

### **TECHNICAL MEMORANDUM**

То:	Darby Watson, Alicia McIntire Parametrix	From:	Jennifer Emerson-Martin, Iteris, Inc.
Date:	July 20, 2022		
RE:	Phase 2 – Land Use Modeling Results and An	alysis	

The purpose of this memorandum is to document the travel demand modeling process used to support the analysis for *Phase 2* of the Division Street Corridor Study. This memorandum documents the following:

- Methods and land use assumptions used for developing the travel model forecasts
- Detailed performance metric information
- Forecast analysis for each of the performance metrics
- A comparative analysis of each of the Phase 2 2045 land use scenarios compared to the 2045 No Build condition

To ensure that the Division Street Corridor Study represents the most accurate regional background information and produces the most realistic forecasts, the project team coordinated with local agencies as follows:

- Spokane Regional Transportation Council (SRTC): The project team obtained the current Metropolitan
  Transportation Plan (MTP) 2019 and 2045 travel model files and met multiple times during the scenarios
  development process to discuss assumptions, model methodologies, and performance metrics analysis.
  - o As a note, the previous phase of the project used the SRTC 2015 and 2040 travel model files.
- Washington State Department of Transportation (WSDOT): The project team obtained network geometry and configuration for North Spokane Corridor (NSC), including adjacent ramps and local facilities, and met during the scenarios development process to discuss assumptions, model methodologies, and performance metrics analysis.

### 1 INTRODUCTION

The primary tool used in the analysis was the current SRTC Travel Model (for years 2019 and 2045). The SRTC model was used to forecast traffic volumes and transit ridership on Division Street and adjacent arterials within the Division Street Corridor Study area. These travel model forecasts were used as inputs during the scenario analysis for Phase 2 of the study. The study area includes the area within ¾ mile of either side of Division Street, which encompasses Hamilton Street to the east and Monroe Street to the west as illustrated in **Figure 1**.

Five scenarios were developed and analyzed for the corridor. The five scenarios are:

### 1. **2019 Existing**

- a. Existing year land use
- b. Existing year roadway network
- c. Existing regional transit network, with existing Route 25 on Division Street

#### 2. 2045 No Build

- a. Future planned SRTC 2045 MTP land use
- b. Future planned SRTC 2045 MTP roadway network
- c. Future year regional transit networks, with existing Route 25 on Division Street (coded as 2019 Existing configuration and headways)

#### 3. 2045 Build-Low

- a. Future planned SRTC 2045 MTP land use
- b. Future planned SRTC 2045 MTP roadway network, with BAT lanes and one reduced lane on Division between the Spokane River and the "Y". Additionally, the walk and bike classifications were added to the Division Street corridor roadway network to enhance the active transportation network component of the Build scenario, ensuring walk and bike access to BRT and local transit stops.
- c. Future year regional transit networks, with Route 25 coded as a BRT route with shorter headways than 2019 Existing Route 25. The alignment for the BRT Route 25 was coded consistent with the existing year Route 25 alignment.

#### 4. 2045 Build-Half TOD

- a. Future year 2045 modified land use, including 7 nodes that are fully developed with TOD land uses described in *Section 2* of this technical memorandum
- b. Future planned SRTC 2045 MTP roadway network, with BAT lanes and one reduced lane on Division between the Spokane River and the "Y". Additionally, the walk and bike classifications were added to the Division Street corridor roadway network to enhance the active transportation network component of the Build scenario, ensuring walk and bike access to BRT and local transit stops.
- c. Future year regional transit networks, with Route 25 coded as a BRT route with shorter headways than 2019 Existing Route 25. The alignment for the BRT Route 25 was coded consistent with the existing year Route 25 alignment.

### 5. 2045 Build-Full TOD

- a. Future year 2045 modified land use, including 12 nodes that are fully developed with TOD land uses described in *Section 2* of this technical memorandum
- b. Future planned SRTC 2045 MTP roadway network, with BAT lanes and one reduced lane on Division between the Spokane River and the "Y". . Additionally, the walk and bike classifications were added to the Division Street corridor roadway network to enhance the active transportation network component of the Build scenario, ensuring walk and bike access to BRT and local transit stops..
- c. Future year regional transit networks, with Route 25 coded as a BRT route with shorter headways than 2019 Existing Route 25. The alignment for the BRT Route 25 was coded consistent with the existing year Route 25 alignment.

Throughout the report, the following scenario sets are compared:

- "The 2045 Scenarios" refers to all four future year scenarios, including the 2045 No Build, 2045 Build-Low, 2045 Build-Half TOD, and 2045 Build-Full TOD scenarios
- "The 2045 Build Scenarios" refers to all three Build scenarios, including the 2045 Build-Low, 2045 Build-Half TOD, and 2045 Build-Full TOD scenarios
- "The 2045 TOD scenarios" refers to the two TOD scenarios, including the 2045 Build-Half TOD, and 2045 Build-Full TOD scenarios

In several sections of this technical memorandum, the performance measures summarize statistics by corridor segment. There are five (5) segments that the project corridor was broken into for analysis:

- 1. Segment 1: Riverside Avenue/Division Street from the Transit Plaza to the Spokane River
- 2. Segment 2: Division Street/Ruby Street from the Spokane River to Euclid Avenue
- 3. Segment 3: Division Street from Euclid Avenue to Francis Avenue
- 4. **Segment 4:** Division Street from Francis Avenue to Newport Highway (the "Y")
- 5. Segment 5: Division Street and Newport Highway from the "Y" to Hastings Road

As a note for this technical memorandum, for a majority of analyses an explanation of "why" is described. These analyses are determined based on professional judgement in combination with travel model outputs. While these analyses are logical, the travel model is merely one tool out of many to be used to come to a definitive conclusion for decision making.

195 Legend Spokane City Limits Study Area : Neighborhood Boundaries

Figure 1: Study Area

The headways for the Division bus rapid transit (BRT) Build scenario were developed during Phase 1 of the project and are assumed as typical weekday service. The 2045 Build scenario service plan is consistent with the service plan of the future STA City Line BRT (currently under construction), with a 19-hour service span from 5:00 AM to 12:00 PM.

Build scenario frequencies by time of day are:

- 5:00 AM to 6:00 AM (Early AM): 30 Minute Headways
- 6:00 AM to 8:30 AM (AM Peak): 7.5 Minute Headways
- 8:30 AM to 5:30 PM (Mid-Day): 10 Minute Headways
- 5:30 PM to 8:00 PM (PM Peak): 7.5 Minute Headways
- 8:00 PM to 11:00 PM (Evening): 15 Minute Headways
- 11:00 PM to 12:00 AM (Late PM): 30 Minute Headways

### 2 DIVISION CORRIDOR ZONES AND LAND USE

To better analyze the land use scenarios, and their impact on transportation, the model Transportation Analysis Zones (TAZ) were split into smaller zones along the Division Street Corridor. The primary boundaries for the revised TAZs are directly related to the 12 land use nodes analyzed during Phase 2 of the project. These nodes represent areas in which the potential for transit-oriented development (TOD) was analyzed. Splitting the TAZs by the node boundaries resulted in 128 new TAZs. During the zone split process, employment and housing units were split manually by referencing to satellite image background. Other land use inputs were either calculated by the proportions of the housing units multiplied by the percentage of the newly split zones acres from the original zone acres or used the original zone data.

Land use nodes in which the potential for TOD was analyzed for the 2045 scenarios were provided by SCJ Alliance, a subconsultant to the DivisionConnects study. The 2045 No Build and 2045 Build-Low scenarios have identical land use to the 2045 SRTC MTP model scenario. The 2045 Build-Half TOD and 2045 Build-Full TOD land use scenarios represent a modification of residential units and employment numbers. For a full set of details on the land use nodes forecasts which were incorporated into the SRTC model for this modeling effort, please refer to the DivisionConnects Vision and Implementation Strategy Phase 2 Report.

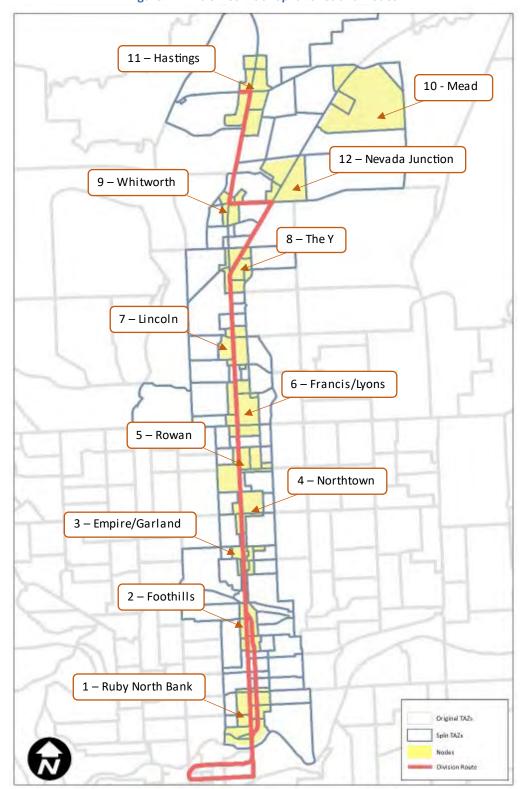
Figure 2 illustrates the model TAZs and the 12 fully developed land use nodes that were used to split the zones:

- Node 1 Ruby North Bank
- Node 2 Foothills
- Node 3 Empire/Garland
- Node 4 Northtown
- Node 5 Rowan
- Node 6 Francis/Lyons
- Node 7 Lincoln
- Node 8 The Y
- Node 9 Whitworth
- Node 10 Mead
- Node 11 Hastings
- Node 12 Nevada Junction

The nodes forecast to be fully developed for the 2045 Build-Half TOD scenario include the following:

- Node 1 Ruby North Bank
- Node 2 Foothills
- Node 3 Empire/Garland
- Node 5 Rowan
- Node 7 Lincoln
- Node 9 Whitworth
- Node 10 Mead

**Table 1** summarizes the single-family and multi-family units for the scenarios for each node. **Table 2** summarizes the retail and non-retail employment for the scenarios for each node. Detailed land use node figures are included in **Attachment A**.



**Figure 2: Division Corridor Split Zones and Nodes** 

Table 1 – Residential Dwelling Units by Land Use Node

Table 1 – Residential Dwelling Offics by Land Ose Node									
Node	2019 E	xisting	2045 No Build 2045 Build-Low		2045 Build-Half TOD		2045 Build-Full TOD		
Noue	Single- Family	Multi- Family	Single- Family	Multi- Family	Single- Family	Multi- Family	Single- Family	Multi-Family	
Node 1 - Ruby North Bank*	18	146	18	599	21	725	21	725	
Node 2 - Foothills*	31	0	31	0	31	166	31	166	
Node 3 - Empire/Garland*	132	19	134	19	134	137	134	137	
Node 4 – Northtown	0	0	0	0	0	0	4	212	
Node 5 - Rowan*	41	27	43	29	43	45	43	45	
Node 6 - Francis/Lyons	42	358	45	369	44	364	45	594	
Node 7 - Lincoln*	9	0	9	0	9	168	9	168	
Node 8 - The Y	0	187	18	192	17	184	0	354	
Node 9 - Whitworth*	0	237	0	240	0	285	0	285	
Node 10 - Mead*	0	0	0	0	141	350	141	350	
Node 11 - Hastings	0	0	0	0	0	0	40	358	
Node 12 - Nevada Junction	0	0	0	0	0	0	0	478	
Total	273	973	298	1,446	440	2,424	468	3,872	
*Included in Half TOD scenario									

Table 2 – Total Employment by Land Use Node

Table 2 – Total Employment by Land Ose Node										
Node	2019 Existing			2045 No Build 2045 Build-Low		2045 Build-Half TOD		ild-Full TOD		
Node	Retail	Non- Retail	Retail	Non- Retail	Retail	Non-Retail	Retail	Non-Retail		
Node 1 - Ruby North Bank*	741	2,983	741	3,215	881	3,996	881	3,996		
Node 2 - Foothills*	439	15	592	16	621	110	621	110		
Node 3 - Empire/Garland*	65	95	82	176	101	148	101	148		
Node 4 – Northtown	1,673	290	1,736	398	1,812	362	1,764	440		
Node 5 - Rowan*	318	2,015	318	2,561	334	2,631	334	2,631		
Node 6 - Francis/Lyons	599	118	623	190	652	209	1,110	209		
Node 7 - Lincoln*	515	295	585	512	944	539	944	539		
Node 8 - The Y	1,087	470	1,163	512	1,253	496	1,146	594		
Node 9 - Whitworth*	166	152	200	200	201	252	201	252		
Node 10 - Mead*	413	0	504	0	559	12	559	12		
Node 11 - Hastings	738	541	912	810	1,119	783	1,044	852		
Node 12 - Nevada Junction	448	310	292	351	303	257	494	699		
Total	7,201	7,284	7,749	8,940	8,780	9,796	9,199	10,482		
*Included in Half TOD scenario										

# **3 PERFORMANCE METRICS**

Readily available performance metrics from the travel demand model were used to complete the scenarios analysis. Performance metrics were supported by information from the SRTC model, primarily related to transit speeds, ridership, and passenger delay. **Table 3** summarizes metrics used in the analysis and available data sources.

Table 3 – Division Corridor Transit Data Analysis Metrics

Metric	Table 3 – Division Corridor Transit Data Analysis	Data Source(s)
Regional Travel Statistics	Average vehicle miles, vehicle hours, vehicle hours of delay, and overall average speed for the greater Spokane region as well as the study area  Regional travel statistics also include an analysis of future year flow-bundles and locations of congestion within the region.	All data used in this analysis was obtained as direct output from the travel demand model
Mode Split	Comparison of drive alone person trips, shared-ride person trips, transit person trips, and non-motorized person trips in the Spokane region, including a comparison of the overall transit and non-motorized mode split	All data used in this analysis was obtained as direct output from the travel demand model
Transit Ridership	A comparison of total regional transit ridership compared with Route 25 ridership	Existing ridership was obtained from STA Trapeze system/Automatic Passenger Counter (APC) data  The change in ridership between future year scenarios was calculated from the travel demand model outputs and applied directly to the raw ridership data
Travel Time and Speed	Average inbound and outbound vehicular travel time and speeds on Division Street between the Plaza (assumed southern terminus) and the Hastings Park and Ride (assumed northern terminus)  Travel time and speed were summarized by AM and PM peak periods and separated by direction of travel (inbound and outbound)	Existing travel time was obtained from WSDOT using Bluetooth reader information  The change in travel times between scenarios was calculated from the travel demand model outputs and applied directly to the raw WSDOT travel time data
Screenline Comparison	A north-south travel comparison for four east-west screenlines drawn at different locations along the study corridor  Vehicle travel for the AM peak period, PM peak period, and total average day were compiled  Vehicle diversion between parallel north-south facilities was compared	All data used in this analysis was obtained as direct output from the travel demand model
Land Use Node Travel Statistics	Average vehicle miles or travel by various metrics, including daily vehicular VMT per service population (population plus employment), daily home-based vehicular VMT per capita (population), daily non-home based vehicular VMT per employee.	All data used in this analysis was obtained as direct output from the travel demand model

Note: All analysis assumes a data sample from typical, pre-COVID operating conditions and ridership during the school year (e.g. October 2019)

## 3.1 Regional Travel Statistics

Regional travel statistics are general measures used to compare vehicular travel in a large geography. For this analysis, two study areas were analyzed to calculate average weekday Vehicle Miles of Travel (VMT), Vehicle Hours of Travel (VHT), and Vehicle Hours of Delay (VHD). **Table 4** summarizes the regional and study area travel statistics for the 2019 existing and all four 2045 scenarios. As detailed in **Table 4**, the scenarios result in the following analysis within the study area:

- Within the Spokane Region, an increase in VMT is observed between the 2019 Existing scenario and the 2045 No Build scenario of approximately 24 percent. Additionally, the effect of build alternatives is less than a quarter of a percent increase compared to the 2045 No Build scenario.
- Within the study area, there is an increase in VMT is observed between the 2019 Existing scenario and the 2045 No Build scenario of approximately 6 percent, which is significantly lower than the 24 percent growth for the region as a whole. Additionally, there is a decrease in VMT of approximately 4 to 6 percent between the 2045 No Build and the 2045 Build scenarios.
  - The reason for the smaller increase in total VMT between the 2019 Existing scenario and the 2045 No Build scenario in the study area when compared to the region is likely due to the shift of traffic from north-south arterials (including Division Street) onto the NSC
  - The decrease in VMT within the study area between the 2045 No Build and the 2045 Build scenarios is likely due to several factors, including the reduction in available capacity on Division Street due to the reduction of one lane, as well as the mode shift from vehicle travel to transit and non-motorized travel
- Within the study area, there is an increase in VHT between the 2019 Existing scenario and the 2045 No
  Build scenario of approximately 6 percent, which is significantly lower than the 24 percent growth for the
  region as a whole. Additionally, there is a decrease in VHT of approximately 2 to 5 percent between the
  2045 No Build and the 2045 Build scenarios. The effect of build alternatives on the Spokane Region VHT
  is an increase of less than a half of one percent compared to No Build.
  - ➤ Generally, a reduction in VMT results in a similar reduction in VHT
  - The reason for the smaller increase in total VHT between the 2019 Existing and the 2045 No Build scenarios in the study area when compared to the region is likely due to the shift of traffic from north-south arterials (including Division Street) onto the NSC
  - ➤ The decrease in VHT within the study area between the 2045 No Build and the 2045 Build scenarios is likely due to several factors, including the reduction in available capacity on Division Street due to the reduction of one lane, as well as the mode shift from vehicle travel to transit and non-motorized travel
- Within the study area, there is an increase in VHD between 2019 and 2045 No Build of approximately 7 percent, which is the same as the percentage growth in delay for the region as a whole. Additionally, there is a decrease in VHD within the study area of approximately 7 to 8 percent between the 2045 No Build and the 2045 Build scenarios. The effect of build alternatives on the Spokane Region VHD is a reduction of less than half of one percent compared to No Build.
  - Generally, a reduction in VMT and VHT results in a greater reduction in VHD, as there is less delay incurred during vehicular travel with less traffic
  - The reason for the smaller increase in total VHD between the 2019 Existing and the 2045 No Build scenarios in the study area when compared to the region is likely due to the shift of traffic from north-south arterials (including Division Street) onto the NSC
  - The decrease in VHD within the study area between the 2045 No Build and the 2045 Build scenarios is likely due to several factors, including the reduction in available capacity on Division Street due to the reduction of one lane, as well as the mode shift from vehicle travel to transit and non-motorized travel

Table 4 – Regional Travel Statistics Comparison (Average Weekday)

	2019		20	45					
Description	Existing	No Build	Build- Low	Build- Half TOD	Build- Full TOD				
Spokane Region									
VMT	9,780,270	12,137,552	12,133,273	12,180,356	12,154,826				
VHT	265,877	330,912	331,048	332,817	331,816				
VHD	65,581	70,268	69,945	69,980	70,018				
Change in VMT		24%	0%	0%	0%				
Change in VHT		24%	0%	1%	0%				
Change VHD		7%	0%	0%	0%				
	Stud	y Area <sup>1</sup>							
VMT	1,030,563	1,096,453	1,032,125	1,057,710	1,044,988				
VHT	35,822	38,006	36,045	37,082	36,557				
VHD	6,151	6,565	6,063	6,095	6,102				
Change in VMT		6%	-6%	-4%	-5%				
Change in VHT		6%	-5%	-2%	-4%				
Change VHD		7%	-8%	-7%	-7%				

Note: The 2045 No Build scenario is compared to the 2019 Existing scenario, and the 2045 Build scenarios are compared with the 2045 No Build.

To understand the difference in regional travel for the 2045 Build scenarios, difference plots were made to illustrate regional changes in vehicular travel. **Figure 3** illustrates a side-by-side comparison of the reduction in average daily traffic from the 2045 No Build scenario with each of the 2045 Build scenarios. The wider sections of red show where there is a reduction in 2045 Build scenarios when compared with the 2045 No Build scenario, meaning that the 2045 No Build scenario has more traffic volume than the 2045 Build scenarios. In general, all of the 2045 Build scenarios show a reduction in vehicular traffic throughout the corridor, with a greater reduction in vehicle trips north of Francis Avenue. More detailed figures for each of the difference plots are included in **Attachment B** (Figures B1 - B3). The reduction in vehicular traffic throughout the corridor is related to a number of factors, primarily a shift to transit and non-motorized travel, meaning that the reduction in vehicular travel does not mean there is a reduction in person travel, which will be detailed in Section 3.7.

<sup>&</sup>lt;sup>1</sup>The study area statistical area includes the area within ¾ mile of either side of Division Street, which encompasses Hamilton Street to the east and Monroe Street to the west as illustrated in **Figure 1**.

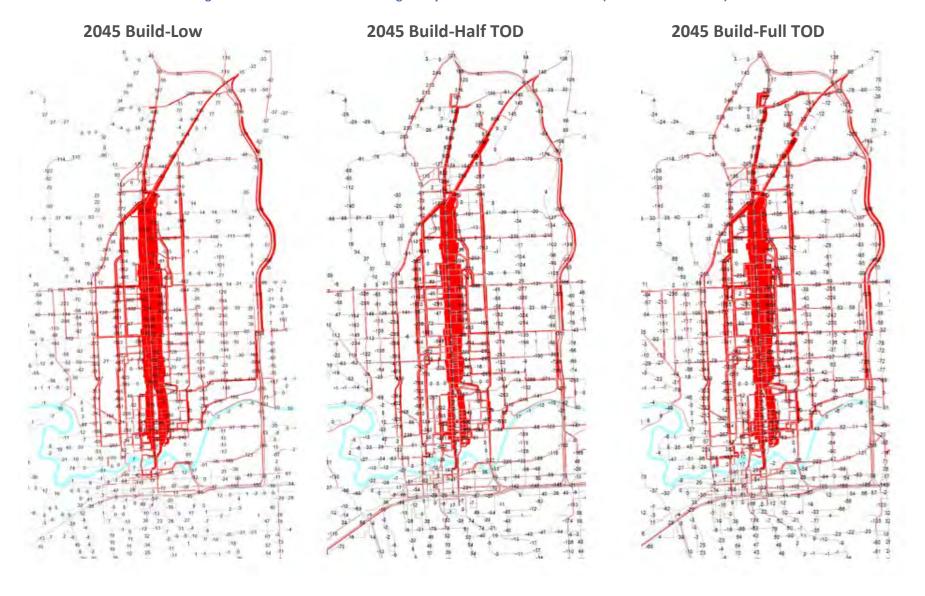


Figure 3: 2045 Build Scenarios Average Daily Traffic Flow Difference Plots (Versus 2045 No Build)

## 3.2 Flow Bundle Analysis (2045 No Build Scenario)

A flow bundle analysis was completed for the 2045 No Build scenario to illustrate general trip distribution throughout the region. The flow bundles illustrate the origins and destinations of trips through a specific location on the network. Flow bundles were developed for the segments north of downtown, including the following segments:

- Segment 2: Division Street/Ruby Street from the Spokane River to Euclid Avenue
  - o Flow bundle analysis located on Division Street and Ruby Street north of Mission Avenue
- Segment 3: Division Street from Euclid Avenue to Francis Avenue
  - o Flow bundle analysis located on Division Street north of Empire Avenue/Garland Avenue
- Segment 4: Division Street from Francis Avenue to Newport Highway (the "Y")
  - o Flow bundle analysis located on Division Street south of Lincoln Road
- Segment 5: Division Street and Newport Highway from the "Y" to Hastings Road
  - o Flow bundle analysis located on Division Street north of Hawthorne Road

The flow bundle analysis for the AM and PM peak periods are illustrated in **Figure 4**, **Figure 5**, **Figure 6**, and **Figure 7**. Additionally, **Figure 8** illustrates the flow bundle analysis for any vehicles which travel through the entire corridor between the Spokane River and Hastings Road. **Figure 9** illustrates the flow bundle analysis for vehicles which travel on the NSC south of Francis Avenue. More detailed figures for each of the difference plots are included in **Attachment B** (Figures B4 - B15).

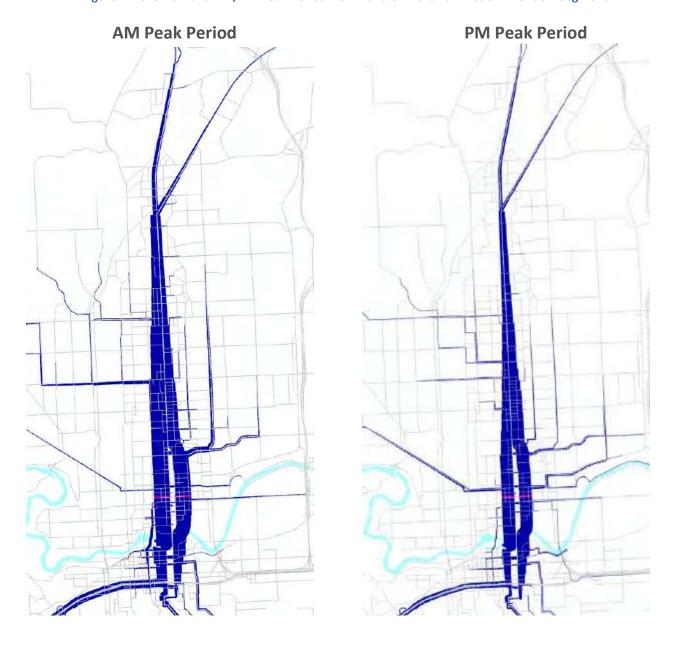
As illustrated in the flow bundle figures:

- For each of the segment locations, both the AM and PM peak periods show little traffic coming from/going eastbound on I-90, because within the model it is more efficient in 2045 to utilize the future NSC for this movement.
- Segment 2: Division Street and Ruby Street north of Mission Avenue
  - o Illustrated in Figure 4
  - Vehicular traffic in this segment comes from/goes to the north and south and west on I-90
  - Additional vehicles come from/go west on Francis Avenue, Wellesley Avenue, and Northwest Boulevard
- Segment 3: Division Street north of Empire Avenue/Garland Avenue
  - o Illustrated in Figure 5
  - Vehicular traffic in this segment comes from/goes to the north and south, including west on I-90
  - o Additional vehicles come from/go to the west on Francis Avenue and Wellesley Avenue
- Segment 4: Division Street south of Lincoln Road
  - o Illustrated in Figure 6
  - Vehicular traffic in this segment comes from/goes to the north and south, as does a small amount of traffic west on I-90
  - The majority of vehicles appear to come from/go to areas north of Francis Avenue, with some distribution around the Spokane River
- Segment 5: Division Street north of Hawthorne Road
  - o Illustrated in Figure 7
  - Vehicular traffic in this segment comes from/go to the north and south
  - The majority of vehicles appear to come from/go to areas north of Francis Avenue, as well as to the west along Country Homes Boulevard and to the east along Nevada Street
- Full Corridor Travel (Division Street/Ruby Street between Spokane River and Hastings Road)
  - o Illustrated in Figure 8
  - While there is vehicular traffic which completes the full length of trip along Division Street, it is still a minimal number of vehicles when compared with select location trips as illustrated in Segment 2, Segment 3, Segment 4, and Segment 5 travel patterns

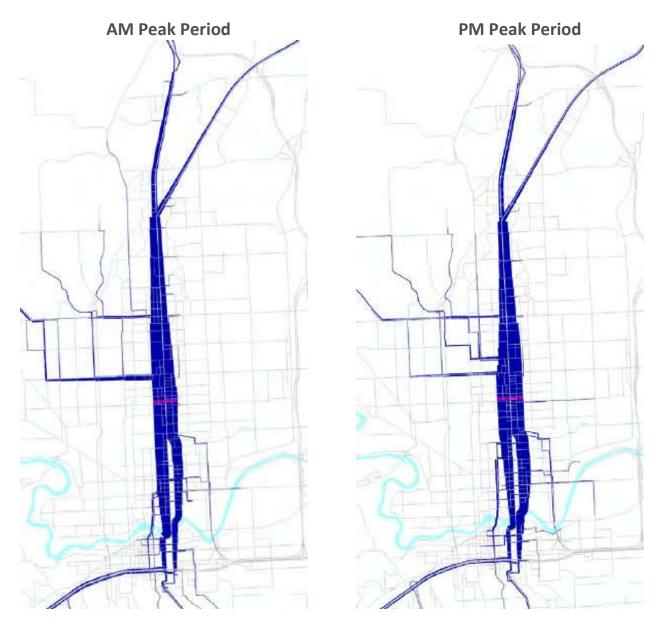
### NSC Travel

- o Illustrated in Figure 9
- A significant amount of traffic from north Spokane (north of Francis Avenue) utilizes the NSC for travel to/from east and west of Spokane via I-90
- o Additional traffic to/from downtown Spokane via 2<sup>nd</sup> Avenue utilizes the NSC for travel through the region.

Figure 4: 2045 No Build AM/PM Peak Period Flow Bundle - North of Mission Avenue – Segment 2









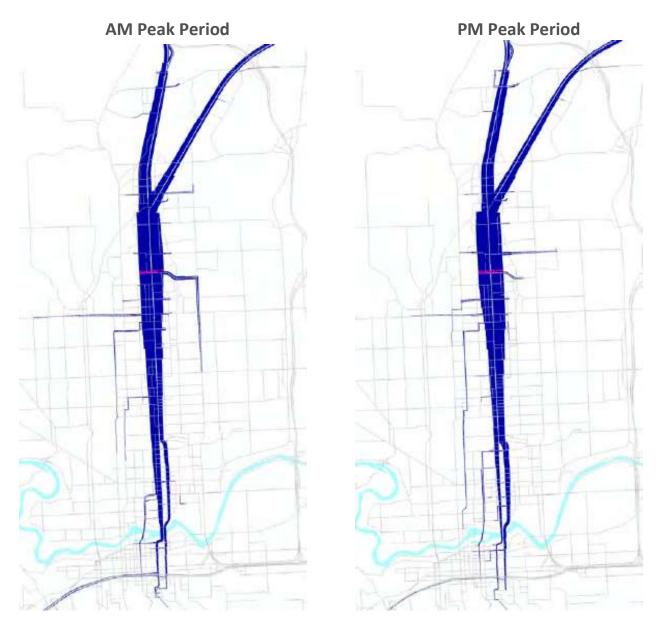
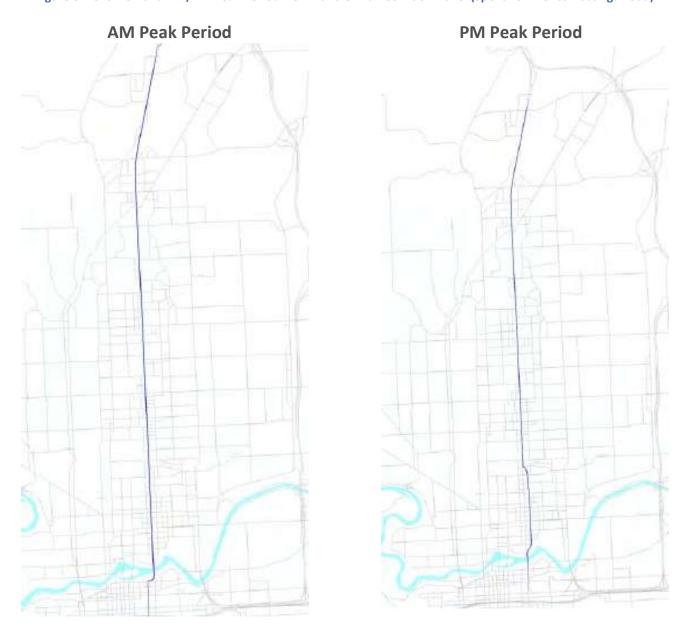


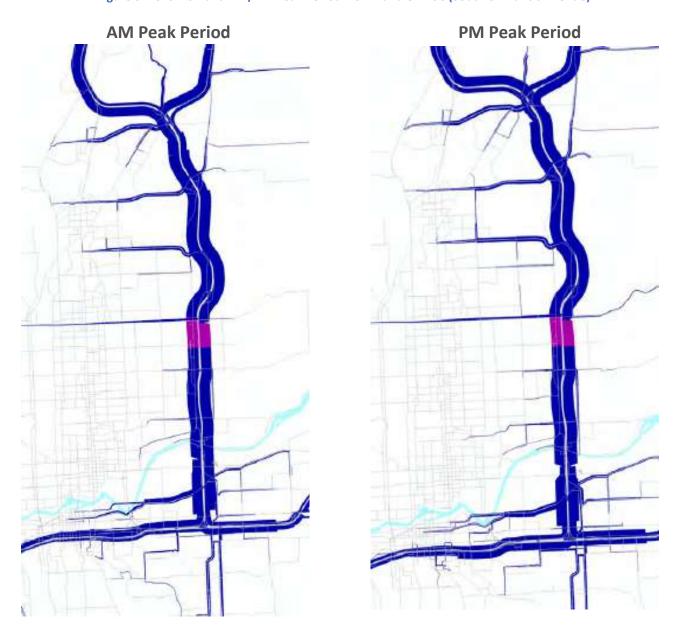




Figure 8: 2045 No Build AM/PM Peak Period Flow Bundle - Full Corridor Travel (Spokane River to Hastings Road)







# 3.3 Regional Travel Congestion

Regional vehicle congestion was calculated to illustrate the overall impact of each scenario on the roadways and travel patterns. Volume to Capacity (V/C) ratios on roadway segments were used as a relative measure of Level of Service (LOS) to identify the roadways that are forecast to perform poorly. **Figure 10** illustrates the regional comparison of PM peak period congestion for all future year scenarios. More detailed figures for each of the difference plots are included in **Attachment B** (Figures B16 - B19).

In all scenarios, including the 2045 No Build, roadway congestion includes:

- A bottleneck on the Maple Street Bridge north of the Spokane River
- Country Homes Boulevard is slightly congested west of Wall Street
- Minor congestion on parallel arterials around the Spokane River

In the 2045 Build scenarios, the following comparison is observed:

- The 2045 Build scenarios present similar congestion levels across the region as the 2045 No Build scenario, with minor additional congestion on parallel arterials west of Division Street.
  - A potential reason for additional congestion on parallel arterials is directly related to the reduction in roadway capacity on Division Street, resulting in a redistribution of traffic onto parallel arterials.
- The 2045 Build scenarios show a slight increase in congestion on Division Street north of Lincoln Road.
  - A potential reason for the additional increase in congestion on Division Street north of Lincoln Road is directly related to the reduction in roadway capacity on Division Street, resulting in an increase in the calculated V/C ratio along the corridor.



Figure 10: 2045 PM Peak Period Congestion Comparison

### 3.4 Regional Mode Split

Mode split is the percentage of travelers using a particular mode (e.g. single-occupant vehicle, high-occupant vehicle, transit, or non-motorized). In this study, the transit and non-motorized mode split percentages are an important component in evaluating the sustainability of the transportation system. **Table 5** summarizes the daily transit and non-motorized mode splits for the 2019 and the four 2045 scenarios. The travel statistics identified in this table are for the entire region, not just for the Division Street study area, therefore the differences between the scenarios are relatively small. As summarized in **Table 5**:

- Drive alone and shared-ride vehicular trips encompass most of the trips in the region.
- The 2045 Build scenarios increase the total number of daily transit trips by between 1,000 and 1,700 trips compared to the 2045 No Build scenario.
  - The primary reason for this is the revision of Route 25 coded as a BRT route with shorter headways than 2019 Existing Route 25. The details on increased ridership, within the region and on Route 25 are detailed in Section 3.5
- The 2045 Build scenarios increase the total number of daily non-motorized trips by between 400 and 2,500 trips compared to the 2045 No Build scenario.
  - ➤ The primary reason for this is the revision of Route 25 coded as a BRT route with shorter headways than 2019 Existing Route 25. Additionally, the enhancements to the active transportation network component of the Build scenario add to the increase in non-motorized trips.
- Transit mode split appears to be approximately 3 percent for each future year alternative, similar to the 2019 Existing scenario, and the non-motorized mode split appears to remain constant through all alternatives except in the 2019 Existing scenario.
  - These outcomes generally indicate that the travel demand model is not the best tool to be used to analyze non-motorized travel. This conclusion is based on several factors, but primarily because the travel demand model was not built or validated at a local level for non-motorized trips. To use the SRTC model effectively for TOD studies, the SRTC model could be enhanced by validating non-motorized trip assignments and completing sensitivity testing on modeled non-motorized forecasts.

Table 5 – Average Daily Regional Travel Mode Split									
	2019	2045							
Description	Existing	No Build	Build- Low	Build- Half TOD	Build- Full TOD				
Drive Alone Person Trips	1,335,710	1,628,580	1,627,830	1,641,620	1,637,860				
Shared Ride Person Trips	735,120	901,060	900,550	905,730	904,400				
Transit Person Trips	71,620	88,180	90,900	90,830	90,200				
Non-Motorized Person Trips	225,170	257,440	257,800	261,010	259,900				
Transit Mode Split	3.0%	3.1%	3.2%	3.1%	3.1%				
Non-Motorized Mode Split	9.5%	9.0%	9.0%	9.0%	9.0%				

Table 5 - Average Daily Regional Travel Mode Split

# 3.5 Transit Ridership

Transit ridership for the average weekday conditions was obtained from the travel demand model and compared to available Swiftly data. The transit ridership by direction for Route 25 (the existing year Division Street transit route) and Division BRT (the future year build scenario transit route) as summarized in **Table 6** indicate:

- The 2045 No Build scenario, which reflects baseline transit service in the 2019 model, observes an increase in ridership of approximately 24 percent compared to the 2019 Existing scenario.
  - The primary growth in transit ridership between the 2019 Existing scenario and the 2045 No Build scenario is directly related to the regional growth in the transit system outside of Route 25
- The 2045 Build scenarios observe an increase in ridership of between 29 percent and 32 percent

compared to the 2045 No Build scenario.

- The primary reason for this is the revision of Route 25 coded as a BRT route with shorter headways than 2019 Existing Route 25.
- Both the 2045 Build-Low and 2045 Build-Half TOD scenarios perform similarly with respect to total growth in ridership, with the 2045 Build-Full TOD seeing the lowest increase in ridership among the 2045 Build scenarios
  - The primary reason for this is that the built system is serving the needs of the corridor and region with the increased headways, and the difference in the average daily ridership between the 2045 Build scenarios is only 150 boardings
  - One potential reason for the lower increase ridership in the 2045 Build-Full TOD scenario could be related to the significant increase in both housing and employment along the corridor in all 12 nodes, which could potentially reduce transit ridership because attractions and destinations are more readily available within walking and biking distances.
- In the 2045 Build scenarios, the increase in regional ridership is greater than the increase in Route 25 ridership.
  - The most likely reason for this comparison is that the improvements made to Route 25 increase ridership on regional routes connecting to Route 25, likely on east-west routes.
- The vehicle trip equivalency for the 2045 Build scenarios, expressed as a ratio of boardings/auto
  occupancy, represent the equivalent of half a lane of peak hour traffic compared to the 2045 No Build
  scenario and an increase of almost a full lane of peak hour traffic compared to the 2019 Existing scenario
  - This is an important measure, because this represents the estimated number of vehicles removed from the roadway due to transit ridership. Meaning, if the BRT is built, regardless of the land use associated with it, there is a large number of vehicle trips (600+ daily trips) removed from local arterials.

Table 6 – Average Daily Transit Ridership (Boardings) and Park and Ride Parking Space Capacity

0 /	0 /		0 1		•			
	2019		2045					
Measurement/Segment	Existing	No Build	Build- Low	Build- Half TOD	Build- Full TOD			
1	otal System							
Regional	46,431	58,167	58,167	60,932	73,490			
To	otal Route 25							
Average Daily Ridership	3,779	4,676	6,171	6,233	6,055			
Growth (Compared to Existing)	-	24%	-	-				
Growth (Compared to the 2045 No Build scenario)	-	-	32%	33%	29%			
Vehicle Trip Equivalency (Calculated as Boardings/Auto Occupancy))	1,612	1,995	2,632	2,659	2,583			
Assumed Lane Equivalence (Calculated as Vehicle Trip Equivalency per hour per lane capacity*)	1.3	1.7	2.2	2.2	2.2			
Route 25 Percent of System Ridership	8%	8%	11%	10%	8%			
Р	ark and Ride							
Park and Ride Location	Hastings	Hastings	Hastings	Hastings	Hastings			
Park and Ride Parking Space Capacity	135	135	135	135	135			
*Note: A peak hour lane of traffic is assumed to accomm	odate 1,200 ve	hicles per hour						

## 3.6 Travel Time and Speed

Travel times and speeds for the Division Street corridor were obtained from the travel demand model on a segment-by-segment basis, and then summed for the entire corridor. The travel times and speeds are summarized by direction and by analysis segment in **Table 7** (travel times) and **Table 8** (speeds). Findings include:

- The 2045 No Build scenario average travel times for the corridor are similar to the 2019 Existing scenario travel times. In the 2045 No Build, the northbound AM and PM Peak Hour and southbound AM Peak Hour travel times are lower than 2019 Existing scenario, and the southbound PM Peak Hour travel times are marginally higher than 2019 Existing scenario.
- The 2045 No Build scenario average travel speeds for the corridor are equal to or slightly greater than the 2019 Existing scenario speeds. The 2045 No Build scenario southbound PM peak hour average travel speeds are identical to the 2019 Existing scenario, and the 2045 No Build scenario northbound AM, PM peak hour and southbound AM peak hour average travel speeds are slightly higher than the 2019 Existing scenario.
- The 2045 Build scenarios travel speeds are slightly less than the 2045 No Build scenario travel speed, with the 2045 TOD scenarios operating at the lowest speeds overall
  - The likely reason for this decrease in travel speeds in the 2045 Build scenarios compared to the 2045 No Build scenario is directly related to the decreased capacity in the 2045 Build scenarios
  - Another potential reason for the lower speeds in the 2045 TOD scenarios is likely related to the increase in household and employment development within the land use nodes, thus increasing travel and vehicular activity along the corridor

As summarized in **Table 7** and **Table 8**, there are several general conclusions which can be made related to travel times and speeds:

- The travel times and speeds remain relatively unchanged between the 2045 scenarios in comparison with the 2019 Existing scenario.
  - This conclusion is supported by the background 2045 conditions including the NSC as a major north-south parallel arterial to Division Street, as discussed in Section 3.7.
- Another general conclusion that can be made is that the speeds in the AM peak hour are typically faster than the PM peak hour for all segments and scenarios in both the northbound and southbound directions.
  - > The most logical explanation for this general conclusion is the greater amount of traffic in the PM peak hour when compared with the AM peak hour, thus lowering speeds and increasing travel times in the PM peak hour when compared with the AM peak hour.

Table 7 – Average AM and PM Peak Hour Travel Time (Minutes) by Segment

	2019		204	45	
Measure	Existing	No Build	Build- Low	Build- Half TOD	Build- Full TOD
AM Peak Hou					
Northbound					
1. Riverside Avenue/Division Street, Transit Plaza to Spokane River	3.7	3.7	3.7	3.7	3.7
2. Division Street, Spokane River to Euclid Avenue	6.6	6.3	6.4	6.4	6.4
3. Division Street, Euclid Avenue to Francis Avenue	6.1	6.1	6.1	6.2	6.2
4. Division Street, Francis Avenue to Newport Highway ("Y")	3.9	3.9	3.9	4.0	4.0
5. Newport Highway, "Y" to North Spokane Corridor	6.7	6.7	6.7	6.7	6.7
Total Corridor	26.9	26.7	26.8	26.9	26.9
Southbound	l				
5. Newport Highway, "Y" to North Spokane Corridor	7.1	6.8	6.7	6.7	6.7
4. Division Street, Francis Avenue to Newport Highway ("Y")	4.1	4.0	4.1	4.1	4.1
3. Division Street, Euclid Avenue to Francis Avenue	5.0	4.6	4.7	4.7	4.7
2. Division Street, Spokane River to Euclid Avenue	4.1	3.7	3.8	3.9	3.9
1. Riverside Avenue/Division Street, Transit Plaza to Spokane River	3.7	3.9	3.9	3.9	3.9
Total Corridor	23.7	22.9	23.0	23.1	23.1
PM Peak Hou	ır				
Northbound	l				
1. Riverside Avenue/Division Street, Transit Plaza to Spokane River	4.4	4.5	4.5	4.4	4.4
2. Division Street, Spokane River to Euclid Avenue	6.3	6.0	6.0	6.0	6.0
3. Division Street, Euclid Avenue to Francis Avenue	7.3	7.1	7.1	7.2	7.1
4. Division Street, Francis Avenue to Newport Highway ("Y")	5.0	4.9	5.0	5.0	5.0
5. Newport Highway, "Y" to North Spokane Corridor	8.5	8.4	8.3	8.3	8.3
Total Corridor	31.4	30.8	30.9	30.9	30.9
Southbound					
5. Newport Highway, "Y" to North Spokane Corridor	8.9	8.9	8.9	8.9	8.9
4. Division Street, Francis Avenue to Newport Highway ("Y")	5.2	5.2	5.3	5.3	5.3
3. Division Street, Euclid Avenue to Francis Avenue	6.2	6.1	6.2	6.2	6.2
2. Division Street, Spokane River to Euclid Avenue	4.7	4.5	4.5	4.5	4.5
1. Riverside Avenue/Division Street, Transit Plaza to Spokane River	4.1	4.4	4.4	4.4	4.4
Total Corridor	29.1	29.2	29.2	29.3	29.3

Table 8 – Average AM and PM Peak Hour Speed by Segment

Measure		2045				
		No Build	Build- Low	Build- Half TOD	Build- Full TOD	
AM Peak Hou	ır					
Northbound						
1. Riverside Avenue/Division Street, Transit Plaza to Spokane River	18.9	18.5	18.7	18.7	18.7	
2. Division Street, Spokane River to Euclid Avenue	15.3	15.8	15.8	15.8	15.8	
3. Division Street, Euclid Avenue to Francis Avenue	19.6	19.7	19.6	19.5	19.4	
4. Division Street, Francis Avenue to Newport Highway ("Y")	27.5	27.4	27.2	26.8	26.9	
5. Newport Highway, "Y" to North Spokane Corridor	27.5	27.5	27.5	27.5	27.5	
Total Corridor	21.5	21.7	21.6	21.5	21.5	
Southbound						
5. Newport Highway, "Y" to North Spokane Corridor	26.0	26.9	27.3	27.5	27.4	
4. Division Street, Francis Avenue to Newport Highway ("Y")	25.9	26.7	25.9	26.1	25.9	
3. Division Street, Euclid Avenue to Francis Avenue	24.1	25.9	25.6	25.3	25.3	
2. Division Street, Spokane River to Euclid Avenue	24.8	26.9	26.3	25.9	25.9	
1. Riverside Avenue/Division Street, Transit Plaza to Spokane River	18.8	17.8	17.7	17.8	17.8	
Total Corridor	24.5	25.3	25.2	25.1	25.1	

	2019		204	45	
Measure		No Build	Build- Low	Build- Half TOD	Build- Full TOD
PM Peak Hou	r				
Northbound					
1. Riverside Avenue/Division Street, Transit Plaza to Spokane River	15.8	15.6	15.6	15.7	15.7
2. Division Street, Spokane River to Euclid Avenue	16.0	16.9	16.8	16.6	16.7
3. Division Street, Euclid Avenue to Francis Avenue	16.5	16.8	16.8	16.8	16.8
4. Division Street, Francis Avenue to Newport Highway ("Y")	21.6	21.7	21.3	21.3	21.4
5. Newport Highway, "Y" to North Spokane Corridor	21.6	21.8	22.1	22.1	22.2
Total Corridor	18.5	18.8	18.8	18.7	18.7
Southbound					
5. Newport Highway, "Y" to North Spokane Corridor	20.5	20.5	20.5	20.5	20.5
4. Division Street, Francis Avenue to Newport Highway ("Y")	20.5	20.4	20.3	20.2	20.2
3. Division Street, Euclid Avenue to Francis Avenue	19.4	19.6	19.5	19.4	19.4
2. Division Street, Spokane River to Euclid Avenue	21.6	22.4	22.3	22.2	22.3
1. Riverside Avenue/Division Street, Transit Plaza to Spokane River	16.7	15.7	15.8	15.8	15.8
Total Corridor	19.9	19.9	19.8	19.8	19.8

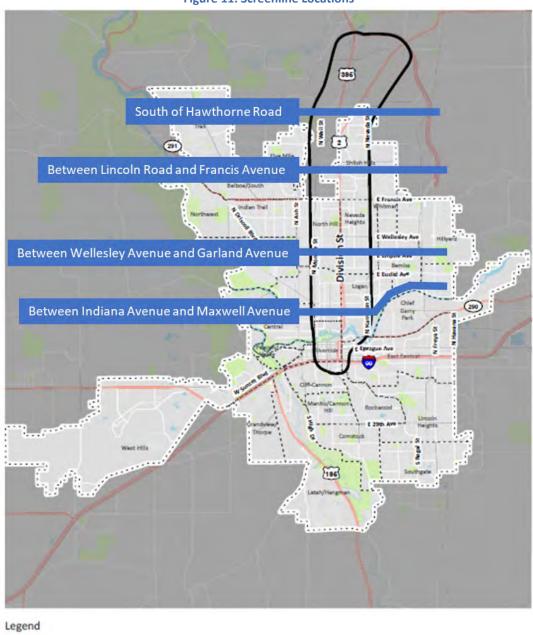
## 3.7 Screenline Comparison

A screenline comparison measures the combined vehicular and person travel which crosses the screenline. Four east-west screenlines were developed for this project to calculate total north-south regional travel. The four screenlines analyzed are illustrated in **Figure 11**. Average daily north-south vehicular travel at the four project screenlines is summarized in **Table 9**. Additional detailed screenline supporting data is provided in **Attachment C** (Table C1).

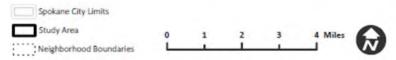
#### As detailed in Table 9:

- Total Screenlines with NSC
  - In the 2045 No Build scenario, the overall north-south vehicular travel in the region grows by an average of 35 percent compared to the 2019 Existing scenario
  - The 2045 Build scenarios show a roughly one percent reduction compared to the 2045 No Build scenario.
    - > This reduction is directly related to shared-ride and mode shift to transit
- Total Screenlines without NSC (meaning excluding the NSC from the total summary of volumes)
  - In the 2045 No Build scenario, the overall north-south vehicular travel on the combined parallel arterials declines by a combined 10 percent compared to the 2019 Existing scenario. Some sections experience reduced average daily north-south vehicular travel by up to 15 percent (between Wellesley Avenue and Garland Avenue).
    - This reduction is directly related to the change in trip distribution of north-south vehicular travel from local arterials (including Division Street) to the NSC in the 2045 Future scenarios
  - When comparing the 2045 Build scenarios to the 2045 No Build scenario, the overall north-south vehicular travel in the region for all scenarios is forecast to lead to a further one to three percent reduction in trips.
    - > This can be attributed to mode shift to transit as well as vehicular trip pattern shift onto a parallel arterial with available capacity
- Total Screenlines without NSC and without parallel arterials (meaning Division Street/Ruby Street only)
  - In the 2045 No Build scenario, the overall average daily north-south traffic on Division Street/Ruby Street is 7 percent lower than in the 2019 Existing scenario
    - The primary reason for this decrease is likely due to the shift of traffic from north-south arterials (including Division Street) onto the NSC

- In the 2045 Build scenarios Division Street/Ruby Street traffic is reduced by an average of 15-17 percent compared to the 2045 No Build scenario, with the greatest reduction of 21 percent occurring on the screenline between Wellesley Avenue and Garland Avenue in the 2045 TOD scenarios and in the screenline between Lincoln Road and Francis Avenue in the 2045 Build-Low scenario
  - > The primary reason for this decrease is likely due to the reduction of one lane of capacity, as well as the mode shift from vehicle travel to transit and non-motorized travel.



**Figure 11: Screenline Locations** 



**Table 9 – Average Daily Screenline Comparison (Vehicular Travel)** 

Table 9 – Average Daily	2019	23	( - cincon	2045					
Measure		No	Build-	Build-	Build-				
	Existing	Build	Low	Half TOD	Full TOD				
	Total Scree	nline							
Average Daily Vehicular Travel									
Including NSC									
Between Indiana Avenue and Maxwell Avenue	101,402	140,709	140,511	142,108	141,187				
Between Wellesley Avenue and Garland Avenue	123,317	164,553	162,342	165,148	162,922				
Between Lincoln Road and Francis Avenue	151,828	212,422	209,031	212,309	210,753				
South of Hawthorne Road	202,338	263,750	260,486	263,948	261,845				
Overall	578,885	781,434	772,370	783,513	776,707				
Between Indiana Avenue and Maxwell Avenue		39%	0%	1%	0%				
Between Wellesley Avenue and Garland Avenue		33%	-1%	0%	-1%				
Between Lincoln Road and Francis Avenue		40%	-2%	0%	-1%				
South of Hawthorne Road		30%	-1%	0%	-1%				
Overall		35%	-1%	0%	-1%				
	Total Scree	nline							
Aver	age Daily Veh	icular Trave	el						
	Without I	VSC							
Between Indiana Avenue and Maxwell Avenue	88,984	83,021	81,848	83,143	82,453				
Between Wellesley Avenue and Garland Avenue	110,899	106,865	103,679	106,183	104,188				
Between Lincoln Road and Francis Avenue	151,828	128,565	124,435	127,400	125,959				
South of Hawthorne Road	202,338	179,893	175,890	179,039	177,051				
Overall	554,049	498,344	485,852	495,765	489,651				
Between Indiana Avenue and Maxwell Avenue		-7%	-1%	0%	-1%				
Between Wellesley Avenue and Garland Avenue		-4%	-3%	-1%	-3%				
Between Lincoln Road and Francis Avenue		-15%	-3%	-1%	-2%				
South of Hawthorne Road		-11%	-2%	0%	-2%				
Overall		-10%	-3%	-1%	-2%				
	Total Scree	nline							
	age Daily Veh								
	on Street/Rub	y Street On	lly						
Between Indiana Avenue and Maxwell Avenue	24,072	23,666	23,047	23,310	24,098				
Between Wellesley Avenue and Garland Avenue	44,052	41,709	33,342	32,815	32,950				
Between Lincoln Road and Francis Avenue	41,695	38,087	29,993	30,758	30,915				
South of Hawthorne Road	46,305	42,226	34,270	35,726	35,226				
Overall	156,124	145,688	120,652	122,609	123,189				
Between Indiana Avenue and Maxwell Avenue		-2%	-3%	-2%	2%				
Between Wellesley Avenue and Garland Avenue		-5%	-20%	-21%	-21%				
Between Lincoln Road and Francis Avenue		-9%	-21%	-19%	-19%				
South of Hawthorne Road		-9%	-19%	-15%	-17%				
Overall		-7%	-17%	-16%	-15%				
Note: The 2045 No Build scenario is compared to the 2 2045 No Build.	2019 Existing s	cenario, an	d the 2045 B	uild scenarios are co	mpared with the				

While comparing the 2045 Build scenarios to the 2045 No Build scenario, a diversion of vehicular trips from Division Street to parallel arterials was observed. The diversion occurred because 1) when capacity is reduced on Division Street, some trips destined for locations not along Division Street modify their trip to a facility which has available capacity for additional trips and 2) the increase in transit services on Division Street attract person trips out of vehicles and onto buses further reducing the Division Street vehicular volume. Additionally, when comparing the 2045 No Build scenario with the 2019 Existing scenario, the development of the NSC changes the distribution of regional north-south vehicular travel. The total forecast volume on the NSC is expected to exceed the growth in north-south vehicle trips in the study corridor, thus reducing north-south volumes on parallel arterials throughout Spokane, including Division Street, to below the 2019 Existing scenario.

Table 10 details daily traffic flows on all north-south arterials crossing each of the east-west screenlines. Existing volumes that are greater than the future year volumes are shown in bold. Of the major north-south arterials crossing the screenlines, Division Street, Ruby Street, Hamilton Street, Perry Street, Nevada Street, Crestline Street, Market Street, and Greene Street tend to have lower volumes in the future year scenarios.

Table 10 – Average Daily Arterial Diversion Comparison (Vehicular Travel)									
	2019		20	45					
Measure	Existing	No Build	Build-	Build-	Build-				
			Low	Half TOD	Full TOD				
	of Hawthorne								
	Daily Vehicula								
Wall	12,462	11,880	12,234	12,543	11,953				
Division	31,630	30,262	29,106	29,440	28,609				
Newport	24,072	23,666	23,047	23,310	24,098				
Nevada	13,908	14,444	14,634	15,057	15,040				
Market	6,912	2,769	2,827	2,793	2,753				
NSC	12,418	57,688	58,663	58,965	58,734				
Total Screenline Traffic	101,402	140,709	140,511	142,108	141,187				
Total Screenline Traffic Growth (%)	00.004	39%	0%	1%	0%				
Total Screenline Arterial Traffic	88,984	83,021	81,848	83,143	82,453				
(Arterials Only – Excluding the NSC)		70/	10/	00/	40/				
Total Screenline Arterial Traffic Growth (%) (Arterials Only - Excluding the NSC)		-7%	-1%	0%	-1%				
Total Screenline Change in Arterial Traffic		-5,963	-1,173	122	-568				
Between Linco	In Poad and E		-1,173	122	-308				
	Daily Vehicula								
Country Homes	20,842	20,702	21,183	21,569	21,253				
Wall	13,296	13,412	15,532	16,606	15,971				
Division	44,052	41,709	33,342	32,815	32,950				
Standard	1,646	1,748	2,377	2,583	2,540				
Nevada	11,961	10,679	12,462	13,055	12,623				
Crestline	9,222	6,628	6,644	6,849	6,551				
Market	9,231	6,455	6,535	6,878	6,643				
Freya	649	5,532	5,604	5,828	5,657				
NSC	12,418	57,688	58,663	58,965	58,734				
Total Screenline Traffic	123,317	164,553	162,342	165,148	162,922				
Total Screenline Traffic Growth (%)		33%	-1%	0%	-1%				
Total Screenline Arterial Traffic	32,709	31,042	33,622	35,193	34,014				
(Arterials Only – Excluding the NSC)		·		·					
Total Screenline Arterial Traffic Growth (%)		-5%	8%	13%	10%				
(Arterials Only - Excluding the NSC)									
Total Screenline Change in Arterial Traffic		-1,667	2,580	4,151	2,972				
Between Wellesle			ıe						
Average	Daily Vehicula	r Travel							
Maple	10,925	10,366	10,670	10,804	10,738				
Ash	10,559	10,177	10,530	10,683	10,586				
Monroe	16,585	17,837	18,519	18,805	18,524				
Wall	7,069	6,082	6,654	7,195	7,024				
Division	41,695	38,087	29,993	30,758	30,915				
Addison	4,814	5,136	5,662	5,887	5,764				
Nevada	16,758	13,673	14,620	14,969	14,625				
Perry	6,356	5,185	5,368	5,480	5,397				
Crestline	8,715	5,954	6,044	6,156	6,061				
Market	24,813	16,068	16,375	16,663	16,325				
NSC To the state of the state o	0	83,857	84,596	84,909	84,794				
Total Screenline Traffic	148,289	212,422	209,031	212,309	210,753				

	2019	2045				
Measure	Existing	No Build	Build- Low	Build- Half TOD	Build- Full TOD	
Total Screenline Traffic Growth (%)		43%	-2%	0%	-1%	
Total Screenline Arterial Traffic	61,456	46,016	48,069	49,155	48,172	
(Arterials Only – Excluding the NSC)						
Total Screenline Arterial Traffic Growth (%)		-25%	4%	7%	5%	
(Arterials Only - Excluding the NSC)						
Total Screenline Change in Arterial Traffic		-15,440	2,053	3,139	2,156	
Between Indiana	Avenue and N	Maxwell Avenu	ie			
Average	Daily Vehicula	r Travel				
Maple	16,227	16,506	16,824	16,939	16,799	
Ash	16,969	16,999	17,313	17,374	17,277	
Monroe	19,327	17,985	18,629	18,601	18,460	
Post	13,134	12,392	12,650	12,926	12,847	
Howard	2,594	2,832	2,939	2,946	2,933	
Washington	13,654	12,711	13,573	14,050	13,744	
Division	23,115	22,206	17,796	18,495	18,261	
Ruby	23,190	20,020	16,474	17,231	16,965	
Hamilton	25,913	21,506	22,254	22,525	22,276	
Perry	14,071	11,797	12,370	12,642	12,469	
Greene	29,846	24,939	25,068	25,310	25,020	
NSC	0	83,857	84,596	84,909	84,794	
Total Screenline Traffic	198,040	263,750	260,486	263,948	261,845	
Total Screenline Traffic Growth (%)		33%	-1%	0%	-1%	
Total Screenline Arterial Traffic	116,135	100,468	93,962	96,203	94,991	
(Arterials Only – Excluding the NSC)						
Total Screenline Arterial Traffic Growth (%)		-13%	-6%	-4%	-5%	
(Arterials Only - Excluding the NSC)						
Total Screenline Change in Arterial Traffic		-15,667	-6,506	-4,265	-5,477	
Note: The 2015 No Build conners is compared to the 2010 Existing conners and the 2015 Build conners are compared with the						

Note: The 2045 No Build scenario is compared to the 2019 Existing scenario, and the 2045 Build scenarios are compared with the 2045 No Build.

To get an understanding of the mode shift of person trips across these Screenlines, **Table 11** summarizes average daily north-south motorized person travel at the four project Screenlines. As a note, the model does not assign non-motorized trips, thus walk and bike trips are not summarized in this analysis. Additional detailed screenline supporting data is provided in **Attachment C** (Table C2).

### As detailed in **Table 11**:

- Average daily vehicle trips in the 2045 Build scenarios reduces on all Screenlines by an average of 21 to 23%, where average daily person trips in the 2045 Build scenarios reduce on all Screenlines by an average of 15 to 17%.
  - > The lower reduction in person trips when compared with the vehicle trips indicates that the trips served on Division Street are shifting away from vehicles and into transit and non-motorized modes of travel

Table 11 - Average Daily Screenline Comparison (Person Trips)

	,				Table 11 – Average Daily Screenline Comparison (Person Trips)						
	2019	2045									
Measure	Existing	No	Build-	Build-	Build-						
		Build	Low	Half TOD	Full TOD						
Average Daily Vehicle Traffic											
(Division Street/Ruby Street Or	(Division Street/Ruby Street Only) - (Excluding Parallel Arterials) - (Excluding NSC)										
Between Indiana Avenue and Maxwell Avenue	46,299	42,229	34,344	35,741	35,180						
Between Wellesley Avenue and Garland Avenue	41,822	38,064	29,989	30,754	30,970						
Between Lincoln Road and Francis Avenue	44,007	41,691	33,388	32,798	32,936						
South of Hawthorne Road	24,095	23,665	23,075	23,345	24,045						
Overall	156,223	145,649	120,796	122,638	123,131						
Between Indiana Avenue and Maxwell Avenue		-9%	-26%	-23%	-24%						
Between Wellesley Avenue and Garland Avenue		-9%	-28%	-26%	-26%						
Between Lincoln Road and Francis Avenue		-5%	-24%	-25%	-25%						
South of Hawthorne Road		-2%	-4%	-3%	0%						
Overall		-7%	-23%	-21%	-21%						
Daily	Motorized P	erson Trips									
(Drive Alor	ne, Shared Ric	de, Truck, T	ransit)								
(Division Street/Ruby Street Or	ıly) - (Excludi	ng Parallel <i>i</i>	Arterials) - (	Excluding NSC)							
Between Indiana Avenue and Maxwell Avenue	56,968	51,438	41,898	43,476	42,778						
Between Wellesley Avenue and Garland Avenue	51,827	46,349	36,792	37,619	37,874						
Between Lincoln Road and Francis Avenue	55,611	52,112	41,806	40,936	41,182						
South of Hawthorne Road	31,291	30,518	29,580	29,927	30,706						
Overall	195,697	180,416	150,076	151,957	152,539						
Between Indiana Avenue and Maxwell Avenue		-10%	-19%	-15%	-17%						
Between Wellesley Avenue and Garland Avenue		-11%	-21%	-19%	-18%						
Between Lincoln Road and Francis Avenue		-6%	-20%	-21%	-21%						
South of Hawthorne Road		-2%	-3%	-2%	1%						
Overall		-8%	-17%	-16%	-15%						
Note: The 2045 No Build scenario is compared to the 2019 Existing scenario, and the 2045 Build scenarios are compared with the											

2045 No Build.

# 3.8 Land Use Node Vehicular Travel Analysis

Vehicular travel statistics for each node are summarized to understand the impact that land use has on vehicular travel. The primary land use node travel statistic for review is calculated as vehicle miles of travel by varying metrics. As a note, the SRTC travel demand model assumes that hotel resident trips are calculated as home trips, and thus hotel room trips are included in all home-based trip calculations. All of the land use node vehicular travel statistics are calculated based on the trips beginning or ending within the land use nodes, as follows:

- Daily VMT: A summary of drive alone and shared ride automobile trips, multiplied by their trip length
- Daily VMT per Service Population: A summary of daily VMT, divided by the zonal service population
  - o The service population calculation includes home residents, hotel visitors, and employees
    - Home residents are estimated using the 2016 to 2020 household size of 2.28 for the City of Spokane, as obtained from www.census.gov.
    - Hotel visitors are estimated using the assumption of 2.28 visitors per occupied room, with a hotel occupancy of 60 percent, resulting in an average population of 1.37 visitors per available hotel room
  - This metric allows you to see if the average length of trips is changing based on the changes in
- Daily Home-Based VMT: A summary of drive alone and shared ride automobile trips which begin or end at a home (meaning the trip starts at a home and ends at another location, such as a grocery store, or the trip begins somewhere other than a home and the home is the destination for that trip),
- Daily Home-Based VMT per Capita: A summary of daily home-based VMT, divided by the zonal population.
  - The per capita calculation includes home residents and hotel visitors.

- o This metric allows you to see if the trips with ends at a home are changing length based on the changes in land use.
- **Daily Non-Home-Based VMT:** A summary of drive alone and shared ride automobile trips which do not begin or end at a home, multiplied by their trip length
- **Daily Non-Home-Based VMT per Employee:** A summary of daily non-home-based VMT, divided by the zonal employment.
  - o For this metric, there are no trips that begin or end at a home
  - o This metric allows you to see if the trips with no trip ends at a home are changing length based on the changes in land use.

**Table 12** summarizes the daily VMT values for each of the nodes, as well as an overall combined scenario average. A complete land use node performance summary is included in **Attachment B**. As detailed in **Table 12**:

- Daily VMT for each of the nodes increases greatly in the 2045 scenarios compared to the 2019 Existing scenario, and is the greatest in the 2045 TOD scenarios, with the 2045 Build-Full TOD scenario experiencing the greatest amount of daily VMT
  - > The reason for the greatest daily VMT occurring in the 2045 TOD scenarios is directly related to the increase in housing and employment densities along the corridor, thus increasing trips in all modes, including vehicular trips.
- **Daily VMT per service population** (household population + hotel population + employment) for 2019 is similar to the 2045 No Build and Build scenarios resulting in lower VMT per service population.
  - The combined average of VMT per Service Population is lower in the 2045 Build-Half TOD and 2045 Build-Full TOD scenarios than in the 2045 No Build and 2045 Build-Low scenarios by 3.5 to 5.1 miles
  - The most likely reason for the lower VMT per service population in the 2045 TOD scenarios is the density of housing and employment in the 2045 TOD scenarios.
- Daily Home-Based VMT for each of the nodes increases greatly in the 2045 scenarios compared to the 2019 Existing scenario, and is the greatest in the 2045 TOD scenarios, with the 2045 Build-Full TOD scenario experiencing the greatest amount of daily home-based VMT
  - The reason for the greatest daily home-based VMT occurring in the 2045 TOD scenarios is directly related to the increase in housing and employment densities along the corridor, thus increasing trips in all modes, including vehicular trips.
- **Daily Home-Based VMT per capita** for the 2019 Existing scenario is higher than all Build scenarios, with the 2045 Build-Low scenario resulting in the lowest VMT per population.
  - In the 2045 Build scenarios, Node 7 (Lincoln) observes a great reduction in the length of homebased VMT trips when compared with the 2019 Existing, 2045 No Build, and 2045 Build-Low scenarios
  - The likely reason for the reduction in home-based VMT per capita is that increasing housing and employment densities has potential to decrease home-based vehicular trip length. As a note, it is likely that the decrease in home-based vehicular trip length is associated with the mode shift away from automobile trips to transit and non-motorized trips.
- Daily Non-Home-Based VMT for each of the nodes increases greatly in the 2045 scenarios compared to the 2019 Existing scenario, and is the greatest in the 2045 TOD scenarios, with the 2045 Build-Full TOD scenario experiencing the greatest amount of daily non-home-based VMT
  - The likely reason for the greatest daily non-home-based VMT occurring in the 2045 TOD scenarios is directly related to the increase in housing and employment densities along the corridor, thus increasing trips in all modes, including vehicular trips.
- **Daily Non-Home-Based VMT per employee** the 2019 Existing scenario is lower than the 2045 Build scenarios, with the 2045 Build scenarios slightly lower on average than the 2045 No Build scenario
  - The combined average of Non-Home-VMT per employee is lower in the 2045 TOD scenarios than in the 2045 No Build and 2045 Build-Low scenarios by 0.2 to 0.4 miles
  - The likely reason for the lower non-home-based VMT per employee in the 2045 TOD scenarios when compared with the 2045 No Build scenario is due to density of housing and employment.

Table 12 – Average Daily Land Use Node Vehicle Miles Traveled

Table 12 – Average Daily Land Use Node Vehicle Miles Traveled							
		2019 2045					
Metric	Land Use Node	Existing	No Build	Build-	Build-	Build-	
Daily VMT	Node 1 - Ruby North Bank*	1/6 500	160.452	Low 159 116	Half TOD	Full TOD	
(Drive Alone + Shared Ride)	Node 2 - Foothills*	146,589	160,452	158,116	179,925	181,147 34,657	
(Drive Alone + Shared Ride)	Node 3 - Empire/Garland*	23,173	30,419 11,913	30,011 11,826	33,953	14,431	
	Node 4 – Northtown	9,133			13,618		
	Node 5 - Rowan*	89,579	108,581	107,254	102,756	104,539	
		66,315	81,995	81,283	79,395	81,803	
	Node 6 - Francis/Lyons	42,161	46,214	46,035	47,096	72,711	
	Node 7 - Lincoln*	41,301	65,014	64,836	70,564	74,561	
	Node 8 - The Y	73,217	81,049	80,444	89,166	84,455	
	Node 9 - Whitworth*	18,489	22,220	22,158	24,618	24,858	
	Node 10 - Mead*	32,018	41,933	41,820	57,112	65,517	
	Node 11 - Hastings	67,124	85,568	85,223	98,691	109,173	
	Node 12 - Nevada Junction	36,763	28,352	28,264	26,414	62,834	
- 11	Combined Average	645,860	763,710	757,270	823,309	910,687	
Daily VMT per Service	Node 1 - Ruby North Bank*	27.1	23.9	23.5	22.7	22.8	
Population	Node 2 - Foothills*	44.1	44.7	44.1	28.8	29.4	
(Drive Alone + Shared Ride)	Node 3 - Empire/Garland*	18.0	19.6	19.5	15.7	16.6	
(Population + Employment)	Node 4 – Northtown	48.3	53.8	53.1	49.8	40.9	
	Node 5 - Rowan*	26.7	27.0	26.7	25.1	25.8	
	Node 6 - Francis/Lyons	24.7	25.2	25.1	25.2	25.5	
	Node 7 - Lincoln*	40.9	50.1	50.0	34.2	36.1	
	Node 8 - The Y	36.9	37.6	37.3	40.3	33.2	
	Node 9 - Whitworth*	21.5	23.4	23.4	22.3	22.5	
	Node 10 - Mead*	77.5	83.2	83.0	33.8	38.8	
	Node 11 - Hastings	52.4	49.7	49.5	51.9	38.9	
	Node 12 - Nevada Junction	48.5	44.1	44.0	47.3	27.5	
	Combined Average	34.4	34.4	34.2	30.9	29.3	
Daily Home-Based VMT	Node 1 - Ruby North Bank*	19,530	25,143	24,755	27,049	26,972	
(Drive Alone + Shared Ride)	Node 2 - Foothills*	432	418	415	2,818	2,866	
	Node 3 - Empire/Garland*	2,308	2,286	2,272	3,986	4,044	
	Node 4 – Northtown	0	0	0	0	1,078	
	Node 5 - Rowan*	910	962	954	1,234	1,216	
	Node 6 - Francis/Lyons	7,112	7,255	7,188	7,895	10,279	
	Node 7 - Lincoln*	3,625	3,637	3,625	6,197	6,153	
	Node 8 - The Y	2,872	3,342	3,304	3,183	5,746	
	Node 9 - Whitworth*	4,116	4,455	4,432	5,187	5,218	
	Node 10 - Mead*	0	0	0	13,013	12,844	
	Node 11 - Hastings	0	0	0	0	12,073	
	Node 12 - Nevada Junction	0	0	0	0	9,986	
	Combined Average	40,904	47,499	46,945	70,563	98,475	
Daily Home-Based VMT	Node 1 - Ruby North Bank*	11.6	9.1	9.0	8.9	8.8	
per Capita	Node 2 - Foothills*	6.1	5.9	5.8	6.3	6.4	
(Drive Alone + Shared Ride)	Node 3 - Empire/Garland*	6.7	6.5	6.5	6.4	6.5	
(Population)	Node 4 – Northtown	0.0	0.0	0.0	0.0	2.2	
	Node 5 - Rowan*	5.9	5.9	5.9	6.1	6.0	
	Node 6 - Francis/Lyons	7.2	7.1	7.0	7.8	6.7	
	Node 7 - Lincoln*	18.1	18.2	18.1	10.6	10.6	
	Node 8 - The Y	6.7	7.0	6.9	6.9	7.1	
	Node 9 - Whitworth*	7.6	8.1	8.1	8.0	8.0	
	Node 10 - Mead*	0.0	0.0	0.0	11.6	11.5	
	Node 11 - Hastings	0.0	0.0	0.0	0.0	13.3	
	Node 12 - Nevada Junction	0.0	0.0	0.0	0.0	9.2	
	Combined Average	9.3	8.5	8.4	8.7	8.6	
						32	

		2019	2045				
Metric	Land Use Node	Existing	No Build	Build- Low	Build- Half TOD	Build- Full TOD	
Daily Non-Home-Based	Node 1 - Ruby North Bank*	36,188	39,540	39,260	46,364	46,337	
Vehicle VMT	Node 2 - Foothills*	12,156	16,408	16,320	17,636	18,106	
(Drive Alone + Shared Ride)	Node 3 - Empire/Garland*	2,834	3,737	3,721	4,332	4,486	
	Node 4 – Northtown	45,402	54,866	54,388	53,465	52,997	
	Node 5 - Rowan*	17,560	21,208	21,029	21,759	21,599	
	Node 6 - Francis/Lyons	17,324	19,289	19,222	19,746	31,695	
	Node 7 - Lincoln*	16,833	23,485	23,413	31,118	31,068	
	Node 8 - The Y	29,113	33,393	33,041	34,312	33,198	
	Node 9 - Whitworth*	5,650	7,337	7,304	7,450	7,784	
	Node 10 - Mead*	15,550	21,671	21,583	26,518	26,561	
	Node 11 - Hastings	30,678	38,910	38,701	44,349	44,185	
	Node 12 - Nevada Junction	14,294	11,356	11,283	10,872	20,207	
	Combined Average	243,581	291,200	289,262	317,922	338,222	
Daily Non-Home-Based	Node 1 - Ruby North Bank*	9.7	10.0	9.9	9.5	9.5	
Vehicle VMT per Employee	Node 2 - Foothills*	26.7	26.9	26.8	24.1	24.8	
(Drive Alone + Shared Ride)	Node 3 - Empire/Garland*	17.7	14.4	14.4	17.4	18.0	
(Employement)	Node 4 – Northtown	24.5	27.2	26.9	25.9	25.6	
	Node 5 - Rowan*	7.5	7.4	7.3	7.3	7.3	
	Node 6 - Francis/Lyons	24.2	23.7	23.6	22.9	24.0	
	Node 7 - Lincoln*	20.8	21.4	21.3	21.0	20.9	
	Node 8 - The Y	18.7	19.9	19.7	19.6	19.1	
	Node 9 - Whitworth*	17.8	18.3	18.2	16.4	17.2	
	Node 10 - Mead*	37.7	43.0	42.8	46.4	46.5	
		24.0	22.6	22.5	23.3	23.3	
	Node 11 - Hastings	24.0	22.0	22.5	25.5		
	Node 11 - Hastings  Node 12 - Nevada Junction	18.9	17.7	17.5	19.4	16.9	
			_				

An associated metric of shared ride auto occupancy was calculated along with the land use nodes. **Table 13** summarizes the daily shared-ride auto occupancy values for each of the nodes. A complete land use node performance summary is included in **Attachment B**. As detailed in **Table 13**:

- Daily Shared Ride auto occupancy for the 2019 Existing scenario is slightly higher than all Build scenarios, and relatively consistent between all Build scenarios.
  - > This result is likely due to the shared ride auto trips in the future being converted to transit or non-motorized trips within the system

Table 13 – Average Daily Shared Ride Auto Occupancy by Node

		2019	2045				
Metric	Land Use Node	Existing	No Build	Build- Low	Build- Half TOD	Build- Full TOD	
Shared	Node 1 - Ruby North Bank	2.31	2.30	2.31	2.30	2.30	
Ride Auto	Node 2 - Foothills	2.49	2.50	2.50	2.42	2.42	
Occupancy	Node 3 - Empire/Garland	2.26	2.30	2.30	2.25	2.28	
	Node 4 - Northtown	2.46	2.46	2.46	2.46	2.45	
	Node 5 - Rowan	2.29	2.27	2.27	2.25	2.27	
	Node 6 - Francis/Lyons	2.38	2.38	2.38	2.39	2.39	
	Node 7 - Lincoln	2.42	2.38	2.37	2.39	2.41	
	Node 8 - The Y	2.41	2.42	2.41	2.39	2.39	
	Node 9 - Whitworth	2.31	2.34	2.31	2.29	2.29	
	Node 10 - Mead	2.45	2.46	2.46	2.29	2.35	
	Node 11 - Hastings	2.40	2.39	2.39	2.41	2.37	
	Node 12 - Nevada Junction	2.42	2.41	2.41	2.43	2.33	
	Combined Average	2.37	2.36	2.36	2.34	2.35	

# 4 CONCLUSION

This technical memorandum details scenario comparisons using the SRTC model as the primary tool for analysis. In Section 3 of this memorandum, detailed performance metrics were primarily related to regional travel performance, mode shares, transit ridership, travel times and speeds, regional north-south travel comparisons, and location-based travel analysis. Notable analysis includes:

### **Regional Travel Statistics**

- When comparing the 2045 No Build scenario to the 2019 Existing scenario, there is an increase of VMT, VHT, and VHD in the Spokane Region and project study area.
- When comparing the 2045 Build scenarios with the 2045 No Build scenario, there is relatively no change
  in regional statistics, yet the study area results in a decrease of VMT, VHT, and VHD for all build scenarios
  between 2 and 8 percent.

#### Flow Bundle Analysis

- For each of the segment locations, both the AM and PM peak periods show little traffic coming from/going eastbound on I-90, because within the model it is more efficient in 2045 to utilize the future NSC for this movement.
- Full Corridor Travel (Division Street/Ruby Street between Spokane River and Hastings Road): While there is vehicular traffic which completes the full length of trip along Division Street, it is still a minimal number of vehicles when compared with select location trips
- NSC Travel: A significant amount of traffic from north Spokane (north of Francis Avenue) utilizes the NSC for travel to/from east and west of Spokane via I-90. Additional traffic to/from downtown Spokane via 2<sup>nd</sup> Avenue utilizes the NSC for travel through the region.

### **Regional Travel Congestion**

- The 2045 Build scenarios present similar congestion levels across the region as the 2045 No Build scenario, with minor additional congestion on parallel arterials west of Division Street.
- The 2045 Build scenarios show a slight increase in congestion on Division Street north of Lincoln Road.

### **Regional Mode Split**

- Drive alone and shared-ride vehicular trips encompass most of the trips in the region.
- The 2045 Build scenarios increase the total number of daily transit trips compared to the 2045 No Build scenario.
- The 2045 Build scenarios increase the total number of daily non-motorized trips compared to the 2045 No Build scenario.

### **Transit Ridership**

- The 2045 No Build scenario, which reflects baseline transit service in the 2019 model, observes an increase in ridership of approximately 24 percent compared to the 2019 Existing scenario.
- The 2045 Build scenarios observe an increase in ridership of between 29 percent and 32 percent compared to the 2045 No Build scenario.
- Both the 2045 Build-Low and 2045 Build-Half TOD scenarios perform similarly with respect to total growth in ridership, with the 2045 Build-Full TOD seeing the lowest increase in ridership among the 2045 Build scenarios

### **Travel Time and Speed**

- The 2045 No Build scenario average travel times for the corridor are similar to the 2019 Existing scenario travel times, and the 2045 No Build scenario average travel speeds for the corridor are equal to or slightly greater than the 2019 Existing scenario speeds.
- The 2045 Build scenarios travel speeds are slightly less than the 2045 No Build scenario travel speed, with

- the 2045 TOD scenarios operating at the lowest speeds overall
- The travel times and speeds remain relatively unchanged between the 2045 scenarios in comparison with the 2019 Existing scenario.
- Another general conclusion that can be made is that the speeds in the AM peak hour are typically faster than the PM peak hour for all segments and scenarios in both the northbound and southbound directions.

### **Screenline Comparison**

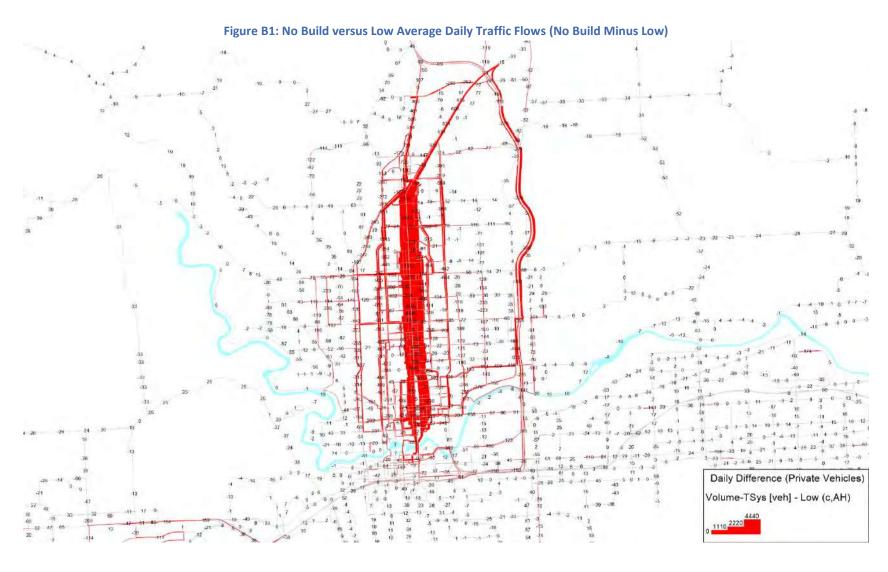
- Total Screenlines with NSC: In the 2045 No Build scenario, the overall north-south travel in the region grows by an average of 35 percent compared to the 2019 Existing scenario, and the 2045 Build scenarios show a roughly one percent reduction compared to the 2045 No Build scenario.
- Total Screenlines without NSC (meaning excluding the NSC from the total summary of volumes): In the 2045 No Build scenario, the overall north-south travel on the combined parallel arterials declines by a combined 10 percent compared to the 2019 Existing scenario. When comparing the 2045 Build scenarios to the 2045 No Build scenario, the overall north-south travel in the region for all scenarios is forecast to lead to a further reduction in trips.
- Total Screenlines without NSC and without parallel arterials (meaning Division Street/Ruby Street only):
   In the 2045 No Build scenario, the overall average daily north-south traffic on Division Street/Ruby Street is 7 percent lower than in the 2019 Existing scenario. In the 2045 Build scenarios Division Street/Ruby Street traffic is reduced by an average of 15-17 percent compared to the 2045 No Build scenario.
- Average daily vehicle trips in the 2045 Build scenarios reduces on all screenlines by an average of 21 to 23%, where average daily person trips in the 2045 Build scenarios reduce on all screenlines by an average of 15 to 17%, leading to the conclusion that there is a mode shift away from vehicles and into transit and non-motorized modes along the Division Street corridor.

#### **Land Use Node Travel Analysis**

- Daily VMT for each of the nodes increases greatly in the 2045 scenarios compared to the 2019 Existing scenario, and is the greatest in the 2045 TOD scenarios, with the 2045 Build-Full TOD scenario experiencing the greatest amount of daily VMT.
- Daily VMT per service population (household population + hotel population + employment) for 2019 is similar to the 2045 No Build and Build scenarios resulting in lower VMT per service population. The combined average of VMT per Service Population is lower in the 2045 Build-Half TOD and 2045 Build-Full TOD scenarios than in the 2045 No Build and 2045 Build-Low scenarios
- Daily Home-Based VMT for each of the nodes increases greatly in the 2045 scenarios compared to the 2019 Existing scenario, and is the greatest in the 2045 TOD scenarios, with the 2045 Build-Full TOD scenario experiencing the greatest amount of daily home-based VMT
- **Daily Home-Based VMT per capita** for the 2019 Existing scenario is higher than all Build scenarios, with the 2045 Build-Low scenario resulting in the lowest VMT per population.
- Daily Non-Home-Based VMT for each of the nodes increases greatly in the 2045 scenarios compared to the 2019 Existing scenario, and is the greatest in the 2045 TOD scenarios, with the 2045 Build-Full TOD scenario experiencing the greatest amount of daily non-home-based VMT
- Daily Non-Home-Based VMT per employee the 2019 Existing scenario is lower than the 2045 Build scenarios, with the 2045 Build scenarios lower on average than the 2045 No Build scenario. The combined average of Non-Home-VMT per employee is lower in the 2045 TOD scenarios than in the 2045 No Build and 2045 Build-Low scenarios.
- Daily Shared Ride auto occupancy for the 2019 Existing scenario is slightly higher than all Build scenarios, and relatively consistent between all 2045 Build scenarios.

## ATTACHMENT A – LAND USE NODE FIGURES

## ATTACHMENT B – SUPPORT FIGURES



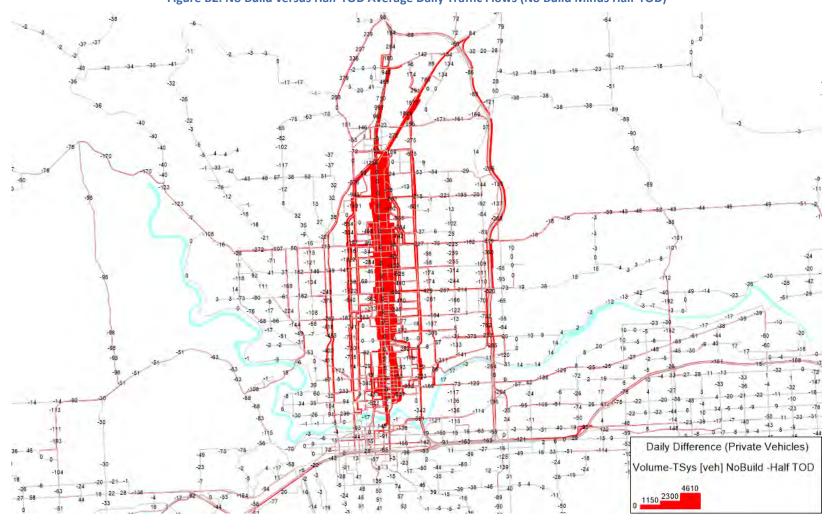


Figure B2: No Build versus Half-TOD Average Daily Traffic Flows (No Build Minus Half-TOD)

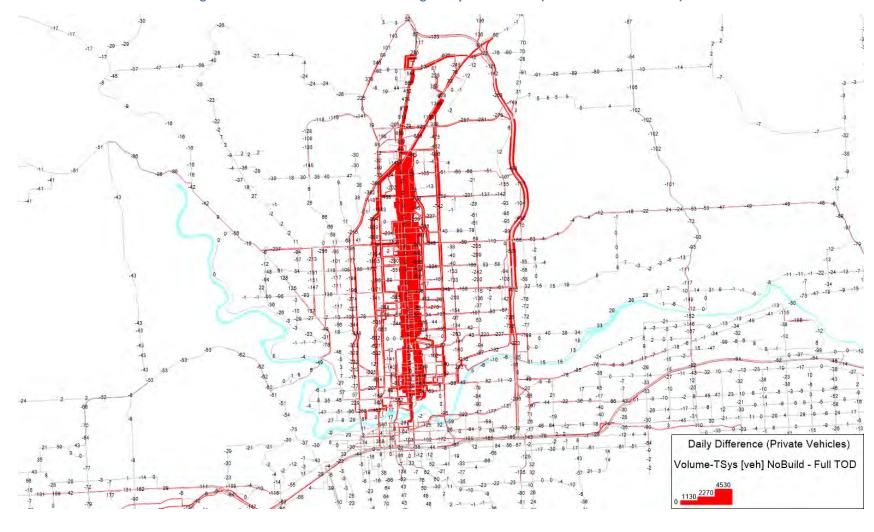
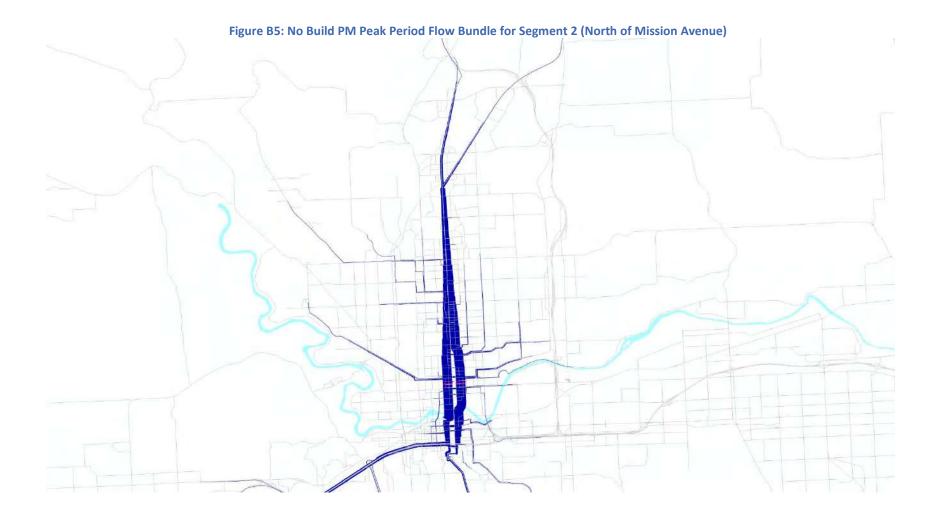


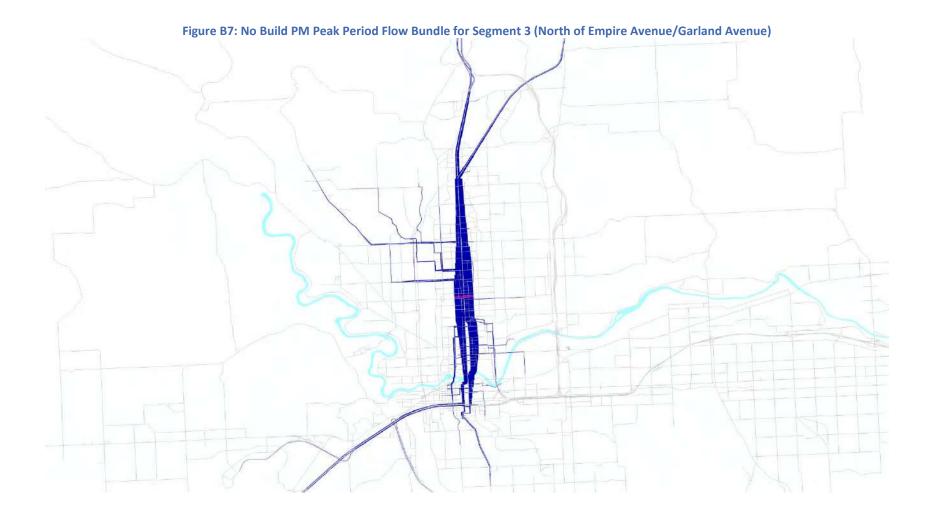
Figure B3: No Build versus Full TOD Average Daily Traffic Flows (No Build Minus Full TOD)

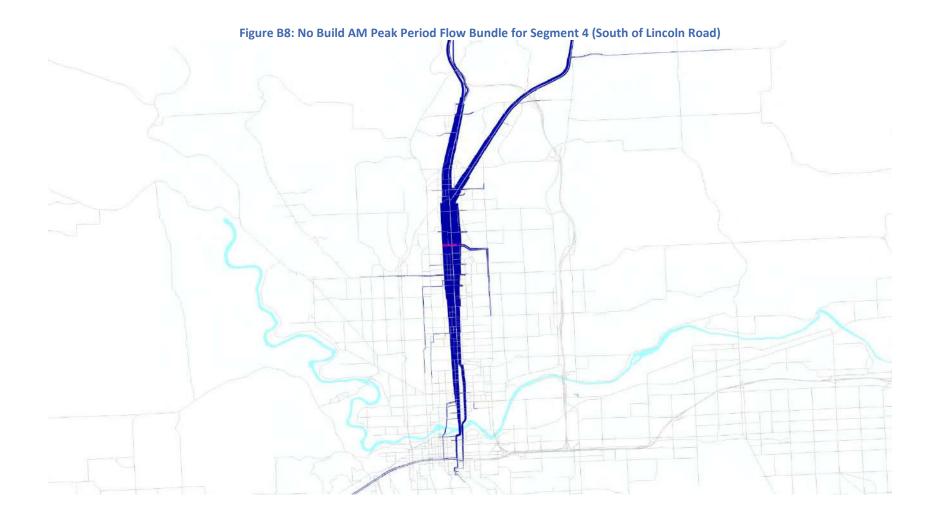


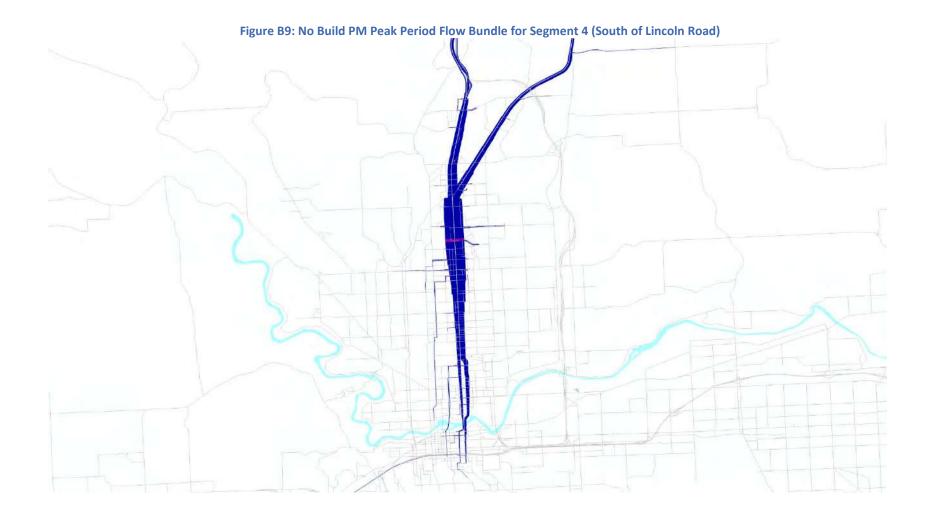
Figure B4: No Build AM Peak Period Flow Bundle for Segment 2 (North of Mission Avenue)

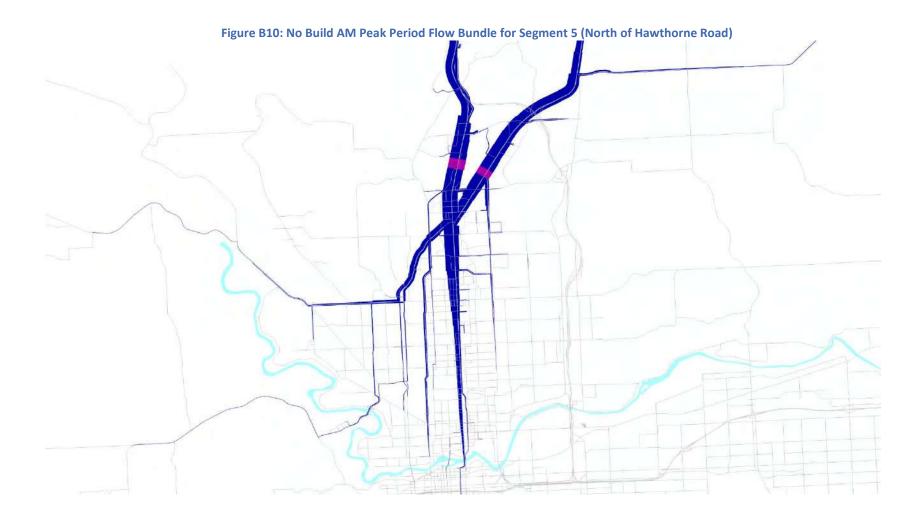












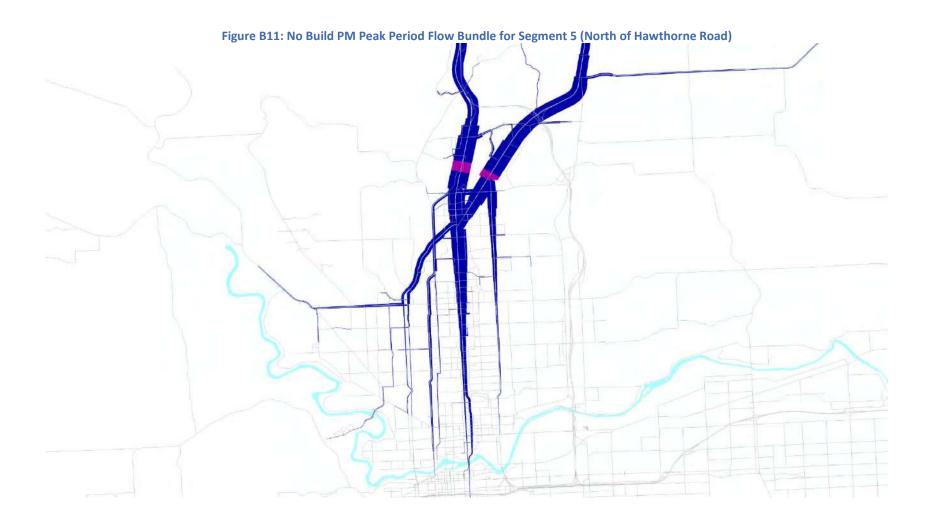




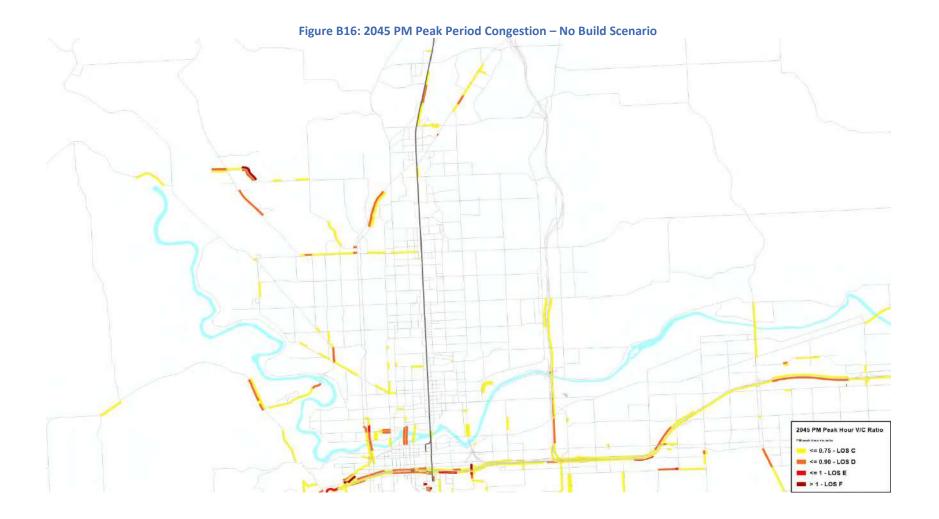


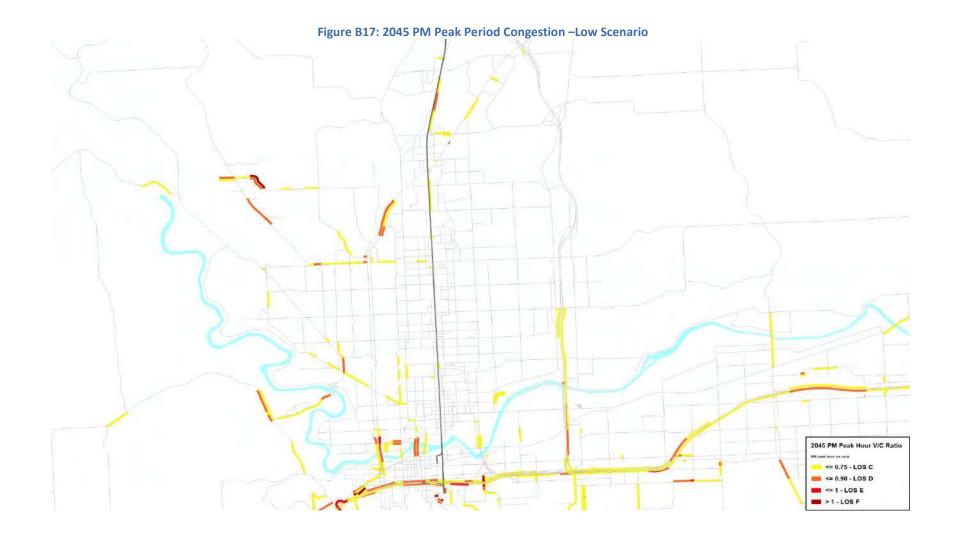


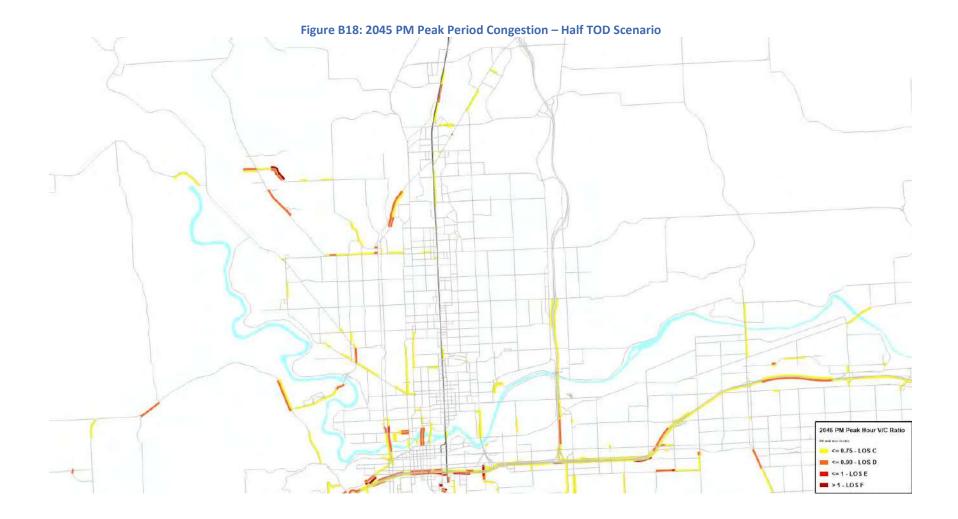
Figure B14: No Build AM Peak Period Flow Bundle for NSC Travel (South of Francis Avenue)

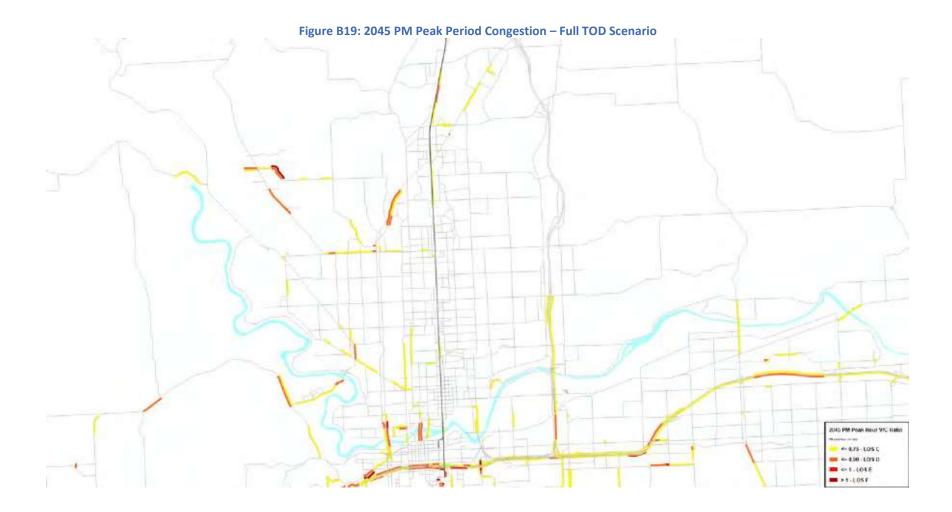


Figure B15: No Build PM Peak Period Flow Bundle for NSC Travel (South of Francis Avenue)









## ATTACHMENT C – DETAILED SCREENLINE DATA

Table C1 – Detailed Average Daily Screenline Comparison

	Table C1 – Detailed Average Daily Screen	2019		20	)45	
Description	Measure	Existing	No Build	Build- Low	Build- Half TOD	Build- Full TOD
	TOTAL Screenline (With NS	C)				
	South of Hawthorne Road	101,402	140,709	140,511	142,108	141,187
	Between Lincoln Road and Francis Avenue	123,317	164,553	162,342	165,148	162,922
Daily ADT	Between Wellesley Avenue and Garland Avenue	151,828	212,422	209,031	212,309	210,753
	Between Indiana Avenue and Maxwell Avenue	202,338	263,750	260,486	263,948	261,845
	Overall	578,885	781,434	772,370	783,513	776,707
	South of Hawthorne Road	19,473	26,915	26,950	27,102	27,095
	Between Lincoln Road and Francis Avenue	23,428	31,106	30,821	31,189	30,955
AM Peak Period ADT	Between Wellesley Avenue and Garland Avenue	30,134	41,386	40,759	41,359	41,150
	Between Indiana Avenue and Maxwell Avenue	39,996	51,491	50,842	51,677	51,442
	Overall	113,031	150,898	149,372	151,327	150,642
	South of Hawthorne Road	26,669	36,309	36,468	36,923	36,667
	Between Lincoln Road and Francis Avenue	32,546	43,341	42,828	43,613	42,998
PM Peak Period ADT	Between Wellesley Avenue and Garland Avenue	39,662	55,219	54,323	55,154	54,784
	Between Indiana Avenue and Maxwell Avenue	52,050	66,906	65,939	66,748	66,200
	Overall	150,927	201,775	199,558	202,438	200,649
	South of Hawthorne Road		39%	0%	1%	0%
	Between Lincoln Road and Francis Avenue		33%	-1%	0%	-1%
Daily ADT Difference %	Between Wellesley Avenue and Garland Avenue		40%	-2%	0%	-1%
	Between Indiana Avenue and Maxwell Avenue		30%	-1%	0%	-1%
	Overall		35%	-1%	0%	-1%
	South of Hawthorne Road		38%	0%	1%	1%
	Between Lincoln Road and Francis Avenue		33%	-1%	0%	0%
AM Peak Period ADT Difference %	Between Wellesley Avenue and Garland Avenue		37%	-2%	0%	-1%
	Between Indiana Avenue and Maxwell Avenue		29%	-1%	0%	0%
	Overall		34%	-1%	0%	0%
	South of Hawthorne Road		36%	0%	2%	1%
	Between Lincoln Road and Francis Avenue		33%	-1%	1%	-1%
PM Peak Period ADT Difference %	Between Wellesley Avenue and Garland Avenue		39%	-2%	0%	-1%
	Between Indiana Avenue and Maxwell Avenue		29%	-1%	0%	-1%
	Overall		34%	-1%	0%	-1%
	TOTAL Screenline (Without N	ISC)				

		2019		20	)45	
Description	Measure	Existing	No Build	Build- Low	Build- Half TOD	Build- Full TOD
	South of Hawthorne Road	88,984	83,021	81,848	83,143	82,453
	Between Lincoln Road and Francis Avenue	110,899	106,865	103,679	106,183	104,188
Daily ADT	Between Wellesley Avenue and Garland Avenue	151,828	128,565	124,435	127,400	125,959
	Between Indiana Avenue and Maxwell Avenue	202,338	179,893	175,890	179,039	177,051
	Overall	554,049	498,344	485,852	495,765	489,651
	South of Hawthorne Road	16,947	14,934	14,737	14,881	14,876
	Between Lincoln Road and Francis Avenue	20,902	19,125	18,608	18,968	18,736
AM Peak Period ADT	Between Wellesley Avenue and Garland Avenue	30,134	24,704	23,864	24,373	24,186
	Between Indiana Avenue and Maxwell Avenue	39,996	34,809	33,947	34,691	34,478
	Overall	107,979	93,572	91,156	92,913	92,276
	South of Hawthorne Road	23,457	21,714	21,458	21,782	21,634
	Between Lincoln Road and Francis Avenue	29,334	28,746	27,818	28,472	27,965
PM Peak Period	Between Wellesley Avenue and Garland Avenue	39,662	33,987	32,906	33,636	33,338
	Between Indiana Avenue and Maxwell Avenue	52,050	45,674	44,522	45,230	44,754
	Overall	144,503	130,121	126,704	129,120	127,691
	South of Hawthorne Road		-7%	-1%	0%	-1%
	Between Lincoln Road and Francis Avenue		-4%	-3%	-1%	-3%
Daily ADT Difference %	Between Wellesley Avenue and Garland Avenue		-15%	-3%	-1%	-2%
	Between Indiana Avenue and Maxwell Avenue		-11%	-2%	0%	-2%
	Overall		-10%	-3%	-1%	-2%
	South of Hawthorne Road		-12%	-1%	0%	0%
	Between Lincoln Road and Francis Avenue		-9%	-3%	-1%	-2%
AM Peak Period ADT Difference %	Between Wellesley Avenue and Garland Avenue		-18%	-3%	-1%	-2%
	Between Indiana Avenue and Maxwell Avenue		-13%	-2%	0%	-1%
	Overall		-13%	-3%	-1%	-1%
	South of Hawthorne Road		-7%	-1%	0%	0%
	Between Lincoln Road and Francis Avenue		-2%	-3%	-1%	-3%
PM Peak Period ADT Difference %	Between Wellesley Avenue and Garland Avenue		-14%	-3%	-1%	-2%
	Between Indiana Avenue and Maxwell Avenue		-12%	-3%	-1%	-2%
	Overall		-10%	-3%	-1%	-2%

		2019		20	45	
Description	Measure	Existing	No Build	Build- Low	Build- Half TOD	Build- Full TOD
	TOTAL Screenline (Division Street/Rub	y Street O	nly)			
	South of Hawthorne Road	24,072	23,666	23,047	23,310	24,098
	Between Lincoln Road and Francis Avenue	44,052	41,709	33,342	32,815	32,950
Daily ADT	Between Wellesley Avenue and Garland Avenue	41,695	38,087	29,993	30,758	30,915
	Between Indiana Avenue and Maxwell Avenue	46,305	42,226	34,270	35,726	35,226
	Overall	156,124	145,688	120,652	122,609	123,189
	South of Hawthorne Road	4,609	4,433	4,307	4,357	4,523
	Between Lincoln Road and Francis Avenue	8,763	7,995	6,280	6,158	6,184
AM Peak Period ADT	Between Wellesley Avenue and Garland Avenue	8,625	7,741	5,991	6,092	6,124
	Between Indiana Avenue and Maxwell Avenue	9,809	8,767	7,120	7,311	7,277
	Overall	31,806	28,936	23,698	23,918	24,108
	South of Hawthorne Road	5,888	5,865	5,634	5,664	5,740
	Between Lincoln Road and Francis Avenue	9,530	9,241	7,216	6,977	6,991
PM Peak Period	Between Wellesley Avenue and Garland Avenue	8,997	8,597	6,448	6,569	6,651
	Between Indiana Avenue and Maxwell Avenue	10,911	9,625	7,417	7,695	7,536
	Overall	35,326	33,328	26,715	26,905	26,918
	South of Hawthorne Road		-2%	-3%	-2%	2%
	Between Lincoln Road and Francis Avenue		-5%	-20%	-21%	-21%
Daily ADT Difference %	Between Wellesley Avenue and Garland Avenue		-9%	-21%	-19%	-19%
	Between Indiana Avenue and Maxwell Avenue		-9%	-19%	-15%	-17%
	Overall		-7%	-17%	-16%	-15%
	South of Hawthorne Road		-4%	-3%	-2%	2%
	Between Lincoln Road and Francis Avenue		-9%	-21%	-23%	-23%
AM Peak Period ADT Difference %	Between Wellesley Avenue and Garland Avenue		-10%	-23%	-21%	-21%
	Between Indiana Avenue and Maxwell Avenue		-11%	-19%	-17%	-17%
	Overall		-9%	-18%	-17%	-17%
	South of Hawthorne Road		0%	-4%	-3%	-2%
	Between Lincoln Road and Francis Avenue		-3%	-22%	-24%	-24%
PM Peak Period ADT Difference %	Between Wellesley Avenue and Garland Avenue		-4%	-25%	-24%	-23%
	Between Indiana Avenue and Maxwell Avenue		-12%	-23%	-20%	-22%
	Overall		-6%	-20%	-19%	-19%

Table C2 – Detailed Average Daily Screenline Comparison – Person Trips by Auto Mode

	Table C2 – Detailed Average D	2019	inine Com	20		ips by Auto
				ZU:		
Description	Measure	2019	Existing	No Build	Build-	Build-
					Low	Half TOD
Daily ADT - LOV	Between Indiana Avenue and Maxwell Avenue	32,577	30,376	24,792	26,014	25,658
	Between Wellesley Avenue and Garland Avenue	29,109	27,080	21,429	22,175	22,352
	Between Lincoln Road and Francis Avenue	31,015	29,957	24,155	23,781	23,921
	South of Hawthorne Road	16,268	16,422	16,055	16,274	16,744
	Overall	108,969	103,835	86,431	88,244	88,675
Daily ADT - HOV	Between Indiana Avenue and Maxwell Avenue	7,590	6,487	5,269	5,406	5,304
	Between Wellesley Avenue and Garland Avenue	7,309	6,030	4,724	4,765	4,799
	Between Lincoln Road and Francis Avenue	8,227	7,347	5,854	5,647	5,726
	South of Hawthorne Road	5,359	4,979	4,846	4,901	4,962
	Overall	28,485	24,843	20,693	20,719	20,791
Daily ADT - TRK	Between Indiana Avenue and Maxwell Avenue	6,121	5,358	4,277	4,311	4,209
	Between Wellesley Avenue and Garland Avenue	5,398	4,947	3,830	3,808	3,811
	Between Lincoln Road and Francis Avenue	4,756	4,378	3,374	3,362	3,283
	South of Hawthorne Road	2,460	2,256	2,165	2,163	2,329
	Overall	18,735	16,939	13,646	13,644	13,632
% Auto that is LOV	Between Indiana Avenue and Maxwell Avenue	81%	82%	82%	83%	83%
	Between Wellesley Avenue and Garland Avenue	80%	82%	82%	82%	82%
	Between Lincoln Road and Francis Avenue	79%	80%	80%	81%	81%
	South of Hawthorne Road	75%	77%	77%	77%	77%
	Overall	79%	81%	81%	81%	81%
% Auto that is HOV	Between Indiana Avenue and Maxwell Avenue	19%	18%	18%	17%	17%
	Between Wellesley Avenue and Garland Avenue	20%	18%	18%	18%	18%
	Between Lincoln Road and Francis Avenue	21%	20%	20%	19%	19%
	South of Hawthorne Road	25%	23%	23%	23%	23%
	Overall	21%	19%	19%	19%	19%
% Truck	Between Indiana Avenue and Maxwell Avenue	13%	13%	12%	12%	12%
	Between Wellesley Avenue and Garland Avenue	13%	13%	13%	12%	12%
	Between Lincoln Road and Francis Avenue	11%	11%	10%	10%	10%
	South of Hawthorne Road	10%	10%	9%	9%	10%
	Overall	12%	12%	11%	11%	11%

## ATTACHMENT D – DETAILED LAND USE NODE ANALYSIS

Table D1 – Detailed Land Use Node Performance Comparison

Metric	Description	2019	2045 No Build	2045 Build - Low	2045 Build - Half TOD	2045 Build - Full TOD
	Population					
	(2.28 per Household, 1.37 per Hotel Room)	1,685	2,760	2,760	3,054	3,054
	Dwelling Units					
	(Single Family + Multi-Family)	164	617	617	746	746
	Hotel Rooms	957	988	988	988	988
	Employment	3,726	3,956	3,956	4,878	4,878
	Daily Vehicle Trip Ends					
	(Origin + Destination)					
	(Drive Alone + Shared Ride Vehicle Trips)	36,431	40,103	39,667	44,572	44,940
	Daily Vehicle VMT					
	(Drive Alone + Shared Ride Vehicle Trips)	146,589	160,452	158,116	179,925	181,147
	Average Vehicle Trip Length	4.0	4.0	4.0	4.0	4.0
	Daily Home-Based Person Trips (Drive Alone)	6,900	8,793	8,686	9,167	9,159
	Daily Home-Based Person Trips (Shared Ride)	3,013	3,694	3,650	3,872	3,863
	Daily Home-Based Person Trips					
	(Drive Alone + Shared Ride)	9,913	12,487	12,336	13,040	13,022
	Daily Home-Based Person Miles Traveled (Drive Alone)	15,785	20,662	20,350	22,146	22,084
Node 4 - B. b. Nodb Book	Daily Home-Based Person Miles Traveled (Shared Ride)	8,651	10,312	10,178	11,258	11,242
Node 1 - Ruby North Bank	Daily Home-Based Vehicle Miles Traveled					
	(Drive Alone + Shared Ride)	19,530	25,143	24,755	27,049	26,972
	Daily Home-Based Person Trip Length	2.5	2.5	2.5	2.6	2.6
	Daily Non-Home-Based Person Trips (Drive Alone)	9,642	10,259	10,233	11,993	11,993
	Daily Non-Home-Based Person Trips (Shared Ride)	5,508	5,900	5,880	6,902	6,903
	Daily Non-Home-Based Person Trips					
	(Drive Alone + Shared Ride)	15,150	16,159	16,113	18,895	18,896
	Daily Non-Home-Based Person Miles Traveled (Drive Alone)	26,264	28,666	28,486	33,588	33,565
	Daily Non-Home-Based Person Miles Traveled (Shared Ride)	22,922	25,021	24,893	29,333	29,372
	Daily Non-Home-Based Vehicle Miles Traveled					
	(Drive Alone + Shared Ride)	36,188	39,540	39,260	46,364	46,337
	Daily Non-Home-Based Person Trip Length	2.1	2.2	2.1	2.2	2.2
	DA Person Trips	30,534	33,617	33,266	37,447	37,746
	SR Person Trips	13,621	14,923	14,788	16,359	16,546
	SR Auto Occupancy	2.31	2.30	2.31	2.30	2.30
	Daily VMT per Service Population	27.09	23.89	23.54	22.68	22.84
	Daily Home-Based VMT/Capita	11.6	9.1	9.0	8.9	8.8
	Daily Non-Home-Based VMT/Employee	9.7	10.0	9.9	9.5	9.5

Metric	Description	2019	2045 No Build	2045 Build - Low	2045 Build - Half TOD	2045 Build - Full TOD
	Population					
	(2.28 per Household, 1.37 per Hotel Room)	71	71	71	449	449
	Dwelling Units					
	(Single Family + Multi-Family)	31	31	31	197	197
	Hotel Rooms	0	0	0	0	0
	Employment	455	610	610	731	731
	Daily Vehicle Trip Ends					
	(Origin + Destination)					
	(Drive Alone + Shared Ride Vehicle Trips)	6,785	9,013	8,950	10,166	10,267
	Daily Vehicle VMT					
	(Drive Alone + Shared Ride Vehicle Trips)	23,173	30,419	30,011	33,953	34,657
	Average Vehicle Trip Length	3.4	3.4	3.4	3.3	3.4
	Daily Home-Based Person Trips (Drive Alone)	126	124	123	828	829
	Daily Home-Based Person Trips (Shared Ride)	46	45	45	307	310
	Daily Home-Based Person Trips					
	(Drive Alone + Shared Ride)	172	169	168	1,135	1,139
	Daily Home-Based Person Miles Traveled (Drive Alone)	373	364	361	2,430	2,467
Node 2 Feedbille	Daily Home-Based Person Miles Traveled (Shared Ride)	146	136	135	937	968
Node 2 - Foothills	Daily Home-Based Vehicle Miles Traveled					
	(Drive Alone + Shared Ride)	432	418	415	2,818	2,866
	Daily Home-Based Person Trip Length	3.0	3.0	2.9	3.0	3.0
	Daily Non-Home-Based Person Trips (Drive Alone)	3,124	4,186	4,175	4,564	4,565
	Daily Non-Home-Based Person Trips (Shared Ride)	1,807	2,427	2,419	2,630	2,649
	Daily Non-Home-Based Person Trips					
	(Drive Alone + Shared Ride)	4,931	6,613	6,594	7,194	7,214
	Daily Non-Home-Based Person Miles Traveled (Drive Alone)	9,071	12,258	12,182	13,058	13,402
	Daily Non-Home-Based Person Miles Traveled (Shared Ride)	7,680	10,383	10,334	11,062	11,383
	Daily Non-Home-Based Vehicle Miles Traveled					
	(Drive Alone + Shared Ride)	12,156	16,408	16,320	17,636	18,106
	Daily Non-Home-Based Person Trip Length	2.2	2.2	2.2	2.2	2.2
	DA Person Trips	5,534	7,352	7,301	8,358	8,435
	SR Person Trips	3,114	4,156	4,118	4,367	4,435
	SR Auto Occupancy	2.49	2.50	2.50	2.42	2.42
	Daily VMT per Service Population	44.06	44.67	44.07	28.77	29.37
	Daily Home-Based VMT/Capita	6.1	5.9	5.8	6.3	6.4
	Daily Non-Home-Based VMT/Employee	26.7	26.9	26.8	24.1	24.8

Metric	Description	2019	2045 No Build	2045 Build - Low	2045 Build - Half TOD	2045 Build - Full TOD
	Population					
	(2.28 per Household, 1.37 per Hotel Room)	347	349	349	618	618
	Dwelling Units					
	(Single Family + Multi-Family)	152	153	153	271	271
	Hotel Rooms	0	0	0	0	0
	Employment	160	259	259	249	249
	Daily Vehicle Trip Ends					
	(Origin + Destination)					
	(Drive Alone + Shared Ride Vehicle Trips)	2,481	3,134	3,132	3,807	4,049
	Daily Vehicle VMT					
	(Drive Alone + Shared Ride Vehicle Trips)	9,133	11,913	11,826	13,618	14,431
	Average Vehicle Trip Length	3.7	3.8	3.8	3.6	3.6
	Daily Home-Based Person Trips (Drive Alone)	610	624	624	1,095	1,096
	Daily Home-Based Person Trips (Shared Ride)	233	235	234	411	414
	Daily Home-Based Person Trips					
	(Drive Alone + Shared Ride)	843	859	858	1,505	1,510
	Daily Home-Based Person Miles Traveled (Drive Alone)	1,951	1,958	1,946	3,402	3,452
Nada 2 Farain / Cada ad	Daily Home-Based Person Miles Traveled (Shared Ride)	808	756	749	1,314	1,352
Node 3 - Empire/Garland	Daily Home-Based Vehicle Miles Traveled					
	(Drive Alone + Shared Ride)	2,308	2,286	2,272	3,986	4,044
	Daily Home-Based Person Trip Length	3.3	3.2	3.1	3.1	3.2
	Daily Non-Home-Based Person Trips (Drive Alone)	683	903	903	1,074	1,083
	Daily Non-Home-Based Person Trips (Shared Ride)	400	528	527	623	633
	Daily Non-Home-Based Person Trips					
	(Drive Alone + Shared Ride)	1,082	1,431	1,430	1,697	1,716
	Daily Non-Home-Based Person Miles Traveled (Drive Alone)	2,050	2,731	2,716	3,148	3,270
	Daily Non-Home-Based Person Miles Traveled (Shared Ride)	1,775	2,318	2,308	2,667	2,779
	Daily Non-Home-Based Vehicle Miles Traveled					
	(Drive Alone + Shared Ride)	2,834	3,737	3,721	4,332	4,486
	Daily Non-Home-Based Person Trip Length	2.2	2.2	2.2	2.2	2.2
	DA Person Trips	2,060	2,613	2,612	3,180	3,374
	SR Person Trips	952	1,201	1,197	1,413	1,542
	SR Auto Occupancy	2.26	2.30	2.30	2.25	2.28
	Daily VMT per Service Population	18.01	19.59	19.45	15.71	16.65
	Daily Home-Based VMT/Capita	6.7	6.5	6.5	6.4	6.5
	Daily Non-Home-Based VMT/Employee	17.7	14.4	14.4	17.4	18.0

Metric	Description	2019	2045 No Build	2045 Build - Low	2045 Build - Half TOD	2045 Build - Full TOD
	Population					
	(2.28 per Household, 1.37 per Hotel Room)	0	0	0	0	492
	Dwelling Units					
	(Single Family + Multi-Family)	0	0	0	0	216
	Hotel Rooms	0	0	0	0	0
	Employment	1,855	2,020	2,020	2,062	2,067
	Daily Vehicle Trip Ends					
	(Origin + Destination)					
	(Drive Alone + Shared Ride Vehicle Trips)	25,362	26,668	26,653	26,328	26,451
	Daily Vehicle VMT					
	(Drive Alone + Shared Ride Vehicle Trips)	89,579	108,581	107,254	102,756	104,539
	Average Vehicle Trip Length	3.5	4.1	4.0	3.9	4.0
	Daily Home-Based Person Trips (Drive Alone)	0	0	0	0	290
	Daily Home-Based Person Trips (Shared Ride)	0	0	0	0	109
	Daily Home-Based Person Trips					
	(Drive Alone + Shared Ride)	0	0	0	0	399
	Daily Home-Based Person Miles Traveled (Drive Alone)	0	0	0	0	932
Node 4 Noutletons	Daily Home-Based Person Miles Traveled (Shared Ride)	0	0	0	0	357
Node 4 - Northtown	Daily Home-Based Vehicle Miles Traveled					
	(Drive Alone + Shared Ride)	0	0	0	0	1,078
	Daily Home-Based Person Trip Length	0.0	0.0	0.0	0.0	3.2
	Daily Non-Home-Based Person Trips (Drive Alone)	11,625	12,023	12,019	11,949	11,715
	Daily Non-Home-Based Person Trips (Shared Ride)	6,749	7,341	7,320	7,250	7,133
	Daily Non-Home-Based Person Trips					
	(Drive Alone + Shared Ride)	18,374	19,364	19,339	19,199	18,848
	Daily Non-Home-Based Person Miles Traveled (Drive Alone)	33,302	39,461	39,112	38,476	38,038
	Daily Non-Home-Based Person Miles Traveled (Shared Ride)	29,792	37,864	37,544	36,813	36,612
	Daily Non-Home-Based Vehicle Miles Traveled					
	(Drive Alone + Shared Ride)	45,402	54,866	54,388	53,465	52,997
	Daily Non-Home-Based Person Trip Length	2.2	2.2	2.2	2.2	2.2
	DA Person Trips	20,672	21,526	21,533	21,293	21,406
	SR Person Trips	11,548	12,638	12,584	12,366	12,349
	SR Auto Occupancy	2.46	2.46	2.46	2.46	2.45
	Daily VMT per Service Population	48.29	53.75	53.10	49.83	40.85
	Daily Home-Based VMT/Capita	0.0	0.0	0.0	0.0	2.2
	Daily Non-Home-Based VMT/Employee	24.5	27.2	26.9	25.9	25.6

Metric	Description	2019	2045 No Build	2045 Build - Low	2045 Build - Half TOD	2045 Build - Full TOD
	Population					
	(2.28 per Household, 1.37 per Hotel Room)	153	162	162	201	201
	Dwelling Units					
	(Single Family + Multi-Family)	67	71	71	88	88
	Hotel Rooms	0	0	0	0	0
	Employment	2,334	2,879	2,879	2,964	2,965
	Daily Vehicle Trip Ends					
	(Origin + Destination)					
	(Drive Alone + Shared Ride Vehicle Trips)	16,432	19,002	18,986	19,019	19,838
	Daily Vehicle VMT					
	(Drive Alone + Shared Ride Vehicle Trips)	66,315	81,995	81,283	79,395	81,803
	Average Vehicle Trip Length	4.0	4.3	4.3	4.2	4.1
	Daily Home-Based Person Trips (Drive Alone)	250	265	264	335	334
	Daily Home-Based Person Trips (Shared Ride)	93	98	98	125	123
	Daily Home-Based Person Trips					
	(Drive Alone + Shared Ride)	342	363	362	459	458
	Daily Home-Based Person Miles Traveled (Drive Alone)	781	829	822	1,058	1,046
Nada E. Barran	Daily Home-Based Person Miles Traveled (Shared Ride)	294	304	301	396	386
Node 5 - Rowan	Daily Home-Based Vehicle Miles Traveled					
	(Drive Alone + Shared Ride)	910	962	954	1,234	1,216
	Daily Home-Based Person Trip Length	3.1	3.1	3.1	3.2	3.1
	Daily Non-Home-Based Person Trips (Drive Alone)	4,709	5,351	5,347	5,583	5,581
	Daily Non-Home-Based Person Trips (Shared Ride)	2,679	3,096	3,088	3,212	3,208
	Daily Non-Home-Based Person Trips					
	(Drive Alone + Shared Ride)	7,387	8,447	8,435	8,795	8,789
	Daily Non-Home-Based Person Miles Traveled (Drive Alone)	12,774	15,342	15,201	15,696	15,606
	Daily Non-Home-Based Person Miles Traveled (Shared Ride)	10,951	13,340	13,252	13,611	13,591
	Daily Non-Home-Based Vehicle Miles Traveled					
	(Drive Alone + Shared Ride)	17,560	21,208	21,029	21,759	21,599
	Daily Non-Home-Based Person Trip Length	2.1	2.2	2.2	2.2	2.1
	DA Person Trips	13,759	15,890	15,884	16,011	16,670
	SR Person Trips	6,115	7,076	7,052	6,754	7,183
	SR Auto Occupancy	2.29	2.27	2.27	2.25	2.27
	Daily VMT per Service Population	26.66	26.96	26.73	25.09	25.84
	Daily Home-Based VMT/Capita	5.9	5.9	5.9	6.1	6.0
	Daily Non-Home-Based VMT/Employee	7.5	7.4	7.3	7.3	7.3

Metric	Description	2019	2045 No Build	2045 Build - Low	2045 Build - Half TOD	2045 Build - Full TOD
	Population					
	(2.28 per Household, 1.37 per Hotel Room)	992	1,022	1,022	1,008	1,535
	Dwelling Units					
	(Single Family + Multi-Family)	401	414	414	408	639
	Hotel Rooms	57	57	57	57	57
	Employment	717	815	815	861	1,319
	Daily Vehicle Trip Ends					
	(Origin + Destination)					
	(Drive Alone + Shared Ride Vehicle Trips)	12,405	13,084	13,126	13,844	21,597
	Daily Vehicle VMT					
	(Drive Alone + Shared Ride Vehicle Trips)	42,161	46,214	46,035	47,096	72,711
	Average Vehicle Trip Length	3.4	3.5	3.5	3.4	3.4
	Daily Home-Based Person Trips (Drive Alone)	1,953	2,002	1,996	2,165	2,844
	Daily Home-Based Person Trips (Shared Ride)	756	769	766	852	1,068
	Daily Home-Based Person Trips					
	(Drive Alone + Shared Ride)	2,709	2,771	2,763	3,017	3,912
	Daily Home-Based Person Miles Traveled (Drive Alone)	6,092	6,236	6,178	6,783	8,878
Nada C. Francia / Lucia	Daily Home-Based Person Miles Traveled (Shared Ride)	2,423	2,428	2,403	2,660	3,350
Node 6 - Francis/Lyons	Daily Home-Based Vehicle Miles Traveled					
	(Drive Alone + Shared Ride)	7,112	7,255	7,188	7,895	10,279
	Daily Home-Based Person Trip Length	3.1	3.1	3.1	3.1	3.1
	Daily Non-Home-Based Person Trips (Drive Alone)	4,584	4,821	4,826	5,040	8,288
	Daily Non-Home-Based Person Trips (Shared Ride)	2,625	2,811	2,810	2,922	4,776
	Daily Non-Home-Based Person Trips					
	(Drive Alone + Shared Ride)	7,209	7,632	7,637	7,961	13,064
	Daily Non-Home-Based Person Miles Traveled (Drive Alone)	12,708	14,046	13,980	14,401	23,068
	Daily Non-Home-Based Person Miles Traveled (Shared Ride)	10,965	12,496	12,471	12,779	20,630
	Daily Non-Home-Based Vehicle Miles Traveled					
	(Drive Alone + Shared Ride)	17,324	19,289	19,222	19,746	31,695
	Daily Non-Home-Based Person Trip Length	2.1	2.2	2.2	2.2	2.2
	DA Person Trips	10,203	10,756	10,791	11,358	17,695
	SR Person Trips	5,229	5,548	5,553	5,943	9,329
	SR Auto Occupancy	2.38	2.38	2.38	2.39	2.39
	Daily VMT per Service Population	24.67	25.16	25.06	25.20	25.48
	Daily Home-Based VMT/Capita	7.2	7.1	7.0	7.8	6.7
	Daily Non-Home-Based VMT/Employee	24.2	23.7	23.6	22.9	24.0

Metric	Description	2019	2045 No Build	2045 Build - Low	2045 Build - Half TOD	2045 Build - Full TOD
	Population					
	(2.28 per Household, 1.37 per Hotel Room)	200	200	200	583	583
	Dwelling Units					
	(Single Family + Multi-Family)	9	9	9	177	177
	Hotel Rooms	131	131	131	131	131
	Employment	809	1,097	1,097	1,483	1,483
	Daily Vehicle Trip Ends					
	(Origin + Destination)					
	(Drive Alone + Shared Ride Vehicle Trips)	10,437	15,228	15,238	17,891	18,876
	Daily Vehicle VMT					
	(Drive Alone + Shared Ride Vehicle Trips)	41,301	65,014	64,836	70,564	74,561
	Average Vehicle Trip Length	4.0	4.3	4.3	3.9	4.0
	Daily Home-Based Person Trips (Drive Alone)	921	929	927	1,565	1,564
	Daily Home-Based Person Trips (Shared Ride)	427	429	428	667	664
	Daily Home-Based Person Trips					
	(Drive Alone + Shared Ride)	1,348	1,357	1,355	2,232	2,228
	Daily Home-Based Person Miles Traveled (Drive Alone)	2,987	2,991	2,979	5,210	5,180
Node 7 - Lincoln	Daily Home-Based Person Miles Traveled (Shared Ride)	1,544	1,535	1,534	2,360	2,342
Node 7 - Lincolli	Daily Home-Based Vehicle Miles Traveled					
	(Drive Alone + Shared Ride)	3,625	3,637	3,625	6,197	6,153
	Daily Home-Based Person Trip Length	3.4	3.3	3.3	3.4	3.4
	Daily Non-Home-Based Person Trips (Drive Alone)	3,990	5,330	5,328	7,291	7,289
	Daily Non-Home-Based Person Trips (Shared Ride)	2,365	3,201	3,198	4,340	4,341
	Daily Non-Home-Based Person Trips					
	(Drive Alone + Shared Ride)	6,354	8,532	8,526	11,630	11,630
	Daily Non-Home-Based Person Miles Traveled (Drive Alone)	12,270	16,913	16,843	22,460	22,434
	Daily Non-Home-Based Person Miles Traveled (Shared Ride)	11,048	15,612	15,602	20,690	20,781
	Daily Non-Home-Based Vehicle Miles Traveled					
	(Drive Alone + Shared Ride)	16,833	23,485	23,413	31,118	31,068
	Daily Non-Home-Based Person Trip Length	2.2	2.2	2.2	2.2	2.2
	DA Person Trips	8,494	12,494	12,506	14,604	15,377
	SR Person Trips	4,704	6,495	6,488	7,854	8,423
	SR Auto Occupancy	2.42	2.38	2.37	2.39	2.41
	Daily VMT per Service Population	40.93	50.13	49.99	34.16	36.09
	Daily Home-Based VMT/Capita	18.1	18.2	18.1	10.6	10.6
	Daily Non-Home-Based VMT/Employee	20.8	21.4	21.3	21.0	20.9

Metric	Description	2019	2045 No Build	2045 Build - Low	2045 Build - Half TOD	2045 Build - Full TOD
	Population					
	(2.28 per Household, 1.37 per Hotel Room)	426	479	479	461	807
	Dwelling Units					
	(Single Family + Multi-Family)	187	210	210	202	354
	Hotel Rooms	0	0	0	0	0
	Employment	1,558	1,676	1,676	1,750	1,740
	Daily Vehicle Trip Ends					
	(Origin + Destination)					
	(Drive Alone + Shared Ride Vehicle Trips)	19,054	20,384	20,276	23,080	21,490
	Daily Vehicle VMT					
	(Drive Alone + Shared Ride Vehicle Trips)	73,217	81,049	80,444	89,166	84,455
	Average Vehicle Trip Length	3.8	4.0	4.0	3.9	3.9
	Daily Home-Based Person Trips (Drive Alone)	703	792	789	759	1,371
	Daily Home-Based Person Trips (Shared Ride)	268	303	301	290	526
	Daily Home-Based Person Trips					
	(Drive Alone + Shared Ride)	971	1,095	1,090	1,049	1,897
	Daily Home-Based Person Miles Traveled (Drive Alone)	2,486	2,894	2,859	2,752	4,960
Node O The V	Daily Home-Based Person Miles Traveled (Shared Ride)	933	1,083	1,072	1,032	1,881
Node 8 - The Y	Daily Home-Based Vehicle Miles Traveled					
	(Drive Alone + Shared Ride)	2,872	3,342	3,304	3,183	5,746
	Daily Home-Based Person Trip Length	3.5	3.6	3.6	3.6	3.6
	Daily Non-Home-Based Person Trips (Drive Alone)	8,095	8,632	8,609	9,222	8,699
	Daily Non-Home-Based Person Trips (Shared Ride)	4,593	5,010	4,986	5,290	5,026
	Daily Non-Home-Based Person Trips					
	(Drive Alone + Shared Ride)	12,688	13,642	13,595	14,512	13,726
	Daily Non-Home-Based Person Miles Traveled (Drive Alone)	21,251	24,080	23,778	24,688	23,861
	Daily Non-Home-Based Person Miles Traveled (Shared Ride)	18,983	22,522	22,333	23,012	22,353
	Daily Non-Home-Based Vehicle Miles Traveled					
	(Drive Alone + Shared Ride)	29,113	33,393	33,041	34,312	33,198
	Daily Non-Home-Based Person Trip Length	2.1	2.2	2.2	2.1	2.2
	DA Person Trips	15,541	16,571	16,475	18,803	17,507
	SR Person Trips	8,485	9,222	9,166	10,227	9,535
	SR Auto Occupancy	2.41	2.42	2.41	2.39	2.39
	Daily VMT per Service Population	36.90	37.61	37.33	40.33	33.16
	Daily Home-Based VMT/Capita	6.7	7.0	6.9	6.9	7.1
	Daily Non-Home-Based VMT/Employee	18.7	19.9	19.7	19.6	19.1

Metric	Description	2019	2045 No Build	2045 Build - Low	2045 Build - Half TOD	2045 Build - Full TOD
	Population					
	(2.28 per Household, 1.37 per Hotel Room)	540	547	547	650	650
	Dwelling Units					
	(Single Family + Multi-Family)	237	240	240	285	285
	Hotel Rooms	0	0	0	0	0
	Employment	318	401	401	453	453
	Daily Vehicle Trip Ends					
	(Origin + Destination)					
	(Drive Alone + Shared Ride Vehicle Trips)	4,612	5,226	5,246	5,863	5,890
	Daily Vehicle VMT					
	(Drive Alone + Shared Ride Vehicle Trips)	18,489	22,220	22,158	24,618	24,858
	Average Vehicle Trip Length	4.0	4.3	4.2	4.2	4.2
	Daily Home-Based Person Trips (Drive Alone)	945	950	949	1,124	1,126
	Daily Home-Based Person Trips (Shared Ride)	359	367	368	432	436
	Daily Home-Based Person Trips					
	(Drive Alone + Shared Ride)	1,304	1,316	1,317	1,556	1,561
	Daily Home-Based Person Miles Traveled (Drive Alone)	3,541	3,818	3,790	4,434	4,453
Norda O Mile itu u auth	Daily Home-Based Person Miles Traveled (Shared Ride)	1,331	1,487	1,482	1,727	1,753
Node 9 - Whitworth	Daily Home-Based Vehicle Miles Traveled					
	(Drive Alone + Shared Ride)	4,116	4,455	4,432	5,187	5,218
	Daily Home-Based Person Trip Length	3.7	4.0	4.0	4.0	4.0
	Daily Non-Home-Based Person Trips (Drive Alone)	1,432	1,697	1,699	1,801	1,806
	Daily Non-Home-Based Person Trips (Shared Ride)	831	1,016	1,014	1,062	1,078
	Daily Non-Home-Based Person Trips					
	(Drive Alone + Shared Ride)	2,263	2,713	2,713	2,863	2,884
	Daily Non-Home-Based Person Miles Traveled (Drive Alone)	4,058	5,182	5,136	5,239	5,467
	Daily Non-Home-Based Person Miles Traveled (Shared Ride)	3,682	5,033	5,004	5,064	5,311
	Daily Non-Home-Based Vehicle Miles Traveled					
	(Drive Alone + Shared Ride)	5,650	7,337	7,304	7,450	7,784
	Daily Non-Home-Based Person Trip Length	2.2	2.2	2.2	2.2	2.2
	DA Person Trips	3,741	4,238	4,244	4,761	4,781
	SR Person Trips	2,015	2,309	2,313	2,524	2,542
	SR Auto Occupancy	2.31	2.34	2.31	2.29	2.29
	Daily VMT per Service Population	21.55	23.44	23.37	22.32	22.54
	Daily Home-Based VMT/Capita	7.6	8.1	8.1	8.0	8.0
	Daily Non-Home-Based VMT/Employee	17.8	18.3	18.2	16.4	17.2

Metric	Description	2019	2045 No Build	2045 Build - Low	2045 Build - Half TOD	2045 Build - Full TOD
	Population					
	(2.28 per Household, 1.37 per Hotel Room)	0	0	0	1,119	1,119
	Dwelling Units					
	(Single Family + Multi-Family)	0	0	0	491	491
	Hotel Rooms	0	0	0	0	0
	Employment	413	504	504	571	571
	Daily Vehicle Trip Ends					
	(Origin + Destination)					
	(Drive Alone + Shared Ride Vehicle Trips)	6,060	7,315	7,315	9,972	11,315
	Daily Vehicle VMT					
	(Drive Alone + Shared Ride Vehicle Trips)	32,018	41,933	41,820	57,112	65,517
	Average Vehicle Trip Length	5.3	5.7	5.7	5.7	5.8
	Daily Home-Based Person Trips (Drive Alone)	0	0	0	1,844	1,843
	Daily Home-Based Person Trips (Shared Ride)	0	0	0	833	827
	Daily Home-Based Person Trips					
	(Drive Alone + Shared Ride)	0	0	0	2,677	2,670
	Daily Home-Based Person Miles Traveled (Drive Alone)	0	0	0	10,684	10,594
Node 10 - Mead	Daily Home-Based Person Miles Traveled (Shared Ride)	0	0	0	5,340	5,281
Node 10 - Mead	Daily Home-Based Vehicle Miles Traveled					
	(Drive Alone + Shared Ride)	0	0	0	13,013	12,844
	Daily Home-Based Person Trip Length	0.0	0.0	0.0	6.0	5.9
	Daily Non-Home-Based Person Trips (Drive Alone)	2,799	3,325	3,327	4,031	4,020
	Daily Non-Home-Based Person Trips (Shared Ride)	1,826	2,333	2,330	2,812	2,820
	Daily Non-Home-Based Person Trips					
	(Drive Alone + Shared Ride)	4,625	5,658	5,657	6,842	6,840
	Daily Non-Home-Based Person Miles Traveled (Drive Alone)	11,145	14,860	14,796	17,822	17,948
	Daily Non-Home-Based Person Miles Traveled (Shared Ride)	10,808	16,728	16,666	19,938	20,216
	Daily Non-Home-Based Vehicle Miles Traveled					
	(Drive Alone + Shared Ride)	15,550	21,671	21,583	26,518	26,561
	Daily Non-Home-Based Person Trip Length	2.3	2.4	2.4	2.4	2.4
	DA Person Trips	4,754	5,674	5,676	7,862	8,862
	SR Person Trips	3,204	4,030	4,026	4,838	5,758
	SR Auto Occupancy	2.45	2.46	2.46	2.29	2.35
	Daily VMT per Service Population	77.53	83.20	82.98	33.79	38.77
	Daily Home-Based VMT/Capita	0.0	0.0	0.0	11.6	11.5
	Daily Non-Home-Based VMT/Employee	37.7	43.0	42.8	46.4	46.5

Metric	Description	2019	2045 No Build	2045 Build - Low	2045 Build - Half TOD	2045 Build - Full TOD
	Population					
	(2.28 per Household, 1.37 per Hotel Room)	0	0	0	0	907
	Dwelling Units					
	(Single Family + Multi-Family)	0	0	0	0	398
	Hotel Rooms	0	0	0	0	0
	Employment	1,280	1,723	1,723	1,901	1,896
	Daily Vehicle Trip Ends					
	(Origin + Destination)					
	(Drive Alone + Shared Ride Vehicle Trips)	13,397	17,117	17,110	19,957	22,093
	Daily Vehicle VMT					
	(Drive Alone + Shared Ride Vehicle Trips)	67,124	85,568	85,223	98,691	109,173
	Average Vehicle Trip Length	5.0	5.0	5.0	4.9	4.9
	Daily Home-Based Person Trips (Drive Alone)	0	0	0	0	2,073
	Daily Home-Based Person Trips (Shared Ride)	0	0	0	0	915
	Daily Home-Based Person Trips					
	(Drive Alone + Shared Ride)	0	0	0	0	2,988
	Daily Home-Based Person Miles Traveled (Drive Alone)	0	0	0	0	10,176
	Daily Home-Based Person Miles Traveled (Shared Ride)	0	0	0	0	4,502
Node 11 - Hastings	Daily Home-Based Vehicle Miles Traveled					
	(Drive Alone + Shared Ride)	0	0	0	0	12,073
	Daily Home-Based Person Trip Length	0.0	0.0	0.0	0.0	4.9
	Daily Non-Home-Based Person Trips (Drive Alone)	5,525	6,951	6,952	8,309	8,057
	Daily Non-Home-Based Person Trips (Shared Ride)	3,604	4,575	4,567	5,379	5,260
	Daily Non-Home-Based Person Trips		•	·		
	(Drive Alone + Shared Ride)	9,129	11,527	11,520	13,689	13,317
	Daily Non-Home-Based Person Miles Traveled (Drive Alone)	21,671	26,731	26,574	30,584	30,308
	Daily Non-Home-Based Person Miles Traveled (Shared Ride)	21,588	29,096	28,970	33,118	32,935
	Daily Non-Home-Based Vehicle Miles Traveled	,	· · · · · · · · · · · · · · · · · · ·	•		,
	(Drive Alone + Shared Ride)	30,678	38,910	38,701	44,349	44,185
	Daily Non-Home-Based Person Trip Length	2.3	2.3	2.3	2.3	2.3
	DA Person Trips	10,740	13,725	13,723	15,975	17,784
	SR Person Trips	6,369	8,105	8,093	9,582	10,226
	SR Auto Occupancy	2.40	2.39	2.39	2.41	2.37
	Daily VMT per Service Population	52.44	49.66	49.46	51.92	38.95
	Daily Home-Based VMT/Capita	0.0	0.0	0.0	0.0	13.3
	Daily Non-Home-Based VMT/Employee	24.0	22.6	22.5	23.3	23.3

Metric	Description	2019	2045 No Build	2045 Build - Low	2045 Build - Half TOD	2045 Build - Full TOD
	Population					
	(2.28 per Household, 1.37 per Hotel Room)	0	0	0	0	1,090
	Dwelling Units					
	(Single Family + Multi-Family)	0	0	0	0	478
	Hotel Rooms	0	0	0	0	0
	Employment	758	643	643	559	1,193
	Daily Vehicle Trip Ends					
	(Origin + Destination)					
	(Drive Alone + Shared Ride Vehicle Trips)	8,095	5,728	5,726	5,492	13,331
	Daily Vehicle VMT					
	(Drive Alone + Shared Ride Vehicle Trips)	36,763	28,352	28,264	26,414	62,834
	Average Vehicle Trip Length	4.5	4.9	4.9	4.8	4.7
	Daily Home-Based Person Trips (Drive Alone)	0	0	0	0	1,966
	Daily Home-Based Person Trips (Shared Ride)	0	0	0	0	781
	Daily Home-Based Person Trips					
	(Drive Alone + Shared Ride)	0	0	0	0	2,747
	Daily Home-Based Person Miles Traveled (Drive Alone)	0	0	0	0	8,466
	Daily Home-Based Person Miles Traveled (Shared Ride)	0	0	0	0	3,539
Node 12 - Nevada Junction	Daily Home-Based Vehicle Miles Traveled					
	(Drive Alone + Shared Ride)	0	0	0	0	9,986
	Daily Home-Based Person Trip Length	0.0	0.0	0.0	0.0	4.4
	Daily Non-Home-Based Person Trips (Drive Alone)	3,425	2,334	2,335	2,325	4,339
	Daily Non-Home-Based Person Trips (Shared Ride)	2,028	1,458	1,455	1,434	2,663
	Daily Non-Home-Based Person Trips		•			
	(Drive Alone + Shared Ride)	5,453	3,792	3,790	3,758	7,002
	Daily Non-Home-Based Person Miles Traveled (Drive Alone)	10,358	7,990	7,934	7,683	14,079
	Daily Non-Home-Based Person Miles Traveled (Shared Ride)	9,521	8,107	8,066	7,740	14,271
	Daily Non-Home-Based Vehicle Miles Traveled		•			
	(Drive Alone + Shared Ride)	14,294	11,356	11,283	10,872	20,207
	Daily Non-Home-Based Person Trip Length	2.2	2.2	2.2	2.2	2.2
	DA Person Trips	6,544	4,629	4,629	4,424	10,879
	SR Person Trips	3,752	2,646	2,643	2,591	5,711
	SR Auto Occupancy	2.42	2.41	2.41	2.43	2.33
	Daily VMT per Service Population	48.50	44.09	43.96	47.25	27.52
	Daily Home-Based VMT/Capita	0.0	0.0	0.0	0.0	9.2
	Daily Non-Home-Based VMT/Employee	18.9	17.7	17.5	19.4	16.9