TRANSIGHT CONSULTING, LLC
Transportation Engineering and Planning Services

Date:	March 26, 2019
To:	Kevin Harrison
From:	Joe Bessman, PE
Project Reference No.:	1244
Project Name:	Prineville Multifamily Development

This memorandum provides a summary of the transportation characteristics of the proposed multifamily development located near Main Street north of the Peters Road intersection in Prineville, Oregon. The location of the property is shown in Figure 1, and the preliminary site layout is illustrated in Figure 2. The proposed multifamily development will include up to 135 total units. The units will be approximately 1,000 to 1,100 square feet each and include either two- or three-bedrooms.

Figure 1. Site Vicinity Map. *Source: Crook County GIS.*

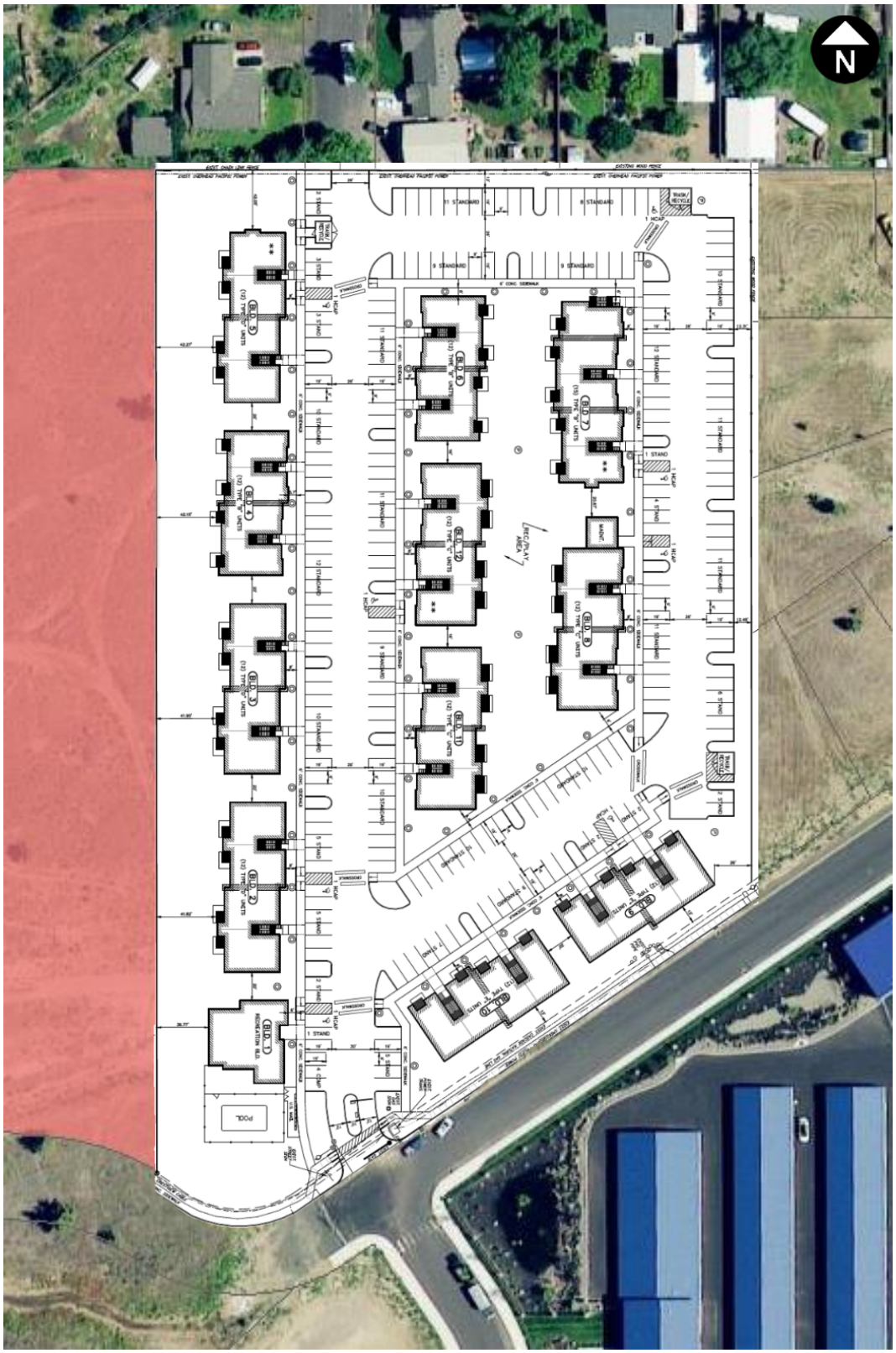


Figure 2. Preliminary Site Layout. *(Source: MultiTech Engineering, dated February 2019)*

As shown in Figures 1 and 2, the proposed site would be located north of the mini-storage units with direct access provided from a northern extension of NE Buckboard Lane. Residential development north of the

site provides an extension of NE Buckboard Lane that terminates at the northern property boundary. It is recommended that this connection be provided into the site to facilitate trips between the residential area. With the predominant travel patterns toward the south it is expected that if a connection were provided it would typically only serve the existing residents to the north, providing them a more direct connection to NE Peters Road and N Main Street. If a direct connection is not desired, the connection should minimally provide emergency access and pedestrian access.

SURROUNDING TRANSPORTATION INFRASTRUCTURE

The location of the project in northern Prineville is generally within a residential area. A mini-storage development is located to the southeast, and the vacant Woodgrain Millworks site is located on the opposite side of Peters Road to the south.

Major roadways within the vicinity of the site include N Main Street, which is classified by the City of Prineville as a *Minor Arterial* within the City's Transportation System Plan and NE Peters Road, which is designated as a *Major Collector.* All other roadways surrounding the project site are designated as *Local Streets*.

Within the immediate site vicinity, the supporting local streets have been constructed to either a three-quarters standard or are fully built-out. This provides a complete pavement section that is 32-feet wide, supporting on-street parking on both sides of the roadway while maintaining two-way travel. All of the local streets operate at an approximately 25 mile per hour speed, although the curvature along NE Blackbear Street west of the property results in lower operating speeds. The local streets that surround the property include curb-tight sidewalks; no sidewalks are provided within the neighborhoods to the north or those west of N Main Street.

Almost a mile south of the site along Main Street are two east-west streets that will support the majority of the trips as they distribute to various destinations within the City of Prineville: NE 10th Street and NE 9th Street. NE 10th Street is a *Collector* to the west and a *Local Street* to the east and is minimally developed with a paved cross-section but no curbs or sidewalks. There is no on-street parking, rather the gravel shoulders are utilized for this purpose. One block south is NE 9th Street, which is designated as an *Arterial.* NE 9th Street contains a 3-lane cross-section with a two-way center turn-lane, bicycle lanes, curbs, sidewalks, and a posted speed limit of 25 mph. Table 1 summarizes area roadway characteristics.

Table 1. Area Roadway Characteristics

Roadway	Functional Classification	Number of Lanes, Posted Speed	Sidewalks?	Bicycle Lanes?	Parking?
N Main Street	Minor Arterial	3-Lanes 35 mph	No	Yes, south of Peters Road	No
NE Peters Road	Major Collector	2-Lanes 35 mph	Partial along the north	Partial east of Buckboard Lane	No
NE Buckboard Lane	Local Street	2-Lanes 25 mph	Yes, both sides	None	Yes, both sides
NE Blackbear Street	Local Street	2-Lanes 25 mph	Yes, both sides	None	Yes, both sides
NE 9th Street	Arterial	3-Lanes 25 mph	Yes, both sides	Yes	No
NE 10th Street	Collector (W of Main) Local Route (E of Main)	2-Lanes Not Posted	No	No	No

TRIP GENERATION

Trip generation estimates are commonly prepared based on the standard reference *Trip Generation, 10th Edition*, published by the Institute of Transportation Engineers (ITE). Multifamily housing is classified based on the number of building levels. Buildings between three and 10 levels are classified with ITE's *Multifamily Housing (Mid-Rise)* classification. The land use description from the ITE manual are provided below:

> ***Multifamily Housing (Mid-Rise):*** *Mid-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have between three and 10 levels (floors).*

The preliminary development plans include all three-story apartment buildings, so *Multifamily Housing (Mid-Rise)* is the category that was applied to the proposed 135-unit development. Table 2 summarizes the resultant trip generation estimates.

Table 2. Trip Generation Estimates (ITE 10th Edition)

Land Use	ITE Code	Size	Daily Trips	Weekday PM Peak Hour		
				Total	In	Out
Multifamily Housing (Mid-Rise)	221	135 Units	734 *5.44/Unit*	59 *0.44/Unit*	36 *61%*	23 *39%*

TRIP DISTRIBUTION AND ASSIGNMENT

Trips from the new multifamily development are expected to primary route onto NE Peters Road and Main Street toward area employment and services. The distribution is expected to mimic the current travel patterns, which show that approximately 95 percent of all trips are destined to and from the south. At the intersections with 10th Street and 9th Street, traffic will distribute to the employment, educational, and retail opportunities throughout the city. Figure 3 illustrates the site-generated trip distribution and assignment at the primary access intersections.

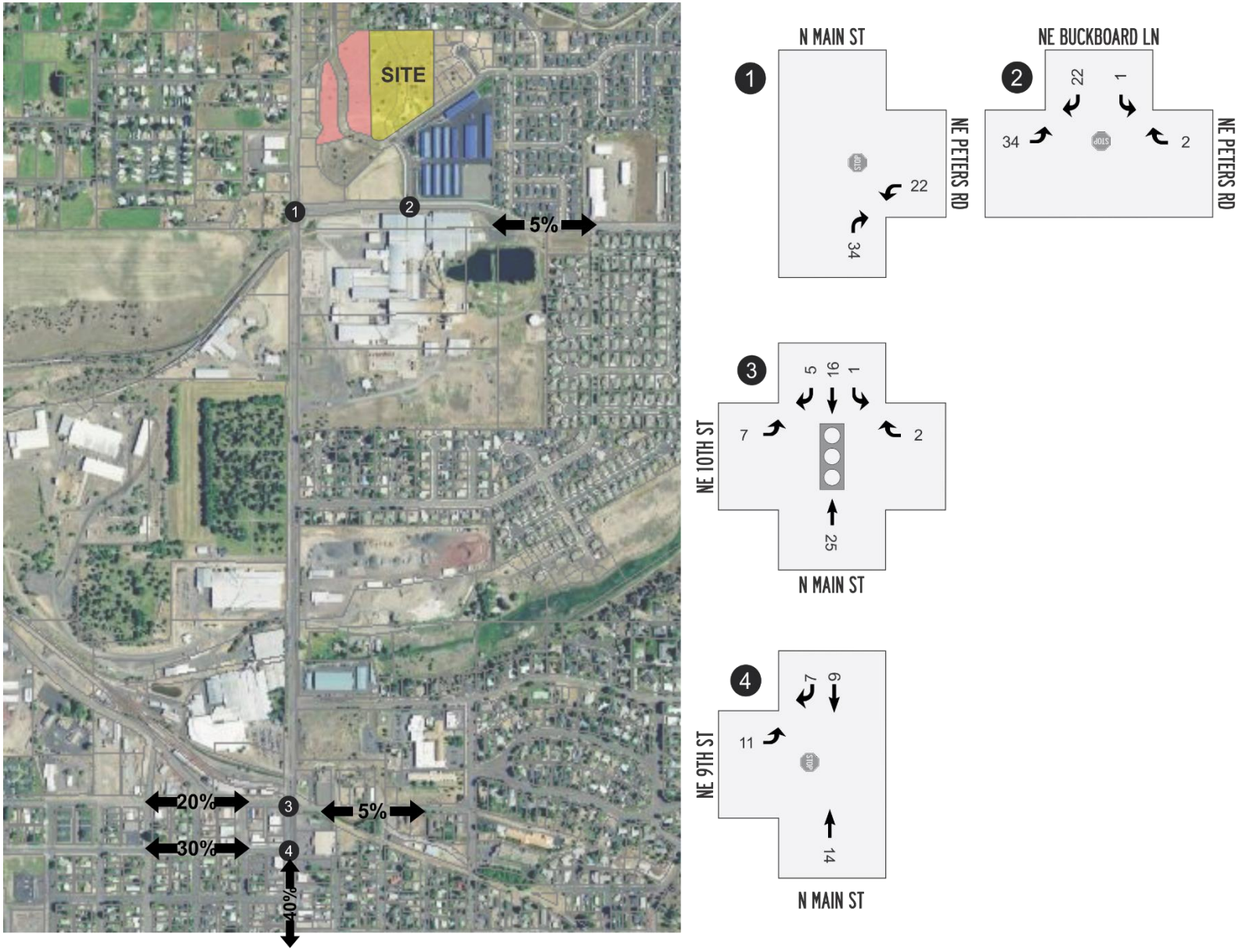


Figure 3. Estimated Trip Distribution and Assignment, Weekday PM Peak Hour

SAFETY REVIEW

Crash records were obtained for all of Crook County from the ODOT crash database between January 2012 and December 2016. Crashes required for reporting during this period include those involving any level of personal injury or property damage exceeding $1,500. This review identified four crashes at the nearby Main Street/Peters Road intersection and a single crash on the NE Peters Road and the N Main Street corridors. Additional details on these crashes are provided below, and Table 3 summarizes the reported crash types.

Table 3. Crash History (January 2012 through December 2016)

Intersection	# of Crashes	Severity		Crash Type			Intersection Crash Rate / MEV*
		Injury	Non-Injury	Turning/ Angle	Rear-End	Fixed Object	
N Main Street/ NE Peters Road	4	1	3	4	0	0	0.30
N Main Street (NE Peters Road south to NE Mariposa Avenue)	1	0	1	0	1	0	
NE Peters Road (Main Street east to NE Mariposa Avenue)	1	0	1	0	0	1	
N Main Street / N 10th St	6	4	2	1 (Cyclist)	3	2	
N Main Street / NW 9th Street	3	1	2	3	0	0	

*Million Entering Vehicles

Review of the crashes at the N Main Street/NE Peters Road intersection shows that all four were classified as turning movement collisions and each crash involved northbound through vehicles and westbound left-turns.

- The first collision occurred on June 12, 2012 at 2:00 p.m. during clear and dry conditions. The crash involved a motorcycle turning left from Peters Road to travel southbound on Main Street that was struck by a northbound vehicle. No injuries were reported.
- The second reported crash occurred on November 12, 2013 at 4:00 p.m. and again involved a westbound left-turning motorist that was struck by a northbound vehicle. The crash records indicate that a vehicle obscured the view, but it was unclear what this notation referenced.
- The third reported collision occurred on January 22, 2014 at 5:00 p.m., during dark conditions on a clear and dry day. The collision again involved a northbound motorist and a westbound to southbound left-turn, and was cited as failure to yield right-of-way.
- The fourth crash occurred on December 5, 2014 at 7:00 a.m. during icy conditions. The crash records cited careless driving and failure to yield right-of-way as the cause of the crash.

The Main Street/Peters Road intersection was recently restriped to provide the consistent three-lane cross-section along Main Street. As all the crashes occurred in 2014 or earlier it is recommended that the City continue to monitor this location. It is anticipated that with the restriping overall crashes along the corridor will be lower as movements are now separated into their own lane.

Review of the six crashes that occurred at the N Main Street / N 10th Street intersection did not reveal any patterns. No crashes occurred in the year 2012, three in 2013, two in 2014, one in 2015, and one in 2016. The crash involving the cyclist occurred on Wednesday, March 13, 2016 at 3:00 p.m. The cyclist was headed north through the intersection on N Main Street, and a vehicle turning right onto Main Street from NE 10th Street failed to yield the right of way. The cyclist suffered moderate injuries. Two crashes involved senior citizen-aged drivers cutting corners at two unique locations. Two crashes involved drivers rear-ending stopped vehicles in front of them due to inattention. One crash was due to driving too fast for the icy conditions.

The N Main Street / NW 9th Street intersection has a history of only three crashes, two of which occurred in 2013 and caused property damage only, and one of which occurred in 2015 and resulted in non-fatal injuries. With this limited crash history, no patterns were identified.

Field review of the intersections noted the substandard configuration and signal hardware at the signalized 10th Street intersection. The traffic signal lacks pedestrian pushbuttons and accessible ramps, and the barrier/retaining walls along the radii highlight inadequacy of the corners for the larger vehicles destined towards the City's industrial lands. Figure 4 illustrates a photo of the western side of the intersection.

Figure 4. Photo of the western approach of the Main Street/10th Street traffic signal.

Intersection Sight Distance

Intersection sight distance was field reviewed at the multifamily development entrance onto N Blackbear Street, at the Buckboard Lane connection to NE Peters Road, and at the NE Peters Road intersection with N Main Street. The purpose of sight distance is to ensure an adequate view of conflicting traffic is provided to drivers along the primary access route.

The City of Prineville typically applies the minimum recommended sight distance criteria based on the standard reference *A Policy on Geometric Design of Highways and Streets, 6th Edition* published by the American Association of State Highway and Transportation Officials (AASHTO) in 2011 (commonly referred to as the *Green Book*). This reference provides the recommended sight distances as measured from a height of 3.5 feet 14.5 feet from the edge of travel way at the access point serving the proposed development, based on the speed of the roadway (see Figure 5). The AASHTO reference is based on conflicts between motorists traveling along the roadway and motorists completing movements at the intersection.

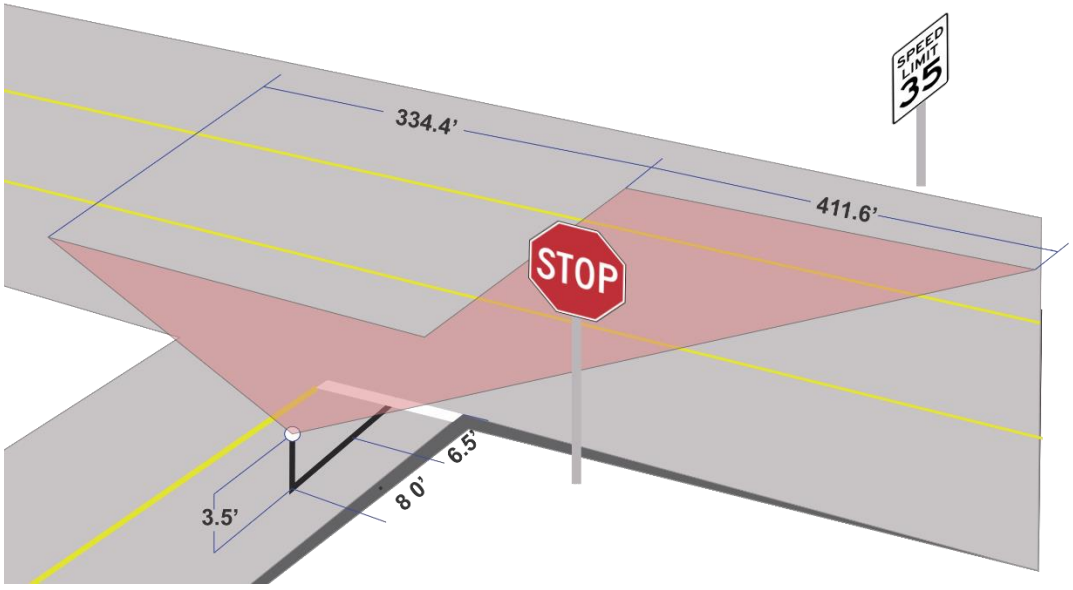


Figure 5. Typical AASHTO sight distance measurements onto NE Peters Road and onto N Main Street.

The Prineville access route was visited and inventoried in October 2018. No sight distance obstructions were observed at any of the study intersections. Photos of the sight lines are provided in Figures 6 through 11. It was noted that with the curvature of NE Blackbear Street the future sight lines from the facility entrance toward the west could be more limited in the future. It is recommended that monuments, fencing, and landscaping be specifically located to maintain adequate views in this direction. With the curvature and local street characteristics a design speed of 20 miles per hour was estimated, resulting in the need to maintain 220 feet along this roadway. Figure 8 shows the approximate area that should remain clear of obstructions to obtain this distance along Blackbear Street.

Figure 6. NE Blackbear Street/NE Buckboard Lane intersection approach viewing toward the east.

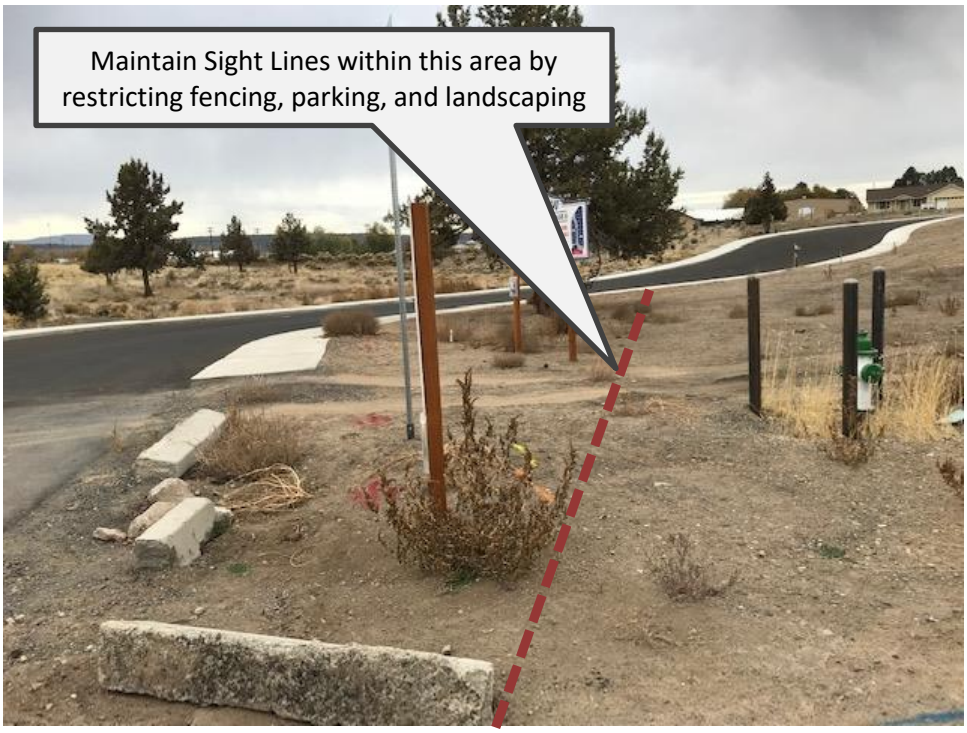


Figure 7. Sight line needed around curve.

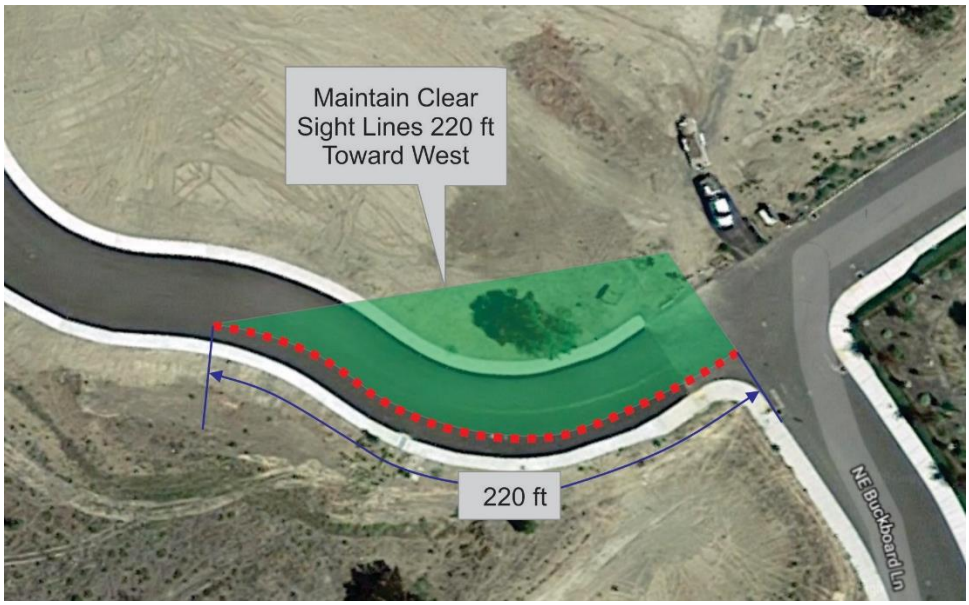


Figure 8. NE Blackbear Street/NE Buckboard Lane intersection approach viewing toward the west.

Figure 9. NE Blackbear Street/NE Buckboard Lane intersection southbound approach facing south.

Figure 10. Buckboard Lane/Peters Road intersection facing east.

Figure 11. Buckboard Lane/Peters Road intersection facing west.

TRAFFIC OPERATIONS

Traffic operations analyses were prepared at the four study intersections shown in Figure 3. Traffic counts were obtained at these intersections on October 11th and October 17th, 2018 to capture typical conditions with area schools in session. Supplemental traffic counts were collected on March 12, 2019 at the Main Street/9th Street and Main Street/10th Street intersections. The traffic counts show that traffic volumes in the area near the site peak during the evening commute period between 4:45 p.m. and 5:45 p.m., whereas the intersections at 9th and 10th Street exhibit an earlier peak around the 4:00 p.m. time period. The existing travel patterns reflect the residential land uses that surround the property and mimic the trip distribution patterns provided in Figure 3.

Operational analyses were conducted of the existing traffic conditions using Synchro analysis software with the Highway Capacity Manual 6th Edition methodology. The following scenarios were analyzed:

- Existing Conditions: This analysis reflects traffic conditions during the peak fifteen-minutes of the peak evening commute hour. This scenario is used to calibrate the analysis models to current conditions.
- Year 2020 "Without Project" Conditions: This analysis identifies how the area transportation system will operate in the build-out year of the proposed multifamily development without the project. This includes a two-percent annual growth rate to account for area development that is likely to occur within the next two years, as well as inclusion of trips from the Holliday RV Park and the Smith Landing property.
- Year 2020 "With Project" Conditions: This analysis includes area growth and adds estimated trips from the proposed multifamily development, as illustrated in Figure 3.

The City's 2013 Transportation System Plan identifies the City's adopted performance standards. As identified within the TSP, for roadways within City jurisdiction the City of Prineville considers intersections to operate acceptably if they operate at Level of Service "E" or better during the peak hour, if they remain below their carrying capacity, and if the 95th percentile vehicular queues can be contained within the available storage.

Table 4 summarizes the results of the transportation analysis and shows that all of the study intersections are currently operating acceptably, but left-turn delays at the Main Street/9th Street intersection are shown to experience high delays. This intersection is further discussed below.

Table 4. Summary of Intersection Operations Analysis, Weekday PM Peak Hour

Intersection	Existing Conditions			Without Project Conditions			With Project Conditions			Acceptable?
	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	v/c	
N Main St/ NE Peters Rd	WB LT LOS B	13.4 s	0.22	WB LT LOS B	14.0 s	0.24	WB LT LOS B	14.6 s	0.29	Yes
NE Peters Rd/ NE Buckboard Ln	SB LR LOS A	8.9 s	0.03	SB LR LOS A	8.9 s	0.03	SB LR LOS A	9.1 s	0.06	Yes
N Main St/ N 10th Street	LOS B	14.6 s	0.49	LOS B	15.2 s	0.54	LOS B	15.6	0.56	Yes
N Main St/ N 9th Street	WB LTR LOS C	22.1 s	0.31	EB L LOS F	57.3 s	0.32	EB L LOS F	74.4 s	0.48	No

LOS: Level of Service; Delay: Critical Movement Delay; v/c: Volume-to-Capacity Ratio
SB: Southbound, WB: Westbound; LT: Left-turn, LR: Shared Left/Right Lane

95th percentile queues at the adjacent access intersections are forecast to only reach a single vehicle with full site build-out. The existing turn lanes and storage bays are adequately sized to accommodate the project trips without any modifications.

Main Street/9th Street Intersection

The unsignalized intersection of Main Street/9th Street is shown to experience high eastbound left-turn delays in the future. This left-turn movement currently serves 21 vehicles during the peak hour, which is projected to increase to 25 left-turns in the future without the project and 36 left-turns with the project. This will remain a low-volume maneuver that operates within its carrying capacity.

Prior mitigation strategies for the Main Street/9th Street intersection included the direct extension of this critical east-west route east through the grocery store with signalization, replacing the existing traffic signal at 10th Street. This plan was modified in the City's 2013 Transportation System Plan to better link 9th and 10th Streets so that the left-turns could use the signalized route. The following is text from the adopted Transportation System Plan:

Main Street

Future modifications to the Main Street corridor can help ease traffic congestion near 3rd Street, enhance safety, and address pedestrian and bicycle connectivity needs. These modifications may include:

- Development of parallel north-south routes to reduce reliance on Main Street. The Peters Road and Combs Flat connections will form a new route connecting into US 26 at the eastern and western edges of the City.
- Restriping Main Street to a three-lane cross-section from Peters Road south to 9th Street. The narrowing of the road will allow larger shoulder areas for bicycles and pedestrians.
- Construction of improvements at the Main Street/10th Street/Lamonta Road traffic signal to realign the intersection, provide pedestrian accommodations, and accommodate truck turns.
- A phased approach to provide an eastern continuation of the 9th/10th Street corridor will help relieve the volume of traffic currently using 7th Street to access Laughlin Road. Initially, truck traffic on the 9th Street corridor should be directed to use Deer Street to connect to Lamonta Road. As funding is available, a new connection between 9th Street and 10th Street should be made between Deer Street and Claypool Street. The rerouting to 10th Street, west of Main Street, aligns traffic to the Main Street/10th Street intersection where signal improvements are planned. The specific alignment of the roadway extension is also dependent on the impacts to the Price Slasher and associated mitigations. Therefore, the final alignment should be determined as part of future redevelopment opportunities or when funding becomes available for planning/construction.

The traffic counts show that there are currently only 21 eastbound left-turns occurring at the 9th Street intersection and 149 at the signalized intersection with 10th Street. The traffic counts indicate that drivers are aware of the delays experienced turning left onto Main Street and are currently using the local street network to connect to the 10th Street alignment.

While the transportation system has reserve capacity at the 10th Street intersection, the increasing travel demands on 9th Street will continue to increase the priority to make functional intersection and system improvements. Many of the local street intersections along the Main Street corridor are slightly offset, and the major through routes to the west (10th Street – Lamonta Road and NW 9th Street) are offset from the NE 7th Street – Laughlin Road alignment that connects east. This continues to show the on-going need to address conditions at NE 7th Street with capacity improvements, and to also improve either NW 9th or NW 10th Street with better connectivity between the two parallel routes (likely along the more major streets such as Deer Street).

No mitigation measures are recommended in the interim period to address the left-turn delays at NW 9th Street. When system improvements are in place this could even be limited to a right-turn only to further encourage use of the signalized connection to turn left.

ON-SITE PARKING

The proposed development will include 256 total parking stalls, including 244 standard stalls, 4 compact stalls and 8 Handicap stalls. Review of available data within the ITE Parking Generation Manual, 4th Edition identifies that of the 22 apartment sites surveyed nationally the measured parking demand varied between 0.59 parking stalls per residential unit to as high as 1.94 stalls per unit, with 95 percent of the sites requiring between 1.10 and 1.37 stalls per apartment unit. The proposed on-site parking ratio of 1.90 far exceeds the 95th percentile demand. Supplemental parking surveys were recently conducted within Bend and Redmond between 2017 and 2018. The nine sites surveyed showed actual Central Oregon parking demand ratios between 0.82 and 1.54 stalls per unit. Accordingly, the proposed site is expected to accommodate its on-site parking demand within the provided on-site parking, allowing any on-street parking to remain available for visitors, guests, and delivery vehicles. Table 5 summarizes the survey data as applied to the proposed development.

Table 5. Applied Parking Survey Data

Survey Data	**Range of Parking Stalls Required** *(135 Dwelling Units)*
ITE Overall Observed Demand	80 - 262 *(0.59- 1.94/DU)*
ITE 95th Percentile Demand	149 - 185 *(1.10 - 1.37/DU)*
Central Oregon Demand	111 - 208 *(0.82-1.54/DU)*
Proposed Parking Stalls	**256**

FINDINGS AND RECOMMENDATIONS

Based on this review, the proposed 135-unit multifamily development is forecast to generate 734 daily trips (including 54 trips during the weekday p.m. peak hour). The majority of these trips are expected to travel south along Main Street toward the City's commercial and employment areas. The site proposes access at the intersection of NE Blackbear Street and NE Buckboard Lane, forming a northern intersection leg. This access location provides clear sight lines in both directions. Major intersections along the primary access route can accommodate the additional trips, and there are no historical safety needs in the site vicinity.

The following is recommended to support this development:

- Landscaping, monument signs, fencing, and on-street parking should be restricted between a height of 2 and 8-feet west of the access onto NE Buckboard Lane and NE Blackbear Street to provide 220-feet of sight distance for eastbound vehicles on NE Blackbear Street, as shown in Figure 8.
- Standard City of Prineville frontage improvements (or fee in lieu) should be required along NE Blackbear Street. This will include the completion of sidewalks along NE Blackbear Street.
- Access into the multifamily development from NE Blackbear Street should be provided with a concrete "dustpan" apron design. The intersection should include stop-control to mirror the traffic control on the opposite approach.
- Parking should be restricted for 25 feet on either side of the primary access to maintain clear sight lines.
- Buckboard Lane should be completed to its current terminus north of the site. As area travel patterns are predominantly toward the south, this connection would primarily benefit the residential neighborhood toward the north by providing a more direct route to the south. If desired, the access could be gated and available for emergency access only.
- Regardless of whether public access is provided north onto NE Buckboard Lane, pedestrian access should be accommodated north of the site, allowing connections to the nearby neighborhoods and canal trail system.
- The multifamily project will require payment of Transportation System Development Charges to mitigate regional system impacts such as those identified along the Main Street corridor near 9th and 10th Streets.

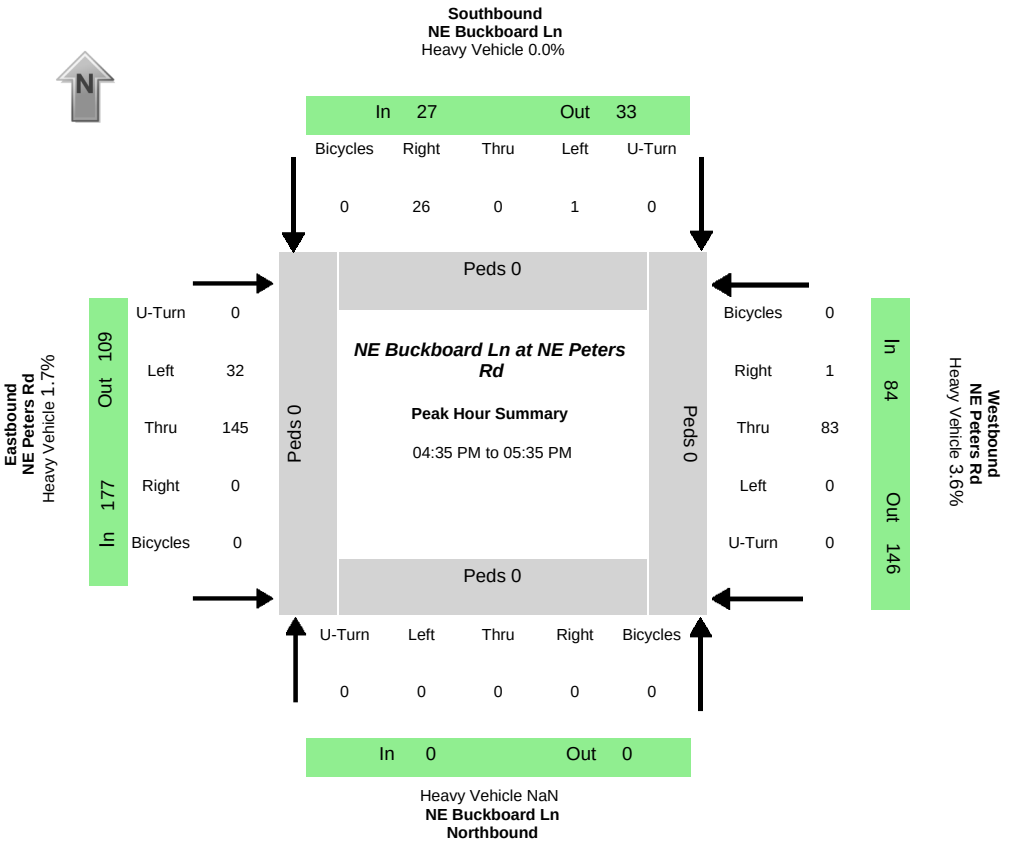
Please let me know if you have any questions on this analysis at (503) 997-4473 or via email at joe@transightconsulting.com.

Attachments:

- Traffic Count Worksheets
- Existing Conditions LOS Worksheets
- Year 2020 Without Project LOS Worksheets
- Year 2020 With Project LOS Worksheets

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*NE Buckboard Ln*
E/W street	*NE Peters Rd*
City, State	Prineville OR
Site Notes	
Location	44.319943 - -120.844131
Start Date	Wednesday, October 17, 2018
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:35:00 PM
Peak 15 Min Start	05:20:00 PM
PHF (15-Min Int)	0.94



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	1	0	26	0	32	145	0	0	0	83	1	0	0	27	177	84	0	33	109	146

Percent Heavy Vehicles

0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.1%	0.0%	0.0%	0.0%	3.6%	0.0%	0.0%	NaN	0.0%	1.7%	3.6%	NaN	0.0%	2.8%	2.1%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHV - Pedestrians

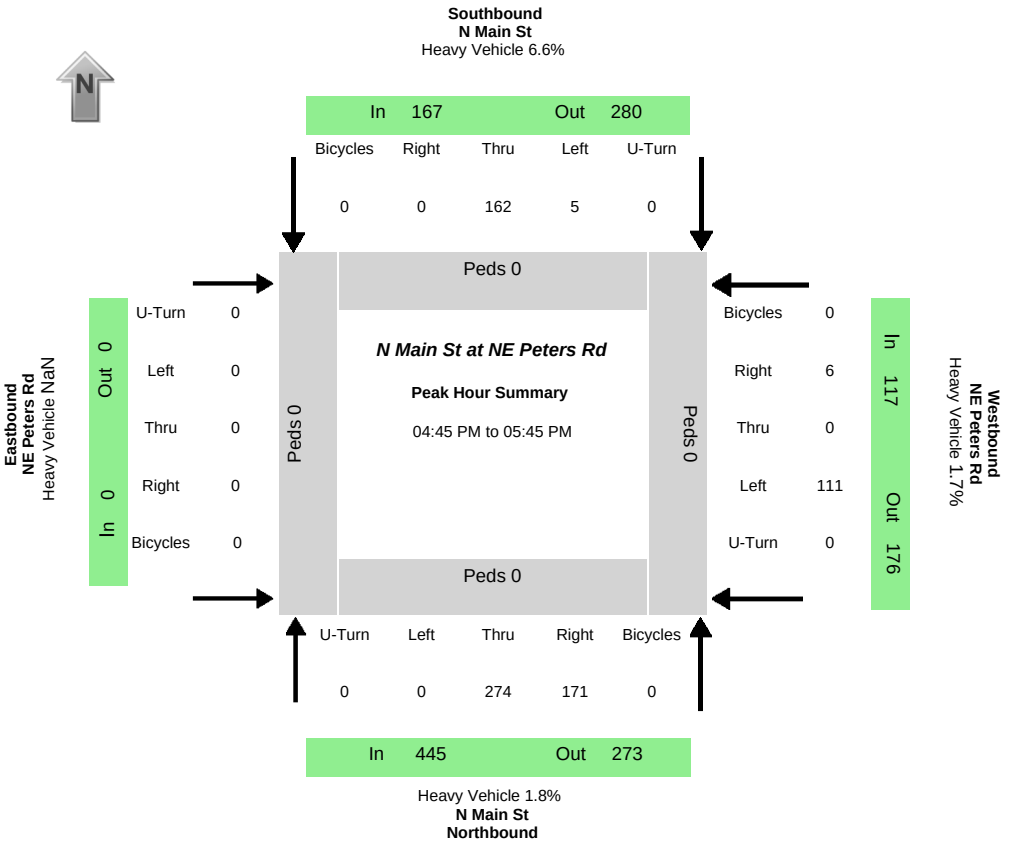
in Crosswalk				
NB	SB	EB	WB	Sum
0	0	0	0	0

All Vehicle Volumes

	Northbound NE Buckboard Ln				Southbound NE Buckboard Ln				Eastbound NE Peters Rd				Westbound NE Peters Rd				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0		
04:05:00 PM	0	0	0	0	0	0	5	0	5	13	0	0	0	9	0	0		
04:10:00 PM	0	0	0	0	0	0	1	0	4	8	0	0	0	3	0	0	52	
04:15:00 PM	0	0	0	0	0	0	0	0	1	13	0	0	0	7	0	0	69	
04:20:00 PM	0	0	0	0	0	0	3	0	1	11	0	0	0	8	0	0	60	
04:25:00 PM	0	0	0	0	0	0	2	0	3	7	0	0	0	13	0	0	69	
04:30:00 PM	0	0	0	0	0	0	1	0	4	12	0	0	0	3	0	0	68	
04:35:00 PM	0	0	0	0	0	0	3	0	4	13	0	0	0	5	1	0	71	
04:40:00 PM	0	0	0	0	0	0	2	0	4	19	0	0	0	4	0	0	75	
04:45:00 PM	0	0	0	0	0	0	2	0	1	9	0	0	0	9	0	0	76	
04:50:00 PM	0	0	0	0	0	0	3	0	2	12	0	0	0	9	0	0	76	
04:55:00 PM	0	0	0	0	0	0	3	0	1	10	0	0	0	4	0	0	65	261
05:00:00 PM	0	0	0	0	0	0	2	0	0	13	0	0	0	5	0	0	64	277
05:05:00 PM	0	0	0	0	1	0	0	0	2	13	0	0	0	6	0	0	60	267
05:10:00 PM	0	0	0	0	0	0	3	0	2	11	0	0	0	7	0	0	65	274
05:15:00 PM	0	0	0	0	0	0	3	0	5	11	0	0	0	7	0	0	71	279
05:20:00 PM	0	0	0	0	0	0	0	0	3	7	0	0	0	8	0	0	67	274
05:25:00 PM	0	0	0	0	0	0	0	0	4	12	0	0	0	8	0	0	68	273
05:30:00 PM	0	0	0	0	0	0	5	0	4	15	0	0	0	11	0	0	77	288
05:35:00 PM	0	0	0	0	0	0	3	0	2	13	0	0	0	6	0	0	83	286
05:40:00 PM	0	0	0	0	0	0	2	0	2	13	0	0	0	4	0	0	80	278
05:45:00 PM	0	0	0	0	0	0	0	0	3	16	0	0	0	3	0	0	67	279
05:50:00 PM	0	0	0	0	0	0	0	0	5	10	0	0	0	8	0	0	66	276
05:55:00 PM	0	0	0	0	0	0	0	0	2	8	0	0	0	6	0	0	61	274

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*N Main St*
E/W street	*NE Peters Rd*
City, State	Prineville OR
Site Notes	
Location	44.319899 - -120.847041
Start Date	Thursday, October 11, 2018
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:45:00 PM
Peak 15 Min Start	05:05:00 PM
PHF (15-Min Int)	0.92



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	274	171	0	5	162	0	0	0	0	0	0	111	0	6	0	445	167	0	117	273	280	0	176

Percent Heavy Vehicles

0.0%	1.8%	1.8%	0.0%	0.0%	6.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.8%	0.0%	0.0%	0.0%	1.8%	6.6%	NaN	1.7%	4.8%	1.8%	NaN	1.7%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHV - Pedestrians

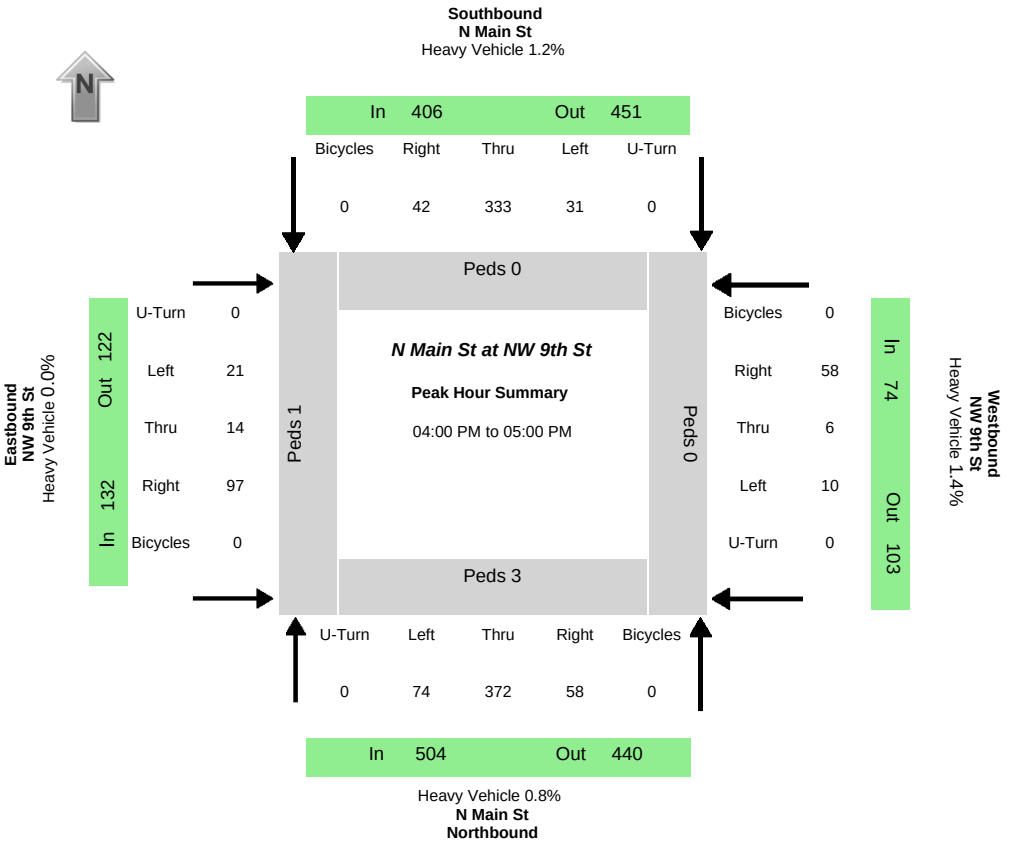
in Crosswalk				
NB	SB	EB	WB	**Sum**
0	0	0	0	0

All Vehicle Volumes

	Northbound N Main St				Southbound N Main St				Eastbound NE Peters Rd				Westbound NE Peters Rd				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	0	15	16	0	1	14	0	0	0	0	0	0	10	0	0	0		
04:05:00 PM	0	19	8	0	0	17	0	0	0	0	0	0	7	0	0	0		
04:10:00 PM	0	27	23	0	0	8	0	0	0	0	0	0	7	0	1	0	173	
04:15:00 PM	0	24	10	0	0	11	0	0	0	0	0	0	10	0	1	0	173	
04:20:00 PM	0	17	15	0	2	15	0	0	0	0	0	0	11	0	0	0	182	
04:25:00 PM	0	21	11	0	1	11	0	0	0	0	0	0	4	0	0	0	164	
04:30:00 PM	0	15	25	0	0	10	0	0	0	0	0	0	9	0	0	0	167	
04:35:00 PM	0	18	10	0	2	9	0	0	0	0	0	0	10	0	0	0	156	
04:40:00 PM	0	22	12	0	0	11	0	0	0	0	0	0	5	0	0	0	158	
04:45:00 PM	0	30	14	0	0	12	0	0	0	0	0	0	14	0	0	0	169	
04:50:00 PM	0	16	15	0	1	6	0	0	0	0	0	0	11	0	1	0	170	
04:55:00 PM	0	19	14	0	0	14	0	0	0	0	0	0	8	0	0	0	175	670
05:00:00 PM	0	23	10	0	0	14	0	0	0	0	0	0	8	0	0	0	160	669
05:05:00 PM	0	34	19	0	0	17	0	0	0	0	0	0	7	0	0	0	187	695
05:10:00 PM	0	23	18	0	0	10	0	0	0	0	0	0	6	0	0	0	189	686
05:15:00 PM	0	18	13	0	1	20	0	0	0	0	0	0	10	0	2	0	198	694
05:20:00 PM	0	21	16	0	2	11	0	0	0	0	0	0	11	0	0	0	182	695
05:25:00 PM	0	28	11	0	0	18	0	0	0	0	0	0	12	0	1	0	195	717
05:30:00 PM	0	20	11	0	0	10	0	0	0	0	0	0	12	0	0	0	184	711
05:35:00 PM	0	17	13	0	1	20	0	0	0	0	0	0	5	0	1	0	180	719
05:40:00 PM	0	25	17	0	0	10	0	0	0	0	0	0	7	0	1	0	170	729
05:45:00 PM	0	25	14	0	0	17	0	0	0	0	0	0	13	0	0	0	186	728
05:50:00 PM	0	19	14	0	0	12	0	0	0	0	0	0	4	0	1	0	179	728
05:55:00 PM	0	20	13	0	0	8	0	0	0	0	0	0	6	0	0	0	166	720

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*N Main St*
E/W street	*NW 9th St*
City, State	Prineville OR
Site Notes	
Location	44.30819 - -120.847086
Start Date	Tuesday, March 12, 2019
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:00:00 PM
Peak 15 Min Start	04:00:00 PM
PHF (15-Min Int)	0.80



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
74	372	58	0	31	333	42	0	21	14	97	0	10	6	58	0	504	406	132	74	440	451	122	103

Percent Heavy Vehicles

0.0%	1.1%	0.0%	0.0%	3.2%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.7%	0.0%	0.8%	1.2%	0.0%	1.4%	0.9%	1.1%	0.0%	1.0%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHV - Pedestrians

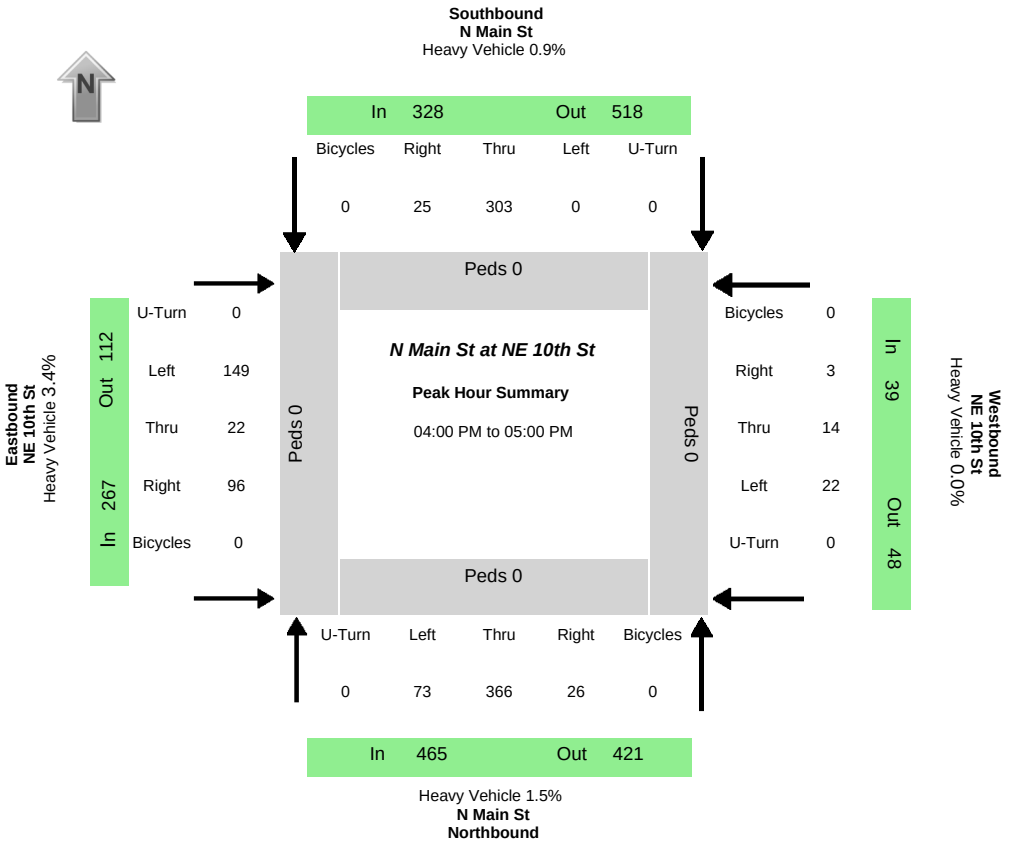
in Crosswalk				
NB	SB	EB	WB	Sum
3	0	1	0	4

All Vehicle Volumes

	Northbound N Main St				Southbound N Main St				Eastbound NW 9th St				Westbound NW 9th St				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	5	36	5	0	4	42	5	0	1	2	15	0	2	1	4	0		
04:05:00 PM	4	34	2	0	2	39	5	0	1	1	12	0	2	1	5	0		
04:10:00 PM	9	35	5	0	4	37	6	0	3	2	14	0	0	1	3	0	349	
04:15:00 PM	8	30	3	0	2	25	3	0	4	2	3	0	0	0	4	0	311	
04:20:00 PM	9	30	4	0	4	31	5	0	1	2	8	0	0	0	10	0	307	
04:25:00 PM	3	32	9	0	2	18	3	0	1	0	5	0	0	0	3	0	264	
04:30:00 PM	9	40	7	0	3	23	3	0	3	0	2	0	1	0	7	0	278	
04:35:00 PM	4	34	7	0	4	28	3	0	1	1	8	0	2	1	7	0	274	
04:40:00 PM	6	24	4	0	1	20	3	0	3	0	4	0	1	1	4	0	269	
04:45:00 PM	7	22	4	0	2	26	3	0	1	1	10	0	1	0	3	0	251	
04:50:00 PM	7	27	3	0	0	19	1	0	0	2	6	0	0	0	6	0	222	
04:55:00 PM	3	28	5	0	3	25	2	0	2	1	10	0	1	1	2	0	234	1116
05:00:00 PM	5	25	4	0	2	23	0	0	1	1	8	0	0	3	5	0	231	1071
05:05:00 PM	7	28	4	0	4	24	4	0	1	0	3	0	1	2	5	0	243	1046
05:10:00 PM	8	33	5	0	2	26	4	0	0	0	7	0	2	0	6	0	253	1020
05:15:00 PM	7	27	6	0	0	15	5	0	0	1	4	0	0	2	3	0	246	1006
05:20:00 PM	7	36	2	0	0	14	6	0	1	2	8	0	2	0	4	0	245	984
05:25:00 PM	7	29	2	0	1	16	3	0	2	1	4	0	0	0	0	0	217	973
05:30:00 PM	4	21	6	0	2	16	5	0	0	0	6	0	0	0	2	0	209	937
05:35:00 PM	6	25	2	0	1	17	1	0	3	2	2	0	0	0	9	0	195	905
05:40:00 PM	3	23	2	0	1	13	4	0	2	0	4	0	0	1	4	0	187	891
05:45:00 PM	5	21	4	0	1	16	4	0	2	1	3	0	0	2	1	0	185	871
05:50:00 PM	4	25	3	0	3	14	1	0	2	1	4	0	2	0	2	0	178	861
05:55:00 PM	1	23	3	0	1	9	3	0	5	2	3	0	0	0	2	0	173	830

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*N Main St*
E/W street	*NE 10th St*
City, State	Prineville OR
Site Notes	
Location	44.309052 - -120.847085
Start Date	Tuesday, March 12, 2019
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:00:00 PM
Peak 15 Min Start	04:00:00 PM
PHF (15-Min Int)	0.82



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
73	366	26	0	0	303	25	0	149	22	96	0	22	14	3	0	465	328	267	39	421	518	112	48
Percent Heavy Vehicles																							
1.4%	1.6%	0.0%	0.0%	0.0%	0.3%	8.0%	0.0%	2.7%	9.1%	3.1%	0.0%	0.0%	0.0%	0.0%	0.0%	1.5%	0.9%	3.4%	0.0%	1.0%	1.9%	2.7%	4.2%

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	0	0

All Vehicle Volumes

	Northbound N Main St				**Southbound** N Main St				**Eastbound** NE 10th St				**Westbound** NE 10th St				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	7	37	3	0	0	43	7	0	15	2	13	0	1	1	1	0		
04:05:00 PM	7	37	1	0	0	38	1	0	14	2	7	0	3	2	0	0		
04:10:00 PM	3	29	2	0	0	26	0	0	12	4	13	0	1	5	0	0	337	
04:15:00 PM	6	31	6	0	0	31	0	0	10	2	5	0	2	0	0	0	300	
04:20:00 PM	6	23	2	0	0	18	1	0	15	1	11	0	0	1	0	0	266	
04:25:00 PM	6	34	0	0	0	23	2	0	12	1	4	0	3	0	0	0	256	
04:30:00 PM	11	43	3	0	0	18	1	0	13	1	10	0	0	0	0	0	263	
04:35:00 PM	7	31	1	0	0	26	2	0	15	1	7	0	2	2	0	0	279	
04:40:00 PM	8	19	2	0	0	15	2	0	12	4	8	0	3	0	1	0	268	
04:45:00 PM	5	30	1	0	0	19	2	0	17	3	6	0	5	1	0	0	257	
04:50:00 PM	4	25	3	0	0	17	2	0	4	0	6	0	0	0	0	0	224	
04:55:00 PM	3	27	2	0	0	29	5	0	10	1	6	0	2	2	1	0	238	1099
05:00:00 PM	5	19	2	0	0	13	1	0	9	1	7	0	0	0	0	0	206	1026
05:05:00 PM	2	44	2	0	0	23	1	0	6	1	5	0	4	2	0	0	235	1004
05:10:00 PM	3	20	0	0	1	22	1	0	10	2	10	0	2	0	0	0	218	980
05:15:00 PM	3	27	3	0	0	11	0	0	10	1	1	0	3	0	0	0	220	946
05:20:00 PM	8	32	1	0	0	19	0	0	5	1	0	0	3	0	0	0	199	937
05:25:00 PM	2	24	0	0	0	15	1	0	6	3	4	0	1	2	0	0	186	910
05:30:00 PM	5	29	0	0	0	20	0	0	8	2	1	0	1	0	0	0	193	876
05:35:00 PM	2	23	2	0	0	14	2	0	6	1	5	0	0	1	0	0	180	838
05:40:00 PM	3	24	1	0	0	17	0	0	5	2	4	0	1	0	0	0	179	821
05:45:00 PM	3	21	3	0	0	15	0	0	3	0	1	0	2	0	0	0	161	780
05:50:00 PM	2	23	2	0	1	12	0	0	4	1	2	0	0	0	0	0	152	766
05:55:00 PM	6	24	0	0	1	12	1	0	2	0	5	0	2	1	0	0	149	732

Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	111	6	274	171	5	162
Future Vol, veh/h	111	6	274	171	5	162
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	115	0	-	250	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	0	2	2	0	7
Mvmt Flow	121	7	298	186	5	176

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	484	298	0	0	484	0
Stage 1	298	-	-	-	-	-
Stage 2	186	-	-	-	-	-
Critical Hdwy	6.42	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	542	746	-	-	1089	-
Stage 1	753	-	-	-	-	-
Stage 2	846	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	539	746	-	-	1089	-
Mov Cap-2 Maneuver	539	-	-	-	-	-
Stage 1	749	-	-	-	-	-
Stage 2	846	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	539	746	1089	-
HCM Lane V/C Ratio	-	-	0.224	0.009	0.005	-
HCM Control Delay (s)	-	-	13.6	9.9	8.3	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.9	0	0	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	32	145	83	1	1	26
Future Vol, veh/h	32	145	83	1	1	26
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	94	94	94	94	94	94
Heavy Vehicles, %	0	2	4	0	0	0
Mvmt Flow	34	154	88	1	1	28

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	89	0	-	0	311	89
Stage 1	-	-	-	-	89	-
Stage 2	-	-	-	-	222	-
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	1519	-	-	-	686	975
Stage 1	-	-	-	-	940	-
Stage 2	-	-	-	-	820	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1519	-	-	-	670	975
Mov Cap-2 Maneuver	-	-	-	-	670	-
Stage 1	-	-	-	-	917	-
Stage 2	-	-	-	-	820	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1519	-	-	-	959
HCM Lane V/C Ratio	0.022	-	-	-	0.03
HCM Control Delay (s)	7.4	0	-	-	8.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Lane Group	EBT	EBR	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	209	117	48	89	478	400
v/c Ratio	0.62	0.30	0.25	0.18	0.45	0.37
Control Delay	35.0	7.9	32.6	11.7	12.7	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.0	7.9	32.6	11.7	12.7	11.6
Queue Length 50th (ft)	87	1	19	20	126	99
Queue Length 95th (ft)	140	32	47	49	219	177
Internal Link Dist (ft)	383		369		258	1013
Turn Bay Length (ft)		75		75		
Base Capacity (vph)	499	529	492	507	1067	1079
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.22	0.10	0.18	0.45	0.37

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	22	96	22	14	3	73	366	26	0	303	25
Future Volume (vph)	149	22	96	22	14	3	73	366	26	0	303	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5		4.5	4.5			4.5	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00			1.00	
Frt		1.00	0.85		0.99		1.00	0.99			0.99	
Flt Protected		0.96	1.00		0.97		0.95	1.00			1.00	
Satd. Flow (prot)		1754	1568		1827		1787	1846			1867	
Flt Permitted		0.96	1.00		0.97		0.47	1.00			1.00	
Satd. Flow (perm)		1754	1568		1827		880	1846			1867	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	182	27	117	27	17	4	89	446	32	0	370	30
RTOR Reduction (vph)	0	0	93	0	4	0	0	2	0	0	3	0
Lane Group Flow (vph)	0	209	24	0	44	0	89	476	0	0	397	0
Heavy Vehicles (%)	3%	9%	3%	0%	0%	0%	1%	2%	0%	0%	0%	8%
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	
Protected Phases	4	4		8	8			2			6	
Permitted Phases			4				2			6		
Actuated Green, G (s)		13.5	13.5		4.6		40.5	40.5			40.5	
Effective Green, g (s)		13.5	13.5		4.6		40.5	40.5			40.5	
Actuated g/C Ratio		0.19	0.19		0.06		0.56	0.56			0.56	
Clearance Time (s)		4.5	4.5		4.5		4.5	4.5			4.5	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		328	293		116		494	1036			1048	
v/s Ratio Prot		c0.12			c0.02			c0.26			0.21	
v/s Ratio Perm			0.02				0.10					
v/c Ratio		0.64	0.08		0.38		0.18	0.46			0.38	
Uniform Delay, d1		27.0	24.2		32.4		7.7	9.3			8.8	
Progression Factor		1.00	1.00		1.00		1.00	1.00			1.00	
Incremental Delay, d2		4.0	0.1		2.1		0.8	1.5			1.0	
Delay (s)		31.1	24.3		34.5		8.5	10.8			9.8	
Level of Service		C	C		C		A	B			A	
Approach Delay (s)		28.6			34.5			10.4			9.8	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	72.1	Sum of lost time (s)	13.5
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	22	96	22	14	3	73	366	26	0	303	25
Future Volume (veh/h)	149	22	96	22	14	3	73	366	26	0	303	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1856	1900	1900	1900	1885	1870	1870	1900	1900	1900
Adj Flow Rate, veh/h	182	27	117	27	17	4	89	446	32	0	370	30
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	9	9	3	0	0	0	1	2	2	0	0	0
Cap, veh/h	243	36	259	46	29	7	578	1008	72	110	1014	82
Arrive On Green	0.16	0.16	0.16	0.04	0.04	0.04	0.58	0.58	0.58	0.00	0.58	0.58
Sat Flow, veh/h	1474	219	1572	1025	645	152	993	1724	124	931	1734	141
Grp Volume(v), veh/h	209	0	117	48	0	0	89	0	478	0	0	400
Grp Sat Flow(s),veh/h/ln	1693	0	1572	1821	0	0	993	0	1848	931	0	1875
Q Serve(g_s), s	7.7	0.0	4.4	1.7	0.0	0.0	3.4	0.0	9.5	0.0	0.0	7.4
Cycle Q Clear(g_c), s	7.7	0.0	4.4	1.7	0.0	0.0	10.8	0.0	9.5	0.0	0.0	7.4
Prop In Lane	0.87		1.00	0.56		0.08	1.00		0.07	1.00		0.08
Lane Grp Cap(c), veh/h	279	0	259	81	0	0	578	0	1080	110	0	1096
V/C Ratio(X)	0.75	0.00	0.45	0.59	0.00	0.00	0.15	0.00	0.44	0.00	0.00	0.37
Avail Cap(c_a), veh/h	509	0	473	514	0	0	578	0	1080	110	0	1096
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	26.1	0.0	24.7	30.7	0.0	0.0	10.0	0.0	7.6	0.0	0.0	7.2
Incr Delay (d2), s/veh	4.0	0.0	1.2	6.7	0.0	0.0	0.6	0.0	1.3	0.0	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	1.6	0.9	0.0	0.0	0.7	0.0	3.4	0.0	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.1	0.0	25.9	37.5	0.0	0.0	10.6	0.0	8.9	0.0	0.0	8.1
LnGrp LOS	C	A	C	D	A	A	B	A	A	A	A	A
Approach Vol, veh/h		326			48			567			400	
Approach Delay, s/veh		28.6			37.5			9.2			8.1	
Approach LOS		C			D			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		42.8		15.3		42.8		7.4				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		38.3		19.7		38.3		18.5				
Max Q Clear Time (g_c+I1), s		12.8		9.7		9.4		3.7				
Green Ext Time (p_c), s		3.7		1.1		2.6		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			14.6									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	14	97	10	6	58	74	372	58	31	333	42
Future Vol, veh/h	21	14	97	10	6	58	74	372	58	31	333	42
Conflicting Peds, #/hr	3	0	0	0	0	3	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	-	-	-	0	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	0	0	0	0	0	2	0	1	0	3	1	0
Mvmt Flow	26	18	121	13	8	73	93	465	73	39	416	53

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1252	1246	443	1279	1236	506	469	0	0	539	0	0
Stage 1	521	521	-	689	689	-	-	-	-	-	-	-
Stage 2	731	725	-	590	547	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.22	4.1	-	-	4.13	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.318	2.2	-	-	2.227	-	-
Pot Cap-1 Maneuver	151	175	619	144	178	566	1103	-	-	1024	-	-
Stage 1	542	535	-	439	450	-	-	-	-	-	-	-
Stage 2	416	433	-	497	521	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	115	154	619	96	157	564	1103	-	-	1023	-	-
Mov Cap-2 Maneuver	115	154	-	96	157	-	-	-	-	-	-	-
Stage 1	496	515	-	402	412	-	-	-	-	-	-	-
Stage 2	325	396	-	371	501	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	21.2	22.1	1.3	0.7
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1103	-	-	115	448	302	1023	-	-
HCM Lane V/C Ratio	0.084	-	-	0.228	0.31	0.306	0.038	-	-
HCM Control Delay (s)	8.6	-	-	45.3	16.6	22.1	8.7	-	-
HCM Lane LOS	A	-	-	E	C	C	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.8	1.3	1.3	0.1	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	116	6	285	179	5	169
Future Vol, veh/h	116	6	285	179	5	169
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	115	0	-	250	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	0	2	2	0	7
Mvmt Flow	126	7	310	195	5	184

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	504	310	0	0	505	0
Stage 1	310	-	-	-	-	-
Stage 2	194	-	-	-	-	-
Critical Hdwy	6.42	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	528	735	-	-	1070	-
Stage 1	744	-	-	-	-	-
Stage 2	839	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	525	735	-	-	1070	-
Mov Cap-2 Maneuver	525	-	-	-	-	-
Stage 1	740	-	-	-	-	-
Stage 2	839	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.8	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	525	735	1070	-
HCM Lane V/C Ratio	-	-	0.24	0.009	0.005	-
HCM Control Delay (s)	-	-	14	9.9	8.4	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.9	0	0	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	33	152	87	1	1	27
Future Vol, veh/h	33	152	87	1	1	27
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	94	94	94	94	94	94
Heavy Vehicles, %	0	2	4	0	0	0
Mvmt Flow	35	162	93	1	1	29

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	94	0	-	0	326	94
Stage 1	-	-	-	-	94	-
Stage 2	-	-	-	-	232	-
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	1513	-	-	-	672	968
Stage 1	-	-	-	-	935	-
Stage 2	-	-	-	-	811	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1513	-	-	-	655	968
Mov Cap-2 Maneuver	-	-	-	-	655	-
Stage 1	-	-	-	-	912	-
Stage 2	-	-	-	-	811	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1513	-	-	-	952
HCM Lane V/C Ratio	0.023	-	-	-	0.031
HCM Control Delay (s)	7.4	0	-	-	8.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Lane Group	EBT	EBR	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	227	122	50	93	520	433
v/c Ratio	0.65	0.30	0.26	0.20	0.49	0.41
Control Delay	35.9	9.1	32.9	12.3	13.7	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.9	9.1	32.9	12.3	13.7	12.3
Queue Length 50th (ft)	96	4	20	21	146	113
Queue Length 95th (ft)	152	37	48	52	245	194
Internal Link Dist (ft)	383		369		258	1013
Turn Bay Length (ft)		75		75		
Base Capacity (vph)	500	525	492	470	1053	1064
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.23	0.10	0.20	0.49	0.41

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	163	23	100	23	15	3	76	399	27	0	325	30
Future Volume (vph)	163	23	100	23	15	3	76	399	27	0	325	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5		4.5	4.5			4.5	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00			1.00	
Frt		1.00	0.85		0.99		1.00	0.99			0.99	
Flt Protected		0.96	1.00		0.97		0.95	1.00			1.00	
Satd. Flow (prot)		1755	1568		1828		1787	1847			1863	
Flt Permitted		0.96	1.00		0.97		0.44	1.00			1.00	
Satd. Flow (perm)		1755	1568		1828		825	1847			1863	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	199	28	122	28	18	4	93	487	33	0	396	37
RTOR Reduction (vph)	0	0	89	0	4	0	0	2	0	0	3	0
Lane Group Flow (vph)	0	227	33	0	46	0	93	518	0	0	430	0
Heavy Vehicles (%)	3%	9%	3%	0%	0%	0%	1%	2%	0%	0%	0%	8%
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	
Protected Phases	4	4		8	8			2			6	
Permitted Phases			4				2			6		
Actuated Green, G (s)		14.0	14.0		4.6		40.1	40.1			40.1	
Effective Green, g (s)		14.0	14.0		4.6		40.1	40.1			40.1	
Actuated g/C Ratio		0.19	0.19		0.06		0.56	0.56			0.56	
Clearance Time (s)		4.5	4.5		4.5		4.5	4.5			4.5	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		340	304		116		458	1025			1034	
v/s Ratio Prot		c0.13			c0.03			c0.28			0.23	
v/s Ratio Perm			0.02				0.11					
v/c Ratio		0.67	0.11		0.40		0.20	0.51			0.42	
Uniform Delay, d1		26.9	24.0		32.5		8.0	9.9			9.3	
Progression Factor		1.00	1.00		1.00		1.00	1.00			1.00	
Incremental Delay, d2		4.9	0.2		2.2		1.0	1.8			1.2	
Delay (s)		31.8	24.1		34.7		9.0	11.7			10.5	
Level of Service		C	C		C		A	B			B	
Approach Delay (s)		29.1			34.7			11.3			10.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	72.2	Sum of lost time (s)	13.5
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	163	23	100	23	15	3	76	399	27	0	325	30
Future Volume (veh/h)	163	23	100	23	15	3	76	399	27	0	325	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1856	1900	1900	1900	1885	1870	1870	1900	1900	1900
Adj Flow Rate, veh/h	199	28	122	28	18	4	93	487	33	0	396	37
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	9	9	3	0	0	0	1	2	2	0	0	0
Cap, veh/h	260	37	276	46	30	7	540	998	68	108	986	92
Arrive On Green	0.18	0.18	0.18	0.05	0.05	0.05	0.58	0.58	0.58	0.00	0.58	0.58
Sat Flow, veh/h	1484	209	1572	1021	656	146	963	1732	117	896	1711	160
Grp Volume(v), veh/h	227	0	122	50	0	0	93	0	520	0	0	433
Grp Sat Flow(s),veh/h/ln	1692	0	1572	1823	0	0	963	0	1849	896	0	1871
Q Serve(g_s), s	8.5	0.0	4.6	1.8	0.0	0.0	3.9	0.0	11.0	0.0	0.0	8.5
Cycle Q Clear(g_c), s	8.5	0.0	4.6	1.8	0.0	0.0	12.4	0.0	11.0	0.0	0.0	8.5
Prop In Lane	0.88		1.00	0.56		0.08	1.00		0.06	1.00		0.09
Lane Grp Cap(c), veh/h	297	0	276	83	0	0	540	0	1066	108	0	1078
V/C Ratio(X)	0.77	0.00	0.44	0.60	0.00	0.00	0.17	0.00	0.49	0.00	0.00	0.40
Avail Cap(c_a), veh/h	502	0	466	507	0	0	540	0	1066	108	0	1078
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	26.1	0.0	24.5	31.1	0.0	0.0	11.2	0.0	8.3	0.0	0.0	7.8
Incr Delay (d2), s/veh	4.1	0.0	1.1	6.9	0.0	0.0	0.7	0.0	1.6	0.0	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	1.7	0.9	0.0	0.0	0.9	0.0	4.0	0.0	0.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.2	0.0	25.6	38.1	0.0	0.0	11.9	0.0	9.9	0.0	0.0	8.9
LnGrp LOS	C	A	C	D	A	A	B	A	A	A	A	A
Approach Vol, veh/h		349			50			613			433	
Approach Delay, s/veh		28.6			38.1			10.2			8.9	
Approach LOS		C			D			B			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		42.8		16.1		42.8		7.5				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		38.3		19.7		38.3		18.5				
Max Q Clear Time (g_c+I1), s		14.4		10.5		10.5		3.8				
Green Ext Time (p_c), s		4.1		1.2		2.9		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			15.2									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	15	101	10	6	60	77	402	60	32	354	46
Future Vol, veh/h	25	15	101	10	6	60	77	402	60	32	354	46
Conflicting Peds, #/hr	3	0	0	0	0	3	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	-	-	-	0	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	0	0	0	0	0	2	0	1	0	3	1	0
Mvmt Flow	31	19	126	13	8	75	96	503	75	40	443	58

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1329	1323	472	1359	1315	545	501	0	0	579	0	0
Stage 1	552	552	-	734	734	-	-	-	-	-	-	-
Stage 2	777	771	-	625	581	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.22	4.1	-	-	4.13	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.318	2.2	-	-	2.227	-	-
Pot Cap-1 Maneuver	133	158	596	127	159	538	1074	-	-	990	-	-
Stage 1	522	518	-	415	429	-	-	-	-	-	-	-
Stage 2	393	413	-	476	503	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	99	138	596	81	139	536	1074	-	-	989	-	-
Mov Cap-2 Maneuver	99	138	-	81	139	-	-	-	-	-	-	-
Stage 1	476	497	-	378	390	-	-	-	-	-	-	-
Stage 2	301	376	-	346	483	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.1	25.1	1.2	0.7
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1074	-	-	99	417	273	989	-	-
HCM Lane V/C Ratio	0.09	-	-	0.316	0.348	0.348	0.04	-	-
HCM Control Delay (s)	8.7	-	-	57.3	18.2	25.1	8.8	-	-
HCM Lane LOS	A	-	-	F	C	D	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	1.2	1.5	1.5	0.1	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	138	6	285	213	5	169
Future Vol, veh/h	138	6	285	213	5	169
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	115	0	-	250	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	0	2	2	0	7
Mvmt Flow	150	7	310	232	5	184

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	504	310	0	0	542	0
Stage 1	310	-	-	-	-	-
Stage 2	194	-	-	-	-	-
Critical Hdwy	6.42	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	528	735	-	-	1037	-
Stage 1	744	-	-	-	-	-
Stage 2	839	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	525	735	-	-	1037	-
Mov Cap-2 Maneuver	525	-	-	-	-	-
Stage 1	740	-	-	-	-	-
Stage 2	839	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.4	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	525	735	1037	-
HCM Lane V/C Ratio	-	-	0.286	0.009	0.005	-
HCM Control Delay (s)	-	-	14.6	9.9	8.5	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	1.2	0	0	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	67	152	87	3	2	49
Future Vol, veh/h	67	152	87	3	2	49
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	94	94	94	94	94	94
Heavy Vehicles, %	0	2	4	0	0	0
Mvmt Flow	71	162	93	3	2	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	96	0	-	0	399	95
Stage 1	-	-	-	-	95	-
Stage 2	-	-	-	-	304	-
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	1510	-	-	-	611	967
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	753	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1510	-	-	-	579	967
Mov Cap-2 Maneuver	-	-	-	-	579	-
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	753	-

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	9.1
HCM LOS			A

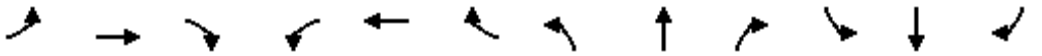
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1510	-	-	-	942
HCM Lane V/C Ratio	0.047	-	-	-	0.058
HCM Control Delay (s)	7.5	0	-	-	9.1
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	235	122	52	93	550	1	459
v/c Ratio	0.66	0.30	0.27	0.21	0.52	0.00	0.43
Control Delay	36.2	9.6	32.3	12.7	14.3	11.0	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.2	9.6	32.3	12.7	14.3	11.0	12.8
Queue Length 50th (ft)	100	6	20	22	161	0	124
Queue Length 95th (ft)	157	38	49	53	264	3	208
Internal Link Dist (ft)	383		369		258		1013
Turn Bay Length (ft)		75		75		75	
Base Capacity (vph)	499	522	491	443	1048	372	1056
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.23	0.11	0.21	0.52	0.00	0.43

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	23	100	23	15	5	76	424	27	1	341	35
Future Volume (vph)	170	23	100	23	15	5	76	424	27	1	341	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.98		1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1755	1568		1821		1787	1848		1805	1859	
Flt Permitted		0.96	1.00		0.97		0.42	1.00		0.35	1.00	
Satd. Flow (perm)		1755	1568		1821		783	1848		658	1859	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	207	28	122	28	18	6	93	517	33	1	416	43
RTOR Reduction (vph)	0	0	85	0	6	0	0	2	0	0	3	0
Lane Group Flow (vph)	0	235	37	0	46	0	93	548	0	1	456	0
Heavy Vehicles (%)	3%	9%	3%	0%	0%	0%	1%	2%	0%	0%	0%	8%
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	
Protected Phases	4	4		8	8			2			6	
Permitted Phases			4				2			6		
Actuated Green, G (s)		14.3	14.3		4.6		39.9	39.9		39.9	39.9	
Effective Green, g (s)		14.3	14.3		4.6		39.9	39.9		39.9	39.9	
Actuated g/C Ratio		0.20	0.20		0.06		0.55	0.55		0.55	0.55	
Clearance Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		347	310		115		432	1019		363	1025	
v/s Ratio Prot		c0.13			c0.03			c0.30			0.25	
v/s Ratio Perm			0.02				0.12			0.00		
v/c Ratio		0.68	0.12		0.40		0.22	0.54		0.00	0.44	
Uniform Delay, d1		26.9	23.8		32.5		8.2	10.3		7.3	9.6	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		5.2	0.2		2.3		1.1	2.0		0.0	1.4	
Delay (s)		32.0	24.0		34.8		9.4	12.4		7.3	11.0	
Level of Service		C	C		C		A	B		A	B	
Approach Delay (s)		29.3			34.8			11.9			11.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	72.3	Sum of lost time (s)	13.5
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	23	100	23	15	5	76	424	27	1	341	35
Future Volume (veh/h)	170	23	100	23	15	5	76	424	27	1	341	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1856	1900	1900	1900	1885	1870	1870	1900	1900	1900
Adj Flow Rate, veh/h	207	28	122	28	18	6	93	517	33	1	416	43
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	9	9	3	0	0	0	1	2	2	0	0	0
Cap, veh/h	268	36	283	45	29	10	515	995	64	449	969	100
Arrive On Green	0.18	0.18	0.18	0.05	0.05	0.05	0.57	0.57	0.57	0.57	0.57	0.57
Sat Flow, veh/h	1490	202	1572	977	628	209	940	1739	111	871	1693	175
Grp Volume(v), veh/h	235	0	122	52	0	0	93	0	550	1	0	459
Grp Sat Flow(s),veh/h/ln	1692	0	1572	1814	0	0	940	0	1850	871	0	1868
Q Serve(g_s), s	8.9	0.0	4.6	1.9	0.0	0.0	4.2	0.0	12.1	0.0	0.0	9.3
Cycle Q Clear(g_c), s	8.9	0.0	4.6	1.9	0.0	0.0	13.5	0.0	12.1	12.2	0.0	9.3
Prop In Lane	0.88		1.00	0.54		0.12	1.00		0.06	1.00		0.09
Lane Grp Cap(c), veh/h	304	0	283	84	0	0	515	0	1059	449	0	1069
V/C Ratio(X)	0.77	0.00	0.43	0.62	0.00	0.00	0.18	0.00	0.52	0.00	0.00	0.43
Avail Cap(c_a), veh/h	498	0	463	501	0	0	515	0	1059	449	0	1069
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.1	0.0	24.4	31.3	0.0	0.0	11.9	0.0	8.7	12.4	0.0	8.1
Incr Delay (d2), s/veh	4.2	0.0	1.0	7.2	0.0	0.0	0.8	0.0	1.8	0.0	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	1.7	1.0	0.0	0.0	0.9	0.0	4.5	0.0	0.0	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.3	0.0	25.5	38.6	0.0	0.0	12.7	0.0	10.5	12.4	0.0	9.4
LnGrp LOS	C	A	C	D	A	A	B	A	B	B	A	A
Approach Vol, veh/h		357			52			643			460	
Approach Delay, s/veh		28.7			38.6			10.8			9.4	
Approach LOS		C			D			B			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		42.8		16.5		42.8		7.6				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		38.3		19.7		38.3		18.5				
Max Q Clear Time (g_c+I1), s		15.5		10.9		14.2		3.9				
Green Ext Time (p_c), s		4.3		1.2		3.0		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			15.6									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	15	101	10	6	60	77	416	60	32	363	53
Future Vol, veh/h	36	15	101	10	6	60	77	416	60	32	363	53
Conflicting Peds, #/hr	3	0	0	0	0	3	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	-	-	-	0	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	0	0	0	0	0	2	0	1	0	3	1	0
Mvmt Flow	45	19	126	13	8	75	96	520	75	40	454	66

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1361	1355	487	1391	1351	562	520	0	0	596	0	0
Stage 1	567	567	-	751	751	-	-	-	-	-	-	-
Stage 2	794	788	-	640	600	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.22	4.1	-	-	4.13	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.318	2.2	-	-	2.227	-	-
Pot Cap-1 Maneuver	127	151	585	121	152	526	1056	-	-	976	-	-
Stage 1	512	510	-	406	421	-	-	-	-	-	-	-
Stage 2	384	405	-	467	493	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	94	132	585	76	132	524	1056	-	-	975	-	-
Mov Cap-2 Maneuver	94	132	-	76	132	-	-	-	-	-	-	-
Stage 1	465	489	-	369	382	-	-	-	-	-	-	-
Stage 2	292	368	-	338	473	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	32	26.5	1.2	0.6
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1056	-	-	94	405	261	975	-	-
HCM Lane V/C Ratio	0.091	-	-	0.479	0.358	0.364	0.041	-	-
HCM Control Delay (s)	8.8	-	-	74.4	18.8	26.5	8.8	-	-
HCM Lane LOS	A	-	-	F	C	D	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	2.1	1.6	1.6	0.1	-	-