fiber-optic cables and a pipeline that could bring fresh water to the IPH study area. Overall, they believe the corridor would generate a significant amount of economic development between the IPH study area and Canada. In addition, group participants discussed the PNWER resolution, the 1st Nation's agreement, and the upcoming 2014 renegotiation of the Columbia River Treaty.

Group participants discussed a wide range of rail issues. One of the most important was for the preservation of the existing short line rail networks. The magnitude of lumber and mining operations has decreased over the past decade leaving the short line railroads with less tonnage to haul and reduced economic viability. The concern was that if the short line railroads cease to operate there will be little chance of re-instituting the service in the future. It was proposed there should be a study to analyze what would be needed for preservation of the existing service and expansion of service enabling short line customers to have better access to the Class I railroad lines. Some of the specific projects could include an improved rail link that currently runs between Spokane, WA and Lewiston, ID via the Tri-Cities for both BNSF and UP and a rail link between Spokane, WA and Trail, BC that would connect the southern portion of the IPH study area by rail to Canadian/Alaskan markets.

Several participants discussed the concept of using air, rail and highway transportation assets along the Spokane/Coeur d'Alene corridor for regional and national distribution. It was recalled that one of the original concepts of the IPH Transportation Study was to utilize the Spokane airport as an airfreight transload center. Landing costs are less expensive at Spokane compared to Sea-Tac (\$900 vs. \$2,700) and there is less airport congestion at Spokane. Airfreight could be transloaded to connecting flights to other U.S. markets or loaded into trucks for regional delivery. One participant added that although the current decline of flights into and out of Spokane has reduced the airfreight capacity in the belly of the aircraft, the capacity could increase over the longer term. This airfreight transload service would require public support to promote its benefits to potential carriers and shippers.

Other transload and consolidation/deconsolidation activities in the area could take advantage of the uncongested warehouse capacity in the area and the abundant availability of empty outbound truck trailers and rail cars. Several people suggested that the IPH study area could be a pre- or post-staging area for freight into or out of the Puget Sound region. One individual stated this cost effectiveness of this business model would

vary depending on the state of the economy, the season of the year and amount of available empty equipment in the market.

In addition to the rail links for Lewiston, ID and Revelstoke, BC, another new business opportunity suggested was the transportation of bio-fuels and waste products. Highways and/or rail lines will need to be planned and funded to support the heavy weight traffic in the locations where this type of future economic development would take place. The production facility locations were not mentioned at this time.

One issue that was enthusiastically discussed was the creation of a regional council to continue to promote the integrated infrastructure master planning and economic development of the entire region. The council would gather and organize potential projects from the entire region. Then based on public benefits derived for the greater good, they would prioritize the projects and ensure they receive proper representation in the surrounding legislatures and with funding agencies. The council would be charged with marketing the vision and the major projects for the entire area. It was believed this would be more cost effective than subgroups marketing their own initiatives. It was discussed that the council should consider integrating Canadian interests to help promote cross-border economic development. However, because experience with integrated coordination and marketing activities is still in the early stages of development, it was suggested the council operate for a while and achieve several successes before branching out to include other regional development associations.

Overall, in Spokane Valley, WA the WSA project team saw a strong correlation between the development and prioritization of a north-south corridor with regional freight mobility and national and international connections. There was also a significant local interest in the impacts that proposed freight projects would have on economic development. In particular, participants were cautious about the effects that urban bypasses might have on the economic well-being of small communities. Support for integrated regional cooperation was evident in the breakout groups and final joint vote.

Spokane Valley Freight Forum Final Ranking of Issues

All Issues

- North/South Trade Corridor – 89
- Regional Master Planning – 22
- Short Line Rail Preservation – 16
- IPH as a Freight Consolidation Center – 15
- Regional Truck Network – 11
- Regional Communication/Collaboration – 10

Individual Breakout Session Rankings based on Transportation Policy Goals

Highway Issues

- Trade Corridors/Urban Bypass – 69
- Regional Cooperation – 26
- Regional Truck Network - 16

Economic Development/Other Modal Issues

- Regional Master Planning – 38
- Truck Consolidation Point – 26
- Link to Revelstoke, BC– 23
- Funding for Building and Maintaining Roadways – 22
- Marketing the Vision to the Public – 11
- Bio-fuels Transport – 6
- Rail Corridor to South – 5
- Back Hauls Out of IPH - 4

SUMMARY OF STAKEHOLDER CONTACTS BY INDUSTRY GROUP

AGRICULTURE AND FOOD

The following section presents contact information and a brief overview of the companies contacted and interviewed for the Inland Pacific Hub Transportation Study. In most cases company websites were utilized in developing the company or facility overview.

ADM Milling Company

Corporate Website: <http://www.adm.com/en-US/Pages/default.aspx>

Shawn Lindhorst, NW Commercial Manager

2301 E. Trent Ave.,

Spokane, WA 99202

509-534-2636 ext. 210

Company/Facility Overview: Archer Daniels Midland (ADM) Company is an international agri-business that transforms crops such as corn, oilseeds, wheat and cocoa into food ingredients, animal feeds, and agriculturally derived fuels and chemicals. Employing 27,000 people worldwide ADM performs crop sourcing, transportation, storage and processing in over 60 countries. The ADM facility in Spokane is a mill that produces food grade flour and some animal feed by-products mostly consumed by cattle at feed lots.

The ADM plant in Spokane produces flour with about one-half of the plants' output consumed in the Seattle/Portland area. A high percentage of the facility output is consumed by commercial bakeries.

Ag Ventures NW

Corporate Website: <http://odessaunion.com>

Keith Bailey

Odessa, Washington

1-800-522-2691

keith@odessaunion.com

Company/Facility Overview:

AgVentures NW is a limited liability company that is wholly owned by Reardan Grain Growers, Inc. and Odessa Union Warehouse Cooperative. AgVentures NW employs and manages all personnel and facilities used in the business operations for the two cooperatives. Even though marketing and transportation are combined to optimize logistics and sales, each company maintains its individual capital and equity structure. Since joining together, the common interests of the collective boards have been well served.



Odessa Grain Elevator
Source: Corporate Website

The combined storage capacity of elevators managed by AgVentures NW is over 15.5 million bushels. Their five offices in Reardan, Harrington, Davenport, Ephrata, and Odessa provide local and accessible resources for current information and valuable marketing services. Odessa Union Warehouse and Reardan Grain Growers are farmer-owned cooperatives offering grain storage and marketing services located in Eastern Washington State. Their service area includes over 1,500 members and 46 separate storage facilities at 12 locations in Spokane, Lincoln, Adams, and Grant counties.

Ag Ventures NW also offers certified and common seed, marketing counsel, futures and options brokerage, and farm storage marketing. The company also operates a small fleet of trucks for moving grain and other products from the elevator to farms or market destinations. The company also has nine unit train loading facilities and ownership in a barge loading operation.

Darigold (Spokane and Seattle)
Corporate Website: <http://www.darigold.com/>
Steve Vignere, Logistics Manager (Spokane)
Mike Bevers (Seattle)
E 33 Francis Ave.
Spokane, WA 99207



Company/Facility Overview: The Spokane plant has been in operation since 1957. The plant was built to produce milk, cottage cheese, sour cream, ice cream, butter and dried milk powder. Today the plant produces high temperature short resistance time (HTST) milk products and sour cream. The Spokane plant also has distribution warehouses in Pasco and Union Gap. The Spokane plant has 136 dedicated employees (including drivers) that work 7 days per week producing and distributing Darigold dairy products.

Darigold is another company taking in agricultural products and processing them for market. In this case the product is milk and milk products. Darigold ships regionally, nationally, and internationally although there is currently no international shipping directly from the Spokane facility. The Spokane plant serves an extensive regional market throughout eastern Washington and reaching over into Montana, Idaho, Oregon, etc. They go north to the Canadian border but do not as yet cross over. They run a large fleet of trucks which perform these longer haul regional moves and also service a local market that includes grocery stores, grocery distribution facilities, schools, and retail outlets such as convenience stores. They have recently made an alliance with another local distribution company to do their convenience store deliveries. They report that convenience stores have switched their deliveries to night time not only for reduced congestion and business disruption but also because it lends a safety factor to the employees in the stores. Darigold receives raw milk from tankers that they do not operate. The plant receives large quantities of plastic pellets which are used to blow milk bottles and they also get packaging materials for products in cartons like school milk. The Darigold facility is on the north side of downtown and their primary route to the interstate is directly through the city. The company described the major north/south and east/west routes relied upon in their operation.

Darigold also makes processed products like dry milk that are distributed over much larger areas and internationally. Darigold takes in agricultural products and processes them for

market, in the case of the Spokane facility the input is milk and milk products. Darigold ships regionally, nationally, and internationally although there is currently no international shipping directly from the Spokane facility.

Inland Empire Oilseeds, LLC

Corporate Website: <http://www.inlandempireoilseeds.com/index.cfm>

Pearson Burke, Marketing and Logistics Manager

206 W. Railroad Ave.

Odessa, WA 99159

Ph: 509-982-2970

pburke@inlandempireoilseeds.com

Company/Facility Overview: Inland Empire Oilseeds was formed in 2006 with the purpose of manufacturing biodiesel. Inland Empire Oilseeds is not directly operated by Ag Ventures N.W., but the two co-operatives making up Ag Ventures owns a controlling interest in Inland Empire Oilseeds. The company produces premium grade biodiesel, primarily from canola purchased from Ag Ventures N.W. The company claims its product has a lower gel point than biodiesel produced by many competitors. A by-product of the biodiesel process is canola meal. The company expects to produce 3 million gallons of biodiesel in 2009. The plant capacity is 8 million gallons.

Litehouse Foods, Inc.

Corporate Website:

<http://www.litehousefoods.com/>

Contact: Slate Kamp, Director of Transportation

1109 North Ella

Sandpoint, ID 83864

(208) 265-7745

skamp@litehouseinc.com



Company/Facility Overview: In business for nearly 40 years, Litehouse Foods now has four plants in Idaho and a plant in Michigan. Litehouse foods makes a variety of fresh, refrigerated dressings, dips and sauces in small batches that are shipped across North American in refrigerated trucks. Litehouse is currently the largest producer of blue cheese in the U.S. Primary distribution markets include WalMart and Taylor Farms. Many of the Litehouse products are distributed in small cups with pre-assembled salads. Typical plant operations run two 10 hour shifts, six days per week. The company employs between 350 and 400 employees.

WOOD, PAPER AND PRINTING INDUSTRIES

Century Publishing

Corporate Website: <http://centurypublishing.com/>

Terri Rotoli (completed a mailed copy of the interview guide)

E. 5710 Seltice Way

Post Falls, ID 83854

Century Publishing is one of the largest publication printers in the Northwest. Started in 1971, Century Publishing is focused on meeting each customer's printing needs, using

technological advances to offer more reliable, cost-effective solutions. The company is dedicated to keeping abreast of the latest digital technology and use computer-to-plate technology in production. The company also maintains capability to process jobs in the conventional fashion. Each month Century ships more than 2 million copies of publications for distribution to customers in over 35 states.

File E-Z Folder, Inc. / Lawton Printing, Inc.
Corporate Website: <http://www.file-ez.com/>
Laura Lawton Forsyth, President
4111 E. Mission Ave.
Spokane, WA 99210
Ph: 800-284-6824

Founded in 1940, both companies are under the leadership of President Laura Lawton-Forsyth. Laura represents one of the family's 4th generation employed by the corporations.

Over the years Lawton has diversified into four separate but interrelated divisions. The Commercial Printing plant services the various needs of clients over a broad geographic region ranging from Western Montana to the Cascade Mountains. Lawton Publications grew out of the commercial printing division and now produces Chamber of Commerce directories and maps, every year, for over 100 Chambers nationwide. A third division- Index Tab provides tabs for code books, legal documents, and Bibles sold via direct mail and the web. The newest division is Innovaging which produces resource guides for seniors and their caregivers. These directories are being published for communities in the Washington, Idaho and Arizona markets. Lawton also has a sister company, File-Ez Folder which produces over 32 million folders and up to 15 varieties for the back to school and office supply industries. Diversification enables Lawton to be a leader in providing value added services such as database management, warehousing, fulfillment and mailing

Huntwood
Corporate Website: <http://www.huntwood.com/>
Colin Fitzgerald, Purchasing
23800 E. Appleway Ave., Liberty Lake 99019
Ph: 509-924-5858
Email: cfitzgerald@huntwood.com



This custom cabinet maker was originally located in the Spokane Industrial Park, Spokane Valley, but in the past few years built a new facility in Liberty Lake. The company was recently ranked as one of the top 25 largest cabinetmakers in the United States. Kitchen cabinets produced by the company are shipped primarily in a four state western region: Washington, Idaho, Oregon and Montana. The company representative noted that most of Huntwood's cabinets are destined for upper end homes, and that the depression in new construction has had an impact on their business. The company employs between 500 and 999 employees and standard operating hours are 7:00 a.m. to 3:30 p.m.

Inland Empire Paper

Corporate Website: <http://www.iepco.com/>

Marv Frey, Shirlene Young; Traffic and Shipping Supervisor, Purchasing Agent

3320 N. Argonne Rd., Spokane 99212

Ph: 509-924-1911

Email: marvfrey@iepco.com

Inland Empire Paper (IEP) was founded in 1911 and has operated continuously since then in Millwood, WA a suburb of Spokane. The company's primary product is newsprint and it also produces specialty paper. Wood chips, provided by the company's forestry operation are processed to produce over 235 tons of mechanical pulp per day. IEP supplies paper to over 120 customers in the western U.S., producing over 500 tons of newsprint every day. Beyond raw wood, the company sources approximately 40 percent of the material used for paper as recycled from municipal paper waste. Some of the recycled paper comes from the Spokane region, but a good portion is purchased from recyclers around the western United States. The facility in Millwood employs between 100 and 250 employees.

Potlatch

Corporate Website: <http://www.potlatchcorp.com/>

Sue Hatch, Chris Whallon, Transportation Managers

Wells Fargo Bldg, 601 W. 1st Ave.

Ph: 509-323-7967, 509-323-7965

Email: sue.hatch@potlatchcorp.com

(Note: Some of the following information was assembled from the company's website).

Potlatch Corporation is a forest products company with 1.6 million acres of timber lands. The company grows trees, sells timber, and makes a wide variety of forest products. The company's subsidiary, Potlatch Land & Lumber, operates manufacturing facilities in four states with a geographic distribution to serve strategic U.S. markets. The company has four manufacturing facilities in the IPH study area: 1) A sawmill in St. Maries, ID, with a capacity of 120,000 m. bd. ft/yr; 2) a plywood mill in St. Maries ID, with a capacity of 160,000 m. sq. ft. per year; 3) a particleboard mill in Post Falls, ID, with a capacity of 70,000 m. sq. ft per year; and, 4) a tissue paper facility in Lewiston, ID with a capacity of 100,000 tons/year. At the time of the interview the company said that its consumer products / paper division was being "spun-off" to Clearwater Paper Company.

The company ships lumber and paper products across the U.S. and Canada. Wood products are consumed primarily in the U.S. and Canada with a concentration in the Pacific Northwest. Paper products, such as private label tissues are sent to the Midwestern U.S., Canada, China, Japan and Australia.

GENERAL MANUFACTURING COMPANIES

EZ Loader Boat Trailers

Corporate Website: <http://www.ezloader.com>

Mike Hilsabeck, Traffic Manager

717 N. Hamilton St., Spokane 99202

Ph: 509-489-0181 ext. 208

Email: mhilsabeck@ezloader.com

(Note: Some of the following information was assembled from the company's website).

EZ Loader Boat Trailers is the world's leading boat trailer manufacturer. Founded in 1953, the company invented the first all roller trailer and was granted a patent on its design in 1964. The company is made up of four manufacturing facilities and six distribution centers that each services their local dealer bases. The EZ Loader Spokane facility employs between 100 and 249 people.

Hearth & Home Technologies
Corporate Website: <http://www.hearthnhome.com/>
Contact: Forest Toop, Materials Manager
1445 N. Hwy. St., Colville 99114
Ph: 509-685-8931
Email: toop@hearthnhome.com



(Note: Some of the following information was assembled from the company's website).

Hearth & Home Technologies™ is the world's leading producer and installer of hearth products. Hearth & Home Technologies offers a product line including a full array of gas, electric, and wood burning fireplaces, inserts, stoves, and grills. Hearth & Home Technologies is a subsidiary of HNI Corporation.

The manufacturing facility in Colville produces Quadra-Fire - pellet, wood and gas burning stoves. The facility employs between 250 and 499 people.

Kaiser Aluminum (Trentwood Works)
Corporate Website: http://www.kaisertwd.com/Default_Content.asp
Jinger Dittmer, Manufacturing Planning Manager
PO Box 15108
Spokane, WA 99215

Constructed in 1942 on the eastern side of Spokane, the Trentwood facility takes advantage of the abundant hydro-electric power in area. As a wartime facility, plants were often placed far enough inland to be beyond range of enemy aircraft. Today, the Kaiser Trentwood plant is one of the most advanced flat-rolled-product mills in the world. Following World War II, Henry Kaiser saw a future in the aluminum business and so he leased and later purchased Trentwood and its sister facility, the Mead Works primary aluminum plant. Investments in technology and equipment have allowed Trentwood to take a space-age leap from basic industrial production to computerized, high-technology manufacturing.

After filing for Chapter 11 bankruptcy in 2002, the company has emerged and quadrupled in size. The Trentwood facility receives raw materials from all over the world, and supplies aluminum to the regional aerospace industry among many others.

Pearson Packaging
Corporate Website: <http://www.pearsonpkg.com>
Contact: Mike Senske, President & CEO
8120 W. Sunset Hwy., Spokane 99224
Ph: 509-979-6702
msenske@personpkg.com

Pearson Packaging Systems began in 1955 with a single machine for the beverage industry. Today the company engineers and manufactures a variety of packaging and robotics equipment, including seven product lines and nearly 30 different models of automated packaging machines.

Pearson Packaging employs between 100 and 250 employees in Spokane, and also has a few remote facilities around the U.S. The company operates from 6 a.m. to 4 p.m. Its business as a machine manufacturer is mature, but still growing and sales doubled between 2003 and 2008.

Quest Aircraft
Corporate Website: <http://questaircraft.com/>
Contact: Meta Hyder, Procurement Manager
1200 Turbine Dr., Sandpoint
Sandpoint, ID.
Ph: 208-263-1111
Email: mhyder@questaircraft.com

Quest Aircraft is a relatively new start-up company that manufactures rugged utility aircraft for harsh environments. It is the goal of Quest to provide every tenth airplane manufactured at cost to a humanitarian mission organization. Quest recently delivered its first Kodiak aircraft to the Quest Mission Aviation Fellowship.



During 2008, the company produced nine Kodiak aircraft. Their long term production goal is two aircraft per week. They currently have a three year backlog on order.

Each aircraft is made up of 13,000 parts, most of which are tooled in the Quest assembly plant. The Pratt and Whitney engines arrive by truck from Canada, and many parts are sent out to a Seattle facility for heat treating and some for painting.

Spokane Industries
Corporate Website: <http://www.spokaneindustries.com/>
Tyrus Tenold, President-Foundry Divisions
3808 N. Sullivan Rd. Bldg. #1,
Spokane, WA 99216
Ph: 509-921-8862

(Note: Some of the following information was assembled from the company's website).

Spokane Industries is a steel foundry and metal products/casting operation. Products include machine parts original equipment manufacturers in truck manufacturing, mining, oil and construction industries, as well as, precision investment casting products and stainless steel products such as wine and beverage tanks, and tanks for agricultural applications. The company ships some products for the military and the oil industry world wide, but the primary market area is North America. In general as commodity markets grow, mineral extraction grows and so do foundries.

The company employs between 100 and 249 people, and while parts of the foundry operation are 24/7 shipping and receiving operates 9 a.m. to 5 p.m.

Zak Designs

<http://www.zak.com/>

Kelly Schaible, International Operations Specialist (ext. 693)

Daini Hertel, Inventory Manager (ext. 650)

1604 S. Garfield Rd.,

Airway Heights, WA 99001

Ph: 800-331-1089

Zak Designs is a manufacturer and distributor of licensed children's dinnerware, seasonal plastic tableware, travel coffee tumblers, lunch kits and a variety of melamine and acrylic dinnerware products. Zak Design products are manufactured in China, and products are then distributed from the headquarters facility in Spokane to retail outlets across the country such as Target and Wal-Mart.

MED-TECH / HI-TECH

ALK-Abello

Corporate Website: <http://www.alk-abello.com>

Henrik Sindberg, Logistics Manager

327 East Pacific Avenue

Spokane, WA 99202



Company/Facility Overview: ALK is a global pharmaceutical company focusing on allergy treatment, prevention and diagnosis. ALK is the world leader in allergy vaccination (immunotherapy) – a unique treatment that induces a protective immune response which reduces and potentially halts the allergic reaction.

This company collects and processes allergy producing substances which are cultivated on farms located all over the U.S. and shipped to the facility in Spokane, cleaned and tested, then shipped out to manufacturing facilities in New York state and Europe. Their packages are quite small both inbound and outbound but are of high value. They rely on the daily service from package carriers for all of their shipping needs and they have no issues with the performance or operating conditions of the carriers. They are relocating to a large new facility to the west of Spokane and anticipate continued significant growth in their business. They located and have remained in Spokane due to an acquisition and access to a skilled work force.

The Spokane facility collects and processes allergy producing substances such as grass, wheat, trees, mice, and cat hair which are cultivated on farms located all over the U.S. The allergens are shipped to the facility in Spokane, cleaned and tested, then shipped out to manufacturing facilities in New York, France, Spain, and Denmark.

General Dynamics – Itronix
Corporate Website: <http://www.gd-itronix.com/>
Don Davis, Manager of Distribution and Traffic
12825 E. Mirabeau Pkwy.,
Spokane Valley 99216
Ph: 509-624-6600
Email: don.davis@gd-itronix.com

(Note: Some of the following information was assembled from the company's website).

The Itronix Division of multinational General Dynamics Corporation produces rugged laptop, hand held and tablet computers for field use in military, law enforcement, humanitarian aid and other field applications. The facility in Spokane employs between about 400 employees. The company operates on a 7 a.m. to 5 p.m. schedule five days a week.

(Note: In April, 2009 Itronix closed its Spokane Valley facility, reducing its work force in Spokane to about 20 sales and marketing people. Approximately 300 people were laid off.)

Signature Genomic Laboratories
Corporate Website: <http://www.signaturegenomics.com/>
Contact: Catherine Koshork, V.P. of Lab Operations
2820 North Astor Street
Spokane WA, 99207
Ph: 509-474-6840

(Note: Some of the following information was assembled from the company's website):

Signature Genomic Labs started in 2003, and is one of only five facilities in the world able to perform testing at the molecular level. Genomic Lab's *microarray* test is used to detect chromosomal abnormalities. The company was founded based on equipment that can remove chromosomal abnormalities by examining DNA. The company receives biological samples from all over the world. All the companies' shipments are handled via FedEx.

TRANSPORTATION, WAREHOUSING & DISTRIBUTION

Burlington Northern Santa Fe Railway Company (BNSF)
Corporate Website: <http://bnsf.com/>
Sabin Reynolds, Sales Mgr. Industrial Products
4510 Wisconsin Ave.
Spokane, WA 99212-1325
Sabin.reynolds@bnsf.com

Also: Vann Cunningham, Assistant Vice President – Economic Development

(Note: Some of the following information was assembled from the company's website):

BNSF Railway is the product of some 390 different railroad lines that merged or were acquired during more than 150 years. Over its history BNSF Railway has been delivering cars, coal, clothing, games, and nearly anything else found in homes and businesses. When the predecessors to BNSF Railway first started operations, we were building a nation by shrinking America's borders. On Feb. 12, 2010, BNSF became a subsidiary of Berkshire Hathaway, Inc. The company's focus is on using speed, agility, and resourcefulness to help expand the global marketplace for goods and services.

Canadian Pacific Railway (CPR) Company

Corporate Website: www.cpr.ca

John McBoyle, Vice President – Intermodal

1290 Central Parkway W. Suite 800

Mississauga, ON L5C 4R3

John.mcboyle@cpr.ca

(Note: Some of the following information was assembled from the company's website):

CPR was incorporated in 1881. CPRC is one of Canada's oldest corporations. From its inception 129 years ago, CPRC has developed into a fully integrated and technologically advanced Class I railway providing rail and intermodal freight transportation services over a 15,400 mile network serving the principal business centers of Canada, from Montreal, Quebec to Vancouver, British Columbia, and the U.S. Midwest and Northeast regions. The railway feeds directly into the U.S. heartland from the East and West coasts.

Inland Empire Distribution

Corporate Website: <http://www.ieds.net>

Matt Ewers, V.P. Business Development

3808 N. Sullivan, Bldg 32

Spokane, WA 99216

Email: mattewers@ieds.net



Inland Empire Distribution Systems' corporate offices are located in Spokane, WA. This location operates out of the Spokane Industrial Park at a convenient location with respect to the local freeway I-90. The facility includes over 600,000 square feet of warehouse space including segregated facilities for consumer, chemical, industrial, and forest products.

Key features of the IEDS location include:

- Daily rail service from both the Union Pacific and BNSF
- Foreign Trade Zone
- U.S. Customs Bonded Container Freight Station
- Indoor/Outdoor Storage Facilities
- Specialized equipment including paper roll clamps, overhead crane, and 16 ton forklift
- Heated facilities for consumer products
- Sprinkler protected facilities

IEDS Spokane also has a full service transportation operation, truckload and less-than-

truckload, including fleet services and freight management that regularly manages up to 15 IEDS and contractor trucks.

Inland Empire performs a variety of logistics services from the large park west of Spokane. They do warehousing, cross docking, unload rail cars and strip containers for redistribution. They run a fleet of trucks and arrange shipping for clients in and around the area.

Railex – Burbank, WA
Corporate Website: <http://www.railexusa.com/>
Peter Quinton, Transportation Manager
627 Railex Road
Burbank, WA 99323
Ph: 509-546-7635
Email: pquinton@railexusa.com

Railex is operating a “new concept” rail service with operations that originated in the Tri-Cities area and has since expanded. The business has developed around the produce industry but is expanding into other areas with wine being their second focus in the Washington region. They operate a unit train on a fixed schedule that runs between Tri-Cities and Albany, New York with a four and one-half day delivery schedule. The Albany location is serving the Northeast including the Port of NYNJ with European imports and exports. Railex has expanded their service with a third facility in Delano in central California, and has plans for additional points across the country. The business model is to provide rapid intermodal transit across the country with no stops between the origin and destination. The train from Washington to New York is operated by the Union Pacific and CSX Railroads using their engines and tracks but the rail cars are leased exclusively by Railex and they own and operate the facilities where the transloading occurs. While primarily a refig operation, the company expressed interest in filling out trains with dry freight requiring a high level of intermodal service in the same lanes. The drayage regions at both ends of the train route are quite extensive, reaching throughout the northwest and into California on the western end and to Florida in the east.

Spokane Bakery Supply
Corporate Website: <http://www.spokanebakerysupply.com>
Contact: Tom Hicks
4616 S. Ben Franklin Lane
Spokane, WA 99224
Ph: 509-535-9829

Company/Facility Overview: Spokane Bakery Supply was established in 1976. The company supplies high quality ingredients to wholesale and retail bakeries and commercial food processors. The company operates a small private fleet and services clients in eastern Washington, Idaho, western Montana, Oregon and California.

Trans-System, Inc.
Corporate Website: <http://trans-system.com>
Jeff Benesch,

7405 S Hayford Road
Cheney, WA 99004
Ph: 800-541-4213

Trans-System, Inc. is a largest trucking company headquartered in the IPH study area. Trans-System serves a wide variety of companies and industries through five subsidiary transportation companies that offer a wide array of transport, logistics and training services:

- System Transport – Truckload and less-than-truck load (LTL) transportation services. System Transport equipment consists of 800 trucks and 1,200 trailers. Headquartered in Spokane, WA the company maintains six terminals and yards strategically located across the country, offering local, regional, and transcontinental freight shipping services, including Alaska and Canada
- TWT Refrigerated Service – Reefer truck service for temperature controlled food and beverage products and general commodities
- James J. Williams Bulk Service Transport – Liquid and dry bulk freight services
- Trans-System Logistics, LLC, - An assets-backed logistics provider and ocean transportation intermediary. Trans-system Logistics provides custom transportation and services to a variety of industries
- Driver Training Solutions (DTS) – A comprehensive transportation training facility in Eastern Washington, focusing on in-depth quality training, that meets the Professional Truck Driver Institute's Training Standards

Union Pacific Railroad

Corporate Website: <http://www.up.com/>

Larry Gerek, Sr. Business Director, Intermodal (phone interview)

406-257-4150

lgerek@up.com

UP operates North America's premier railroad system, covering 23 states in the western two-thirds of the United States. The railroad links every major West Coast and Gulf Coast port and provides service to the east through its four major gateways in Chicago, St. Louis, Memphis and New Orleans. Additionally, Union Pacific operates key north/south corridors and is the only railroad to serve all six major gateways to Mexico. UP also interchanges traffic with the Canadian rail systems.

The railroad has one of the most diversified commodity mixes in the industry, including chemicals, coal, food and food products, forest products, grain and grain products, intermodal, metals and minerals, and automobiles and parts.

URM Stores

<http://www.urmstores.com/html/default.htm>

Steve Wolf, Outbound Traffic Manager (phone interview)

7511 N. Freya St.

Spokane, WA 99217

Ph. 509-467-2706

Email: swolfe@urmstores.com

Company/Facility Overview: URM is the number one food distributor in the Inland Northwest. URM services over 160 grocery stores and over 1,500 hotels, restaurants, and convenience stores. URM is independent and locally owned. The company employs over 1,000 people, and operates seven days per week, 24 hours a day except on weekends. The company's service territory is generally 200 miles in all directions, including Washington, Idaho, the Bozeman area of Montana, and northeastern Oregon. Growth of the grocery market is driven by population. The company's peak activity is during the holiday season, with weekly peaks on Fridays and Saturdays. Key factors contributing to the company's distribution network are on-time delivery, cost and safety. Purchasing responsibilities are contracted through a third-party operated by Del Monte.

STAKEHOLDER INTERVIEWS – AIRPORTS / PORTS

Coeur d' Alene Airport (COE) - Pappy Boyington Field

Facility Website: <http://www.cdaairport.com>

Contact: Greg Delavan – Airport Manager

10375 Sensor Avenue

Hayden, ID 83835

Ph: (208) 446-1860

gdelavan@kcgov.us

Coeur d'Alene Airport is a general aviation airport located on 1,100 acres located in Hayden, just north of Coeur d'Alene. COE has two asphalt runways and offers a full ILS approach and has an on-site weather observation system, which provides up-to-the-minute weather reports. Runway 5/23 is 7,400 feet long and 100 feet wide and has high-intensity runway lights. Runway 1/19 is 5,400 feet long and 75 feet wide and is equipped with medium-intensity lights. COE has snow removal equipment on site and is a certified weather alternate for Spokane International Airport.

Fairchild AFB

Facility Website: <http://www.fairchild.af.mil/>

Roger Timm, Civilian Commander, Logistics Readiness Squadron (phone interview)

Ph: 509-247-3787

Fairchild Air Force Base is home to a wide variety of units and missions. Most prominent is the air refueling mission, with two wings, one active, the 92nd Air Refueling Wing, and one Air National Guard, the 141st ARW. Other units here include the Air Force Survival, Evasion, Resistance and Escape school, medical detachments, a weapons squadron and the Joint Personnel Recovery Agency.

Due to the security clearance and background checks required to enter the base, a phone interview was conducted. Mr. Timm indicated that the base did not really have any freight related issues. Their primary mission as an air refueling base, they bring their primary resource, aviation fuel, onto the base via pipeline. He also indicated that at times when supporting the Air National Guard on maneuvers, they sometimes generated a lot of supply truck traffic, but had never encountered any problems or issues.

Port of Clarkston

Facility Website: <http://portofclarkston.com>

Contact: Wanda Keefer – Port Manager
849 Port Way
Clarkston, WA 99403
Ph: 509-758-5272
wanda@portofclarkston.com

The Port of Clarkston was created in 1958, and is the farthest inland port in Washington State, located at river mile 137.8 of the Snake River, approximately 460 miles from the mouth of the Columbia River. Prior to navigable access, the Port focused on industrial development.

The Port of Clarkston's jurisdiction includes the entire county, but most of its activity is centered in the City of Clarkston adjacent to the Snake River on 120 acres of prime flat land with all infrastructure in place. The Port is currently planning development of an additional 120 acres of land available for future development, in an area located south and west of the existing Port facilities. The Port of Clarkston is involved in marine commerce, property development (industrial and commercial) and recreation/tourism facilities.

Port of Lewiston
Facility Website: <http://portoflewiston.com>
Contact: David Doeringsfeld, Port Manager
1626 6th Ave. N.
Lewiston, ID 83501
Ph: 208-743-4243
portinfo@portoflewiston.com



The Port of Lewiston was formed in 1958 by the voters of Nez Perce County. In accordance with Idaho Code 70-1101, the Port oversees harbor operations, terminal facilities, international trade, and industrial and economic development. Working in cooperation with the Nez Perce County, the City of Lewiston, and Valley Vision, a primary objective of the Port is to encourage economic growth to make the valley a competitive force in the regional marketplace.

All major modes of transportation are available to Port shippers. The Port's location next to US Highway 12 allows a direct link to markets in Montana and points east, while the Port's proximity to US Highway 95 allows for links to Boise, Idaho and Interstate-84 to the south, and Spokane, Washington and Interstate-90 to the north.

A feeder line of the Great Northwest Railroad provides the Port with a direct link to the main lines of the Union Pacific Railroad and BNSF Railway. Air transportation is available at the Lewiston-Nez Perce County Airport only two miles from the Port. Port waterfront property is served by tug and barge lines, allowing for shipments of containerized cargo, plus a variety of general break/bulk commodities directly from barge to storage or truck.

Inland 465 Warehousing and Distribution operates a 150,000 square-foot distribution facility located adjacent to the Port of Lewiston container yard. Facilities include 10 truck bays, 5 rail bays (served by BNSF and Union Pacific via the Great Northwest Railroad), and inside

and outside storage for forest and paper products, manufactured goods, and agricultural products. Inside storage benefits from a controlled minimum temperature.

Port of Seattle (POS)

Port Website: <http://www.portseattle.org>

Contacts:

Eric Hanson, Seaport Planning Manager

Bari Bookout, Marketing Manager, Carrier Accounts, Container Marketing

Stephanie Kang, Marketing Manager, National Accounts

2711 Alaskan Way, Seattle, WA 98121

206-787-3000

(Note: The following information was assembled from the Port's website)

The Port of Seattle is an economic development and international trade resource for customers all over the world, providing fast, convenient and reliable access to global markets linked by a network of transportation and information systems. The port serves both maritime businesses and the general public. The port owns and operates the Seattle-Tacoma International Airport as well as several passenger cruise terminals at Pier 66 and Terminal 30. The seaport was the nation's seventh busiest in 2007, serving 21 international steamship lines.

Port of Tacoma

Port Website: <http://www.portoftacoma.com>

Contacts :

Anna Soderstrom, Container Terminal Business Manager

Larry St. Clair, Intermodal Marketing Director

Brian Mannelly, Port Planning Director

One Sitcum Plaza

Tacoma, WA 98421

253-428-8671

bmannelly@portoftacoma.com

(Note: Some of the following information was assembled from the company's website)

A major gateway to Asia and Alaska, the Port of Tacoma is a leading North American seaport, handling more than \$36 billion in annual trade and nearly 2 million TEUs (Twenty-foot Equivalent container Units) in 2008. The Port is the seventh largest container port in North America. The Port is also a major center for bulk, break-bulk and project and heavy-lift cargoes, as well as automobiles and medium-duty trucks.

Located on Commencement Bay – a natural, deep-water harbor in Southern Puget Sound – the Port of Tacoma is an independent municipal corporation that operates under state-enabling legislation. Created by Pierce County citizens in 1918, the Port has 2,400 acres (972 hectares) that are used for shipping terminal activity and warehouse, distributing, and manufacturing.

Outstanding intermodal operations, connections to two transcontinental railroads and easy access to Interstate 5, Interstate 90, SR 509 and SR 167 make the Port an ideal location for warehouse and distribution activities. More than 70 percent of the Port's international import container cargo heads east via rail to major markets such as Chicago, Indianapolis, New York and Boston.

Spokane International Airport (GEG)

Facility Website:

<http://spokaneairports.net/>

Contacts:

Neal Sealock, Airport Director

Liesa Losanke, Marketing Manager

9000 W. Airport Drive # 204

Spokane, WA 99224



Spokane International Airport is a commercial service airport served by nine airlines and three air cargo carriers. Also referenced as Geiger Field (GEG), the airport processed 3.4 million passengers and 52,076 air cargo tons in 2008. It is the second largest airport in the State of Washington and recognized by the FAA as a small hub.

Spokane International Airport's 5,400 acres are strategically located in the heart of Spokane County's largest remaining tract of industrial land as well as having immediate access to Washington State's two most important East/West routes - Interstate 90 and Highway 2 - through multiple entrance points. Over the last ten years, the Spokane Airport Board has invested over \$30 million developing the 80-acre Pacific Northwest Inter-Mountain Region Logistics Center. A combination of federal funds and airport general revenues have been invested to construct 13 acres of airfield parking apron designed for heavy aircraft, a new entrance road created with wide turning radius for truck-trailer traffic, and a new US Customs and Border Protection for an international flight clearance facility. In 1998, the Regional USPS Processing and Distribution Center was constructed adjacent to this site. UPS and FedEx were relocated to this site in 2008 and 2009, respectively. Adjacent to the airport property are extensive refrigerated storage and distribution centers operated by private sector operators as well as a BNSF Railway spur line. On the passenger side of the airport's business, they annually process 3.5 million travelers from an 80,000 square mile market area that is populated by 1.7 million people.

STAKEHOLDER INTERVIEWS – SERVICE INDUSTRIES

Avista

Corporate Website: <http://www.avistalegacy.com/>

Latisha Hill, Regional Research & Project Manager

Judy Cole, Director of Business & Public Affairs

Randy Barcus, Chief Economist

Roger Woodworth – VP for Sustainable Energy Solutions

1411 E. Mission Ave

Spokane, WA 99220-3727

(Note: Two meetings were conducted with Avista, the first included Latisha Hill and Judy Cole. The second included in addition to Ms. Hill and Ms. Cole, Mr. Barcus and Mr.

Woodworth. Some of the following information was taken from the Avista corporate website).

Founded in 1889, Avista, headquartered in Spokane, WA, engages in energy production, transmission and distribution, as well as other energy-rated activities. An investor-owned utility, Avista provides electric and natural gas service to about 481,000 customers in a service territory of more than 30,000 square miles. The energy supplied to customers comes from a mix of hydropower, natural gas, coal and biomass generation delivered over 2,100 miles of transmission lines, 17,000 miles of distribution line and 6,100 miles of natural gas distribution mains. Avista employs nearly 2,000 people in five western states.

Avista has been a primary supporter of the IPH project from inception and very aware of how transportation needs drive the economic development in the area. The interview covered many issues concerning existing growth in the city, the workforce, and with interactions with neighboring regions, states, and Canada. Much of the discussion focused on ways in which cooperative efforts might benefit the entire study area.

The company believes that area assets should be coordinated and leveraged to improve region. The company believes in the economic benefit of corridors and has promoted comprehensive transportation planning for the area, acting as a facilitator on issues.

Representatives feel that one goal of the IPH study area is to promote efficient, safe, and effective transportation and to help understand the future role of this region in the larger economy. Using the word “hub” has implications – it may not be the best way to describe the effort since “hub” implies a distinct smaller area and/or specific facility. The IPH study area needs a good plan to leverage assets and increase options throughout the area to create better economic development opportunities.

Crown West (commercial real estate company)
Corporate Website: <http://www.crownwest.com>
Dean Stuart, Director of Marketing
3808 N. Sullivan Rd. #N15-202
Spokane Valley 99216
Ph: 509-924-1720



Crown West is a commercial real estate company with commercial and industrial developments in Arizona, Colorado, Georgia, Maryland, New Jersey, North Carolina and Washington. Spokane Industrial Park in Spokane Valley consists of 355 acres located between I-90 and State Route 290. Crown West manages four million square feet of industrial sites in “The Park.” The Park features rail service by Union Pacific and Burlington Northern Santa Fe, warehouses with both grade and dock-high loading and clearance heights of up to 37 feet.

At the beginning of the decade distribution centers were consolidated in Seattle, and many of Spokane business and industries were fed by Seattle distribution center locations. With the spike in fuel costs during 2008, many distribution centers began deconsolidating and opening satellite facilities in eastern Washington, northern Idaho, western Montana and northeast Oregon.

The Park is Spokane Valley is somewhat unique in that not many industrial parks of this size in the U.S. are served by two Class I railroads. At the time of the interview, demand for space in The Park was still growing and Crown West was planning to open a new 100,000 square foot building on the site in the spring of 2009, its 7th building since 1998.

Empire Aerospace / Empire Airlines

Corporate Website: <http://www.empireairlines.com/index.asp?PagelD=976>

Contact: Timothy Komberec, President/CEO

11559 North Atlas Road

Hayden, ID 83835

(208) 292-3850 x 120

Empire Aerospace performs maintenance and repairs on twin turbo prop aircraft for a variety of clients throughout North America including FedEx. Their 50,000 square foot hangar facility built in 2004 is located at the Coeur d'Alene Airport.



The maintenance and repair side of the business currently conducts about 140,000 maintenance hours on aircraft - their niche market is large twin engine turbo prop planes.

A sister company, Empire Airlines, operates contract routes in the Northwest for FedEx. Empire Airlines operates about 50 aircraft under FedEx direction. They currently operate eight aircraft out of Spokane. These aircraft serve Pasco, Yakima, Pendleton, La Grande, Wenatchee, Lewiston and Pullman.

PUBLIC AGENCIES

Bonner County Economic Development Corp. (BCEDC)

Agency Website: <http://blog.bonnercountyedc.com>

Contact: Karl Dye, Director

414 Church St

Sandpoint, ID 83864

Ph: 866-831-8413

The Mission of the BCEDC is to promote economic growth and sustainable, meaningful job creation in Bonner County, ID, by recruiting new business to the area and providing support for existing businesses.

City of Spokane

Agency Website: <http://www.spokanecity.org/>

Contact: Theresa Sanders, Director of Economic Development

808 W. Spokane Falls Blvd.

Spokane, Wa 99201

509-625-6300

(Note: The following information was assembled from the agency's website)

The City of Spokane is home to approximately 195,500 residents; there are around 418,000 residents in the metropolitan area. Spokane is located in the heart of the Inland Northwest, and it serves as a shopping, entertainment, and medical hub for an area that includes eastern Washington, eastern Oregon, north Idaho, western Montana, and southern portions of Alberta and British Columbia.

Idaho Transportation Department

Agency Website: <http://itd.idaho.gov/>

Contacts:

Don Davis, Senior Transportation Planner, District 1

Ron Kerr, Senior Transportation Planner, Rail and Intermodal

P.O. Box 7129

Boise, ID 83707-1129

(Note: The following information was assembled from the agency's website)

The duties of the Idaho Transportation Department (ITD) involve all modes of state wide transportation to move interstate commerce, out-of-state visitors and Idaho's 1.2 million people. ITD's 1,829 employees are divided into five divisions and a support organization designed to serve and maintain the transportation needs of the state. ITD's five divisions are: Aeronautics, Highways, Motor Vehicles, Transportation Planning, and Public Transportation. The six support offices are: Budget, Policy and Intergovernmental Relations, Internal Review, Office of Communications, Administration, Information Systems, and Civil Rights.

ITD's headquarters are in Boise. But because Idaho has such varied geographic regions, ITD divides the state into six administrative districts. Each district is responsible for transportation planning, construction and maintenance of the highways within its boundaries. Administrative district offices are located in Coeur d'Alene, Lewiston, Boise, Shoshone, Pocatello and Rigby. Within these administrative districts are 36 maintenance sheds whose personnel keep Idaho roads repaired and opened. The Division of Aeronautics office is located at the Boise airport.

Spokane County

Agency Website: <http://www.spokanecounty.org/>

Contact: Chad W. Coles, P.E.

1116 W. Broadway

Spokane, WA 99260

Ph: 509-477-3600

ccoles@spokanecounty.org

(Note: The following information was assembled from the agency's website)

Spokane County employs over 2000 individuals to help meet the public needs of the 450,000 County residents. Spokane County government serves all the residents of Spokane County. Within the boundaries of Spokane County are numerous incorporated cities, including:

- City of Spokane
- City of Spokane Valley

- City of Airway Heights
- City of Cheney
- City of Liberty Lake
- City of Medical Lake
- City of Millwood

Spokane Regional Transportation Council (SRTC)/Kootenai Metropolitan Planning Organization (KMPO)

SRTC Website: <http://www.srtc.org>

Contact:

Glenn F. Miles, Transportation Manager
 Jeff Selle, Manager of Government Affairs
 221 W. First Avenue, Suite 310,
 Spokane, WA 99201
 Ph: 509-343-6370

Kootenai MPO Website: <http://kmpo.net/about.html>

Contacts

Glenn F. Miles, Transportation Manager
 Jeff Selle, Manager of Government Affairs
 221 W. First Avenue, Suite 310,
 Spokane, WA 99201
 Ph: 800-698-1927

(Note: The following information was assembled from the agency's websites)

The KMPO Board has contracted with Spokane Regional Transportation Council, the MPO for Spokane County, WA, for day-to-day operational and administrative needs. SRTC operates at the pleasure of the KMPO Board. KMPO has a technical transportation committee, KCATT, which meets monthly to discuss and advise the KMPO Board on technical transportation issues.

SRTC is the federally designated Metropolitan Planning Organization for Spokane County. Regional transportation planning requires an understanding of the past, recognition of current conditions, and the ability to provide an economically achievable, environmentally balanced, and consumer-friendly transportation system that enables the Spokane community to reach its full potential.

As a local intergovernmental agency, SRTC encourages coordination and collaboration between planning and transportation departments in the City of Spokane, City of Spokane Valley, Spokane County, the Washington State Department of Transportation and small cities and towns in order to assure cohesive connectivity throughout Spokane County. SRTC maintains the metropolitan Transportation Improvement Program, a three-year list of state and federally funded transportation projects, as well as the Metropolitan Transportation Plan, a 20-year document mapping the future of transportation in Spokane County.

Washington State Department of Transportation

Agency Website:

Contacts: <http://wsdot.wa.gov>

Keith Metcalf, Regional Administrator – Eastern Region

Charlene I. Kay, P.E., Eastern Region Planning Manager

Elizabeth Stratton, Manager, Freight Policy and Project – Headquarters Freight Systems Division

2714 N. Mayfair St.

Spokane, WA 99207

509-324-6000

(Note: The following information was assembled from the agency's website)

The Washington State Department of Transportation (WSDOT) is the steward of a large and robust transportation system, and is responsible for ensuring that people and goods move safely and efficiently. In addition to building, maintaining, and operating the state highway system, WSDOT is responsible for the state ferry system, and works in partnership with others to maintain and improve local roads, railroads, airports, and multi-modal alternatives to driving.

WSDOT works towards achieving five goals: safety, preservation, mobility, environmental quality, and system stewardship. These goals are consistent with the statewide transportation policy goals established by the Legislature for all transportation agencies.

The WSDOT Eastern Region serves the counties of Adams, Ferry, Lincoln, Pend Oreille, Spokane, Stevens, Whitman and portions of Franklin County.

British Columbia Ministry of Transportation

Tom Freeman, Southern Interior Region

Kamloops, BC

250-828-4273

Jim Richardson, Regional Transportation Engineer

Kamloops, BC

250-828-4842

BUSINESS ORGANIZATIONS / CHAMBERS OF COMMERCE AGENCIES

Coeur d'Alene Chamber of Commerce

Organization Website: <http://www.cdachamber.com/default.aspx>

Contact: Jonathan Coe, President

105 N. First Street Suite 100

Coeur d'Alene, ID 83814

Ph: 877-782-9232

(Note: The following information was assembled from the organization's website)

The Coeur d'Alene Chamber of Commerce is the premier business organization in north Idaho. With about 1,300 members, it is the second largest Chamber of Commerce in Idaho and plays a big part in promoting Coeur d'Alene, welcoming newcomers, lobbying the Idaho

Legislature for the business interests in north Idaho, and bringing events to the area that contribute greatly to the local economy.

Greater Spokane Incorporated (GSI)

Organization Website: <http://www.greaterspokane.org/>

Contacts:

Robin Toth, Vice President for Economic Development

Jeff Severs, Chief Operating Officer

801 W. Riverside, Suite 100

Spokane, WA 99201

Ph: (509) 624-1393

(Note: The following information was assembled from the organization's website)

Greater Spokane Incorporated is the Spokane Region's only Chamber of Commerce and Economic Development Council. Since 1881 GSI has worked to build a stronger economy and a world-class business climate. GSI partners with the local business community and partners throughout the region in support of a healthy and vibrant environment in which to live, work and do business. GSI concentrates on the four key areas of economic development, workforce development, public policy, and small business. GSI is funded by more than 1,200 private-sector member investors, Washington State, Spokane County, and the cities of Spokane, Spokane Valley, Liberty Lake, Cheney, Airway Heights, Medical Lake, and Millwood.

Inland Northwest Economic Alliance

Organization Website: <http://www.inlandnorthwestregion.com>

Contact: Bob Potter, President

P.O. Box 164

Liberty Lake, WA 99019

Ph: 866-495- 8877

(Note: The following information was assembled from the organization's website)

The Inland Northwest Economic Alliance (INEA) is an alliance of regional economic development agencies and corporations. The collaborative effort is aimed at building economic growth through enhancing the brand recognition of the Inland Northwest and its communities and showcasing its business value. Under the unique relationship, the goal is job creation. Collectively, the eight eastern Washington and five northern Idaho counties have abundant resources and attributes to offer. Partners in the Alliance include:

- Boundary County Economic Development Council
- Jobs Plus
- Moscow/Latah Economic Development Council
- Palouse Economic Development Council
- Priest River Development Corporation
- Port of Whitman County
- Silver Valley Economic Development Council
- Spokane Area Economic Development Council

- Tri-County Economic Development District
- Valley Vision

Spokane Valley Chamber of Commerce

Organization Website: <http://spokanevalleychamber.org>

Contact: Eldonna Shaw, President

9507 E. Sprague Ave.

Spokane Valley, WA 99206

Phone: (509) 924-4994

(Note: The following information was assembled from the organization's website)

The Spokane Valley Chamber of Commerce is a member-driven and professionally staffed nonprofit 501(c)(3) association of business people committed to improving the economic climate and quality of life in Eastern Spokane County. The organization primarily serves the cities of Spokane Valley, Millwood, and Liberty Lake, although membership is open to anyone who lives, works or does business in the area.

The Chamber consists of 1000+ members, who are business and organizations, but also includes schools, public agencies, churches, other nonprofit organizations and individuals.

APPENDIX A: INTERVIEW GUIDE

Inland Pacific Hub Study Shipper/Receiver Interview Guide

Purpose:

- 1) Collect information about supply chain logistics and challenges
- 2) Gather input about strategies for improving transportation systems.
- 3) Provide a reality check for data sources about goods movement
 - Specific commodities moving in large quantities to and from the State.
 - Major market destinations for outbound products.
 - Major originations of process or production inputs.

NOTICE TO SURVEY RESPONDENTS

All information provided by this survey will remain strictly confidential. No statements or other information will be linked directly to individual respondents in any publication without the express permission of the respondent (i.e. the respondent would be contacted after the survey for permission to attribute any data or quotations). Demographic, organizational, and other individual information collected from survey respondents will be released only to members of the project team and staff acting on their behalf in the course of project-related activities only, including for record-keeping and follow-up purposes. Demographic, organizational, or data related to respondents will be reported only in aggregate formats with other survey responses.

Inland Pacific Hub Interview Guide

Part a – all RESPONDENTS

Background

1) In what city or zip code area is your company located? _____

2) Is this the only location in the state?

_____ **YES** ⇒ Continue to Question 3

_____ **NO** ⇒ Please list any other locations in Eastern Washington or Northern Idaho

3) How many full-time employees does your company employ in the Inland Pacific Hub study area (based on the locations listed above)? Please check the category applicable to your firm:

- | | |
|----------------------------|---------------------|
| A. ___ Over 1000 employees | E. ___ 50 - 99 |
| B. ___ 500 - 999 employees | F. ___ 25 - 49 |
| C. ___ 250 - 499 employees | G. ___ 10 - 24 |
| D. ___ 100 - 249 employees | H. ___ Less than 10 |

4) Does your firm own and/or operate any of the following transportation assets
(Please check all that apply)

_____ Private Truck Fleet – Dry Vans (# of Units _____)

_____ Private Truck Fleet – Special Equipment (e.g., flat-bed, refrigerated, etc.)

_____ Private Rail Cars

_____ Rail Containers

_____ Other (specify) _____

5) How would you classify your business?

_____ Transportation and Warehousing

_____ Agri-Business

_____ Manufacturing

_____ Construction

_____ Lumber and Wood Products

_____ Mining

_____ Wholesale

_____ Other (specify) _____

6) What are typical hours of operation of your Company transportation activities?

a. Daytime only from _____ a.m. to _____ p.m.

b. Day/Evening from _____ a.m. to _____ p.m.

Outbound transportation

7) What are the primary products you ship from your location?

Please list product type and provide STCC code if known:

a _____ b _____

c _____ d _____

8) What is your fastest growing product or product line?

a _____ b _____

c _____ d _____

9) What are the primary markets/final destinations for these products? Please list the top states or countries; (if the market is within 50 miles, please list cities or counties).

a _____ b _____

c _____ d _____

10) What markets do you anticipate will grow the fastest over the next 3-5 years?

a _____ b _____
c _____ d _____

11) Who exercises primary control over out-bound transportation decisions?
(If more than one answer applies please provide approximate percentage for each)

a. _____ Your company b. _____ Customers c. _____ A third party

12) Approximately how many outbound shipments does your company make **weekly**?

a. _____ truckloads b. _____ less than truckload
c. _____ express package/air d. _____ rail car
e. _____ container f. _____ other _____

13) What is your average shipment weight for products shipped by weight?

_____ pounds

14) Do you often weigh out or cube out?

Weight out:

___ **No** ⇒ Continue on to Question 15

___ **Yes** ⇒ Would alternative truck configurations better meet your needs?

Cube out:

___ **No** ⇒ Continue on to Question 15

___ **Yes** ⇒ Would alternative truck configurations better meet your needs?

15) What type of volume peaks do your outbound transportation needs experience?

- 16) Using a scale from 1 to 10, with 10 being the most important, how would you rank the following factors in terms of how they influence your outbound transportation arrangements? Also indicate whether the factor is improving or declining (+ / -).

IMPORTANCE TO YOU

a. Transit time	1...2...3...4...5...6...7...8...9...10	+ / -
b. On-time/just-in-time delivery	1...2...3...4...5...6...7...8...9...10	+ / -
c. Cost (rates)	1...2...3...4...5...6...7...8...9...10	+ / -
d. Loss and damage	1...2...3...4...5...6...7...8...9...10	+ / -
e. Equipment availability	1...2...3...4...5...6...7...8...9...10	+ / -
f. Access to global markets	1...2...3...4...5...6...7...8...9...10	+ / -
g. Shipment visibility / traceability	1...2...3...4...5...6...7...8...9...10	+ / -
h. Safety	1...2...3...4...5...6...7...8...9...10	+ / -
i. Carbon Foot print	1...2...3...4...5...6...7...8...9...10	+ / -
j. Other:	1...2...3...4...5...6...7...8...9...10	+ / -

- 17) If "On-time/just-in-time delivery" is a crucial factor influencing outbound transportation decisions, please indicate what defines on-time relative to the appointment time:

___ minutes ___ hour(s) ___ day(s) ___ Other:

- 18) In general, how well does the current transportation infrastructure meet your needs? Estimate using a scale from 1 to 10, with 10 being infrastructure needs are fully met. Also indicate whether the factor is improving or declining (+ / -).

INFRASTRUCTURE PERFORMANCE

a. Transit time	1...2...3...4...5...6...7...8...9...10	+ / -
b. On-time/just-in-time delivery	1...2...3...4...5...6...7...8...9...10	+ / -
c. Access to global markets	1...2...3...4...5...6...7...8...9...10	+ / -
d. Safety	1...2...3...4...5...6...7...8...9...10	+ / -
e. Other:	1...2...3...4...5...6...7...8...9...10	+ / -

Inbound Transportation

- 19) What are the primary products you receive at your location? Please list product type and provide STCC code if known:

a. _____ b. _____
c. _____ d. _____

- 20) What are the primary origins of these products? Please list the top states or countries; if the market is within Washington or Idaho, please list cities or counties.

a. _____ b. _____
c. _____ d. _____

- 21) Approximately how many inbound shipments does your company receive **weekly**?

a. ____ truckloads b. ____ less than truckload
c. ____ express package/air d. ____ rail car
e. ____ container f. ____ other _____

- 22) What type of volume peaks do your inbound transportation needs experience?

- 23) Using a scale from 1 to 10, with 10 being the most important, how would you rank the following factors in terms of how they influence your inbound transportation arrangements? Also indicated whether the factor is improving or declining (+ / -).

IMPORTANCE TO YOU

a.	Transit time	1...2...3...4...5...6...7...8...9...10	+ / -
b.	On-time/just-in-time delivery	1...2...3...4...5...6...7...8...9...10	+ / -
c.	Cost (rates)	1...2...3...4...5...6...7...8...9...10	+ / -
d.	Loss and damage	1...2...3...4...5...6...7...8...9...10	+ / -
e.	Equipment availability	1...2...3...4...5...6...7...8...9...10	+ / -
f.	Access to global markets	1...2...3...4...5...6...7...8...9...10	+ / -
g.	Shipment visibility / traceability	1...2...3...4...5...6...7...8...9...10	+ / -

- | | | | |
|----|-------------------|---|-------|
| h. | Safety | 1....2....3....4....5....6....7....8....9....10 | + / - |
| i. | Carbon Foot print | 1....2....3....4....5....6....7....8....9....10 | + / - |
| j. | Other: | 1....2....3....4....5....6....7....8....9....10 | + / - |

24) If "On-time/just-in-time delivery" is one of the crucial factors influencing your inbound transportation, please indicate what defines on-time relative to the appointment time:

_____ minutes _____ hour(s) _____ day(s) Other: _____

Railroad Service Questions: (Note: If you do not use rail services, skip to Question 34)

25) **Railroad Users:** a) What type of railroad carrier do you currently received service from?

- | | |
|------------------------------|-------------------------------------|
| a. _____ Class I | b. _____ Short line |
| c. _____ Both Class I and SL | d. _____ : Other / Don't know _____ |

Who is your primary rail carrier:_____

26) Do you have a rail siding serving your location? If not, how far is the nearest rail facility for the types of rail transportation you use?

- | | |
|-----------------------------|-----------------------------|
| a. _____ Siding at location | b. _____ Less than 1 mile |
| c. _____ 1 to 5 miles | d. _____ 5 to 25 miles |
| e. _____ 25 to 50 miles | f. _____ more than 50 miles |

27) What type of rail facilities do you use to for shipping or receiving products?

- | | |
|-------------------------------|---------------------------------|
| a. _____ Intermodal | b. _____ Bulk transload |
| c. _____ Break bulk transload | d. _____ Direct railcar service |

28) What type of railroad equipment is used to move your products?

- | | |
|---------------------|---------------------|
| a. _____ Container | b. _____ Box Car |
| c. _____ Hopper Car | d. _____ Tanker Car |
| e. _____ Other | _____ |

29) How would you rate rail transportation based on the following performance factors?
Also indicate whether the service factor has been improving or declining (+ / -).

IMPORTANCE TO YOU

- | | | |
|---------------------------------------|--|-------|
| a. Transit time | 1...2...3...4...5...6...7...8...9...10 | + / - |
| b. On-time/just-in-time delivery | 1...2...3...4...5...6...7...8...9...10 | + / - |
| c. Cost (rates) | 1...2...3...4...5...6...7...8...9...10 | + / - |
| d. Loss and damage | 1...2...3...4...5...6...7...8...9...10 | + / - |
| e. Equipment availability | 1...2...3...4...5...6...7...8...9...10 | + / - |
| g. Shipment visibility / traceability | 1...2...3...4...5...6...7...8...9...10 | + / - |
| h. Other | 1...2...3...4...5...6...7...8...9...10 | + / - |

30) Are there any service or access improvements that would increase your current use of railroad transportation?

- a. No
- b. Yes, Please explain: _____
- _____

Port Cargo Service Questions:

31) Does your company use water cargo?

- a. _____ No If no, skip to question 36
- b. _____ Yes

32) What are the primary ports used for water cargo shipments?

- a. _____ b. _____
- c. _____ d. _____

Air Cargo Service Questions:

33) Does your company use air cargo?

- a. _____ No If no, skip to question 29
- b. _____ Yes, If so, what is the service provider or type?
- Express Carrier

Freight Forwarder

Charter

34) **Do you ship international air cargo?**

a. _____ No

b. _____ Yes, If so, what % is international?

What airport?

35) **What are the primary airports used for air cargo shipments?**

Domestic Air Cargo

International Air Cargo

a. _____

b. _____

General Transportation Opinions

36) What are the biggest challenges you currently face in meeting your company's transportation/ supply chain management needs?

Least.....Greatest

- | | | |
|----|-------------------------------|--|
| a. | Safety | 1...2...3...4...5...6...7...8...9...10 |
| b. | On-time delivery | 1...2...3...4...5...6...7...8...9...10 |
| c. | Border issues | 1...2...3...4...5...6...7...8...9...10 |
| d. | Transportation cost | 1...2...3...4...5...6...7...8...9...10 |
| e. | Transportation infrastructure | 1...2...3...4...5...6...7...8...9...10 |
| f. | Other (specify) _____ | 1...2...3...4...5...6...7...8...9...10 |

37) From your business perspective, what do you feel is the weakest link in the transportation services currently available in the region?

38) What would you consider to be the greatest transportation strength in the region?

39) Are fuel costs causing you to consider reengineering your supply chain? How might it change?

40) Is your company beginning to plan for carbon reductions? How may that affect your supply chain design and transportation requirements?

Thank you for your time and assistance!

APPENDIX B: STAKEHOLDER ISSUES SUMMARY

Exhibit A-1: Stakeholder Issues Summary - Infrastructure

MODE	INFRASTRUCTURE							
Overarching Issue Type	Capacity/Capability		Performance/Efficiency		Condition/Safety		Proximity/Accessibility	
TRUCKING Network								
Better North/South Access	▲	US95 Improvement from border to Coeur d'Alene and a Huetter Bypass						
Slow Processes and Support for Improvements	▲	Need North/South Freeway	▲	45 to 50 minute trip - would take 6 minutes				
Border Crossings					▲	Route through Sandpoint is difficult		
East-West Alternative Route to I90 in Spokane & other Spokane Difficulties					▲	Narrow and Winding		
I-90 to Plant - Connector Routes	▲	Congestion			▲	Access Management	▲	Designated Connector Routes to plants
North-South Freeway	▲	Significant Issue						
Road Condition and Line-haul Use					●	They adjust weight in winter for chains & utilize serving yards to disconnect plant from linehaul		
Make US-95 4-Lane (Border to Boise)	▲	Major Congestion w/400 trucks/day and Summer tourists in Sandpoint (thru-town)						
Improve King's Gate Crossing at East Port	▲	only 2-Lanes w/8 parking spots for ComVeh.						
Improve Bridge Clearance on Hwy 200 from Sandpoint East to Montana			▲	Improve 1 Low-clearance Bridge in Clark Ford = - 25mile shorter route, 15 gals of fuel saving, cuts drive time by 1 hr				

MODE	INFRASTRUCTURE							
Overarching Issue Type	Capacity/Capability		Performance/Efficiency		Condition/Safety		Proximity/Accessibility	
Gross Vehicle Weight Limits of 105,500 lbs			•	Infrastructure maintenance and longer life	▲	Off-tracking warnings when running double configurations		
North-South Route	▲	Better connection to Canada						
Trucking Service			▲	Inefficient connections	▲	Equipment Balance & circuitry? (**lane balance/network?)		
North-South Freeway	▲	Need Trade route connector						
By-pass Routes					▲	Dangerous Francis Ave/Bigelow Gulch Rd		
Road Condition					▲	Poor Road Condition on Key Routes		
Primary Routes through City							▲	2 primary routes pass directly through city
Maintenance, Bottlenecks, Safety			▲	Bottlenecks in Spokane Downtown Area	▲	Lack of maintenance, Excessive Ruts, Safety of Regional Highway Network (2 out of 10)		
North-South Freeway	▲	Weakest link is lack of North-South Freeway	▲	Winter maintenance	▲	Overall condition of the regional network		
Safety					▲	Drivers are instructed to avoid Bigelow Gulch in winter		
Intersection Design			▲	Market Street intersection difficult to negotiate				
Cell Phone Coverage							▲	Better coverage for communication which Truckers rely on
Load Limits	▲	CA is 80K						

MODE	INFRASTRUCTURE							
Overarching Issue Type	Capacity/Capability		Performance/Efficiency		Condition/Safety		Proximity/Accessibility	
Key Radials	●	Anything to CA					▲	395 to Tri-Cities (only?)
North-South Freeway			▲	Maxis can't fit well, save time				
North-South Corridor in Spokane							▲	Helps access into Northern Idaho and US95
Road Condition (US v. CAN)					▲	Canada pavement better, by all 2-Lane, Hilly, and Narrow		
Coeur d'Alene	▲	Low Bridges					▲	Oversize load limits
Oversize Loads (Hwy 200)							▲	Too hard for oversize loads
Construction related Limits							▲	ID & MT limit widths/wide loads during construction
Large Load Pilots							▲	Some States req. 2 pilots for large loads
Road Restrictions on Size							▲	US 2 ID to MT, Lewiston to Boise on US 95
Winter Weather Pass Closures			▲	Design Life is reached for this level of traffic				
Real-time 'Telecom' Traffic Info	▲	JIT information					▲	JIT information
Rest Stop & Stranded Facilities					▲	Stuck during closures and rest stops often closed in winter		
Standard Facilities since other routes are rarely even an option					▲	Many rest stops open only seasonally, limited hours		
US 395 in Kennewick-Bypass (Blue Bridge)			▲	Need to Slow down	▲	Hard to see coming over bridge, poor lane markings		
RAIL Network								

MODE	INFRASTRUCTURE							
Overarching Issue Type	Capacity/Capability		Performance/Efficiency		Condition/Safety		Proximity/Accessibility	
Intermodal Rail Service			▲	+10 days longer to use US Rail Service over Canada rail and port				
Railroad Bottleneck between Plummer/Spokane					▲	Replace substandard track on stretch of UP		
Network Position & Density	▲	Density is problematic					▲	Network positioning is problematic
Weight Limits	▲	Low track weight on UP from Spokane to Plummer						
WATERWAY Network								
Port of Seattle Access							●	Major Regional Strength
AIR CARGO Network								
Supply Chain Reliability at GEG	▲	Lengthen runway, enable direct Intl flights Asia/Spokane						
Wide Body Jet Service at GEG	▲	Important for perishable cherry products to Japan						
Runway Length	▲	GEG limits on plane size						
INTERMODAL Network								
Lack of Intermodal	▲	Need a container facility in Spokane	▲	Would increase the use of rail	▲	Would increase the use of rail	▲	Need a container facility in Spokane

Strengths/Assets
Challenges/Needs/- Opportunities
Issue Classification not Clear

●
▲
■

Exhibit A-2: Stakeholder Issues Summary – Logistics

MODE	LOGISTICS			
Overarching Issue Type	Service/Availability		Reliability/Efficiency (Distance/Time)	
TRUCKING Network				
The deregulation of Over-the-Road (OTR) Trucking	▲	Motivation for serving profitable routes only	▲	Seasonal Harvests controlled by Mother Nature
Outbound delivery			●	no outbound delays
~ some Inbound delays			▲	Farmers reporting of shipment
Locating Backhauls & Cost of doing Business	▲	Locating backhauls	▲	Balance shipping lanes
Less than Truckload (LTL) Services	●	Level of Service		
Lack of Backhauls & Carrier and Equipment Availability			▲	Seasonality of Agriculture/Lack of backhauls in remote areas
Outbound Truck Supply	▲	Occasional Supply issues		
Prefer not to cross border	▲	Driver's don't want to cross borders and don't serve Ontario & Quebec		
Need Lane Balancing	▲	Especially with more freight coming in than going out		
More Carrier Choice & Availability	▲	Among Carriers		
Priority Ratings	▲	Would like Priority raised on Fed Ex's delivery route		
North-South Route	▲	Better connection to Canada		
Trucking Service	●	Service is good and convenient		
Trucking Service			▲	Difficult Supply
North-South Freeway	▲	need Trade route connector		
Carriage Capacity			▲	Harvests limit Industrial access to carriage capacity
Lack of Backhauls			▲	Lack of Backhauls is biggest challenge (only 10-15% return loaded)
Driver Eligibility and Treatment	▲	Truckers need to be able to secure and have passports	▲	Cab searches, driver detainment, load detainment

MODE
Overarching Issue Type
Eastgate (US95), Osoyoos, Sweetgrass Crossings
Winter Weather Pass Closures
RAIL Network
Rail Service rates High
Rail Shipment Reliability
Rail Shipment Transit Time
Rail Weather Issues
Variable Inbound Rail Service
Harmonization of Connected Rail Service
Railroad Bottleneck between Plummer/Spokane
Future Rail Service
Network Position & Density
Carriage Capacity
Weight Limits
Rail Container Movements
Railroad Minimums
WATERWAY Network
Port Security Clearances
AIR CARGO Network
Supply Chain Reliability at GEG

LOGISTICS			
Service/Availability		Reliability/Efficiency (Distance/Time)	
		●	Agents know the companies trucks
		▲	More pass closures in last 3 yrs than past 20
●	High Level of Service		
		●	Shipment to Midwest is 2 wks Reliable
		▲	Shipment to Midwest is 2 wks
▲	Winter brings weather issues ONTO rail system		
●	Some can track shipments all the way in		
		▲	Harmonization of TS&W 'Cloverleaf' in Midwest would allow better access to Chicago
▲	Would allow use of cars that could be loaded to 286,000 lbs		
▲	Service concern if volumes rise		
▲	Partial rail presence		
		▲	Harvests limit Industrial access to carriage capacity
▲	Low track weight on UP from Spokane to Plummer		
▲	Better container movements		
▲	From 20-26 to 100 car sets req.		
▲	Difficult to track and comply	▲	Individual Ports have different clearances
		▲	Trucks from Seattle travel over mountain passes in winter

MODE
Overarching Issue Type
INTERMODAL Network
<i>Not being connected to large hub</i>
<i>Carrier logistics work well</i>
<i>Supply chain reliability</i>
<i>Lack of Intermodal</i>
<i>Intermodal Rail Service Supply Chain</i>
<i>Irregular Sized Products</i>
<i>Container Supply & Facilities</i>
<i>Lack of Container Backhauls</i>
<i>Cost to Maximize Truckload v. No need to do so through Intermodal</i>

LOGISTICS			
Service/Availability		Reliability/Efficiency (Distance/Time)	
•	<i>Ease of use</i>		
•	<i>Business favors Logistics over transport costs</i>		
		▲	<i>Forecasts / projections of raw supplies and end use are controlled by Mother Nature</i>
		▲	<i>Current inefficient transloading to flatbed for final few miles</i>
▲	<i>Some intermodal shipments routed to Seattle on flatbed trucks to be containerized</i>		
		▲	<i>Damage when using Intermodal, need to use a lot of Dunnage in containers</i>
■	<i>Container Supply</i>	■	<i>Adequate Facilities</i>
		▲	<i>Lack of backhauls and lane balance for carriers, Empty containers from Coast go back empty from Spokane</i>
•	<i>Interest in Railroad TOFC options and facilitation</i>	▲	<i>Needs solutions to fill trucks</i>

Strengths/Assets	•
Challenges/Needs/-Opportunities	▲
Issue Classification not Clear	■

Exhibit A-3: Stakeholder Issues Summary – Policy Planning Priority

MODE	POLICY/PLANNING/PRIORITY							
Overarching Issue Type	Business		Local		Regional/State		National	
TRUCKING Network								
The deregulation of Over the Road (OTR) Trucking	▲	Motivation for serving profitable routes only						
Slow Processes and Support for Improvements			▲	Still not complete after 50 yrs	▲	Still not complete after 50 yrs	▲	Still not complete after 50 yrs
Border Crossings					▲	Need Routes to reach them	▲	Need Routes to reach them
East-West Alternative Route to I90 in Spokane & other Spokane Difficulties			▲	Improvements face resistance from residents (Bigelow Gulch)				
Priority Ratings	▲	Would like Priority raised on Fed Ex's delivery route						
Snow Clearing			▲	High-tech business wants street re-classed as priority route for snow plowing				
Trucking Service			▲	Inefficient connections	▲	Inefficient connections	▲	Inefficient connections
Load Limits							■	Load limits on Federal System
North-South Freeway			▲	Winter maintenance of regional network	▲	Winter maintenance of regional network		
Load Limits					▲	Various states have various limits	▲	Various states have various limits
Construction related Limits					▲	ID & MT limit widths/wide loads during construction	▲	ID & MT limit widths/wide loads during construction
Large Load Pilots					▲	Some States req. 2 pilots for large loads	▲	Some States req. 2 pilots for large loads

MODE
Overarching Issue Type
Communication of Closures
Real-time 'Telecom' Traffic Info
RAIL Network
Railroad Minimums
WATERWAY Network
Port Security Clearances
AIR CARGO Network
INTERMODAL Network
Public Outreach and Education

POLICY/PLANNING/PRIORITY							
Business		Local		Regional/State		National	
				▲	Need email notification for ID too. Currently 2 hr delay of opening notifications		
▲	Everyone demands this and organizes for it	▲	Used to be something people paid for, but today everything is JIT	▲	Used to be something people paid for, but today everything is JIT	▲	Used to be something people paid for, but today everything is JIT
▲	Business plan moves away from RR-need a backup						
						▲	TWIC interpretation varies a lot
	NONE						
		▲	Public opposition to Bridging the Valley				

Strengths/Assets	●
Challenges/Needs/-Opportunities	▲
Issue Classification not Clear	■

Exhibit A-4: Stakeholder Issues Summary – Economics

MODE	ECONOMICS
Overarching Issue Type	Sustainability
TRUCKING Network	
<i>The deregulation of Over the Road (OTR) Trucking</i>	▲ Motivation for serving profitable routes only
<i>Locating Backhauls & Cost of doing Business</i>	▲ Overall cost to do business
<i>LTL Services</i>	● Level of competition
<i>Better Rates</i>	▲ Rates to Sandpoint need to be better
<i>Trucking Service</i>	● Low Rates
<i>Border Crossing</i>	▲ Frustrating
<i>Driver Eligibility and Treatment</i>	▲ Intimidation and Harassment of drivers by US and Canada
<i>Eastgate (US95), Osoyoos, Sweetgrass Crossings</i>	● 3 Crossings aren't too bad
<i>Winter Weather Pass Closures</i>	▲ Coast and Inland are cut off from each other by this
<i>Strand Facilities since other routes are rarely even an option</i>	▲ Customers only pay the shortest route, so hold back elsewhere, or go another route
RAIL Network	
<i>Rail Rates rate Low</i>	▲ Rail Rates rate low and getting worse
<i>Intermodal Rail Service</i>	▲ Containers routed across Canada Rail system to Port of Montreal vs. 10 days longer to use US Rail Service
<i>Reciprocal Switching at Plumber</i>	▲ Allow others access and could help improve the system
<i>Rail Container Movements</i>	▲ Reduce Costs
<i>Railroad Minimums</i>	▲ Intermodal Isotainers lift costs won't work
WATERWAY Network	
<i>Port Security Clearances</i>	▲ System is very costly, other state and federal requirements are costly
AIR CARGO Network	NONE
INTERMODAL Network	
<i>Community to Support an Intermodal Facilities</i>	● size and people
<i>Lack of Intermodal</i>	● Would increase the use of rail
<i>Becoming a Regional Hub</i>	● Good access to trucking, two Class I railroads, and proximity to border
<i>Intermodal Rail Service Supply Chain</i>	▲ Containers routed across Canada Rail system to Port of Montreal vs. 10 days longer to use US Rail Service

MODE
<i>Overarching Issue Type</i>
<i>Intermodal Service Measures</i>
<i>Lack of Container Backhauls</i>

ECONOMICS
<i>Sustainability</i>
■ <i>Competitiveness (Rail-Water): UK-26d, FRA-33d. (Door-Door): UK-33d, GER-38d, FRA-40d.</i>
▲ <i>Results in higher costs for transport</i>

Strengths/Assets		●
Challenges/Needs/-Opportunities		▲
Issue Classification not Clear		■

Exhibit A-5: Consolidated Stakeholder Issues Summary

					Freight Forum		
Pullman (Original)	Spokane Valley (Original)	Sandpoint (Original)		COMBINED REGIONAL ISSUES	Pullman (12/1/09)	Spokane Valley (12/2/09)	Sandpoint (12/2/09)
All Issues							
Infrastructure Preservation and Improvement	Short Line Rail Corridor	Infrastructure		Preserve Existing Infrastructure	43	16	10
Existing Transportation Networks					20		
Business Retention					19		
Regional Freight Mobility	Regional Truck Network				11	11	
National/Global Connections	IPH as a Freight Consolidation Center				8	15	
Trade Corridors	North/South Trade Corridor	Trade Corridors		Develop Regional Trade Corridor(s)	1	89	1
		Communications					12
	Regional Communication / Collaboration - 10 Regional Master Planning – 22	Joint Participation				32	10
		Urban By-passes					3
Transportation Policy Goals							
Highway Issues Break out Session							
Preserve What Exists					29		
Trade Corridors - 23 All Season Roads - 9	Trade Corridors/Urban By-Pass	Trade Corridors			32	69	10

					Freight Forum		
Pullman (Original)	Spokane Valley (Original)	Sandpoint (Original)		COMBINED REGIONAL ISSUES	Pullman (12/1/09)	Spokane Valley (12/2/09)	Sandpoint (12/2/09)
Improved Communication		Communications / Technology		Communications Technologies (Realtime)	9		1
Safety				Roadway Design Improvements & Innovations for Safety & Infrastructure Improvements	7		
		Urban By-pass Routes					18
		Local Connectors					7
	Regional Truck Network	Regional Truck Routes				16	4
		Border Crossing Improvements					2
	Regional Cooperation					26	
Economic Development/Other Modal issues							
Highway Preservation and Improvement	Funding for Building and Maintaining Roadways	North/South Connection			19	22	12
Existing Transportation Networks		Local Mobility Enhancements			16		6
Support River Transport					14		
Support Passenger Airline Service		Airport Improvements			8		4
Insure Adequate Rail Transit					5		
Help Maintain Competitive Transportation Costs		Business Retention			3		10

					Freight Forum		
Pullman (Original)	Spokane Valley (Original)	Sandpoint (Original)		COMBINED REGIONAL ISSUES	Pullman (12/1/09)	Spokane Valley (12/2/09)	Sandpoint (12/2/09)
	Regional Master Planning – 38 Marketing the Vision to the Public – 11 Truck Consolidation Point – 26	Regional Participation in Planning				75	24
		Availability of Water, Sewer, Power and Communications Infrastructure					16
	Link to Revelstoke – 23 Rail Corridor to South – 5					28	
	Biofuels Transport					6	
	Back Hauls Out of IPH					4	

Exhibit A-6: Consolidated Issues from the Stakeholder Perspective

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