

# **John Day Gateway**

## **Transportation Impact Analysis**

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**Prepared by:**



720 SW Washington St.  
Suite 500  
Portland, OR 97205  
503.243.3500  
[www.dksassociates.com](http://www.dksassociates.com)

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## Section I. Introduction

The purpose of this transportation impact analysis is to identify potential transportation system needs triggered by the proposed hotel and conference center development located on the Innovation Gateway Area site in John Day, OR. The proposed site is proposed to consist of a 60-room hotel and 6,500 square foot conference center.

Included in the following sections is a documentation of existing transportation conditions, a summary of the assumptions and methodologies used to analyze future transportation conditions, a detail of traffic operating conditions and a summary of recommendations related to the proposed project.

### Project Area

The project site is generally bounded by the John Day River to the north, US 26 (W. Main Street) to the south, NW 3<sup>rd</sup> Avenue to the east, and Patterson Bridge Road to the west. The following intersections were evaluated as study intersections, with their intersection control listed:

- W. Main Street / Patterson Bridge Road (existing stop controlled on the side street)
- W. Main Street / West Project Driveway (proposed stop controlled on the side street)
- W. Main Street / East Project Driveway (proposed stop controlled on the side street)
- W. Main Street / NW 3<sup>rd</sup> Avenue (existing stop controlled on the side street)

## Section 2. Existing Conditions

Much of the land within the study area is rural, with the exception of land surrounding W Main Street through downtown John Day. As a result, many roadways are not constructed to urban standards. Evaluating the transportation impacts of the proposed hotel and conference center development requires an understanding of the current transportation facilities in this area. This section includes descriptions of existing infrastructure to serve pedestrian, bicycle, transit and motor vehicle modes of travel in the immediate study area.

### Pedestrian and Bicycle System

An inventory of existing pedestrian and bicycle facilities was conducted for the John Day Innovation Gateway Area plan and used to summarize current pedestrian and bike facilities within the project area. Table 1 shows the key roadways, along with existing pedestrian and bicycle facilities. Due to the rural nature of the abutting land uses, many streets in the study area have not been improved to urban standards and generally lack accommodation for pedestrian and bicycle users.

W Main Street is an important connection for pedestrian and bicycle travel in the City. It provides the only current direct route for pedestrians and bicyclists to access all parts of the City. Those walking or biking along this highway often have to walk along the edge or share the travel lane with motor vehicles. In addition, frequent driveways negatively impact the walking experience and introduce conflict points between pedestrians and motor vehicles. Motor vehicle traffic volumes along this segment of the highway is over 5,000 vehicles per day and the posted speed is 35 miles per hour. These conditions are generally not conducive to comfortable shared walking and biking travel conditions. W Main Street through John Day is also designated as part of the Old West Oregon Scenic Bikeway. Much of this route lacks accommodations for bicyclists.

Pedestrian and bicycle count data during the evening peak period was also collected at the study intersections<sup>1</sup>. The count data shows that the only pedestrian activity observed occurred at the W Main Street / NW 3rd Avenue intersection (8 crossings during the p.m. peak period). No bicycle activity was recorded at the study intersections during the p.m. peak period.

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<sup>1</sup> Based on traffic counts conducted during December 2019.

**Table 1: Study Area Pedestrian and Bicycle Characteristics**

Roadway (limits)	Pedestrian Facilities	Bike Facilities
W Main Street - US 26 / US 395 (Patterson Bridge Road to 3rd Avenue)	Sidewalk on north side from 3rd Avenue to the west for 0.25 miles; Intermittent sidewalks on south side	None
Patterson Bridge Road (US 26 / US 395 to northern terminus)	None	None
7th Avenue (Bridge Street to western terminus)	None	None
3rd Avenue (US 26 / US 395 to Dayton Street)	Sidewalk on both sides from US 26 / US 395 to Brent Drive; none east of Brent Drive	None
Bridge Street (US 26 / US 395 to 7th Avenue)	Sidewalk on both sides from US 26 / US 395 to 3rd Avenue; Sidewalk on east side only north of 3rd Avenue	None

## Transit System

Transit service is provided in John Day and other nearby cities by the Grant County People Mover via several fixed bus routes, a Dial-a-Ride service and two deviated fixed route systems. The People Mover connects riders in John Day to nearby cities including Bend, Redmond, Prineville, Mount Vernon, Monument, Pendleton, Walla Walla, Burns, Prairie City and Baker City. The Bend, Redmond, Prineville, Mount Vernon route runs Monday, Wednesday and Friday; the Monument route runs on Thursdays; the Pendleton and Walla Walla route runs on Tuesdays; the Burns route runs on the 1st, 3rd, and 5th Thursday of the month; and the Prairie City and Baker City route runs on the 2nd and 4th Thursday of the month. Each of these routes typically depart John Day in the morning and return in the evening.

The deviated fixed route services in the John Day valley run Monday through Friday. The route will deviate ½ mile from the fixed route line. The PC MV Route runs between Prairie City and Mt Vernon three times a day, at 7 am, 12 pm and 6 pm. The JD CC Loop runs a set route in John Day and Canyon City every hour, beginning at 7 am and ending at 6 pm. Both the PC MV Route and the JD CC Loop are free.

The Dial-a-Ride, or Demand Response service runs Monday through Friday 8 am to 6 pm and Saturday 9 am to 4 pm. This service picks and drops off passengers at a location of their choosing.

Anyone is eligible to ride this service, and it is available in John Day, Canyon City, Mt Vernon and Prairie City.

The deviated fixed routes have transit stops throughout John Day, with 56 stops in and around the City. Most of the intercity routes pick-up and drop-off passengers at the People Mover Bus Depot located on NE Dayton Street near at NE 1st Avenue. However, the Monument to John Day route pick-ups and drop-offs passengers at the Senior Center parking lot on NE Dayton Street south of NE 1st Avenue.

Transit users in the study area are generally less than one quarter mile from the closest bus stop (within the typical trip length for the average walking trip).

## **Roadway System**

The major characteristics of the roadways in the study area are summarized in Table 2. W Main Street provides for higher capacity motor vehicle movement through the study area. It is classified by the state as a Statewide Highway and runs east-to-west maintaining a two-lane (i.e., one through lane in each direction) to three-lane cross-section (i.e., one through lane in each direction and a center turn lane) through the study area. Posted speeds along the highway in the study area range between 25 and 35 miles per hour. It is designated as a scenic byway and freight route, and the segment near the NW 3rd Avenue intersection is within an urban business area.

Patterson Bridge Road and Bridge Street run north-to-south from W Main Street, providing the only current crossings of the John Day River. 3rd Avenue runs east-to-west through the center of John Day, connecting to W Main Street. These streets are classified as collectors and generally have lower vehicle-carrying capacity than the highway. All other roadways in the study area are local streets and primarily serve local traffic traveling to and from the highway.

**Table 2: Study Area Roadway Characteristics**

Roadway (limits)	Functional Classification*	Cross section	Special Designations
W Main Street - US 26 / US 395 (Patterson Bridge Road to 3rd Avenue)	Statewide	2 to 3 lanes	Scenic Byway; Freight Route; Urban Business Area (City limits to 3rd Avenue)
Patterson Bridge Road (US 26 / US 395 to northern terminus)	Collector	2 lanes	None
7th Avenue (Bridge Street to western terminus)	Local Street	2 lanes	None
3rd Avenue (US 26 / US 395 to Bridge Street)	Collector	2 lanes	None
Bridge Street (US 26 / US 395 to 7th Avenue)	Collector	2 lanes	None

\*Source: Oregon Highway Plan; John Day Transportation System Plan, December 1996.

## Existing Travel Conditions

To determine intersection operations, turn movement counts were conducted at study intersections during the weekday evening peak period (4 to 6 p.m.). The raw traffic count data is included in the Appendix.

### Daily Motor Vehicle Volumes

Daily motor vehicle count data was also collected at the two existing motor vehicle crossings of the John Day River, including along NW Bridge Street near the NW 7th Avenue intersection and Patterson Bridge Road north of US 26<sup>2</sup>. The count data indicates that approximately 1,266 vehicles use NW Bridge Street and 898 vehicles use Patterson Bridge Road to cross the John Day River during an average weekday. The highest number of vehicle crossings occurred during the p.m. peak hour at both locations (4:00 p.m.), with 123 crossings at NW Bridge Street and 100 at Patterson Bridge Road.

<sup>2</sup> Count data collected in December 2019.



## Intersection Operations

This section discusses the existing conditions for motor vehicles at the study intersections, including an analysis of traffic operations.

### Intersection Performance Measures

Level of service (LOS) ratings and volume-to-capacity (v/c) ratios are two commonly used performance measures that provide a good picture of intersection operations. Agencies often incorporate these performance measures into their mobility standards. Descriptions are given below:

- Level of service (LOS): A “report card” rating (A through F) based on the average delay experienced by vehicles at the intersection. LOS A, B, and C indicate conditions where traffic moves without significant delays over periods of peak hours travel demand. LOS D and E are progressively worse operation conditions. LOS F represents conditions where average vehicle delay has become excessive and demand has exceeded capacity.
- Volume-to-capacity (v/c) ratio: A decimal representation (typically between 0.00 and 1.00) of the proportion of capacity that is being used at a turn movement, approach leg, or intersection. It is determined by dividing the peak hour traffic volume by the hourly capacity of a given intersection or movement. A lower ratio indicates smooth operations and minimal delays. As the ratio approaches 1.00, congestion increases, and performance is reduced. If the ratio is greater than 1.00, the turn movement, approach leg, or intersection is oversaturated and usually results in excessive queues and long delays.

### Jurisdictional Mobility Standards

The mobility standards for the study intersections vary according to the agency of jurisdiction for each roadway. All of the study intersections are under ODOT jurisdiction.

ODOT requires a volume to capacity ratio of 0.85 or less to be maintained for highway movements and a volume to capacity ratio of 0.95 or less to be maintained for the minor approaches<sup>3</sup>.

### Existing Operating Conditions

Motor vehicle conditions were evaluated during the p.m. peak hour at the study intersections (see Table 3). During the peak hour, all study intersections operate well within the adopted mobility standards.

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<sup>3</sup> Table 6, Policy 1F, Oregon Highway Plan, Oregon Department of Transportation, Amended May 2015.

**Table 3: Existing 2019 Study Intersection Operations**

Intersection	Mobility Standard	Delay	LOS	V/C
W. Main Street / Patterson Bridge Road		13.2	A/B	0.17
W. Main Street / West Project Driveway	W. Main Street: 0.85 V/C;	-	-	-
W. Main Street / East Project Driveway	Minor Approaches: 0.95 V/C	-	-	-
W. Main Street / NW 3rd Avenue		11.1	A/B	0.10

v/c = Volume-to-Capacity Ratio of Worst Movement  
 Delay = Average Intersection Delay (sec.) of Worst Approach  
 LOS = Level of Service of Major Street/Minor Street

**Safety Analysis**

The most recent five years of available collision data (2013 – 2017) for the study intersections was obtained from Oregon Department of Transportation (ODOT) and used to evaluate the collision history<sup>4</sup>. Only one crash was recorded, at the W. Main Street / Patterson Bridge Road intersection, over the five-year period.

Crash rates at study intersections were calculated to identify problem areas in need of mitigation. The total number of crashes experienced at an intersection is typically proportional to the number of vehicles entering it, therefore, a crash rate describing the frequency of crashes per million entering vehicles (MEV) is used to determine if the number of crashes should be considered high. Using this technique, a collision rate of 1.0 MEV or greater is commonly used to identify when collision occurrences are higher than average and should be further evaluated. As shown in Table 4, crash rates calculated at all study intersections are well below this threshold, indicating the frequency of collisions is typical for the volume of traffic served.

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<sup>4</sup> ODOT reported collisions for January 1, 2013 through December 31, 2017.

**Table 4: Crash Data Summary (2013- 2017)**

Intersection	Total Crashes	Crash Type			Crash Severity			Collision Rate
		Angle or Turn	Rear End	Fixed Object	PDO*	Minor Injury	Major Injury	
W. Main Street / Patterson Bridge Road	1	0	1	0	0	1	0	0.16
W. Main Street / NW 3rd Avenue	0	0	0	0	0	0	0	0.00

\*PDO = Property Damage Only

## Section 3. Assumptions and Methodologies

This section outlines key assumptions and methodologies that were used to analyze future conditions and identify any potential impacts at study intersections. Areas of interest covered in this section are trip generation, trip distribution and background traffic growth.

### Project Description

The proposed project will consist of a 60-room hotel and 6,500 square foot conference center. The proposed site is located south of the John Day River along W. Main Street, between Patterson Bridge Road and NW 3<sup>rd</sup> Avenue. The site plan can be seen in Figure 1.

**Figure 1: Proposed Site Plan**



Image Source: Walker

### Site Access

The project site has two driveways to W. Main Street. Both driveways will remain open and be improved to current standards to provide access to the site. The western most driveway is proposed to remain in the current location and be right-out access only, while the eastern driveway will be shifted to the west approximately 300 feet and provide full access. W. Main Street is classified as a statewide highway with a posted speed of 35 mph adjacent to the project site. The access spacing

standard for a roadway of this type is 500 feet<sup>5</sup>. The existing site access points that will remain open to W. Main Street would be approximately 525 feet east, and 1,000 feet west of the nearest driveways, and spaced approximately 500 from each other, complying with the spacing standard.

### **Sight Distance Review**

The sight triangle at intersections should be clear of objects (large signs, landscaping, parked cars, etc.) that could potentially limit vehicle sight distance. In addition, all proposed accesses should meet AASHTO sight distance requirements as measured from 15 feet back from the edge of pavement<sup>6</sup>.

The eastern driveway with full access to W. Main Street requires a minimum of 390 feet of sight distance, while the western driveway with right-out only movements would require a minimum of 335 feet of sight distance based on an assumed 35-mph design speed. Preliminary sight distance evaluation from the eastern driveway indicates that it would be expected to provide sight distance of approximately 650 feet looking to the west and 580 feet looking to the east. Preliminary sight distance evaluation from the western driveway indicates that it would be expected to provide sight distance of approximately 1,000 feet looking to the east (this driveway is proposed to be right-out access only).

Prior to occupancy, sight distance at all access points will need to be verified, documented, and stamped by a registered professional Civil or Traffic Engineer licensed in the State of Oregon.

### **Internal Site Circulation**

Access to the site is proposed via one full-access driveway to W. Main Street, with another driveway for right-out access only. Parking will be primarily located on the south side of the loop road connecting the two driveways, with some additional parking spots located on the north side of the John Day River accessed via the 7<sup>th</sup> Street extension. Vehicles will enter the site through the eastern driveway to access this parking. The internal loop road will allow full circulation between the driveways and to the conference center and hotel.

There is no existing sidewalk along the site frontage, although a four-foot shoulder is available along W. Main Street adjacent to the project site. The nearest sidewalk is located approximately 0.20 miles east of the project site on the north side of W. Main Street, with no nearby sidewalks located west of the project site. The Innovation Gateway Area Plan recommends a sidewalk on the north side of W. Main Street adjacent to the project site connecting the existing sidewalk to the east with Patterson

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<sup>5</sup> Table 14, Appendix C, Oregon Highway Plan, Oregon Department of Transportation, Amended May 2015.

<sup>6</sup> AASHTO – *Geometric Design of Highways and Streets*, 6<sup>th</sup> edition, 2011.

Bridge Road. The sidewalk on the north side is recommended to be wider than the Highway Design Manual Standard (8 feet versus 6 feet) and include a four-foot buffer.

The Innovation Gateway Area Plan also recommends a network of walkways and trails that would connect to the recommended sidewalks on W Main Street and provide a pedestrian route east of the internal loop roadway. In addition, on-site pedestrian connections will be provided between the proposed parking area and the building entrances.

## Planning Horizons

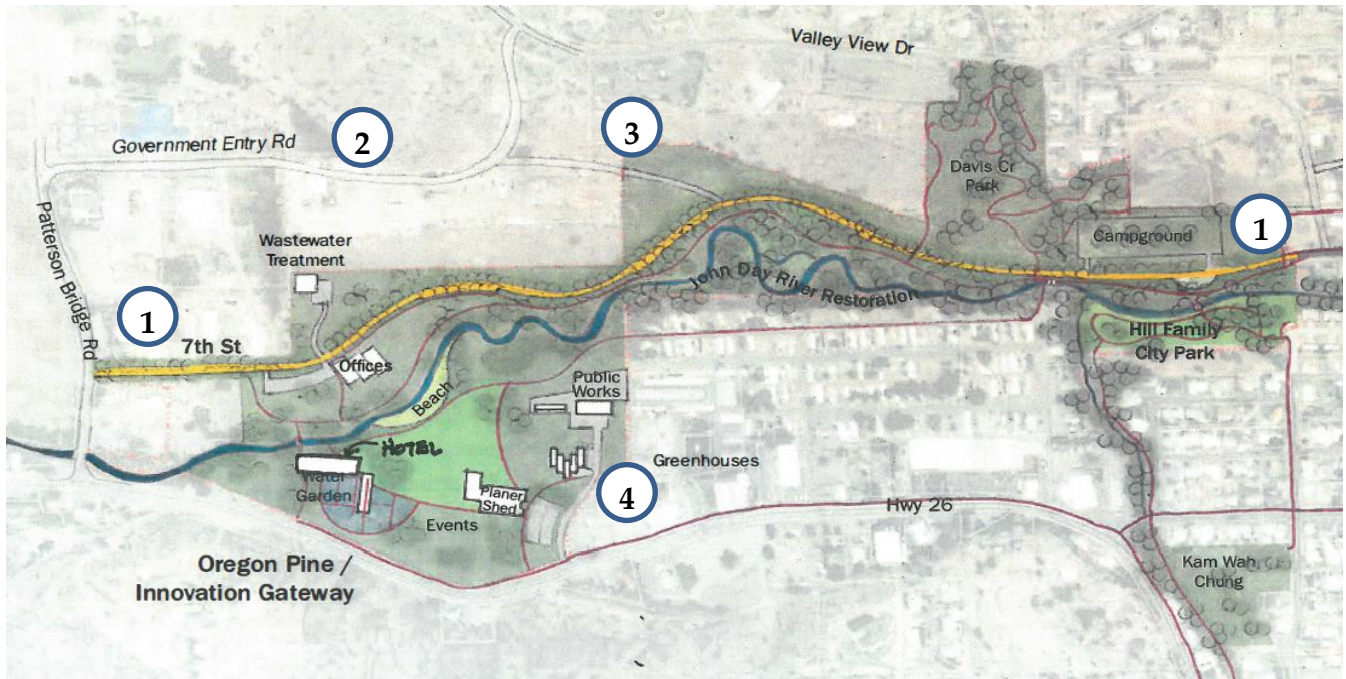
The planning horizon year selected for analysis is 2024, which represents the expected year of build-out and occupancy for the proposed project. Two scenarios were evaluated to allow for the identification of capacity constraints associated with proposed project, including:

- **2024 Background Conditions** – Existing traffic volumes plus background traffic growth.
- **2024 Project Conditions** – Existing traffic volumes plus background traffic growth, with the added traffic associated with the proposed project.

An additional sensitivity option was tested for the 2024 Project Conditions Scenario that assumed full build-out of the Innovation Gateway Area site and associated transportation network improvements. This scenario includes the proposed hotel and conference center, in addition to offices, a wastewater treatment plant, parks and open space and a campground north of the John Day river, and parks and open space, public works facility and greenhouses south of the river. The sensitivity scenario also includes the following improvements that are not associated with the currently proposed project (see Figure 2):

- 1) **7th Street** extension from Bridge Street to Patterson Bridge Road
- 2) **Government Entry Road** construction from Patterson Bridge Road to Valley View Drive
- 3) **Gateway Drive** construction from 7th Street to Government Entry Road
- 4) **Johnson Drive** construction north of W Main Street

**Figure 2: Innovation Gateway Area Improvements Assumed with Sensitivity Scenario**



### Background Traffic

In addition to the trips generated from the proposed project, a half percent background traffic growth rate was applied to existing volumes for two-years to represent traffic volumes in 2024. Although traffic volumes along W. Main Street adjacent to the project site have been steady or even declining slightly in recent years (see Table 5), as a conservative approach the background traffic growth rate would cover any in-process developments that could potentially build-out and increase traffic volumes before the completion of the proposed project in 2024.

**Table 5: Volume Data along W. Main Street**

Location	Year	AADT*
W. Main Street (US 26)	2011	4,500
Mile point 161.30	2018	4,100
<b>Annual Growth Rate (2011 to 2018)</b>		<b>-1.3%</b>

\*Source: ODOT Transportation Volume Tables, 2011 and 2018

## Trip Generation

Trip generation is the method used to estimate the number of vehicles that are added to the surrounding roadway network as a result of proposed project. The trip generation for the proposed hotel was estimated using the Hotel (ITE Code 310) land use as reported by the Institute of Transportation Engineers (ITE)<sup>7</sup>.

A 6,500 square foot conference center is also proposed for the site. This facility could be used for a variety of events (e.g., conferences, meetings, weddings). Based on typical space planning practices, the estimated maximum event capacity is calculated at approximately 433 people<sup>8</sup>. The peak vehicle trip generation assumes an 85<sup>th</sup> percentile event, which represents an event with an attendance equal or greater than 85 percent of all events held at this facility during the year. This correlates to an event with an attendance of about 368 people. For most events, it is assumed that a number of attendees will stay at the on-site hotel and walk to the conference center. For this analysis, it is assumed that 25 percent of the event attendees will occupy on-site hotel rooms, and the remaining event attendees would drive to the location.

Auto occupancy rates and arrival and departure patterns were used to develop expected vehicle trip generation rates for the conference center. Most of the trips generated by the facility are expected to occur outside of the weekday evening peak hour, as most events will likely have a start and ending time outside of the peak hour. For the trip generation calculations, it was assumed that 50 percent of the event attendees driving to the conference center would arrive or leave during the weekday evening peak hour, with an expected vehicle occupancy rate of 2.2 persons per vehicle<sup>9</sup>. Based on these estimates, approximately 63 total vehicle trips would be expected to be generated by the conference center during the weekday evening peak hour.

Table 6 summarizes the expected trip generation for the proposed project. As shown, the proposed site is expected to generate approximately 99 (56 in, 43 out) p.m. peak hour trips.

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<sup>7</sup> *Trip Generation Manual*, Institute of Transportation Engineers, 10<sup>th</sup> Edition.

<sup>8</sup> Based on an average density of 15 square feet per guest.

<sup>9</sup> 2009 National Household Travel Survey, Summary of Household Trends, U.S. Department of Transportation Federal Highway Administration



**Table 6: Trip Generation for the Proposed Project**

Land Use	Trip Generation Source	Land Use Size	PM Peak Hour		
			In	Out	Total
Hotel	ITE- Hotel land use (ITE Code 310)	60 rooms	18	18	36
Conference Center	Based on space planning practices, auto occupancy rates and arrival and departure patterns	6,500 square feet	38	25	63
<b>Total Proposed Project Trips</b>			<b>56</b>	<b>43</b>	<b>99</b>

**Trip Generation for Sensitivity Scenario**

The estimated trip generation for the Sensitivity Scenario was obtained from the Innovation Gateway Area Plan<sup>10</sup>. Overall, the build-out of the proposed land use assumed for the Innovation Gateway Area is expected to generate about 98 (34 in, 64 out) p.m. peak hour trips (see Table 7). These trips would be in addition to those estimated for the proposed hotel and conference center (see Table 6).

**Table 7: Trip Generation for Sensitivity Scenario**

Land Use	Trip Generation Source	Land Use Size	PM Peak Hour		
			In	Out	Total
Office	ITE- General Office Building (ITE Code 710)	42,000 square feet	7	41	48
Public Works Facility	ITE- Small Office Building (ITE Code 712)	7 employees	3	5	8
Parks and Open Spaces (i.e., pavilion, lawn, open space, beach, trails, water garden, greenhouses)	ITE- Public Park (ITE Code 411)	90 acres	15	13	28
Campground	ITE- Campground/ Recreation Vehicle Park (ITE Code 416)	50 campsites	9	5	14
<b>Total Proposed Project Trips*</b>			<b>34</b>	<b>64</b>	<b>98</b>

\*Source: John Day Innovation Gateway Area Plan

<sup>10</sup> John Day Innovation Gateway Area Plan, Technical Memo #8: Implementation and Transportation Funding. DKS Associates, September 16, 2019

## **Trip Distribution**

Trip distribution involves estimating how project generated traffic will leave and arrive at the proposed site. The trip distribution for the proposed project was estimated based on regional population distribution and current traffic patterns. It is estimated that 20 percent of the traffic would originate or end from the west along W. Main Street, 30 percent from the east along W. Main Street and 50 percent from within John Day.

## Section 4. Future Conditions

The following section summarizes the peak hour transportation operating conditions for the planning horizon year of 2024. Future traffic operating conditions were analyzed at the study intersections to determine if the transportation network can support traffic generated by the proposed project. If intersection mobility standards are not met, then mitigations may be necessary to improve network performance.

### 2024 Background Conditions Intersection Operations

Table 8 shows the future 2024 intersection operations at study intersections, without the proposed project. As shown, the background traffic growth is expected to have little impact on traffic operations. All study intersections are expected to operate with a v/c ratio of 0.18 or better.

Table 8: 2024 Background Conditions Study Intersection Operations				
Intersection	Mobility Standard	Delay	LOS	V/C
W. Main Street / Patterson Bridge Road	W. Main Street: 0.85 V/C; Minor Approaches: 0.95 V/C	13.4	A/B	0.18
W. Main Street / West Project Driveway		-	-	-
W. Main Street / East Project Driveway		-	-	-
W. Main Street / NW 3rd Avenue		11.2	A/B	0.10

v/c = Volume-to-Capacity Ratio of Worst Movement  
 Delay = Average Intersection Delay (sec.) of Worst Approach  
 LOS = Level of Service of Major Street/Minor Street

### 2024 Project Conditions Intersection Operations

The 2024 project conditions peak hour operations at study intersection are shown in Table 9. As shown, the added traffic associated with the proposed project is expected to have little impact on traffic operations when compared to the background conditions without the project (see Table 8 earlier in this document). All study intersections are still expected to operate with a v/c ratio of 0.22 or better.

**Table 9: 2024 Project Conditions Study Intersection Operations**

Intersection	Mobility Standard	Delay	LOS	V/C
W. Main Street / Patterson Bridge Road		13.7	A/B	0.19
W. Main Street / West Project Driveway	W. Main Street: 0.85 V/C; Minor	10.0	A/B	0.22
W. Main Street / East Project Driveway	Approaches: 0.95 V/C	15.3	A/C	0.22
W. Main Street / NW 3rd Avenue		11.7	A/B	0.13

v/c = Volume-to-Capacity Ratio of Worst Movement  
 Delay = Average Intersection Delay (sec.) of Worst Approach  
 LOS = Level of Service of Major Street/Minor Street

**Innovation Gateway Area Sensitivity Scenario**

The proposed hotel and conference center only represent some of the proposed land use assumed for the Innovation Gateway Area. Additional planned uses include offices, a wastewater treatment plant, parks and open space and a campground north of the John Day river, and parks and open space, public works facility and greenhouses south of the river. Therefore, to ensure the future roadway network can accommodate the potential growth, the future volumes and study intersection operations under the 2024 Project Conditions were tested with the assumed full build-out of the Innovation Gateway Area site and associated transportation network improvements (see the summary of improvements earlier in this document).

As shown in Table 10, the traffic associated with the assumed full build-out of the Innovation Gateway Area site and rerouted traffic associated with the transportation network improvements is expected to have little impact on intersection operations when compared to the scenario without them. The change to study intersection operations is mostly a result of the additional trips associated with the full build-out of the Innovation Gateway Area site.

**Table 10: 2024 Project Conditions Study Intersection Operations**

Intersection	Mobility Standard	Delay	LOS	V/C
W. Main Street / Patterson Bridge Road		16.3	A/C	0.31
W. Main Street / West Project Driveway	W. Main Street: 0.85 V/C; Minor	10.1	A/B	0.24
W. Main Street / East Project Driveway	Approaches: 0.95 V/C	16.4	A/C	0.24
W. Main Street / NW 3rd Avenue		11.8	A/B	0.12

v/c = Volume-to-Capacity Ratio of Worst Movement  
 Delay = Average Intersection Delay (sec.) of Worst Approach  
 LOS = Level of Service of Major Street/Minor Street

### Turn Lane Warrant Analysis

A left turn lane warrant analysis was reviewed at the Patterson Bridge Road and the full access site driveway intersections with W. Main Street using 2024 project condition peak hour volumes. The analysis found the eastbound left-turn lane on W. Main Street would not be warranted by 2024 at these intersections given that the left-turn volume is 20 vehicles or less during the p.m. peak hour. However, the Innovation Gateway Area Plan recommended left turn lanes at both intersections and they are close to meeting the warrant with 2024 project volumes. With additional background traffic growth, the warrants could be triggered beyond the 2024 horizon year.

## Section 5. Recommendations

The following summarizes the key findings and recommendations related to the proposed project.

### Motor Vehicle Improvements

The proposed project will not have an impact to the study intersection operations based on projected growth. However, a few improvements are recommended to support the proposed project.

#### Left Turn Lanes

A left turn lane warrant analysis was reviewed at the Patterson Bridge Road and the full access site driveway intersections with W. Main Street using 2024 project condition p.m. peak hour volumes. While the analysis found the eastbound left-turn lane would not be warranted by 2024, both intersections are close to meeting the left turn lane warrant and with additional background traffic growth could trigger the warrants beyond the 2024 horizon year. The Innovation Gateway Area Plan recommended left turn lanes at both intersections.

#### Sight Distance

Prior to occupancy, sight distance at the project driveway will need to be verified, documented, and stamped by a registered professional Civil or Traffic Engineer licensed in the State of Oregon.

### Pedestrian/Bicycle Improvements

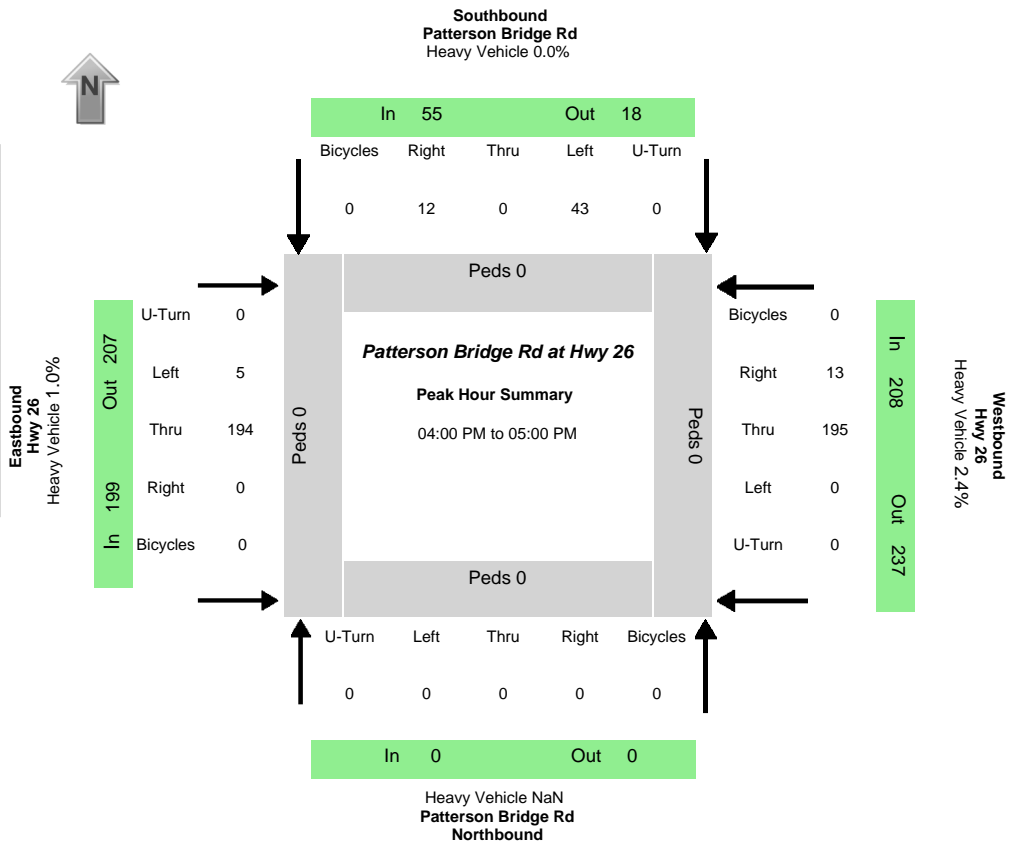
There is no existing sidewalk along the site frontage, although a four-foot shoulder is available along W. Main Street adjacent to the project site. The Innovation Gateway Area Plan recommends a sidewalk on the north side of W. Main Street adjacent to the project site connecting the existing sidewalk to the east with Patterson Bridge Road. The sidewalk on the north side is recommended to be wider than the Highway Design Manual Standard (8 feet versus 6 feet) and include a four-foot buffer.

The proposed site should provide sidewalk connections to the proposed network of walkways and trails to the north and east of the project site, to the recommended sidewalks on W Main Street and provide a pedestrian route east of the internal loop roadway. In addition, on-site pedestrian connections should be provided between the proposed parking area and the building entrances.

# Appendix

Data Provided by K-D-N.com 503-594-4224

N/S street	<b>Patterson Bridge Rd</b>
E/W street	<b>Hwy 26</b>
City, State	John Day OR
Site Notes	
Location	44.420258 - -118.974304
Start Date	Tuesday, December 17, 2019
Start Time	04:00:00 PM
Weather	
Study ID #	
<b>Peak Hour Start</b>	<b>04:00:00 PM</b>
<b>Peak 15 Min Start</b>	<b>04:00:00 PM</b>
<b>PHF (15-Min Int)</b>	<b>0.70</b>



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
0	0	0	0	43	0	12	0	5	194	0	0	0	195	13	0	0	55	199	208	0	18	207	237
Percent Heavy Vehicles																							
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	0.0%	0.0%	0.0%	2.1%	7.7%	0.0%	NaN	0.0%	1.0%	2.4%	NaN	5.6%	1.9%	0.8%

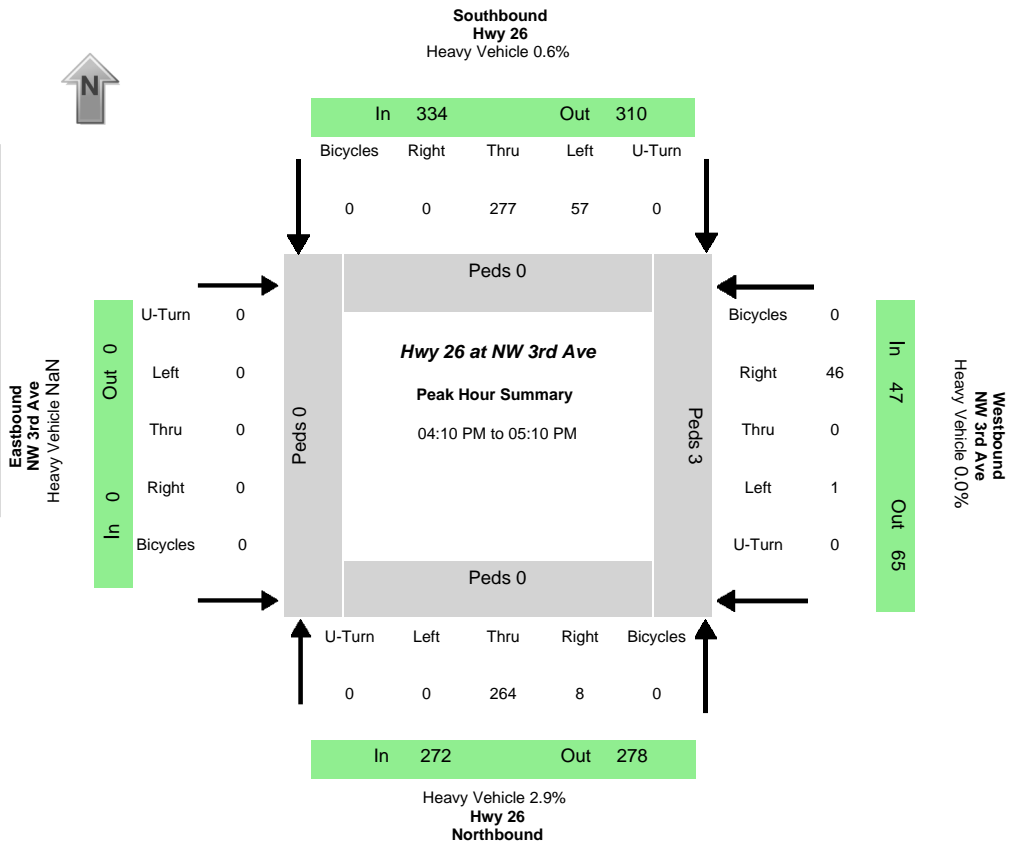
PHV - Bicycles												PHV - Pedestrians									
Northbound				Southbound				Eastbound				Westbound				Sum	in Crosswalk				Sum
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		NB	SB	EB	WB	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

All Vehicle Volumes																		
Time	Northbound Patterson Bridge Rd				Southbound Patterson Bridge Rd				Eastbound Hwy 26				Westbound Hwy 26				15 Min Sum	1 HR Sum
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		
04:00:00 PM	0	0	0	0	7	0	1	0	0	36	0	0	0	31	0	0		
04:05:00 PM	0	0	0	0	5	0	1	0	0	15	0	0	0	19	2	0		
04:10:00 PM	0	0	0	0	3	0	0	0	0	24	0	0	0	21	0	0	165	
04:15:00 PM	0	0	0	0	3	0	0	0	3	11	0	0	0	7	2	0	116	
04:20:00 PM	0	0	0	0	3	0	2	0	0	9	0	0	0	17	1	0	106	
04:25:00 PM	0	0	0	0	3	0	2	0	0	11	0	0	0	14	3	0	91	
04:30:00 PM	0	0	0	0	3	0	1	0	0	19	0	0	0	15	0	0	103	
04:35:00 PM	0	0	0	0	4	0	1	0	0	7	0	0	0	16	2	0	101	
04:40:00 PM	0	0	0	0	3	0	3	0	0	11	0	0	0	16	0	0	101	
04:45:00 PM	0	0	0	0	2	0	0	0	1	16	0	0	0	20	1	0	103	
04:50:00 PM	0	0	0	0	3	0	1	0	0	17	0	0	0	11	0	0	105	
04:55:00 PM	0	0	0	0	4	0	0	0	1	18	0	0	0	8	2	0	105	462
05:00:00 PM	0	0	0	0	6	0	0	0	1	17	0	0	0	13	1	0	103	425
05:05:00 PM	0	0	0	0	4	0	2	0	1	18	0	0	0	18	0	0	114	426
05:10:00 PM	0	0	0	0	2	0	1	0	1	9	0	0	0	14	0	0	108	405
05:15:00 PM	0	0	0	0	3	0	0	0	1	11	0	0	0	27	1	0	113	422
05:20:00 PM	0	0	0	0	2	0	1	0	0	10	0	0	0	18	1	0	102	422
05:25:00 PM	0	0	0	0	2	0	0	0	0	15	0	0	0	22	1	0	115	429
05:30:00 PM	0	0	0	0	1	0	1	0	1	10	0	0	0	5	1	0	91	410
05:35:00 PM	0	0	0	0	1	0	0	0	0	8	0	0	0	7	0	0	75	396
05:40:00 PM	0	0	0	0	1	0	0	0	0	11	0	0	0	10	1	0	58	386
05:45:00 PM	0	0	0	0	0	0	1	0	1	6	0	0	0	7	1	0	55	362
05:50:00 PM	0	0	0	0	0	0	1	0	0	9	0	0	0	9	0	0	58	349
05:55:00 PM	0	0	0	0	1	0	0	0	0	5	0	0	0	7	0	0	48	329



Data Provided by K-D-N.com 503-594-4224

N/S street	Hwy 26
E/W street	NW 3rd Ave
City, State	John Day OR
Site Notes	
Location	44.419346 - -118.958715
Start Date	Tuesday, December 17, 2019
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:10:00 PM
Peak 15 Min Start	04:55:00 PM
PHF (15-Min Int)	0.84



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
0	264	8	0	57	277	0	0	0	0	0	0	1	0	46	0	272	334	0	47	278	310	0	65
Percent Heavy Vehicles																							
0.0%	3.0%	0.0%	0.0%	0.0%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.9%	0.6%	NaN	0.0%	0.7%	2.6%	NaN	0.0%

PHV - Bicycles												PHV - Pedestrians									
Northbound				Southbound				Eastbound				Westbound				in Crosswalk					
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3

Time	Northbound Hwy 26				Southbound Hwy 26				Eastbound NW 3rd Ave				Westbound NW 3rd Ave				15 Min Sum	1 HR Sum
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		
04:00:00 PM	0	31	1	0	3	29	0	0	0	0	0	0	2	0	4	0		
04:05:00 PM	0	22	0	0	2	32	0	0	0	0	0	0	0	0	3	0		
04:10:00 PM	0	22	0	0	6	19	0	0	0	0	0	0	1	0	4	0	181	
04:15:00 PM	0	18	1	0	4	27	0	0	0	0	0	0	0	0	5	0	166	
04:20:00 PM	0	16	0	0	4	18	0	0	0	0	0	0	0	0	2	0	147	
04:25:00 PM	0	24	0	0	8	22	0	0	0	0	0	0	0	0	4	0	153	
04:30:00 PM	0	18	2	0	4	20	0	0	0	0	0	0	0	0	3	0	145	
04:35:00 PM	0	22	0	0	2	24	0	0	0	0	0	0	0	0	7	0	160	
04:40:00 PM	0	23	1	0	5	16	0	0	0	0	0	0	0	0	3	0	150	
04:45:00 PM	0	28	0	0	3	16	0	0	0	0	0	0	0	0	3	0	153	
04:50:00 PM	0	19	1	0	4	27	0	0	0	0	0	0	0	0	3	0	152	
04:55:00 PM	0	28	0	0	4	28	0	0	0	0	0	0	0	0	2	0	166	650
05:00:00 PM	0	18	0	0	3	32	0	0	0	0	0	0	0	0	3	0	172	636
05:05:00 PM	0	28	3	0	10	28	0	0	0	0	0	0	0	0	7	0	194	653
05:10:00 PM	0	12	0	0	4	20	0	0	0	0	0	0	0	0	5	0	173	642
05:15:00 PM	0	25	2	0	7	18	0	0	0	0	0	0	0	0	2	0	171	641
05:20:00 PM	0	19	0	0	3	20	0	0	0	0	0	0	0	0	6	0	143	649
05:25:00 PM	0	21	0	0	5	18	0	0	0	0	0	0	1	0	4	0	151	640
05:30:00 PM	0	12	0	0	6	22	0	0	0	0	0	0	0	0	1	0	138	634
05:35:00 PM	0	14	0	0	7	18	0	0	0	0	0	0	0	0	3	0	132	621
05:40:00 PM	0	16	1	0	2	19	0	0	0	0	0	0	0	0	3	0	124	614
05:45:00 PM	0	13	0	0	5	12	0	0	0	0	0	0	0	0	3	0	116	597
05:50:00 PM	0	13	0	0	2	15	0	0	0	0	0	0	0	0	0	0	104	573
05:55:00 PM	1	14	0	0	1	12	0	0	0	0	0	0	0	0	1	0	92	540



**KEY DATA NETWORK**

K-D-N.com  
 Tualatin, OR 97062  
 503-804-3294

Patterson Bridge Rd north of Hwy 26  
 Date Start: 12/17/2019  
 Latitude: 44' 25.2436 North  
 Longitude: 118' 58.4583 West

Start Time	12/18/2019 Wed	SB	NB	Combined Total	
12:00 AM		1	1	2	█
01:00		1	3	4	█
02:00		3	5	8	█
03:00		4	3	7	█
04:00		8	2	10	█
05:00		2	13	15	█
06:00		8	53	61	█
07:00		19	45	64	█
08:00		23	26	49	█
09:00		27	26	53	█
10:00		34	32	66	█
11:00		51	36	87	█
12:00 PM		38	47	85	█
01:00		35	44	79	█
02:00		35	28	63	█
03:00		44	34	78	█
04:00		66	34	100	█
05:00		35	12	47	█
06:00		6	4	10	█
07:00		2	0	2	█
08:00		2	1	3	█
09:00		0	2	2	█
10:00		2	0	2	█
11:00		0	1	1	█
<b>Total</b>		<b>446</b>	<b>452</b>	<b>898</b>	
<b>Percent</b>		<b>49.7%</b>	<b>50.3%</b>		

**KEY DATA NETWORK**

K-D-N.com  
 Tualatin, OR 97062  
 503-804-3294

Patterson Bridge Rd north of Hwy 26  
 Date Start: 12/17/2019  
 Latitude: 44' 25.2436 North  
 Longitude: 118' 58.4583 West

Start Time	12/19/2019 Thu	SB	NB	Combined Total	
12:00 AM		1	1	2	█
01:00		1	2	3	█
02:00		5	3	8	█
03:00		3	0	3	█
04:00		2	1	3	█
05:00		9	20	29	█
06:00		10	46	56	█
07:00		21	52	73	█
08:00		32	32	64	█
09:00		21	35	56	█
10:00		7	15	22	█
11:00		*	*	*	
12:00 PM		*	*	*	
01:00		*	*	*	
02:00		*	*	*	
03:00		*	*	*	
04:00		*	*	*	
05:00		*	*	*	
06:00		*	*	*	
07:00		*	*	*	
08:00		*	*	*	
09:00		*	*	*	
10:00		*	*	*	
11:00		*	*	*	
<b>Total</b>		<b>112</b>	<b>207</b>	<b>319</b>	
<b>Percent</b>		<b>35.1%</b>	<b>64.9%</b>		
<b>Grand Total</b>		<b>677</b>	<b>716</b>		
<b>Percentage</b>		<b>48.6%</b>	<b>51.4%</b>		
<b>ADT</b>		<b>ADT 892</b>		<b>AADT 892</b>	

**KEY DATA NETWORK**

K-D-N.com  
 Tualatin, OR 97062  
 503-804-3294

Patterson Bridge Rd north of Hwy 26  
 Date Start: 17-Dec-19  
 Latitude: 44' 25.2436 North  
 Longitude: 118' 58.4583 West

SB

Start Time	1	21	23	25	27	29	31	33	35	37	39	41	43	45	Total	85th Percent	95th Percent
	20	22	24	26	28	30	32	34	36	38	40	42	44	999			
12/17/19	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	<b>34</b>	<b>12</b>	<b>7</b>	<b>2</b>	0	0	0	0	0	0	0	0	0	0	<b>55</b>	22	23
17:00	27	7	3	1	1	0	0	0	0	0	0	0	0	0	39	21	24
18:00	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	17	19
19:00	12	2	0	0	0	0	0	0	0	0	0	0	0	0	14	19	21
20:00	4	2	0	0	0	0	0	0	0	0	0	0	0	0	6	21	21
21:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	21	21
22:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	21	21
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
Total	80	25	10	3	1	0	0	0	0	0	0	0	0	0	119		
Percent	67.2%	21.0%	8.4%	2.5%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak Vol.																	
PM Peak Vol.	16:00	16:00	16:00	16:00	17:00										16:00		
	34	12	7	2	1										55		



**KEY DATA NETWORK**

K-D-N.com  
 Tualatin, OR 97062  
 503-804-3294

Patterson Bridge Rd north of Hwy 26  
 Date Start: 17-Dec-19  
 Latitude: 44' 25.2436 North  
 Longitude: 118' 58.4583 West

SB

Start Time	1	21	23	25	27	29	31	33	35	37	39	41	43	45	Total	85th Percent	95th Percent
	20	22	24	26	28	30	32	34	36	38	40	42	44	999			
12/19/19	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	17	19
01:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	17	19
02:00	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5	17	19
03:00	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	17	19
04:00	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	17	19
05:00	8	1	0	0	0	0	0	0	0	0	0	0	0	0	9	19	21
06:00	10	0	0	0	0	0	0	0	0	0	0	0	0	0	10	17	19
07:00	19	2	0	0	0	0	0	0	0	0	0	0	0	0	21	18	20
08:00	<b>26</b>	<b>3</b>	2	0	1	0	0	0	0	0	0	0	0	0	<b>32</b>	20	23
09:00	14	3	<b>4</b>	0	0	0	0	0	0	0	0	0	0	0	21	22	23
10:00	5	1	0	<b>1</b>	0	0	0	0	0	0	0	0	0	0	7	21	25
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	94	10	6	1	1	0	0	0	0	0	0	0	0	0	112		
Percent	83.9%	8.9%	5.4%	0.9%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	09:00	10:00	08:00												
Vol.	26	3	4	1	1												32
PM Peak																	
Vol.																	
Grand Total	479	119	64	11	4	0	0	0	0	0	0	0	0	0	677		
Percent	70.8%	17.6%	9.5%	1.6%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 4 MPH  
 50th Percentile : 14 MPH  
 85th Percentile : 21 MPH  
 95th Percentile : 23 MPH

Statistics  
 10 MPH Pace Speed : 15-24 MPH  
 Number in Pace : 327  
 Percent in Pace : 48.3%  
 Number of Vehicles > 25 MPH : 9  
 Percent of Vehicles > 25 MPH : 1.4%  
 Mean Speed(Average) : 14 MPH

**KEY DATA NETWORK**

K-D-N.com  
 Tualatin, OR 97062  
 503-804-3294

Patterson Bridge Rd north of Hwy 26  
 Date Start: 17-Dec-19  
 Latitude: 44' 25.2436 North  
 Longitude: 118' 58.4583 West

NB

Start Time	1	21	23	25	27	29	31	33	35	37	39	41	43	45	Total	85th Percent	95th Percent
	20	22	24	26	28	30	32	34	36	38	40	42	44	999			
12/17/19	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	<b>13</b>	<b>5</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>23</b>	<b>23</b>	<b>25</b>
17:00	11	3	1	1	0	0	0	0	0	0	0	0	0	0	16	21	24
18:00	6	0	2	0	0	0	0	0	0	0	0	0	0	0	8	22	23
19:00	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6	17	19
20:00	0	1	1	1	0	0	0	0	0	0	0	0	0	0	3	25	25
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	21	21
Total	36	10	7	3	1	0	0	0	0	0	0	0	0	0	57		
Percent	63.2%	17.5%	12.3%	5.3%	1.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak Vol.																	
PM Peak Vol.	16:00 13	16:00 5	16:00 3	16:00 1	16:00 1										16:00 23		





**KEY DATA NETWORK**

K-D-N.com  
 Tualatin, OR 97062  
 503-804-3294

Patterson Bridge Rd north of Hwy 26  
 Date Start: 17-Dec-19  
 Latitude: 44' 25.2436 North  
 Longitude: 118' 58.4583 West

NB

Start Time	1	21	23	25	27	29	31	33	35	37	39	41	43	45	Total	85th Percent	95th Percent
	20	22	24	26	28	30	32	34	36	38	40	42	44	999			
12/19/19	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	17	19
01:00	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	17	19
02:00	2	0	1	0	0	0	0	0	0	0	0	0	0	0	3	23	23
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
04:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	17	19
05:00	14	3	3	0	0	0	0	0	0	0	0	0	0	0	20	22	23
06:00	25	14	3	2	2	0	0	0	0	0	0	0	0	0	46	22	25
07:00	30	11	10	1	0	0	0	0	0	0	0	0	0	0	52	22	23
08:00	19	9	4	0	0	0	0	0	0	0	0	0	0	0	32	21	23
09:00	25	7	3	0	0	0	0	0	0	0	0	0	0	0	35	21	22
10:00	11	2	0	1	1	0	0	0	0	0	0	0	0	0	15	21	26
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	130	46	24	4	3	0	0	0	0	0	0	0	0	0	207		
Percent	62.8%	22.2%	11.6%	1.9%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	06:00	07:00	06:00	06:00										07:00		
Vol.	30	14	10	2	2										52		
PM Peak																	
Vol.																	
Grand Total	446	151	76	29	12	2	0	0	0	0	0	0	0	0	716		
Percent	62.3%	21.1%	10.6%	4.1%	1.7%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 4 MPH  
 50th Percentile : 16 MPH  
 85th Percentile : 22 MPH  
 95th Percentile : 24 MPH

Statistics  
 10 MPH Pace Speed : 15-24 MPH  
 Number in Pace : 361  
 Percent in Pace : 50.4%  
 Number of Vehicles > 25 MPH : 29  
 Percent of Vehicles > 25 MPH : 4.0%  
 Mean Speed(Average) : 15 MPH



**KEY DATA NETWORK**

K-D-N.com  
 Tualatin, OR 97062  
 503-804-3294

NW Bridge St south of 7th  
 Date Start: 12/17/2019  
 Latitude: 44' 25.3402 North  
 Longitude: 118' 57.2681 West

Start Time	12/18/2019 Wed	NB	SB	Combined Total	
12:00 AM		1	2	3	█
01:00		1	0	1	█
02:00		0	0	0	
03:00		1	0	1	█
04:00		3	2	5	█
05:00		1	3	4	█
06:00		8	14	22	█
07:00		7	28	35	█
08:00		13	57	70	█
09:00		21	31	52	█
10:00		38	35	73	█
11:00		35	41	76	█
12:00 PM		48	42	90	█
01:00		60	54	114	█
02:00		55	50	105	█
03:00		43	60	103	█
04:00		62	61	123	█
05:00		51	41	92	█
06:00		70	43	113	█
07:00		25	38	63	█
08:00		34	18	52	█
09:00		22	18	40	█
10:00		10	8	18	█
11:00		6	5	11	█
<b>Total</b>		<b>615</b>	<b>651</b>	<b>1266</b>	
<b>Percent</b>		<b>48.6%</b>	<b>51.4%</b>		

**KEY DATA NETWORK**

K-D-N.com  
 Tualatin, OR 97062  
 503-804-3294

NW Bridge St south of 7th  
 Date Start: 12/17/2019  
 Latitude: 44' 25.3402 North  
 Longitude: 118' 57.2681 West

Start Time	12/19/2019 Thu	NB	SB	Combined Total	
12:00 AM		1	1	2	█
01:00		1	0	1	█
02:00		1	0	1	█
03:00		1	3	4	█
04:00		1	0	1	█
05:00		1	1	2	█
06:00		10	17	27	██████████
07:00		5	24	29	██████████
08:00		20	69	89	████████████████████
09:00		34	39	73	██████████████████
10:00		30	50	80	██████████████████
11:00		21	20	41	██████████
12:00 PM		*	*	*	
01:00		*	*	*	
02:00		*	*	*	
03:00		*	*	*	
04:00		*	*	*	
05:00		*	*	*	
06:00		*	*	*	
07:00		*	*	*	
08:00		*	*	*	
09:00		*	*	*	
10:00		*	*	*	
11:00		*	*	*	
<b>Total</b>		<b>126</b>	<b>224</b>	<b>350</b>	
<b>Percent</b>		<b>36.0%</b>	<b>64.0%</b>		
<b>Grand Total</b>		<b>956</b>	<b>1054</b>		
<b>Percentage</b>		<b>47.6%</b>	<b>52.4%</b>		
<b>ADT</b>		<b>ADT 1,272</b>		<b>AADT 1,272</b>	

**KEY DATA NETWORK**

K-D-N.com  
 Tualatin, OR 97062  
 503-804-3294

NW Bridge St south of 7th  
 Date Start: 17-Dec-19  
 Latitude: 44' 25.3402 North  
 Longitude: 118' 57.2681 West

NB

Start Time	1	21	23	25	27	29	31	33	35	37	39	41	43	45	Total	85th Percent	95th Percent
12/17/19	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	40	7	1	0	0	0	0	0	0	0	0	0	0	0	48	20	21
18:00	<b>43</b>	<b>14</b>	4	1	0	<b>1</b>	0	0	0	0	0	0	0	0	<b>63</b>	21	23
19:00	19	11	<b>6</b>	<b>2</b>	0	0	0	0	0	0	0	0	0	0	38	22	24
20:00	22	4	1	1	0	0	0	0	0	0	0	0	0	0	28	20	23
21:00	15	7	2	1	0	0	0	0	0	0	0	0	0	0	25	21	23
22:00	8	1	2	0	0	0	0	0	0	0	0	0	0	0	11	22	23
23:00	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	21	21
Total	148	45	16	5	0	1	0	0	0	0	0	0	0	0	215		
Percent	68.8%	20.9%	7.4%	2.3%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak Vol.																	
PM Peak Vol.	18:00	18:00	19:00	19:00		18:00									18:00		
	43	14	6	2		1									63		

**KEY DATA NETWORK**

K-D-N.com  
 Tualatin, OR 97062  
 503-804-3294

NW Bridge St south of 7th  
 Date Start: 17-Dec-19  
 Latitude: 44' 25.3402 North  
 Longitude: 118' 57.2681 West

NB

Start Time	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	999	Total	85th Percent	95th Percent
12/18/19	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	21	21	
01:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	23	23	
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*	
03:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	27	27	
04:00	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	23	23	
05:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	17	19	
06:00	5	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	22	23	
07:00	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	21	23	
08:00	11	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	20	24	
09:00	20	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	17	19	
10:00	18	11	5	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	23	26	
11:00	24	6	1	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	21	25	
12 PM	21	14	8	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	23	25	
13:00	21	21	11	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60	23	25	
14:00	32	9	10	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	55	23	24	
15:00	26	10	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43	22	23	
16:00	43	11	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	62	21	23	
17:00	37	12	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51	21	21	
18:00	45	14	9	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70	22	23	
19:00	20	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	20	21	
20:00	21	5	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	22	23	
21:00	18	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	20	22	
22:00	9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	18	21	
23:00	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	21	21	
<b>Total</b>	<b>381</b>	<b>128</b>	<b>71</b>	<b>26</b>	<b>7</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>615</b>			
Percent	62.0%	20.8%	11.5%	4.2%	1.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				
AM Peak	11:00	10:00	10:00	11:00	03:00	10:00																						10:00		
Vol.	24	11	5	3	1	1																						38		
PM Peak	18:00	13:00	13:00	13:00	12:00																							18:00		
Vol.	45	21	11	5	2																							70		

**KEY DATA NETWORK**

K-D-N.com  
 Tualatin, OR 97062  
 503-804-3294

NW Bridge St south of 7th  
 Date Start: 17-Dec-19  
 Latitude: 44' 25.3402 North  
 Longitude: 118' 57.2681 West

NB

Start Time	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	999	Total	85th Percent	95th Percent
12/19/19	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	17	19	
01:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	17	19	
02:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	23	23	
03:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	17	19	
04:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	17	19	
05:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	21	21	
06:00	8	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	23	27	
07:00	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	21	21	
08:00	15	3	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	21	25	
09:00	20	9	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	21	24	
10:00	20	5	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	22	23	
11:00	16	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	21	22	
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	86	23	11	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	126			
Percent	68.3%	18.3%	8.7%	2.4%	1.6%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%					
AM Peak	09:00	09:00	10:00	08:00	06:00	10:00																					09:00			
Vol.	20	9	4	2	1	1																					34			
PM Peak																														
Vol.																														
Grand Total	615	196	98	34	9	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	956			
Percent	64.3%	20.5%	10.3%	3.6%	0.9%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%					

15th Percentile : 4 MPH  
 50th Percentile : 15 MPH  
 85th Percentile : 22 MPH  
 95th Percentile : 23 MPH

Statistics  
 10 MPH Pace Speed : 15-24 MPH  
 Number in Pace : 478  
 Percent in Pace : 50.0%  
 Number of Vehicles > 35 MPH : 0  
 Percent of Vehicles > 35 MPH : 0.0%  
 Mean Speed(Average) : 15 MPH



**KEY DATA NETWORK**

K-D-N.com  
 Tualatin, OR 97062  
 503-804-3294

NW Bridge St south of 7th  
 Date Start: 17-Dec-19  
 Latitude: 44' 25.3402 North  
 Longitude: 118' 57.2681 West

SB

Start Time	1	21	23	25	27	29	31	33	35	37	39	41	43	45	Total	85th Percent	95th Percent
12/17/19	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	32	9	1	0	1	0	0	0	0	0	0	0	0	0	43	21	21
18:00	40	6	4	0	0	0	0	0	0	0	0	0	0	0	50	20	22
19:00	25	4	3	1	0	1	0	0	0	0	0	0	0	0	34	21	24
20:00	15	1	0	0	0	0	0	0	0	0	0	0	0	0	16	18	20
21:00	17	3	5	1	0	0	0	0	0	0	0	0	0	0	26	22	23
22:00	3	1	1	1	0	0	0	0	0	0	0	0	0	0	6	24	25
23:00	2	2	0	0	0	0	0	0	0	0	0	0	0	0	4	21	21
Total	134	26	14	3	1	1	0	0	0	0	0	0	0	0	179		
Percent	74.9%	14.5%	7.8%	1.7%	0.6%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak Vol.																	
PM Peak Vol.	18:00	17:00	21:00	19:00	17:00	19:00									18:00		
	40	9	5	1	1	1									50		

**KEY DATA NETWORK**

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 Tualatin, OR 97062  
 503-804-3294

NW Bridge St south of 7th  
 Date Start: 17-Dec-19  
 Latitude: 44' 25.3402 North  
 Longitude: 118' 57.2681 West

SB

Start Time	1	21	23	25	27	29	31	33	35	37	39	41	43	45	Total	85th Percent	95th Percent
	20	22	24	26	28	30	32	34	36	38	40	42	44	999			
12/18/19	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	21	21
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
04:00	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	23	23
05:00	1	0	2	0	0	0	0	0	0	0	0	0	0	0	3	23	23
06:00	9	3	2	0	0	0	0	0	0	0	0	0	0	0	14	21	23
07:00	18	7	2	1	0	0	0	0	0	0	0	0	0	0	28	21	23
08:00	<b>45</b>	6	<b>6</b>	0	0	0	0	0	0	0	0	0	0	0	<b>57</b>	21	23
09:00	29	2	0	0	0	0	0	0	0	0	0	0	0	0	31	18	20
10:00	22	<b>10</b>	2	0	<b>1</b>	0	0	0	0	0	0	0	0	0	35	21	23
11:00	28	9	2	<b>2</b>	0	0	0	0	0	0	0	0	0	0	41	21	23
12 PM	24	<b>13</b>	3	<b>2</b>	0	0	0	0	0	0	0	0	0	0	42	21	23
13:00	31	13	<b>10</b>	0	0	0	0	0	0	0	0	0	0	0	54	22	23
14:00	36	8	4	2	0	0	0	0	0	0	0	0	0	0	50	21	23
15:00	47	12	0	1	0	0	0	0	0	0	0	0	0	0	60	20	21
16:00	<b>50</b>	8	3	0	0	0	0	0	0	0	0	0	0	0	<b>61</b>	20	21
17:00	28	11	2	0	0	0	0	0	0	0	0	0	0	0	41	21	21
18:00	30	11	2	0	0	0	0	0	0	0	0	0	0	0	43	21	21
19:00	29	6	3	0	0	0	0	0	0	0	0	0	0	0	38	21	22
20:00	13	2	2	1	0	0	0	0	0	0	0	0	0	0	18	22	24
21:00	14	2	2	0	0	0	0	0	0	0	0	0	0	0	18	21	23
22:00	5	2	1	0	0	0	0	0	0	0	0	0	0	0	8	21	23
23:00	3	1	0	0	0	0	<b>1</b>	0	0	0	0	0	0	0	5	30	31
Total	464	127	49	9	1	0	1	0	0	0	0	0	0	0	651		
Percent	71.3%	19.5%	7.5%	1.4%	0.2%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	10:00	08:00	11:00	10:00										08:00		
Vol.	45	10	6	2	1										57		
PM Peak	16:00	12:00	13:00	12:00		23:00									16:00		
Vol.	50	13	10	2		1									61		

**KEY DATA NETWORK**

K-D-N.com  
 Tualatin, OR 97062  
 503-804-3294

NW Bridge St south of 7th  
 Date Start: 17-Dec-19  
 Latitude: 44' 25.3402 North  
 Longitude: 118' 57.2681 West

SB

Start Time	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	999	Total	85th Percent	95th Percent
12/19/19	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	17	19	
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*	
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*	
03:00	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	23	23		
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*	
05:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	17	19		
06:00	11	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	21	23		
07:00	19	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	20	21		
08:00	51	13	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69	21	22		
09:00	30	5	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39	21	24		
10:00	36	11	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	21	22		
11:00	19	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	17	20		
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	170	38	14	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	224				
Percent	75.9%	17.0%	6.3%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%					
AM Peak	08:00	08:00	08:00	09:00														08:00												
Vol.	51	13	5	2														69												
PM Peak																														
Vol.																														
Grand Total	768	191	77	14	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1054				
Percent	72.9%	18.1%	7.3%	1.3%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%						

15th Percentile : 4 MPH  
 50th Percentile : 13 MPH  
 85th Percentile : 21 MPH  
 95th Percentile : 23 MPH

Statistics  
 10 MPH Pace Speed : 15-24 MPH  
 Number in Pace : 498  
 Percent in Pace : 47.2%  
 Number of Vehicles > 35 MPH : 0  
 Percent of Vehicles > 35 MPH : 0.0%  
 Mean Speed(Average) : 14 MPH

**Intersection**

Int Delay, s/veh 1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	5	195	195	15	45	15
Future Vol, veh/h	5	195	195	15	45	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	1	2	0	0	0
Mvmt Flow	7	279	279	21	64	21

**Major/Minor**

	Major1	Major2	Minor2		
Conflicting Flow All	300	0	-	0	582 289
Stage 1	-	-	-	-	289 -
Stage 2	-	-	-	-	293 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1273	-	-	-	479 755
Stage 1	-	-	-	-	765 -
Stage 2	-	-	-	-	762 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1273	-	-	-	476 755
Mov Cap-2 Maneuver	-	-	-	-	476 -
Stage 1	-	-	-	-	765 -
Stage 2	-	-	-	-	757 -

**Approach**

	EB	WB	SB
HCM Control Delay, s	0.2	0	13.2
HCM LOS			B

**Minor Lane/Major Mvmt**

	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1273	-	-	-	524
HCM Lane V/C Ratio	0.006	-	-	-	0.164
HCM Control Delay (s)	7.8	0	-	-	13.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.6

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	0	240	210	0	0	0
Future Vol, veh/h	0	240	210	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	1	2	0	0	0
Mvmt Flow	0	343	300	0	0	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	300	0	-	0	643
Stage 1	-	-	-	-	300
Stage 2	-	-	-	-	343
Critical Hdwy	4.1	-	-	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	2.2	-	-	-	3.5
Pot Cap-1 Maneuver	1273	-	-	-	441
Stage 1	-	-	-	-	756
Stage 2	-	-	-	-	723
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1273	-	-	-	441
Mov Cap-2 Maneuver	-	-	-	-	441
Stage 1	-	-	-	-	756
Stage 2	-	-	-	-	723

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1273	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

**Intersection**

Int Delay, s/veh 0

**Movement** EBL EBT WBT WBR SBL SBR

Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	0	240	210	0	0	0
Future Vol, veh/h	0	240	210	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	1	2	0	0	0
Mvmt Flow	0	343	300	0	0	0

**Major/Minor** Major1 Major2 Minor2

Conflicting Flow All	300	0	-	0	643	300
Stage 1	-	-	-	-	300	-
Stage 2	-	-	-	-	343	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1273	-	-	-	441	744
Stage 1	-	-	-	-	756	-
Stage 2	-	-	-	-	723	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1273	-	-	-	441	744
Mov Cap-2 Maneuver	-	-	-	-	441	-
Stage 1	-	-	-	-	756	-
Stage 2	-	-	-	-	723	-

**Approach** EB WB SB

HCM Control Delay, s 0 0 0  
 HCM LOS A

**Minor Lane/Major Mvmt** EBL EBT WBT WBR SBLn1

Capacity (veh/h)	1273	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

**Intersection**

Int Delay, s/veh 1.6

**Movement** WBL WBR SEL SET NWT NWR

Lane Configurations	Y		Y	↑	↑	
Traffic Vol, veh/h	5	50	60	280	265	10
Future Vol, veh/h	5	50	60	280	265	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	0	1	0	3	0
Mvmt Flow	6	60	71	333	315	12

**Major/Minor** Minor2 Major1 Major2

Conflicting Flow All	797	321	327	0	-	0
Stage 1	321	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	358	724	1238	-	-	-
Stage 1	740	-	-	-	-	-
Stage 2	629	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	337	724	1238	-	-	-
Mov Cap-2 Maneuver	337	-	-	-	-	-
Stage 1	740	-	-	-	-	-
Stage 2	593	-	-	-	-	-

**Approach** WB SE NW

HCM Control Delay, s 11.1 1.4 0  
 HCM LOS B

**Minor Lane/Major Mvmt** NWT NWRWBLn1 SEL SET

Capacity (veh/h)	-	-	656	1238	-
HCM Lane V/C Ratio	-	-	0.1	0.058	-
HCM Control Delay (s)	-	-	11.1	8.1	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.2	-

**Intersection**

Int Delay, s/veh 1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	5	200	200	15	45	15
Future Vol, veh/h	5	200	200	15	45	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	1	2	0	0	0
Mvmt Flow	7	286	286	21	64	21

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	307	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.1	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.2	-	-
Pot Cap-1 Maneuver	1265	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1265	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1265	-	-	-	515
HCM Lane V/C Ratio	0.006	-	-	-	0.166
HCM Control Delay (s)	7.9	0	-	-	13.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.6



**Intersection**

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			↑
Traffic Vol, veh/h	0	245	215	0	0	0
Future Vol, veh/h	0	245	215	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	1	2	0	0	0
Mvmt Flow	0	350	307	0	0	0

**Major/Minor**

	Major1	Major2	Minor2
Conflicting Flow All	-	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	0	-	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

**Approach**

	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

**Minor Lane/Major Mvmt**

	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	0	245	215	0	0	0
Future Vol, veh/h	0	245	215	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	1	2	0	0	0
Mvmt Flow	0	350	307	0	0	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	307	0	-	0	657
Stage 1	-	-	-	-	307
Stage 2	-	-	-	-	350
Critical Hdwy	4.1	-	-	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	2.2	-	-	-	3.5
Pot Cap-1 Maneuver	1265	-	-	-	433
Stage 1	-	-	-	-	751
Stage 2	-	-	-	-	718
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1265	-	-	-	433
Mov Cap-2 Maneuver	-	-	-	-	433
Stage 1	-	-	-	-	751
Stage 2	-	-	-	-	718

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1265	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

**Intersection**

Int Delay, s/veh 1.6

**Movement** WBL WBR SEL SET NWT NWR

Lane Configurations						
Traffic Vol, veh/h	5	50	60	285	270	10
Future Vol, veh/h	5	50	60	285	270	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	0	1	0	3	0
Mvmt Flow	6	60	71	339	321	12

**Major/Minor** Minor2 Major1 Major2

Conflicting Flow All	809	327	333	0	-	0
Stage 1	327	-	-	-	-	-
Stage 2	482	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	353	719	1232	-	-	-
Stage 1	735	-	-	-	-	-
Stage 2	625	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	333	719	1232	-	-	-
Mov Cap-2 Maneuver	333	-	-	-	-	-
Stage 1	735	-	-	-	-	-
Stage 2	589	-	-	-	-	-

**Approach** WB SE NW

HCM Control Delay, s	11.2	1.4	0
HCM LOS	B		

**Minor Lane/Major Mvmt** NWT NWRWBLn1 SEL SET

Capacity (veh/h)	-	-	650	1232	-
HCM Lane V/C Ratio	-	-	0.101	0.058	-
HCM Control Delay (s)	-	-	11.2	8.1	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.2	-

**Intersection**

Int Delay, s/veh 1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	5	211	208	15	45	15
Future Vol, veh/h	5	211	208	15	45	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	1	2	0	0	0
Mvmt Flow	7	301	297	21	64	21

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	319	0	-	0	624 308
Stage 1	-	-	-	-	308 -
Stage 2	-	-	-	-	316 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1252	-	-	-	452 737
Stage 1	-	-	-	-	750 -
Stage 2	-	-	-	-	744 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1252	-	-	-	449 737
Mov Cap-2 Maneuver	-	-	-	-	449 -
Stage 1	-	-	-	-	750 -
Stage 2	-	-	-	-	739 -

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	13.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1252	-	-	-	498
HCM Lane V/C Ratio	0.006	-	-	-	0.172
HCM Control Delay (s)	7.9	0	-	-	13.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.6

**Intersection**

Int Delay, s/veh 0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			↑
Traffic Vol, veh/h	0	256	217	0	0	6
Future Vol, veh/h	0	256	217	0	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	1	2	0	0	0
Mvmt Flow	0	366	310	0	0	9

**Major/Minor**

	Major1	Major2	Minor2
Conflicting Flow All	-	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	0	-	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

**Approach**

	EB	WB	SB
HCM Control Delay, s	0	0	10
HCM LOS			B

**Minor Lane/Major Mvmt**

	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	735
HCM Lane V/C Ratio	-	-	0.012
HCM Control Delay (s)	-	-	10
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0

HCM 2010 TWSC  
 3: W. Main Street & East Project Driveway

03/06/2020

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	11	245	215	45	35	2
Future Vol, veh/h	11	245	215	45	35	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	1	2	0	0	0
Mvmt Flow	16	350	307	64	50	3

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	371	0	-	0	720 339
Stage 1	-	-	-	-	339 -
Stage 2	-	-	-	-	381 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1199	-	-	-	398 708
Stage 1	-	-	-	-	726 -
Stage 2	-	-	-	-	695 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1199	-	-	-	391 708
Mov Cap-2 Maneuver	-	-	-	-	391 -
Stage 1	-	-	-	-	726 -
Stage 2	-	-	-	-	683 -

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	15.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1199	-	-	-	401
HCM Lane V/C Ratio	0.013	-	-	-	0.132
HCM Control Delay (s)	8	0	-	-	15.3
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.5

**Intersection**

Int Delay, s/veh 1.8

**Movement** WBL WBR SEL SET NWT NWR

Lane Configurations	↔		↔	↑	↔	
Traffic Vol, veh/h	5	64	71	309	301	10
Future Vol, veh/h	5	64	71	309	301	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	0	1	0	3	0
Mvmt Flow	6	76	85	368	358	12

**Major/Minor** Minor2 Major1 Major2

Conflicting Flow All	901	364	370	0	-	0
Stage 1	364	-	-	-	-	-
Stage 2	537	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	311	685	1194	-	-	-
Stage 1	707	-	-	-	-	-
Stage 2	590	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	289	685	1194	-	-	-
Mov Cap-2 Maneuver	289	-	-	-	-	-
Stage 1	707	-	-	-	-	-
Stage 2	548	-	-	-	-	-

**Approach** WB SE NW

HCM Control Delay, s	11.7	1.5	0
HCM LOS	B		

**Minor Lane/Major Mvmt** NWT NWRWBLn1 SEL SET

Capacity (veh/h)	-	-	623	1194	-
HCM Lane V/C Ratio	-	-	0.132	0.071	-
HCM Control Delay (s)	-	-	11.7	8.2	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.2	-

**Intersection**

Int Delay, s/veh 3.2

**Movement** EBL EBT WBT WBR SBL SBR

Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	20	205	215	25	75	25
Future Vol, veh/h	20	205	215	25	75	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	1	2	0	0	0
Mvmt Flow	29	293	307	36	107	36

**Major/Minor** Major1 Major2 Minor2

Conflicting Flow All	343	0	-	0	675	325
Stage 1	-	-	-	-	325	-
Stage 2	-	-	-	-	350	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1227	-	-	-	422	721
Stage 1	-	-	-	-	737	-
Stage 2	-	-	-	-	718	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1227	-	-	-	410	721
Mov Cap-2 Maneuver	-	-	-	-	410	-
Stage 1	-	-	-	-	737	-
Stage 2	-	-	-	-	698	-

**Approach** EB WB SB

HCM Control Delay, s	0.7	0	16.3
HCM LOS			C

**Minor Lane/Major Mvmt** EBL EBT WBT WBR SBLn1

Capacity (veh/h)	1227	-	-	-	460
HCM Lane V/C Ratio	0.023	-	-	-	0.311
HCM Control Delay (s)	8	0	-	-	16.3
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1.3



**Intersection**

Int Delay, s/veh 0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			↑
Traffic Vol, veh/h	0	280	230	0	0	10
Future Vol, veh/h	0	280	230	0	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	1	2	0	0	0
Mvmt Flow	0	400	329	0	0	14

**Major/Minor**

	Major1	Major2	Minor2
Conflicting Flow All	-	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	0	-	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

**Approach**

	EB	WB	SB
HCM Control Delay, s	0	0	10.1
HCM LOS			B

**Minor Lane/Major Mvmt**

	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	717
HCM Lane V/C Ratio	-	-	0.02
HCM Control Delay (s)	-	-	10.1
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.1

**Intersection**

Int Delay, s/veh 1.4

**Movement** EBL EBT WBT WBR SBL SBR

Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	15	265	225	45	40	5
Future Vol, veh/h	15	265	225	45	40	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	1	2	0	0	0
Mvmt Flow	21	379	321	64	57	7

**Major/Minor** Major1 Major2 Minor2

Conflicting Flow All	386	0	-	0	775	354
Stage 1	-	-	-	-	354	-
Stage 2	-	-	-	-	421	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1184	-	-	-	369	694
Stage 1	-	-	-	-	715	-
Stage 2	-	-	-	-	667	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1184	-	-	-	361	694
Mov Cap-2 Maneuver	-	-	-	-	361	-
Stage 1	-	-	-	-	715	-
Stage 2	-	-	-	-	652	-

**Approach** EB WB SB

HCM Control Delay, s	0.4	0	16.4
HCM LOS			C

**Minor Lane/Major Mvmt** EBL EBT WBT WBR SBLn1

Capacity (veh/h)	1184	-	-	-	381
HCM Lane V/C Ratio	0.018	-	-	-	0.169
HCM Control Delay (s)	8.1	0	-	-	16.4
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6

**Intersection**

Int Delay, s/veh 1.6

**Movement** WBL WBR SEL SET NWT NWR

Lane Configurations						
Traffic Vol, veh/h	5	55	65	335	315	10
Future Vol, veh/h	5	55	65	335	315	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	0	1	0	3	0
Mvmt Flow	6	65	77	399	375	12

**Major/Minor** Minor2 Major1 Major2

Conflicting Flow All	935	381	387	0	-	0
Stage 1	381	-	-	-	-	-
Stage 2	554	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	297	671	1177	-	-	-
Stage 1	695	-	-	-	-	-
Stage 2	580	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	278	671	1177	-	-	-
Mov Cap-2 Maneuver	278	-	-	-	-	-
Stage 1	695	-	-	-	-	-
Stage 2	542	-	-	-	-	-

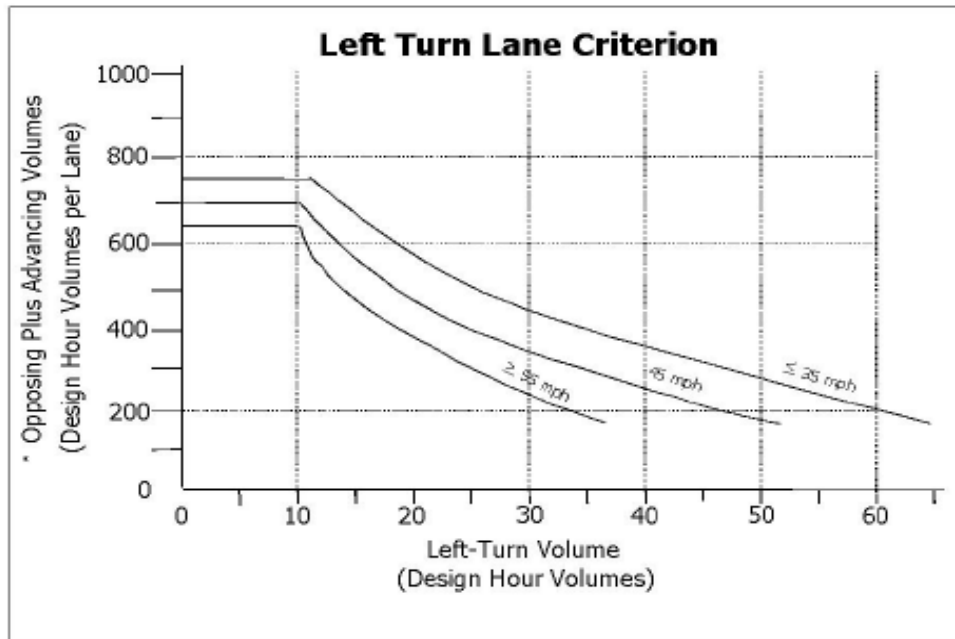
**Approach** WB SE NW

HCM Control Delay, s 11.8 1.3 0  
 HCM LOS B

**Minor Lane/Major Mvmt** NWT NWRWBLn1 SEL SET

Capacity (veh/h)	-	-	600	1177	-
HCM Lane V/C Ratio	-	-	0.119	0.066	-
HCM Control Delay (s)	-	-	11.8	8.3	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.2	-

HCM Shared Lane V/C Conversion	Volume		HCM Lane Flow		V/C Calc		
	EBL	EBT	EBL	EBT	EBL	EBT	
2019							
W. Main Street / Patterson Bridge Road	5	195	7	279	0.01	0.16	0.17
W. Main Street / East Project Driveway	0	240	0	343	0.00	0.20	0.20
2024 Background	EBL	EBT	EBL	EBT	EBL	EBT	
W. Main Street / Patterson Bridge Road	5	200	7	286	0.01	0.17	0.18
W. Main Street / East Project Driveway	0	245	0	350	0.00	0.21	0.21
2024 Project	EBL	EBT	EBL	EBT	EBL	EBT	
W. Main Street / Patterson Bridge Road	5	211	7	301	0.01	0.18	0.19
W. Main Street / West Project Driveway	0	256	0	366	0.00	0.22	0.22
W. Main Street / East Project Driveway	11	245	16	350	0.01	0.21	0.22
2024 Sensitivity	EBL	EBT	EBL	EBT	EBL	EBT	
W. Main Street / Patterson Bridge Road	20	205	29	293	0.02	0.17	0.19
W. Main Street / West Project Driveway	0	280	0	400	0.00	0.24	0.24
W. Main Street / East Project Driveway	15	265	21	379	0.02	0.22	0.24



\*(Advancing Volume/Number of Advancing Through Lanes) + (Opposing Volume/Number of Opposing Through Lanes))

Left Turn Lane Criterion						
Intersection	Movement	Posted Speed (mph)	Estimated PM Peak Hour Left Turn Volume	Opposing Plus Advancing Volumes	Warrant Threshold Left Turn Volume	Is Warrant Met?
<b>2024 Project Conditions</b>						
W Main Street / Patterson Bridge Road	W Main Street - Eastbound Left	45	5	439	22	No
W Main Street / East Project Driveway	W Main Street - Eastbound Left	35	11	516	25	No
<b>2024 Project Conditions Sensitivity Scenario</b>						
W Main Street / Patterson Bridge Road	W Main Street - Eastbound Left	45	20	465	22	No
W Main Street / East Project Driveway	W Main Street - Eastbound Left	35	15	550	24	No