

TRANSPORTATION TECHNICAL REPORT

for

Huntington Middle School Interim Use of Catlin Elementary School Site

PREPARED FOR:

Kelso School District

PREPARED BY:



6544 NE 61st Street, Seattle, WA 98115
ph: (206) 523-3939 ♦ fx: (206) 523-4949

February 11, 2021

TABLE OF CONTENTS

1. INTRODUCTION	1
1.1. Project Description	1
2. BACKGROUND CONDITIONS	5
2.1. Roadway Network.....	5
2.2. Traffic Volumes	6
2.3. Traffic Operations	7
2.4. Parking Supply	11
2.5. Traffic Safety.....	11
2.6. Transit Facilities and Service	12
2.7. Non-Motorized Transportation Facilities	12
3. PROJECT IMPACTS	13
3.1. Roadway Network.....	13
3.2. Traffic Volumes	13
3.3. Traffic Operations	18
3.4. Parking Supply and Demand.....	19
3.5. Traffic Safety.....	19
3.6. Transit.....	20
3.7. Non-Motorized Transportation Facilities	20
4. FINDINGS AND RECOMMENDATIONS.....	21
4.1. Recommendation.....	21
APPENDIX A – TRAFFIC COUNT DATA SHEETS	
APPENDIX B – LEVEL OF SERVICE DEFINITIONS & LOS CALCULATION SHEETS	

LIST OF FIGURES

Figure 1. Site Location and Vicinity	2
Figure 2. Site Plan for Interim Use by Huntington Middle School.....	4
Figure 3. Existing Traffic Volumes – Morning and Afternoon Peak Hours	8
Figure 4. Forecast 2022 Without-Project Traffic Volumes – Morning and Afternoon Peak Hours	9
Figure 5. Project Trip Distribution and Assignment – Morning Peak Hour	15
Figure 6. Project Trip Distribution and Assignment – Afternoon Peak Hour	16
Figure 7. Forecast 2022-With-Project Traffic Volumes – Morning and Afternoon Peak Hours	17

LIST OF TABLES

Table 1. Traffic Count Data.....	6
Table 2. Level of Service Summary – Existing and 2022-Without-Project Conditions.....	10
Table 3. Collision Summary (January 1, 2017 through October 31, 2020).....	11
Table 4. Huntington Middle School Interim Use Trip Generation at Catlin Elementary Site	13
Table 5. Level of Service Summary – 2022-Without and With-Project Conditions.....	18



1. INTRODUCTION

This report presents the transportation impact analyses for the Kelso School District’s (District) proposal to temporarily house Huntington Middle School at the Catlin Elementary School site. The scope of analysis and approach were based on extensive past experience performing transportation impact analyses for school projects throughout Washington. This report documents the existing conditions in the site vicinity, presents estimates of project-related traffic, and evaluates the anticipated impacts to the surrounding transportation system including parking, safety, and non-motorized facilities. This analysis was prepared to support the Conditional Use Permit (CUP) required by the City of Kelso (City) and the SEPA checklist prepared by the District. The study area and key analysis assumptions were defined in coordination with City staff.¹ At the time of this analysis, Kelso Schools were operating with a mix of hybrid- and remote-learning due to the COVID-19 pandemic. The traffic analyses presented herein are based on data collected before the pandemic began to reflect normalized school conditions.

The District retained Heffron Transportation, Inc. to prepare the required traffic and transportation analyses for the project. Heffron Transportation, Inc. is a professional traffic and transportation engineering consulting firm located and registered in the State of Washington. The analysis and report documentation were prepared by:

Tod S. McBryan, P.E., Principal & Vice President
Heffron Transportation, Inc.
6544 NE 61st Street
Seattle, WA 98115

Phone: (206) 527-8410
Email: tod@hefftrans.com

Mr. McBryan is a Principal Transportation Engineer and Professional Civil Engineer licensed in the State of Washington with 29 years of experience preparing traffic impact analyses. He is also a member of the Institute of Transportation Engineers (ITE) and the Transportation Research Board (TRB). Mr. McBryan has led transportation analyses for over 250 public schools in Washington State.

1.1. Project Description

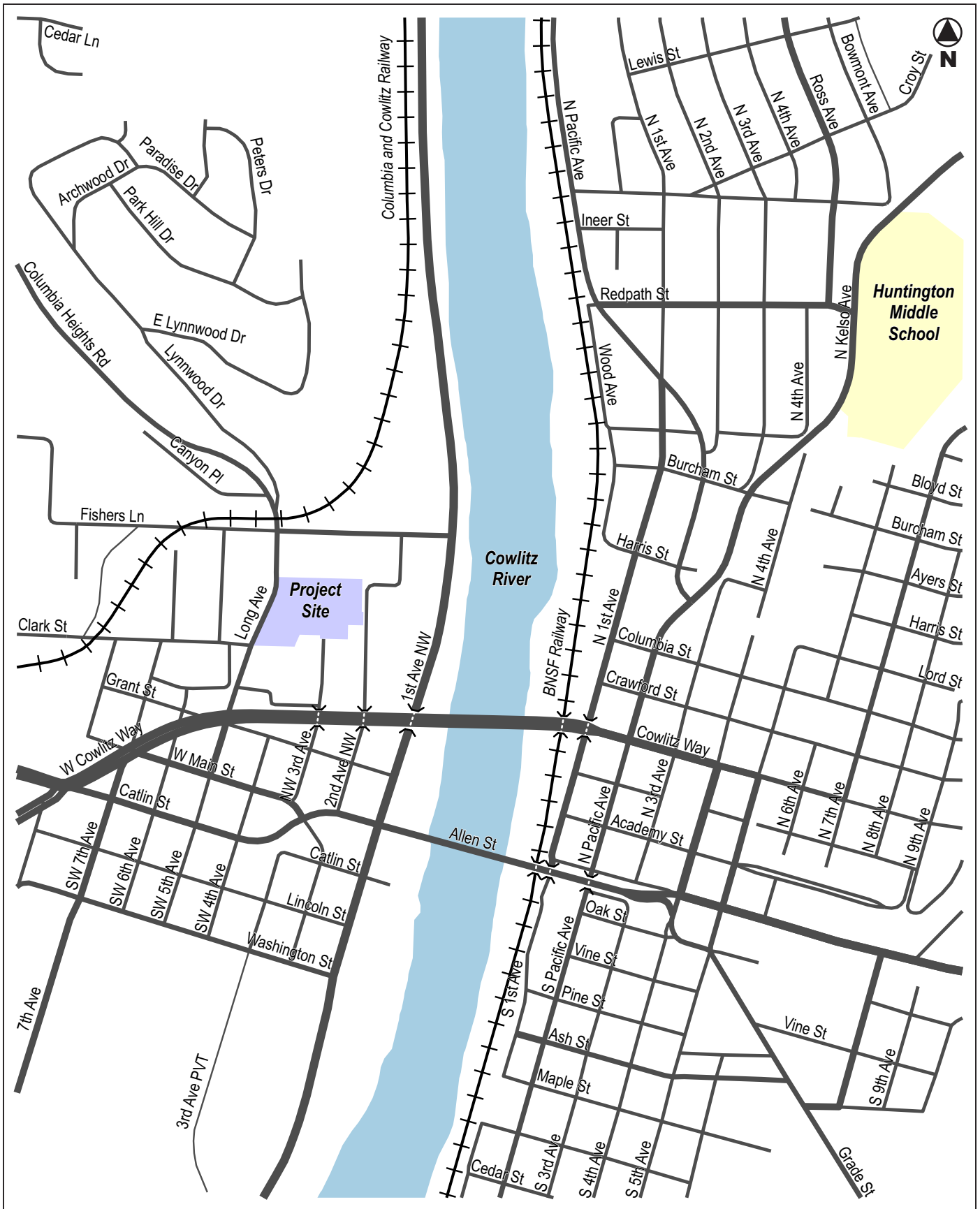
Huntington Middle School will undergo modernization during the 2021-2022 school year. After Catlin Elementary students are relocated to the new Lexington Elementary School that is currently under construction, Huntington Middle School, with its enrollment of about 580 students will be temporarily relocated to the Catlin Elementary site (located at 404 Long Avenue in Kelso) for one school year. The following sections describe the existing school site and the proposed project.

1.1.1. Existing School Site

The Catlin Elementary School site consists of three parcels bounded by Long Avenue on the west, 2nd Avenue NW on the east, and private properties to the north and south. The project site location and vicinity are shown in Figure 1.

¹ Email communication, M. Kardas, PE—Community Development Director/City Engineer, City of Kelso, Nov. 2, 2020.





**Kelso School District
Huntington Middle School
Interim Site Traffic Analysis**

Figure 1
Site Location and Vicinity



Transportation Technical Report for Huntington Middle School Interim Use of Catlin Elementary School Site

The original school building was constructed in 1947 and has 27,870 square feet (sf) of space. A 24,429-sf addition with classroom, office, and library, was built in 1979.² The site also has a 3,112-sf covered play area, added in 1989. Hard-and soft-surface play areas exist in the middle of the site east and south of the school buildings and a natural turf play field on the eastern side of the site.

Surface parking areas with a total of about 59 space are located along the northwest, south, and southeast portions of the buildings. The northwest lot (with 16 spaces) has two one-way access driveways on Long Avenue with entry at the south and exit at the north. The south lot (with 25 spaces) has a full-access driveway on Long Avenue located just north of Clark Street and an internal access connection south of the building to 3rd Avenue NW, which terminates at the school property. There are 9 spaces adjacent to the east site of the south school building and another 9 located on the south side of the school-bus load/unload area and accessed from 3rd Avenue NW.

There is a signed 5-minute load zone for student pick-up and drop-off (Monday through Friday) on east side (northbound direction) of Long Avenue. School-buses access on-site load/unload area from northbound 3rd Avenue NW and exit to Long Avenue through the south parking lot.

Over the past five years, enrollment at Catlin Elementary School has ranged from 302 to 373 students with the highest enrollment during the 2017-18 school year.³

1.1.2. Proposed Site Changes

After Catlin Elementary students are relocated to the new Lexington Elementary School that is currently under construction, the Kelso School District would reconfigure and augment the Catlin Elementary site in order to temporarily house Huntington Middle School, with its expected enrollment of 580 students. The District would place five double portables (10 classrooms) in the central portion of the site where hard- and soft-surface play areas currently exist. Two restroom portables would be placed east of the northern school building and the natural turf play field would be resurfaced to provide a passenger-vehicle load/unload area for students as well as added parking (an additional 60 spaces) for staff and visitors.

The new load/unload and parking area would have two new access driveways serving one-way traffic through the site. It would have an entry from 2nd Avenue NW opposite Galloway Avenue and an exit to 2nd Avenue NE at the south side of the site (about 185 feet south of Galloway Street). School buses would use the same routes and access patterns as formerly used to serve Catlin Elementary. They would arrive from the south using northbound 3rd Avenue NW and loading/unload students on site in the area south of the covered play structure. Buses would exit the site to the west using the internal drive connection south of the school building to the south driveway on Long Avenue. The site, planned portable placement, and access configuration are shown in Figure 2.

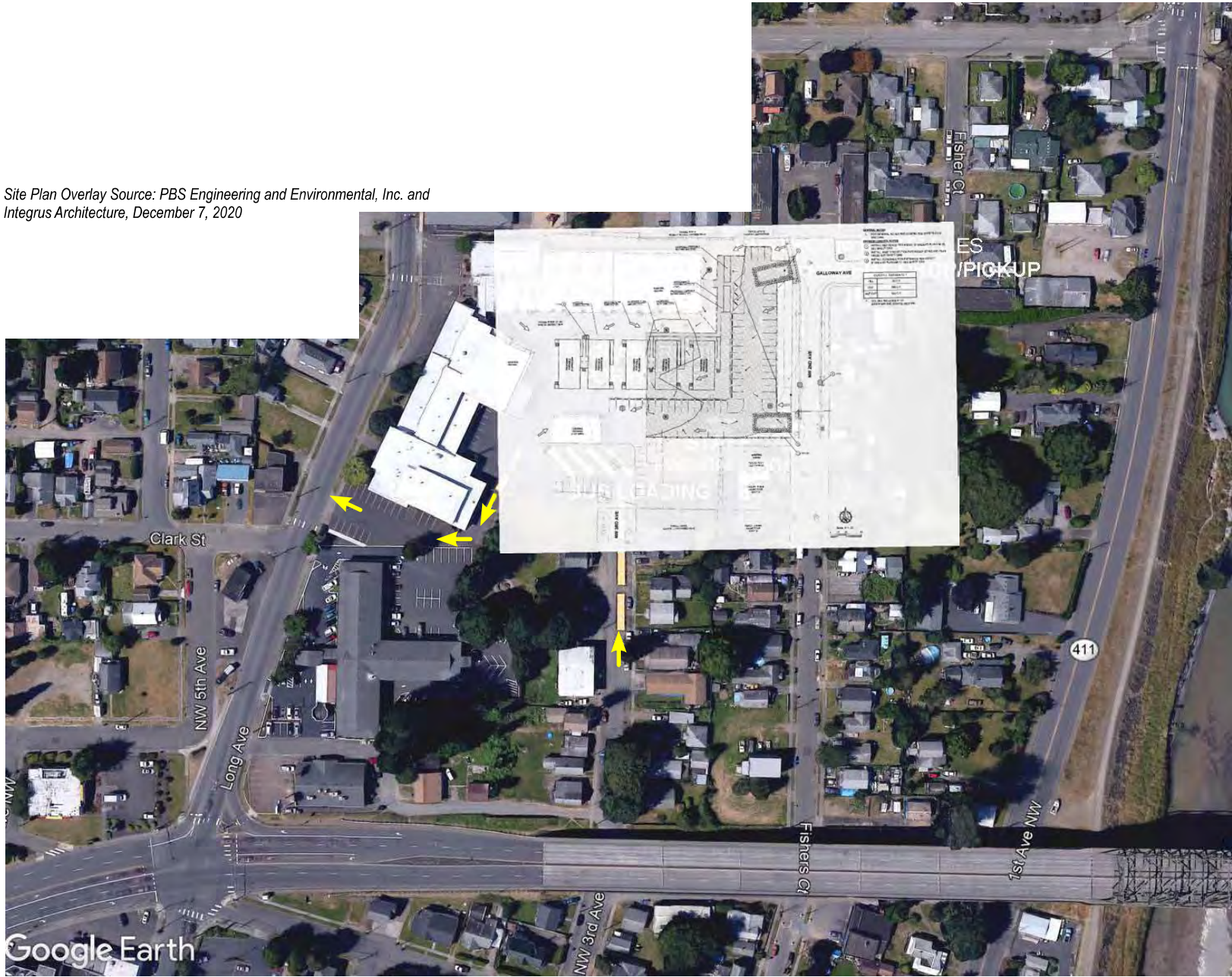
The site would be used as the interim Huntington Middle School for the 2021-2022 school year (September through June). After the 2021-22 school year, the site may be re-purposed for alternative non-K-12 uses (such as early learning and pre-school programs and/or partnerships with other community service agencies) or could be sold. Future analyses (without and with the project) presented in this report reflect year 2022 conditions to reflect the period when the interim middle school use would occur.

² Construction Services Group, *Kelso School District, No. 458 Study and Survey – School Facilities and Organization Information and Condition of Schools, Inventory of Facilities and Buildings* (as of November 29, 2017), December 2017.

³ Office of Superintendent of Public Instruction (OSPI), Online Washington School Report Card data portal, 2020.



Site Plan Overlay Source: PBS Engineering and Environmental, Inc. and
Integrus Architecture, December 7, 2020



**Kelso School District
Huntington Middle School
Interim Site Traffic Analysis**

Figure 2
Site Plan for Interim Use by Huntington Middle School



2. BACKGROUND CONDITIONS

This section presents the existing and future conditions without the proposed project. The impacts of the proposed project were evaluated against these base conditions. For comparison, and to provide an analysis of potential new traffic and parking impacts, year 2022 without-project conditions assume the existing Catlin Elementary School would remain closed and unused, since its students will have relocated to the new Lexington Elementary School. The following sections describe the existing roadway network, traffic volumes, traffic operations (in terms of levels of service), traffic safety, transit facilities, non-motorized facilities, and parking.

Five off-site intersections plus the site access driveways were selected for study based on travel routes expected to be used by family drivers, buses, and staff to access and egress the site area. The following study area intersections were identified for analysis for both the morning and afternoon peak hours.

Signalized Intersection

1st Avenue NW (State Route [SR] 411) / Fishers Lane

Stop-Controlled Intersections

- Fishers Lane / Fishers Court
- Long Avenue / Fishers Lane
- Grant Street / 1st Ave NW
- W Main St / 2nd Avenue NW

Site Access Intersections

- Long Avenue / North Lot Exit
- Long Avenue / North Lot Entry
- Long Avenue / South Lot Access
- 2nd Avenue NW / Planned New Entry
- 2nd Avenue NW / Planned New Exit

2.1. Roadway Network

The following describes key roadways in the site vicinity. Roadway classifications are based on the City's Functional Classifications.⁴

Long Avenue is a north-south Major Collector that connects Cowlitz Way on the south to Fishers Lane and the north City limit. Near the school, it has one travel lane in each direction. There are sidewalks, curbs, and gutters on both sides. There is a five-minute school load/unload zone on the east side of the street adjacent to Catlin Elementary. The posted speed limit is 25 miles per hour (mph); however, in the vicinity of the school it is signed as a School Zone with speed limit of 20 mph from 7:30 A.M. to 4:00 P.M. There are signed and marked school crosswalks in two locations—one directly in front of the school and one on the north leg of the intersection with Clark Street.

Fishers Lane is an east-west Major Collector that extends west from 1st Avenue NW (West Side Highway / SR 411) to Long Avenue. West of Long Avenue, it continues as a local access street to the west City limit. The roadway has one lane in each direction with right-turn pockets at its intersections with 1st Avenue NW and Long Avenue. The posted speed limit is 25 mph. It has intermittent segments with sidewalk and curbs on both sides.

1st Avenue NW (SR 411 / West Side Highway) is a north-south Minor Arterial and designated State Route aligned along the west side of the Cowlitz River and extending north from SR 432. Near the site, it has one lane in each direction with turn lanes added at major intersections, including Fishers Lane. North of Fishers Lane, the posted speed limit is 45 mph; south of Fishers Lane, the speed limit is 35 mph. Its intersection with Fishers Lane is signalized. The roadway has curb and sidewalk along the west side south of Fishers Lane; there are paved or gravel shoulders on both sides to the north.

⁴ City of Kelso, *West Kelso Subarea Plan Existing Conditions Report*, October 2015.



Galloway Avenue is local street that provides access to residential uses south of Fishers Lane and connects to 2nd Avenue NW. It has curbs and sidewalks on both sides. There are “No Parking” signs on the east side of the north-south segment south of Fishers Lane. Its approach to Fishers Lane is stop-sign controlled; its intersection at 2nd Avenue NW is uncontrolled.

2nd Avenue NW is a north-south local street that connects between Galloway Avenue on the north and Main Street on the south. Near the site, it has sidewalks, curbs, and gutters on both sides. Parallel on-street parking occurs on both sides. Its approaches at the Grant Street and Main Street intersections are stop-sign controlled.

3rd Avenue NW is a north-south local street that connects between the school site on the north, where it dead-ends at a gated school access, and Main Street. Near the school, it has paved gravel shoulders with intermittent segments of sidewalk. Parking occurs within the shoulders on both sides. Its approaches at the Grant Street and Main Street intersections are stop-sign controlled.

Grant Street is an east-west local street that connects between 1st Avenue NW (SR 411) on the east to NW 5th Avenue at the Cowlitz Way intersection. It has curbs and sidewalks with parallel parking on both sides. Its approach to 1st Avenue NW is stop-sign controlled. The segment between 4th Avenue NW and NW 5th Avenue is designated for one-way eastbound travel only.

Since the proposed project is planned for one school year beginning in 2021, existing study-area intersection channelization and operating conditions (including traffic control) were assumed to remain unchanged from existing conditions.

2.2. Traffic Volumes

2.2.1. Existing Conditions

The school day at Huntington Middle School is 7:30 A.M. to 3:15 P.M. Those times are assumed to remain in effect when it is temporarily housed at the Catlin Elementary site. Due to the ongoing COVID-19 pandemic conditions, traffic data in the site vicinity were derived from counts collected in 2015 and 2017. Table 1 lists count data used for this analysis; data sheets are provided in Appendix A.

Table 1. Traffic Count Data

Type & Location	Day(s), Date(s)	Count Periods	Source
Peak Period Turning Movement Counts			
1 st Avenue NW / Fishers Lane	Wed., May 3, 2017	7:00 to 9:00 A.M. 4:00 to 6:00 P.M.	Idax Data Solutions
Long Avenue / Fishers Lane	Wed., May 3, 2017	7:00 to 9:00 A.M. 4:00 to 6:00 P.M.	Idax Data Solutions
Catlin St / Cowlitz Way	Wed., May 3, 2017	7:00 to 9:00 A.M. 4:00 to 6:00 P.M.	Idax Data Solutions
Catlin St / Cowlitz Way	Wed., June 16, 2015	4:00 to 6:00 P.M.	Idax Data Solutions
Main St / Allen St Bridge	Wed., June 16, 2015	4:00 to 6:00 P.M.	Idax Data Solutions
Machine Counts			
Allen St east of 1 st Ave NW	Tue., May 2 – Wed., May 3, 2017	48-hours	Idax Data Solutions
Cowlitz Way between Pacific Ave and Long Ave	Tue., May 2 – Wed., May 3, 2017	48-hours	Idax Data Solutions
SR 411 north of Fishers Lane	Year 2010 to 2020	24 hours / day	WSDOT



The morning peak period counts reflect volumes during the anticipated morning peak hour for Huntington Middle School (likely 7:00 to 8:00 A.M.). However, the PM peak period counts began the hour after the anticipated afternoon dismissal peak hour for the school—likely to occur from 3:00 to 4:00 P.M. Therefore, based on volumes from the 48-hour machine counts on the Allen Street Bridge, the 3:00 to 4:00 P.M. volumes were estimated to be 93% of the 4:00 to 5:00 P.M. traffic volumes. Turning movements at locations where counts were not available—local streets including Galloway Avenue, Grant Street, and 2nd Avenue NW—were estimated using the available link-volume data and projections based on the land uses and functions of those local streets. The historical volumes were then adjusted to reflect normalized traffic conditions for this analysis based on a review of 10 years of monthly traffic statistics from the Washington State Department of Transportation (WSDOT) permanent traffic recorder north of the site on SR 411. Based on that review, a 1% compound annual growth rate was applied to the historical counts to reflect existing 2020 conditions. The existing traffic volumes for the anticipated school peak hours are shown on Figure 3. The existing volumes reflect normalized conditions if there was no COVID-19 pandemic.

2.2.2. Future Without-Project Conditions

Future traffic volume forecasts for 2022 conditions without the project were developed using the same 1% compound annual growth rate described above. This growth rate was coordinated with City staff and is consistent with rates used for traffic analyses of other developments in the City. The forecast 2022-without-project morning and afternoon peak hour traffic volumes are shown on Figure 4.

2.3. Traffic Operations

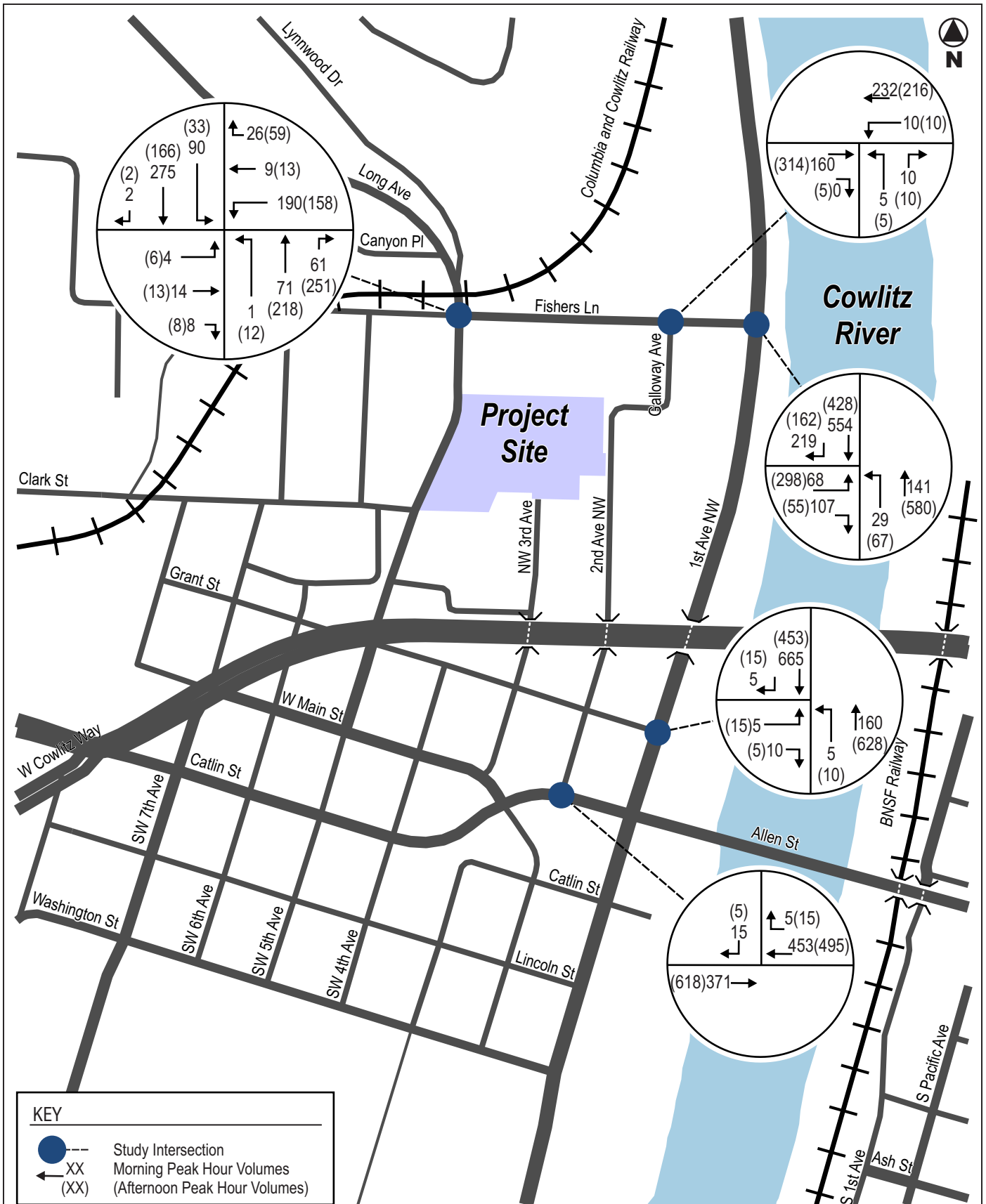
2.3.1. Off-Site Study Area Intersections

Traffic operations are evaluated based on level-of-service (LOS), which is a qualitative measure used to characterize intersection operating conditions. Six letter designations, “A” through “F,” are used to define level of service. LOS A is the best and represents good traffic operations with little or no delay to motorists. LOS F is the worst and indicates poor traffic operations with long delays.

Levels of service for the study area intersections were determined using methodologies established in the *Highway Capacity Manual (HCM), 6th Edition*.⁵ Appendix B summarizes HCM level of service thresholds and definitions for unsignalized intersections. Levels of service for the study area intersections were determined using the *Synchro 10.3* analysis software and reported using the *Synchro* module for signalized intersections and the *HCM 6* module for unsignalized intersections. The models reflect existing intersection geometries and channelization; these characteristics were assumed to remain unchanged for future 2022 conditions.

⁵ Transportation Research Board 2016.

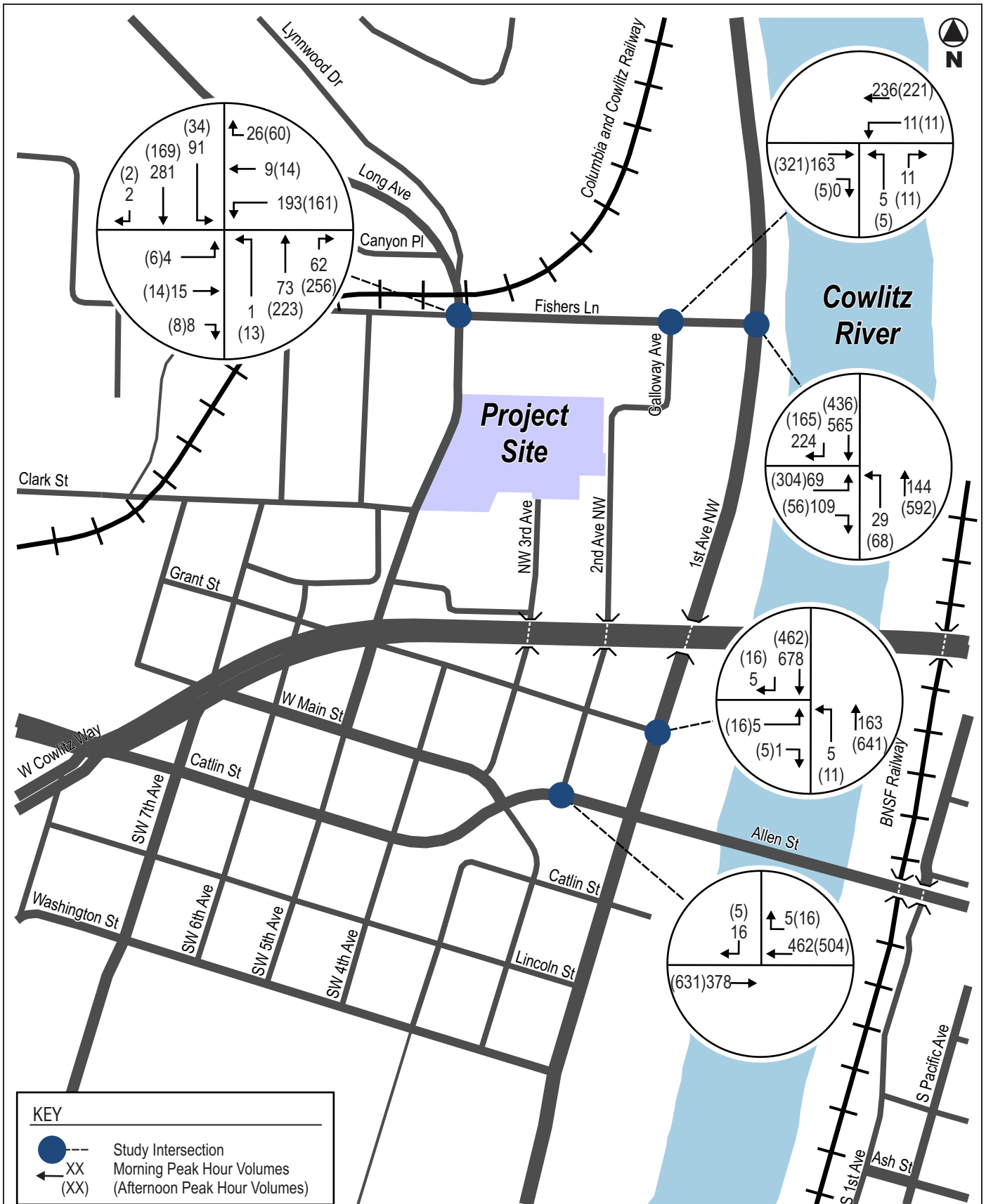




**Kelso School District
Huntington Middle School
Interim Site Traffic Analysis**

Figure 3
**Existing Traffic Volumes
Morning and Afternoon Peak Hours**





**Kelso School District
Huntington Middle School
Interim Site Traffic Analysis**

Figure 4
Forecast 2022 Without-Project Volumes
Morning and Afternoon Peak Hours



One of the five study-area intersections is signalized; the remaining four are stop-sign controlled. Table 2 summarizes existing and forecast 2022 levels of service without the proposed project for both the morning and afternoon peak hour conditions. The LOS calculation sheets are provided in Appendix B.

Table 2. Level of Service Summary – Existing and 2022-Without-Project Conditions

Intersections	Morning Peak Hour				Afternoon Peak Hour			
	Existing		Without Project		Existing		Without Project	
	LOS ¹	Delay ²	LOS	Delay	LOS	Delay	LOS	Delay
Signalized								
1 st Avenue NW / Fishers Lane	B	12.4	B	12.5	C	20.7	C	21.1
Stop-sign Controlled	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Fishers Lane / Galloway Avenue	A	0.5	A	0.5	A	0.4	A	0.5
Northbound Movements	A	9.8	A	9.8	B	10.7	B	10.7
Westbound Left Turns	A	7.6	A	7.6	A	8.0	A	8.0
Long Avenue / Fishers Lane	C	17.6	C	19.9	A	6.2	A	6.6
Northbound Left Turn	A	7.9	A	8.0	A	7.6	A	7.6
Eastbound Movements	C	15.5	C	15.9	C	15.9	C	16.5
Westbound Movements	F	50.8	F	58.2	C	24.1	D	25.9
Southbound Left Turn	A	7.8	A	7.8	A	8.6	A	8.6
1 st Avenue NW / Grant Street	A	0.3	A	0.3	A	0.4	A	0.4
Northbound Left Turn	A	9.2	A	9.2	A	8.5	A	8.5
Eastbound Movements	B	13.2	B	13.2	C	16.9	C	17.4
2 nd Avenue NW / Main Street	A	0.2	A	0.2	A	0.0	A	0.0
Southbound Right Turns	A	9.2	A	9.9	A	10.0	B	10.1

Source: Heffron Transportation, Inc., November 2020.

1. LOS = Level of service.
2. Delay = Average seconds of delay per vehicle.

As shown, all study-area intersections operate at LOS C or better overall during the morning and afternoon peak hours. All movements except one (described in the following paragraph) at the stop-controlled intersections, currently operate at LOS C or better during both peak hours. The projected increases in background traffic is forecast to add some delay to the study-area intersections by 2022.

The westbound approach of Fishers Lane at Long Avenue currently operates at LOS F during the morning peak hour. Extrapolating the four hours of traffic count data available, volumes at this intersection may be sufficiently high to meet the minimum volume thresholds for conversion to multi-way-stop control as outlined in Section 2B.07 of the *Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways*.⁶ The thresholds are met when an intersection has: 1) an average of 300 or more vehicles per hour on the major street approaches (total of both directions) for any 8 hours of an average day; and 2) averages of 200 or more vehicles per hour entering from the minor street approaches (total of both approaches) for the same 8 hours, with average delay to minor-street vehicular traffic of at least 30 seconds per vehicle. If converted to all-way-stop control, the intersection would operate at LOS C overall in 2022 with all movements at LOS C or better

⁶ US Department of Transportation, Federal Highway Administration, 2009.



2.3.2. Off-Site Study Area Intersections

Access to the school’s on-site parking occurs from Long Avenue. No analyses of driveway operations were performed for existing conditions due to the COVID-19 pandemic measures. As previously discussed, the 2022-without-project conditions assume that the site would be vacant and unused since the existing students would be relocated to the new Lexington Elementary.

2.4. Parking Supply

The existing site has on-site parking areas with a total of about 59 spaces in three areas. No parking occupancy counts were performed due to conditions related to the COVID-19 pandemic.

2.5. Traffic Safety

Collision data for the study area intersections and road segment were obtained from WSDOT. These data, reflecting the period between January 1, 2017 and October 31, 2020 (3.8 years), were examined to determine if there are any unusual traffic safety conditions that could impact or be impacted by the proposed project.

Table 3 summarizes the collision data. As shown, the highest numbers of collisions occurred at the Fishers Lane / Long Avenue and Grant Street / 1st Avenue NW intersections—15 at each location. The most frequent collision types were right-angle collisions. None of the collisions reported in the study area resulted in fatalities. In 2018, there were nine collisions at the Fishers Lane / Long Avenue intersection and seven were either right-angle or left-turn collisions. As noted in *Section 2B.07* of the *MUTCD* another possible criterion for installing multi-way-stop control is when “...five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.”

Table 3. Collision Summary (January 1, 2017 through October 31, 2020)

Intersection Control Type	Rear-End	Side-Swipe	Head-On	Left Turn	Right Angle	Ped / Cycle	Other ^a	Total for 3.8 Years	Average / Year
Signalized Intersections									
1 st Avenue NW / Fishers Lane	2	0	0	0	2	2	1	7	1.8
Unsignalized Intersections									
Long Avenue / Fishers Lane	4	0	0	1	10	0	0	15	3.9
Fishers Lane / Galloway Avenue	2	0	0	1	0	1	1	5	1.3
1 st Avenue NW / Grant Street	2	0	1	1	11	0	0	15	3.9
2 nd Avenue NW / Main Street	0	0	0	0	0	0	0	0	0.0
Road Segments									
Long Ave, between Fishers Ln and W Cowlitz Wy	1	0	0	0	2	0	3	6	1.6

Source: Washington State Department of Transportation, November 2020.

a. Other collisions were six vehicle struck fixed object (three signal pole, one utility pole, one metal sign post, one fence) and one vehicle struck parked vehicle.



2.6. Transit Facilities and Service

River Cities Transit (RCT) provides bus service in the site vicinity. The closest bus stops are located about 550 feet away to the southeast Cowlitz Way at Long Avenue. These stops are served by RCT Routes 44, 45, and 57. Each route is described below.

Route 44 provides weekday east-west loop service along Ocean Beach Highway (SR 4) with park-and-ride options west of Heron Pointe. Route 44 connects with Routes 45, 56, and 57 at Kelso Station, where Amtrak and Greyhound provide rail and bus service. Weekday service operates from 6:30 A.M. to about 6:00 P.M. with 60-minute headways (time between consecutive buses).

Route 45 provides weekday and Saturday loop service with stops between Longview and Kelso near the US Post Office, shopping centers, the courthouse, and other public offices. Route 45 meets also connects with Routes 31, 32, and 33 at the Transit Center and with Routes 44, 56, and 57 at Kelso Station, where Amtrak and Greyhound provide rail and bus service. Weekday service operates from 6:30 A.M. to about 7:00 P.M. with 20- to 30-minute headways.

Route 57 provides weekday and Saturday loop service from Kelso to Longview destinations including Lower Columbia College and the Triangle Shopping Center. Route 57 connects with Routes 44, 45, and 56 at Kelso Station, where Amtrak and Greyhound provide rail and bus service. Weekday service operates from 6:30 A.M. to about 6:00 P.M. with 60-minute headways.

School bus transportation is available to transportation-eligible students within the District. Catlin Elementary School was previously served with 4 full-size (typically 40 feet long) school buses and 3 smaller special education (SPED) buses (typically up to 25-feet long).⁷

2.7. Non-Motorized Transportation Facilities

As described in the *Roadway Network* section, the roadways near the school site generally have curb and sidewalks on one or both sides. There are also marked and signed crosswalks in several locations as listed below:

- 1st Avenue NW (SR 411) / Fishers Lane: *Crossing north and west legs*
- Long Avenue: *Mid-block at school entrance*
- Long Avenue / Fishers Lane: *crossing south leg*
- Long Avenue / Clark Street: *crossing north leg*

⁷ Email communication, S. Westlund, CFO, Kelso School District, October 16, 2020.



3. PROJECT IMPACTS

This section describes the conditions that would exist with Huntington Middle School temporarily relocated to the Catlin Elementary School site with enrollment of up to 580 students. Vehicle trip estimates associated with the interim school use were added to the 2022-without-project traffic volume forecasts. Level of service analyses were performed to determine the proposed project’s impact on traffic operations in the study area. Other potential impacts to parking, safety, transit, and non-motorized conditions were reviewed.

3.1. Roadway Network

No changes to the surrounding roadway network are proposed. However, the project would resurface the natural turf play field to create a passenger-vehicle load/unload area for students as well as added parking for staff and visitors. The new load/unload and parking area would have two new access driveways serving one-way traffic through the site with an entry from 2nd Avenue NW opposite Galloway Avenue and an exit to 2nd Avenue NE at the south side of the site (about 185 feet south of Galloway Street).

3.2. Traffic Volumes

The proposed project is expected to generate vehicular, pedestrian, and bicycle activity on the surrounding transportation network. With the interim use, the school is expected to have an enrollment of up to 580 students. The following describes the method used to estimate project-generated traffic for the middle school.

3.2.1. School Trip Generation

Trip generation estimates for Huntington Middle School’s interim use of the Catlin site were derived using rates published for Middle / Junior High Schools (Land Use 522) in the Institute of Transportation Engineers’ (ITE) *Trip Generation Manual*.⁸ The rates based on the number of students were applied using the expected enrollment (580 students). Table 4 presents the estimated trip generation for three peak hours—morning arrival, afternoon dismissal, and the traditional commuter PM peak hours.

Table 4. Huntington Middle School Interim Use Trip Generation at Catlin Elementary Site

Land Use	Size (students)	Daily Trips	Morning Peak Hour			Afternoon Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total	In	Out	Total
<i>Middle School Trip Rates¹</i>		<i>2.13 trips / student</i>	<i>0.70 trips / student (55% in, 45% out)</i>			<i>0.35 trips / student (46% in, 54% out)</i>			<i>0.17 trips / student (49% in, 51% out)</i>		
Huntington Middle	580	1,240	223	183	406	93	110	203	49	50	99
<i>Elementary School Trip Rates²</i>		<i>1.89 trips / student</i>	<i>0.67 trips / student (54% in, 46% out)</i>			<i>0.34 trips / student (45% in, 55% out)</i>			<i>0.17 trips / student (48% in, 52% out)</i>		
Catlin Elementary	373	700	135	115	250	57	70	127	30	3	63
<i>Net Change</i>	<i>207</i>	<i>540</i>	<i>88</i>	<i>68</i>	<i>156</i>	<i>36</i>	<i>40</i>	<i>76</i>	<i>19</i>	<i>17</i>	<i>36</i>

Source: Heffron Transportation Inc., May 2020.

1. ITE, *Trip Generation Manual*, LU 522, 10th Edition, September 2017.

2. ITE, *Trip Generation Manual*, LU 520, 10th Edition, September 2017.

⁸ ITE, 10th Edition, September 2017.



Transportation Technical Report for Huntington Middle School Interim Use of Catlin Elementary School Site

These estimates reflect all trips generated by the school including student pick-up/drop-off, school-bus trips, family-vehicle and visitor trips, teacher/staff trips, and typical after-hours use of play fields or other on-site facilities. The District estimates the school would be served by 12 full-size school buses and 1 or 2 SPED smaller buses.

During the morning arrival and afternoon dismissal peak hours, most trips would consist of family-drivers and school buses taking students to and from school, with some teacher and staff trips as well as school volunteers. Trips at middle schools during the commuter PM peak hour may consist of teachers or staff leaving for the day, some after-school-activity related trips, and community use of facilities (such as playfields, play areas, and/or gymnasiums and assembly spaces). It is important to note that the project site for the interim school will not have many of the typical facilities common at permanent middle schools such as a full-size gymnasium, playfields, or theaters. These types of facilities are typically used for events and extracurricular activities as well as by local communities and surrounding neighborhoods. As a result, they are often the primary cause of traffic generation during the commuter PM peak hour (since middle schools generally are dismissed prior to the PM peak). Therefore, the PM peak hour trip estimates are likely conservatively high for this interim site use at the Catlin site.

As shown, the school is estimated to generate up to 1,240 trips per day, with 406 trips in the morning arrival peak hour, 203 trips in the afternoon dismissal peak hour, and 99 trips in the PM peak hour of the adjacent roadways. A comparison to the site's current use as an elementary school with enrollment up to 373 students is provided for context. The middle school is expected to generate roughly 60% more trips during each of the analysis peak hours than the elementary school. However, since the elementary school students will be relocated to the new Lexington Elementary School regardless of the subsequent use of the space, and because the middle school has slightly different peak hour than the elementary school, the transportation analysis performed herein assumes that all middle school trips would be new to the study area, which reflects the worst-case condition.

3.2.2. Project Trip Distribution and Assignment

Trip distribution patterns of school-generated trips were developed based on a combination of the overall residential density within the enrollment area and anticipated traffic patterns within the vicinity. Google Maps predictive travel times⁹ were utilized to estimate routes to and from the site based on the respective travel times. Separate project trip distribution patterns and assignments were developed for morning and afternoon peak hours and also account for typical patterns of some family drivers linking school drop-off and pick-up trips with work or other trips.¹⁰

The estimated peak hour trips were assigned to the roadway network using the estimated distribution patterns described above. Figure 5 and Figure 6, show the trip distribution patterns and trip assignments for the morning arrival and afternoon dismissal peak hours, respectively.

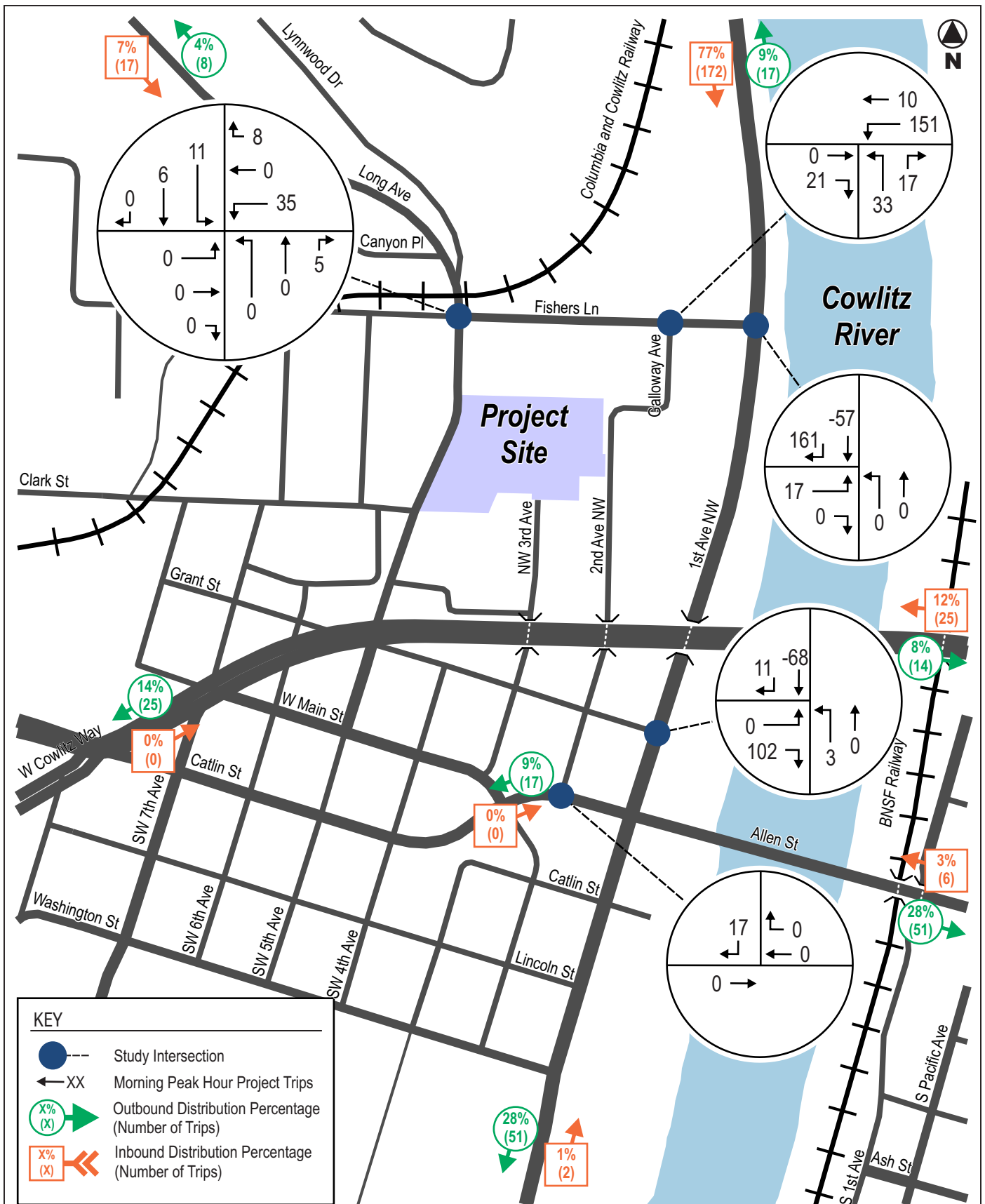
3.2.3. Project Trip Distribution and Assignment

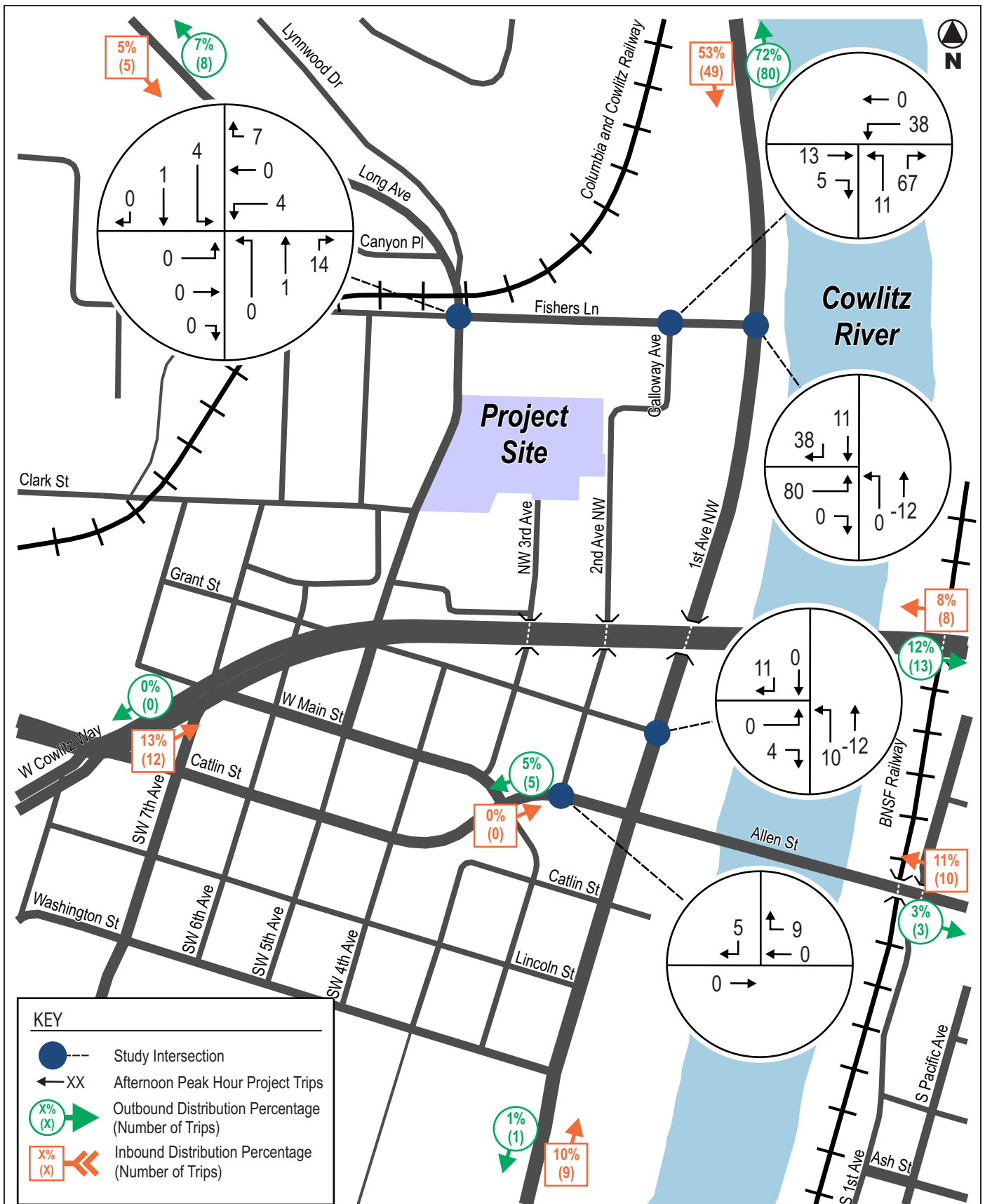
The school-generated traffic was added to the forecast 2022-without-project volumes to reflect forecast 2022-with-project traffic volumes. Figure 7 shows the total forecast 2022-with-project volumes for the morning and afternoon peak hours.

⁹ Google Maps, <https://www.google.com/maps>, Accessed September 2020.

¹⁰ A portion of trips generated by the school are expected to be linked to existing trips that would already be on the street system (e.g. SR 411) and were estimated based on a study conducted for the Northshore School District (Gibson Traffic Consultants, *ITE School Pass-By Report*, January 2012) from surveys of parents at four elementary and middle schools. It found an average 42% of morning school trips and 38% of afternoon school trips were linked to existing trips that would occur with or without the school activity.



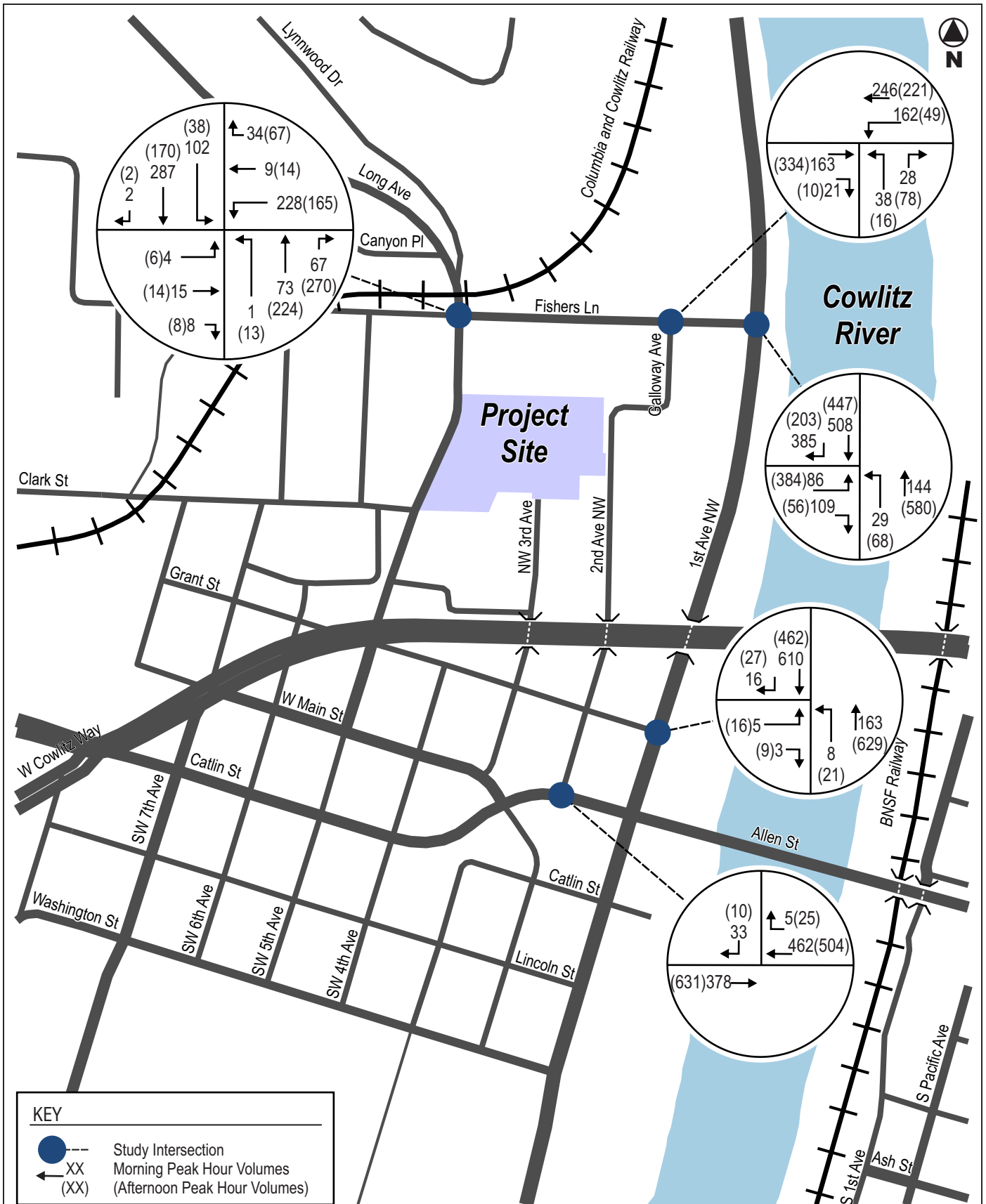




**Kelso School District
Huntington Middle School
Interim Site Traffic Analysis**

Figure 6
Project Trip Distribution and Assignment
Afternoon Peak Hour





**Kelso School District
Huntington Middle School
Interim Site Traffic Analysis**

Figure 7
Forecast 2022 With-Project Traffic Volumes
Morning and Afternoon Peak Hours



3.3. Traffic Operations

Intersection levels of service for future with-project conditions were evaluated using the same methodology described previously. The interim school use would generate vehicular and non-motorized trips at and around the school. The operational analyses accounted for potential increases in pedestrian crossing activity, peaking characteristics of school traffic (school drop-off and pick-up primarily occurs during about 20 minutes in the peak hour), and the added school bus trips.

3.3.1. Off-Site Study Area Intersections

Levels of service for the off-site study area intersections were calculated using the 2022-with-project traffic volumes and the same methodology described previously. Table 5 shows the results of the analysis; levels of service for the 2022-without-project conditions are provided for comparison. The LOS calculation sheets are provided in Appendix B.

Table 5. Level of Service Summary – 2022-Without and With-Project Conditions

Intersections	Morning Peak Hour				Afternoon Peak Hour			
	Without Project		With Project		Without Project		With Project	
Signalized	LOS ¹	Delay ²	LOS	Delay	LOS	Delay	LOS	Delay
1 st Avenue NW / Fishers Lane	B	12.5	B	11.4	C	21.1	C	23.9
Stop-sign Controlled	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Fishers Lane / Galloway Avenue	A	0.5	A	4.9	A	0.5	A	2.1
Northbound Movements	A	9.8	C	21.0	B	10.7	B	11.5
Westbound Left Turns	A	7.6	A	8.2	A	8.0	A	8.2
Long Avenue / Fishers Lane	C	19.9	E	40.5	A	6.6	A	7.2
Northbound Left Turn	A	8.0	A	8.0	A	7.6	A	7.6
Eastbound Movements	C	15.9	C	16.6	C	16.5	C	17.0
Westbound Movements	F	58.2	F	113.2	D	25.9	D	27.7
Southbound Left Turn	A	7.8	A	7.8	A	8.6	A	8.7
1 st Avenue NW / Grant Street	A	0.3	A	3.1	A	0.4	A	0.6
Northbound Left Turn	A	9.2	A	9.1	A	8.5	A	8.6
Eastbound Movements	B	13.2	B	14.2	C	17.4	C	16.9
2 nd Avenue NW / Main Street	A	0.2	A	0.5	A	0.0	A	0.1
Southbound Right Turns	A	9.9	A	10.1	B	10.1	B	10.2

Source: Heffron Transportation, Inc., November 2020.

3. LOS = Level of service.

4. Delay = Average seconds of delay per vehicle.

As shown, the additional traffic and pedestrian activity generated by the interim school use is expected to add some delay to the study area intersections and turning movements during both the morning and afternoon peak hours. However, all but the Long Avenue / Fishers Lane intersection, would continue to operate at LOS C or better overall with the project during both morning and afternoon peak hours. Other than westbound from Fishers Lane at Long Avenue during the morning peak hour, all movements are forecast to operate at LOS D or better with the project during both peak hours.



As described previously, westbound movements at the Long Avenue / Fishers Lane intersection currently operate at LOS F and are forecast to continue operating at LOS F in 2022 without school traffic. The relatively small increase in trips generated by the interim school at this intersection (less than 8% of total entering traffic) is projected to disproportionately increase delay. However, if the intersection were converted to all-way-stop control as described previously, it would operate at LOS C overall with all movements operating at LOS C or better during both peak hours.

3.3.2. Site Access

The site access driveways are expected to operate at LOS A overall, with all movements operating at LOS D or better during both the morning and afternoon peak hours.

3.4. Parking Supply and Demand

The natural turf play field would be resurfaced to provide a passenger-vehicle load/unload area for students as well as added parking (60 spaces) for staff and visitors. When added to existing parking on the site, the interim school would have up to 119 parking spaces for staff and visitors. The creation of two access driveways on 2nd Avenue NW would likely eliminate two or three parallel on-street parking spaces on the west side of the street. No other changes to on-site or on-street parking supply are proposed.

3.4.1. School Day Parking

School-day parking at middle schools is primarily influenced by staffing levels and family-volunteer activity. Huntington Middle School is expected have 62 staff members—the same number as currently employed.¹¹ Future parking demand estimates were developed from rates published in ITE's *Parking Generation*.¹² Based on the range of rates available, the interim use could generate peak school-day parking demand of 52 to 87 vehicles, depending on the number of employees and visitors on site simultaneously. The higher end of the demand range represents conditions that may occur with higher numbers of family volunteers, which often occurs midday.

The site currently has 59 parking spaces and the planned improvements to accommodate the interim use would add 60 more spaces for a total of 119 spaces, which would accommodate the estimated peak school-day demand. However, it is noted that some staff and/or visitors could choose to park on-street near the school for convenience.

3.4.2. Event Parking

The site could host events periodically throughout the school year; however, the lack of athletic facilities and limited assembly spaces would reduce the number and level of attendance for occasional school or outside events. Large events happen relatively infrequently and would be held at off-site locations (such as Lexington Elementary or Kelso High School) during the 2021-2022 school year.

3.5. Traffic Safety

The collision data provided for the study area showed that all intersections averaged fewer than five collisions per year over the 3.8-year analysis period and did not indicate any unusual collision patterns that would impact or be impacted by the proposed project. However, as noted, there were nine collisions at the Long Avenue / Fishers Lane intersection in 2018 and seven were right-angle or left-turn collisions. If the intersection is converted to all-way-stop control, it may contribute to reduced number and severity of collisions.

¹¹ Email communication, P. Iverson, Construction Services Group, October 23, 2020.

¹² ITE, 5th Edition, January 2019.



3.6. Transit

A small number of transit trips may be generated by the teachers or staff at the site; however, the traffic estimates do not rely on reductions in auto trips to account for any staff transit usage. The closest bus stops are located about 550 feet away to the southeast on Cowlitz Way at Long Avenue. The project is not expected to result in adverse impacts to transit facilities or service.

According to District staff, when Huntington Middle School is relocated to the Catlin site, it will be served by 12 full-size buses and 1 or 2 SPED buses, based on current needs. In the morning, all 12 buses of the larger buses would arrive to drop off students between 7:15 and 7:40 A.M.; in the afternoon, 6 of the larger buses would stage on site for the first wave of students to board, then 6 more would come from Kelso High School in a second wave to pick up the remaining students.¹³ The buses were accounted for in the trip generation and traffic operations analysis. No adverse transit impacts are expected.

3.7. Non-Motorized Transportation Facilities

The interim school use is expected to result in pedestrian trips within the site vicinity. It is anticipated that the largest increases in pedestrian activity would occur along 2nd Avenue NW, where some student load/unload may occur along the west side of the street during morning arrival and afternoon dismissal periods. No significant adverse impacts to non-motorized access or facilities is expected, and no improvements to non-motorized facilities are anticipated.

¹³ Email communication, P. Iverson, – Project Manager, Capital Projects and Planning, Seattle Public Schools, Nov. 2020.



4. FINDINGS AND RECOMMENDATIONS

The following sections summarize the findings and recommendations of the analysis.

- The proposal would make temporary site changes to accommodate the interim use of the site by Huntington Middle School for the 2021-22 school year, with up to 580 students.
- With 580 students, interim use by Huntington Middle School is projected to generate up to 406 trips (223 in, 183 out) during the morning peak hour (from 7:00 to 8:00 A.M.) and 203 trips (93 in, 110 out) during the afternoon peak hour (from 3:00 to 4:00 P.M.). These estimates do not account for the removal of trips previously generated by the existing Catlin Elementary School.
- Similar to prior conditions with the site housing an elementary school, some traffic congestion is expected during morning arrival and afternoon dismissal periods along the roadways that surround the site. New traffic is expected along 2nd Avenue NW from which a new passenger-vehicle load/unload area would be accessed.
- The additional traffic and pedestrian activity generated by the interim school use is expected to add some delay to study area intersections and turning movements during morning and afternoon peak hours. All but the Long Avenue / Fishers Lane intersection, would continue to operate at LOS C or better overall with the project during morning and afternoon peak hours.
- Due to poor existing morning operations for westbound movements at the Long Avenue / Fishers Lane intersection, the relatively small increase in trips generated by the interim school at this intersection (less than 8% of total entering traffic) is projected to disproportionately increase delay. However, if the intersection were converted to all-way-stop control, it would operate at LOS C overall with all movements operating at LOS C or better during both peak hours. Existing traffic volumes, traffic operations, and historic collision data support the conversion of this intersection to all-way-stop control.
- School-day parking demand could be accommodated by the planned on-site supply. Some parking demand may occur on-street on roadways surrounding the site.
- The site could host events periodically throughout the school year; however, the lack of athletic facilities and limited assembly spaces would reduce the number and level of attendance. Large events happen infrequently and would be held at off-site locations.

Based the above findings, the interim use by Huntington Middle School of the Catlin Elementary School site would not result in significant adverse impacts to traffic operations or parking.

4.1. Recommendation

Prior to re-opening, KSD should coordinate with the City of Kelso to determine if the City supports conversion to all-way-stop control at the Long Avenue / Fishers Lane intersection to address the existing poor operations during the morning peak hour. If so, the District could contribute a proportionate share of the costs for that conversion based on school traffic expected to be added.

In addition, KSD and Huntington Middle School should develop a Transportation Management Plan (TMP) that communicates to families and staff expectations and travel routes for the interim school site. The TMP should also include a review of safety elements around the site such as school-zone speed limits and crossing guard locations to determine if any changes are needed.



APPENDIX A

Traffic Count Data Sheets

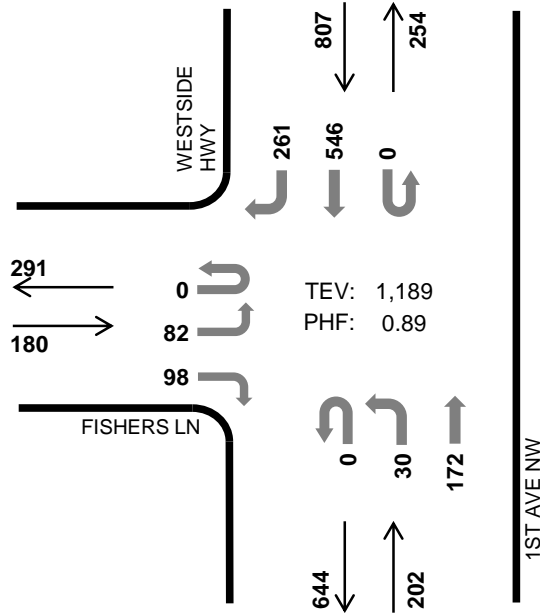


1ST AVE NW FISHERS LN

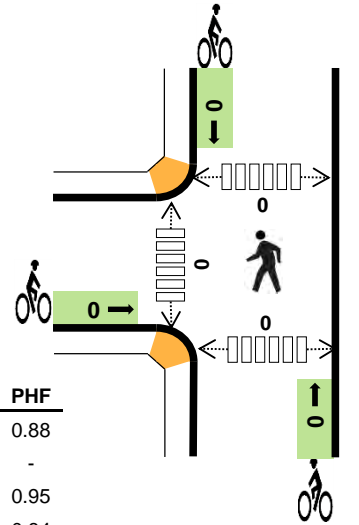


Peak Hour

Date: Wed, May 03, 2017
 Count Period: 7:00 AM to 9:00 AM
 Peak Hour: 7:45 AM to 8:45 AM



TEV: 1,189
 PHF: 0.89



	HV %:	PHF
EB	0.6%	0.88
WB	-	-
NB	2.5%	0.95
SB	2.4%	0.84
TOTAL	2.1%	0.89

Two-Hour Count Summaries

Interval Start	FISHERS LN				0				1ST AVE NW				WESTSIDE HWY				15-min Total	Rolling One Hour
	Eastbound		Westbound		Northbound		Southbound		UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	11	0	28	0	0	0	0	0	5	38	0	0	0	103	35	220	0
7:15 AM	0	18	0	24	0	0	0	0	0	8	33	0	0	0	133	49	265	0
7:30 AM	0	20	0	22	0	0	0	0	0	5	29	0	0	0	142	50	268	0
7:45 AM	0	17	0	30	0	0	0	0	0	10	37	0	0	0	160	79	333	1,086
8:00 AM	0	16	0	19	0	0	0	0	0	6	47	0	0	0	104	53	245	1,111
8:15 AM	0	23	0	28	0	0	0	0	0	6	43	0	0	0	125	60	285	1,131
8:30 AM	0	26	0	21	0	0	0	0	0	8	45	0	0	0	157	69	326	1,189
8:45 AM	0	24	0	20	0	0	0	0	0	8	44	0	0	0	135	52	283	1,139
Count Total	0	155	0	192	0	0	0	0	0	56	316	0	0	0	1,059	447	2,225	0
Peak Hour	0	82	0	98	0	0	0	0	0	30	172	0	0	0	546	261	1,189	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

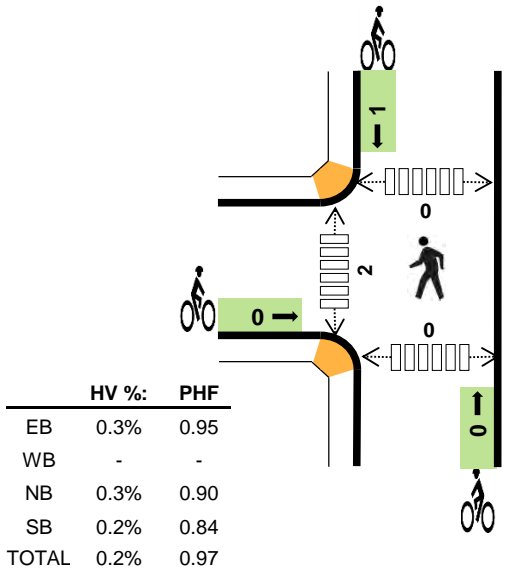
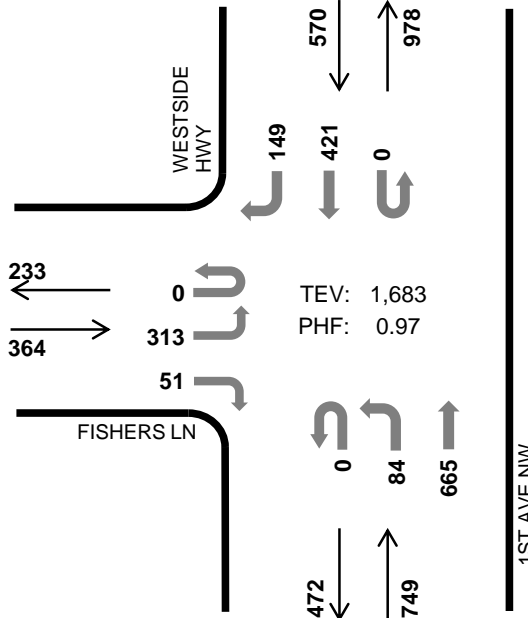
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	1	4	5	1	0	0	1	2	0	0	0	0	0
7:15 AM	0	0	0	1	1	0	0	1	2	3	0	0	0	0	0
7:30 AM	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0
7:45 AM	0	0	3	1	4	0	0	0	0	0	0	0	0	0	0
8:00 AM	1	0	2	5	8	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	8	8	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
Count Total	1	0	8	24	33	2	0	1	3	6	0	0	0	0	0
Peak Hr	1	0	5	19	25	0	0	0	0	0	0	0	0	0	0

1ST AVE NW FISHERS LN



Peak Hour

Date: Wed, May 03, 2017
 Count Period: 4:00 PM to 6:00 PM
 Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	0.3%	0.95
WB	-	-
NB	0.3%	0.90
SB	0.2%	0.84
TOTAL	0.2%	0.97

Two-Hour Count Summaries

Interval Start	FISHERS LN				0				1ST AVE NW				WESTSIDE HWY				15-min Total	Rolling One Hour
	Eastbound		Westbound		Northbound		Southbound		UT		LT		TH		RT			
4:00 PM	0	73	0	15	0	0	0	0	0	12	147	0	0	0	116	42	405	0
4:15 PM	0	78	0	20	0	0	0	0	0	20	149	0	0	0	99	42	408	0
4:30 PM	0	82	0	14	0	0	0	0	0	17	149	0	0	0	122	48	432	0
4:45 PM	0	78	0	8	0	0	0	0	0	21	160	0	0	0	109	37	413	1,658
5:00 PM	0	71	0	15	0	0	0	0	0	25	183	0	0	0	85	35	414	1,667
5:15 PM	0	82	0	14	0	0	0	0	0	21	173	0	0	0	105	29	424	1,683
5:30 PM	0	80	0	19	0	0	0	0	0	28	150	0	0	0	94	41	412	1,663
5:45 PM	0	83	0	19	0	0	0	0	0	30	126	0	0	0	79	48	385	1,635
Count Total	0	627	0	124	0	0	0	0	0	174	1,237	0	0	0	809	322	3,293	0
Peak Hour	0	313	0	51	0	0	0	0	0	84	665	0	0	0	421	149	1,683	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

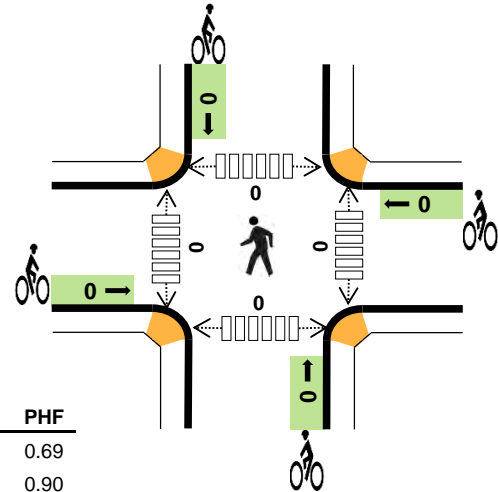
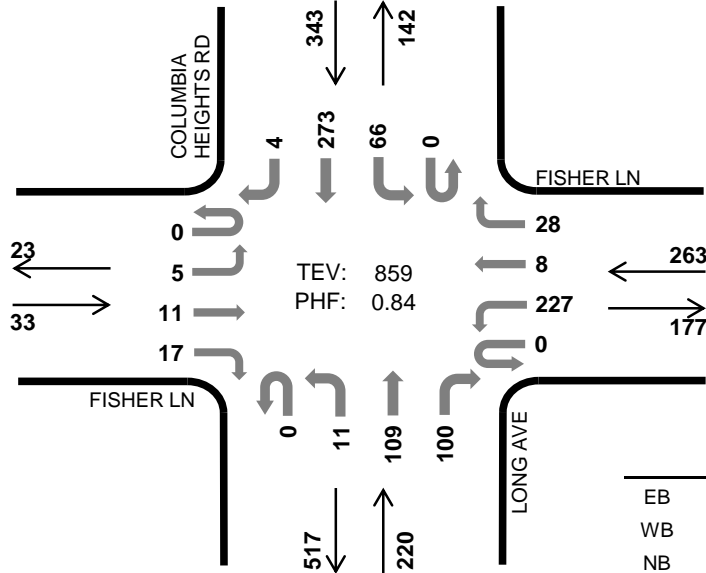
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	1	2	3	1	0	2	0	3	0	0	0	0	0
4:15 PM	1	0	0	0	1	1	0	0	1	2	0	0	0	0	0
4:30 PM	0	0	2	1	3	0	0	0	0	0	0	2	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	1	0	0	0	1	0	0	0	1	1	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
Count Total	2	0	4	4	10	2	0	2	3	7	0	2	0	0	2
Peak Hr	1	0	2	1	4	0	0	0	1	1	0	2	0	0	2

LONG AVE FISHER LN



Peak Hour

Date: Wed, May 03, 2017
 Count Period: 7:00 AM to 9:00 AM
 Peak Hour: 7:45 AM to 8:45 AM



	HV %:	PHF
EB	3.0%	0.69
WB	1.1%	0.90
NB	2.7%	0.68
SB	0.6%	0.80
TOTAL	1.4%	0.84

Two-Hour Count Summaries

Interval Start	FISHER LN Eastbound				FISHER LN Westbound				LONG AVE Northbound				COLUMBIA HEIGHTS RD Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	2	2	1	0	31	2	3	0	0	15	12	0	27	40	0	135	0
7:15 AM	0	1	4	4	0	42	3	9	0	0	17	12	0	21	55	1	169	0
7:30 AM	0	0	6	1	0	51	2	2	0	0	15	17	0	19	85	1	199	0
7:45 AM	0	1	2	2	0	60	2	11	0	1	22	18	0	20	87	0	226	729
8:00 AM	0	0	7	3	0	48	4	7	0	1	23	13	0	14	44	1	165	759
8:15 AM	0	3	2	7	0	59	1	2	0	3	23	35	0	15	60	1	211	801
8:30 AM	0	1	0	5	0	60	1	8	0	6	41	34	0	17	82	2	257	859
8:45 AM	0	2	2	3	0	58	1	4	0	1	22	19	0	16	69	0	197	830
Count Total	0	10	25	26	0	409	16	46	0	12	178	160	0	149	522	6	1,559	0
Peak Hour	0	5	11	17	0	227	8	28	0	11	109	100	0	66	273	4	859	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

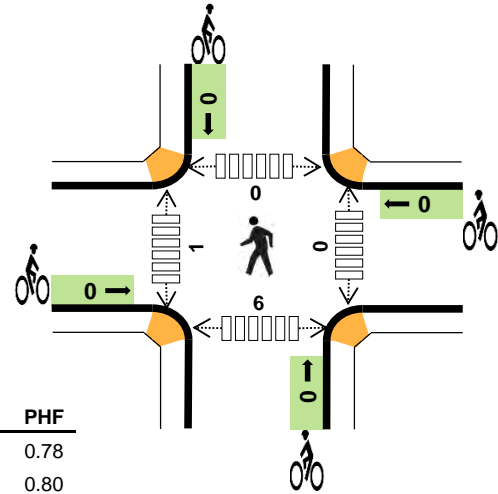
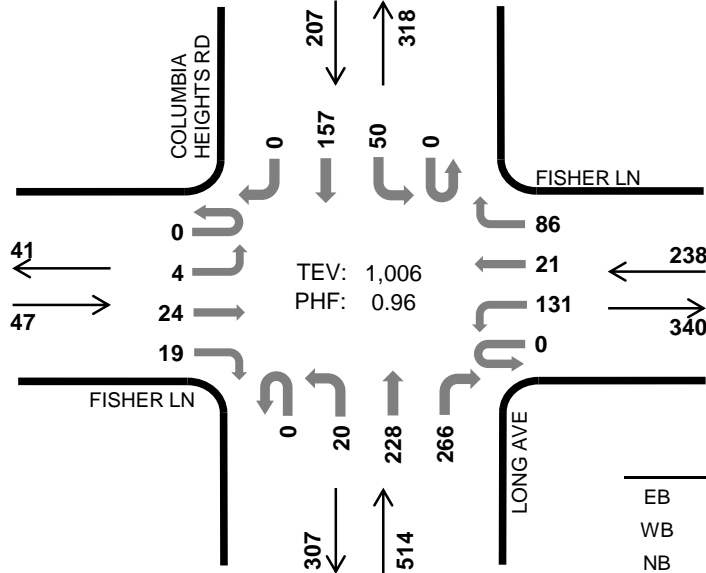
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	1	2	0	1	4	0	1	0	0	1	0	1	0	0	1
7:15 AM	0	1	1	2	4	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	3	2	0	5	0	0	0	0	0	0	0	0	0	0
8:15 AM	1	0	2	1	4	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
Count Total	2	7	7	5	21	0	1	0	0	1	0	1	0	0	1
Peak Hour	1	3	6	2	12	0	0	0	0	0	0	0	0	0	0

LONG AVE FISHER LN



Peak Hour

Date: Wed, May 03, 2017
 Count Period: 4:00 PM to 6:00 PM
 Peak Hour: 5:00 PM to 6:00 PM



	HV %:	PHF
EB	0.0%	0.78
WB	0.0%	0.80
NB	0.0%	0.96
SB	0.5%	0.94
TOTAL	0.1%	0.96

Two-Hour Count Summaries

Interval Start	FISHER LN Eastbound				FISHER LN Westbound				LONG AVE Northbound				COLUMBIA HEIGHTS RD Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	2	4	0	43	2	15	0	3	43	63	0	11	41	1	228	0
4:15 PM	0	2	4	1	0	40	5	15	0	3	64	66	0	11	40	0	251	0
4:30 PM	0	3	3	2	0	41	2	16	0	4	66	72	0	7	54	1	271	0
4:45 PM	0	1	5	2	0	40	5	15	0	3	55	61	0	5	38	0	230	980
5:00 PM	0	0	6	4	0	30	3	24	0	7	56	62	0	11	42	0	245	997
5:15 PM	0	1	7	4	0	30	1	17	0	7	60	67	0	7	39	0	240	986
5:30 PM	0	3	7	5	0	32	10	17	0	3	65	65	0	16	37	0	260	975
5:45 PM	0	0	4	6	0	39	7	28	0	3	47	72	0	16	39	0	261	1,006
Count Total	0	10	38	28	0	295	35	147	0	33	456	528	0	84	330	2	1,986	0
Peak Hour	0	4	24	19	0	131	21	86	0	20	228	266	0	50	157	0	1,006	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

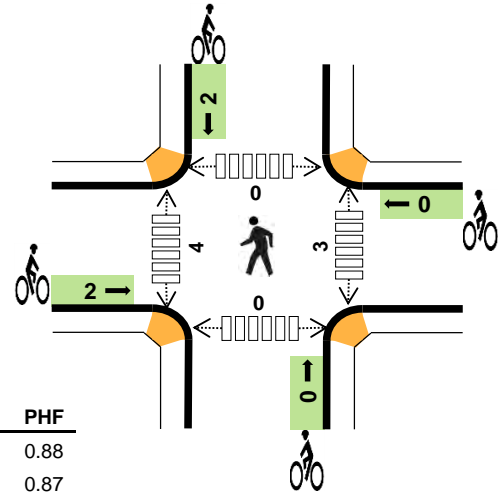
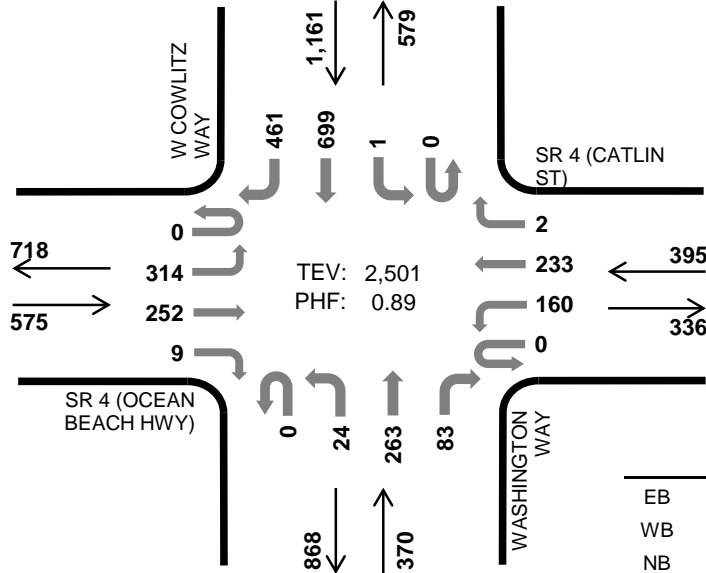
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	0	1	1	0	0	0	0	0	3	0	0	0	3
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
5:00 PM	0	0	0	1	1	0	0	0	0	0	0	1	0	4	5
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	2	2	0	0	0	0	0	3	1	0	12	16
Peak Hour	0	0	0	1	1	0	0	0	0	0	0	1	0	6	7

WASHINGTON WAY SR 4 (OCEAN BEACH HWY)



Peak Hour

Date: Wed, May 03, 2017
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM



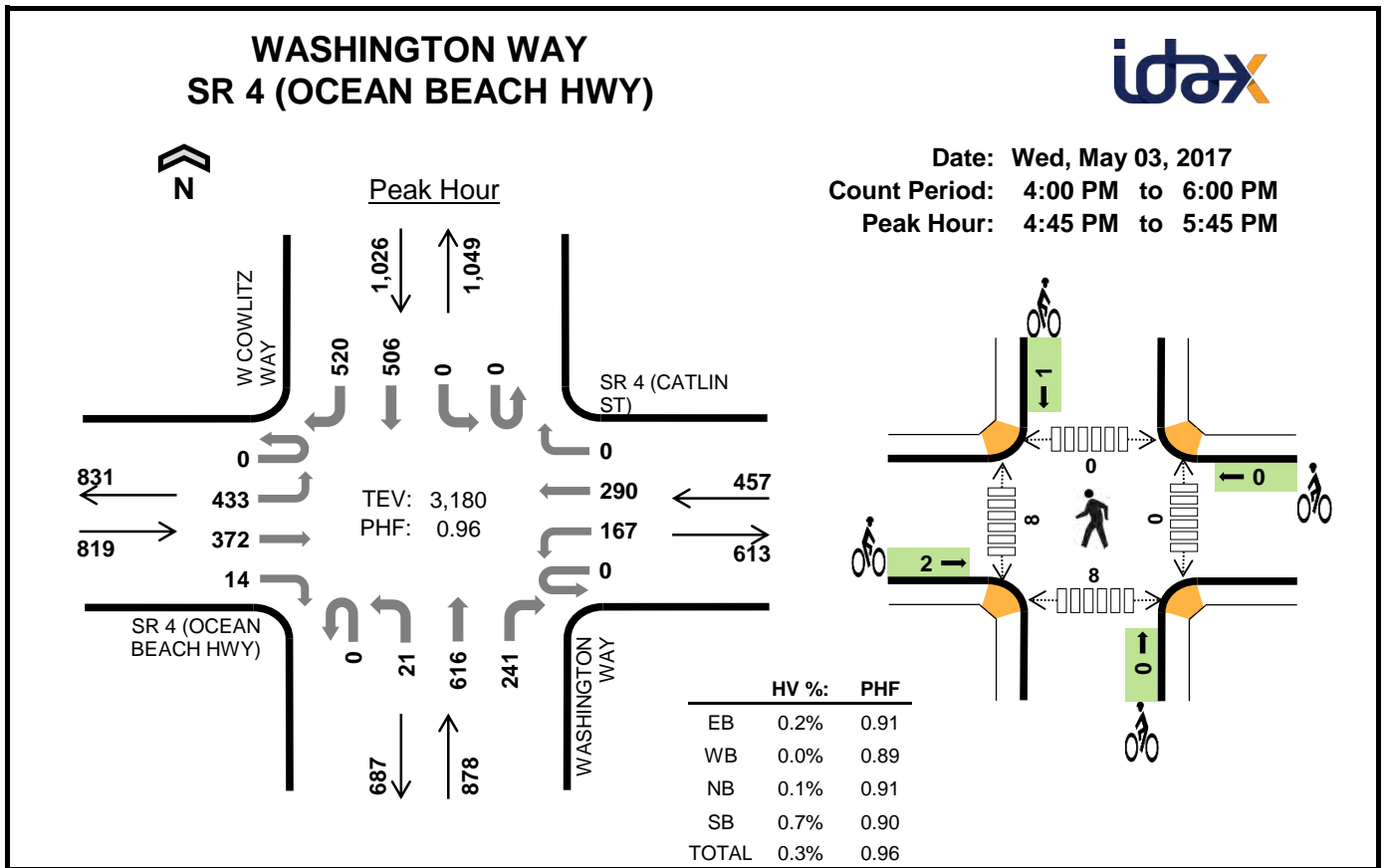
	HV %:	PHF
EB	1.0%	0.88
WB	1.0%	0.87
NB	1.4%	0.95
SB	0.9%	0.83
TOTAL	1.0%	0.89

Two-Hour Count Summaries

Interval Start	SR 4 (OCEAN BEACH HWY)				SR 4 (CATLIN ST)				WASHINGTON WAY				W COWLITZ WAY				15-min Total	Rolling One Hour
	Eastbound		Westbound		Westbound		Northbound		Southbound		Southbound		Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	54	50	0	0	17	35	0	0	1	42	13	0	0	68	55	335	0
7:15 AM	0	71	55	1	0	21	40	0	0	4	37	14	0	0	86	104	433	0
7:30 AM	0	78	76	0	0	48	48	0	0	2	54	16	0	0	150	151	623	0
7:45 AM	0	80	82	1	0	48	44	1	0	3	69	24	0	0	211	137	700	2,091
8:00 AM	0	88	53	2	0	30	50	1	0	5	72	20	0	1	125	114	561	2,317
8:15 AM	0	84	63	1	0	43	64	0	0	9	71	13	0	0	156	106	610	2,494
8:30 AM	0	62	54	5	0	39	75	0	0	7	51	26	0	0	207	104	630	2,501
8:45 AM	0	82	77	5	0	64	72	2	0	8	60	22	0	0	180	111	683	2,484
Count Total	0	599	510	15	0	310	428	4	0	39	456	148	0	1	1,183	882	4,575	0
Peak Hour	0	314	252	9	0	160	233	2	0	24	263	83	0	1	699	461	2,501	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	2	1	1	0	4	0	0	2	0	2	0	0	0	0	0
7:15 AM	1	0	1	1	3	0	0	0	1	1	0	0	0	0	0
7:30 AM	0	2	0	3	5	0	0	0	0	0	0	2	0	1	3
7:45 AM	1	2	2	2	7	0	0	0	1	1	0	1	0	0	1
8:00 AM	2	0	3	4	9	1	0	0	0	1	0	1	0	0	1
8:15 AM	0	1	0	3	4	1	0	0	0	1	3	0	0	0	3
8:30 AM	3	1	0	2	6	0	0	0	1	1	0	2	0	0	2
8:45 AM	1	0	1	2	4	0	0	0	0	0	1	3	0	0	4
Count Total	10	7	8	17	42	2	0	2	3	7	4	9	0	1	14
Peak Hour	6	4	5	11	26	2	0	0	2	4	3	4	0	0	7



Two-Hour Count Summaries

Interval Start	SR 4 (OCEAN BEACH HWY)				SR 4 (CATLIN ST)				WASHINGTON WAY				W COWLITZ WAY				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	118	102	8	0	34	70	0	0	12	159	48	0	0	123	121	795	0
4:15 PM	0	122	85	7	0	35	73	0	0	2	168	43	0	0	136	116	787	0
4:30 PM	0	126	81	4	0	33	59	0	1	4	166	50	0	0	114	126	764	0
4:45 PM	0	101	91	2	0	47	64	0	0	6	171	65	0	0	139	145	831	3,177
5:00 PM	0	108	91	3	0	44	76	0	0	3	163	64	0	0	116	127	795	3,177
5:15 PM	0	97	92	8	0	48	81	0	0	8	131	55	0	0	125	128	773	3,163
5:30 PM	0	127	98	1	0	28	69	0	0	4	151	57	0	0	126	120	781	3,180
5:45 PM	0	120	91	9	0	32	77	1	0	7	107	46	0	0	105	118	713	3,062
Count Total	0	919	731	42	0	301	569	1	1	46	1,216	428	0	0	984	1,001	6,239	0
Peak Hour	0	433	372	14	0	167	290	0	0	21	616	241	0	0	506	520	3,180	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

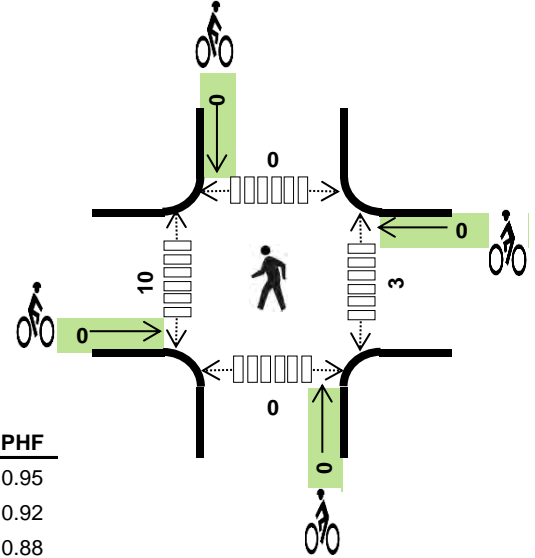
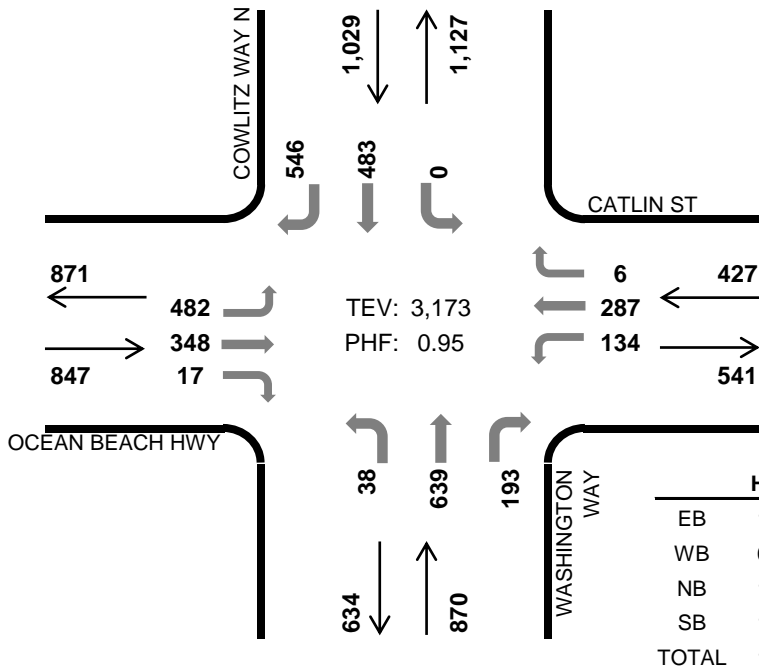
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	0	1	2	4	0	2	0	1	3	0	0	0	5	5
4:15 PM	0	0	0	1	1	0	1	1	0	2	0	1	0	1	1
4:30 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1
4:45 PM	0	0	0	1	1	0	0	0	0	0	0	3	0	3	
5:00 PM	2	0	1	2	5	1	0	0	1	2	0	0	0	2	2
5:15 PM	0	0	0	1	1	0	0	0	0	0	0	2	0	3	5
5:30 PM	0	0	0	3	3	1	0	0	0	1	0	3	0	6	
5:45 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	1	
Count Total	3	0	2	11	16	2	3	1	3	9	0	9	0	15	24
Peak Hour	2	0	1	7	10	2	0	0	1	3	0	8	0	8	

COWLITZ WAY N CATLIN ST



Peak Hour

Date: Tue, Jun 16, 2015
 Count Period: 4:00 PM to 6:00 PM
 Peak Hour: 4:45 PM to 5:45 PM



	HV %:	PHF
EB	1.4%	0.95
WB	0.7%	0.92
NB	1.3%	0.88
SB	1.0%	0.96
TOTAL	1.1%	0.95

Two-Hour Count Summaries

Interval Start	OCEAN BEACH HWY			CATLIN ST			WASHINGTON WAY			COWLITZ WAY N			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	123	97	3	36	69	1	6	141	53	0	123	110	762	
4:15 PM	119	88	6	36	70	2	10	153	55	0	131	121	791	
4:30 PM	121	84	3	39	77	0	5	124	31	0	113	149	746	
4:45 PM	117	74	5	37	62	2	7	161	48	0	109	127	749	3,048
5:00 PM	128	90	4	25	76	2	12	176	60	0	131	128	832	3,118
5:15 PM	127	91	5	37	78	1	10	148	46	0	128	141	812	3,139
5:30 PM	110	93	3	35	71	1	9	154	39	0	115	150	780	3,173
5:45 PM	106	85	3	33	56	3	6	121	34	0	89	122	658	3,082
Count Total	951	702	32	278	559	12	65	1,178	366	0	939	1,048	6,130	
Peak Hr	482	348	17	134	287	6	38	639	193	0	483	546	3,173	

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	2	1	3	3	9	0	0	0	0	0	0	0	0	0	0
4:15 PM	4	3	1	1	9	0	0	0	0	0	4	5	0	4	13
4:30 PM	3	0	1	4	8	0	0	0	0	0	0	1	0	0	1
4:45 PM	5	0	2	4	11	0	0	0	0	0	0	2	0	0	2
5:00 PM	3	2	4	0	9	0	0	0	0	0	0	2	0	0	2
5:15 PM	2	1	4	4	11	0	0	0	0	0	2	6	0	0	8
5:30 PM	2	0	1	2	5	0	0	0	0	0	1	0	0	0	1
5:45 PM	2	1	1	3	7	0	0	0	0	0	0	0	0	3	3
Count Total	23	8	17	21	69	0	0	0	0	0	7	16	0	7	30
Peak Hr	12	3	11	10	36	0	0	0	0	0	3	10	0	0	13

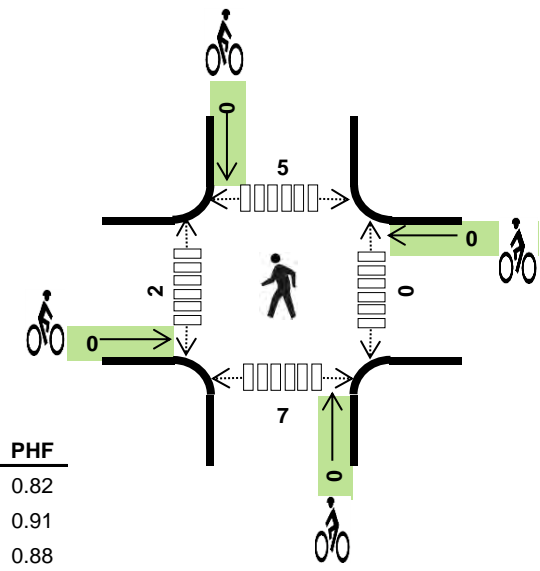
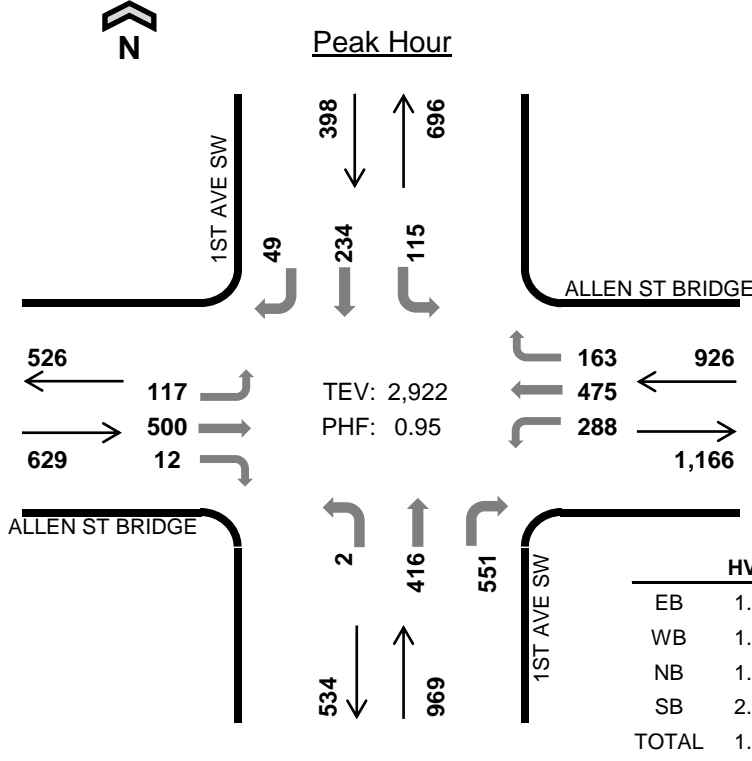
1ST AVE SW ALLEN ST BRIDGE



Date: Tue, Jun 16, 2015

Count Period: 4:00 PM to 6:00 PM

Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	1.4%	0.82
WB	1.1%	0.91
NB	1.3%	0.88
SB	2.5%	0.92
TOTAL	1.4%	0.95

Two-Hour Count Summaries

Interval Start	ALLEN ST BRIDGE			ALLEN ST BRIDGE			1ST AVE SW			1ST AVE SW			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	20	131	6	62	133	35	1	102	115	26	65	15	711	
4:15 PM	29	169	2	68	127	34	0	106	102	27	50	13	727	
4:30 PM	18	106	3	76	110	40	0	93	144	20	60	19	689	
4:45 PM	21	129	2	60	110	55	1	102	123	32	64	12	711	2,838
5:00 PM	30	123	5	74	115	31	1	114	160	38	54	6	751	2,878
5:15 PM	48	142	2	78	140	37	0	107	124	25	56	12	771	2,922
5:30 PM	27	126	5	52	103	29	0	84	86	29	48	10	599	2,832
5:45 PM	14	129	4	69	86	32	0	91	117	34	41	12	629	2,750
Count Total	207	1,055	29	539	924	293	3	799	971	231	438	99	5,588	
Peak Hr	117	500	12	288	475	163	2	416	551	115	234	49	2,922	

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	2	1	8	4	15	0	0	0	0	0	0	0	1	1	2
4:15 PM	4	2	2	4	12	0	0	0	0	0	0	2	0	1	3
4:30 PM	2	2	4	4	12	0	0	0	0	0	0	1	2	3	6
4:45 PM	4	4	2	4	14	0	0	0	0	0	0	0	0	1	1
5:00 PM	2	3	5	1	11	0	0	0	0	0	0	1	2	0	3
5:15 PM	1	1	2	1	5	0	0	0	0	0	0	0	1	3	4
5:30 PM	1	2	4	1	8	0	0	0	0	0	0	2	1	2	5
5:45 PM	3	1	1	0	5	0	0	0	0	0	0	0	1	1	2
Count Total	19	16	28	19	82	0	0	0	0	0	0	6	8	12	26
Peak Hr	9	10	13	10	42	0	0	0	0	0	0	2	5	7	14

Location: ALLEN ST E/O 1ST AVE NW

Date Range: 5/2/2017 - 5/8/2017

Site Code: 03

Time	Tuesday			Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Mid-Week Average		
	5/2/2017			5/3/2017			5/4/2017			5/5/2017			5/6/2017			5/7/2017			5/8/2017			EB	WB	Total
	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	63	53	116	63	68	131	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	63	61	124
1:00 AM	44	49	93	48	50	98	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46	50	96
2:00 AM	41	60	101	43	53	96	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	57	99
3:00 AM	47	47	94	60	49	109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	54	48	102
4:00 AM	104	99	203	101	97	198	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	103	98	201
5:00 AM	203	231	434	245	246	491	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	224	239	463
6:00 AM	343	396	739	352	367	719	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	348	382	729
7:00 AM	607	704	1,311	607	706	1,313	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	607	705	1,312
8:00 AM	637	715	1,352	653	764	1,417	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	740	1,385
9:00 AM	656	677	1,333	707	703	1,410	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	682	690	1,372
10:00 AM	775	760	1,535	755	667	1,422	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	765	714	1,479
11:00 AM	959	742	1,701	894	830	1,724	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	927	786	1,713
12:00 PM	957	848	1,805	1,016	893	1,909	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	987	871	1,857
1:00 PM	925	864	1,789	1,000	939	1,939	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	963	902	1,864
2:00 PM	1,041	845	1,886	1,040	879	1,919	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,041	862	1,903
3:00 PM	1,084	854	1,938	1,107	855	1,962	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,096	855	1,950
4:00 PM	1,199	903	2,102	1,149	857	2,006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,174	880	2,054
5:00 PM	1,182	903	2,085	1,101	864	1,965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,142	884	2,025
6:00 PM	772	650	1,422	792	673	1,465	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	782	662	1,444
7:00 PM	636	532	1,168	683	555	1,238	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	660	544	1,203
8:00 PM	423	376	799	552	493	1,045	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	488	435	922
9:00 PM	301	255	556	383	343	726	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	342	299	641
10:00 PM	180	153	333	223	196	419	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	202	175	376
11:00 PM	131	88	219	142	81	223	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	137	85	221
Total	13,310	11,804	25,114	13,716	12,228	25,944	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13,513	12,016	25,529
Percent	53%	47%	-	53%	47%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53%	47%	-

Location: W COWLITZ SAY BTWN N PACIFIC AVE & LONG AVE

Date Range: 5/2/2017 - 5/8/2017

Site Code: 02

Time	Tuesday			Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Mid-Week Average		
	5/2/2017			5/3/2017			5/4/2017			5/5/2017			5/6/2017			5/7/2017			5/8/2017					
	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	58	66	124	61	57	118	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	62	121
1:00 AM	40	47	87	43	38	81	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	43	84
2:00 AM	22	44	66	28	35	63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	40	65
3:00 AM	32	42	74	27	50	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	46	76
4:00 AM	56	86	142	45	90	135	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	51	88	139
5:00 AM	114	160	274	121	176	297	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	118	168	286
6:00 AM	230	341	571	219	324	543	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	225	333	557
7:00 AM	492	683	1,175	480	680	1,160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	486	682	1,168
8:00 AM	446	793	1,239	491	758	1,249	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	469	776	1,244
9:00 AM	414	589	1,003	428	636	1,064	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	421	613	1,034
10:00 AM	481	601	1,082	494	653	1,147	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	488	627	1,115
11:00 AM	543	648	1,191	599	718	1,317	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	571	683	1,254
12:00 PM	621	742	1,363	736	800	1,536	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	679	771	1,450
1:00 PM	660	704	1,364	714	864	1,578	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	687	784	1,471
2:00 PM	684	810	1,494	725	806	1,531	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	705	808	1,513
3:00 PM	763	870	1,633	764	804	1,568	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	764	837	1,601
4:00 PM	793	876	1,669	881	901	1,782	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	837	889	1,726
5:00 PM	967	804	1,771	845	831	1,676	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	906	818	1,724
6:00 PM	637	572	1,209	641	668	1,309	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	639	620	1,259
7:00 PM	561	470	1,031	586	504	1,090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	574	487	1,061
8:00 PM	439	372	811	516	496	1,012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	478	434	912
9:00 PM	234	247	481	366	357	723	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	300	302	602
10:00 PM	172	162	334	199	195	394	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	186	179	364
11:00 PM	116	92	208	119	102	221	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	118	97	215
Total	9,575	10,821	20,396	10,128	11,543	21,671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9,852	11,182	21,034
Percent	47%	53%	-	47%	53%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	47%	53%	-

1. Mid-week average includes data between Tuesday and Thursday.

WSDOT Permanent Traffic Recorder - S819: On SR 411 at milepost 7.97 A: S/O SANDY BEND ROAD - LEXINGTON

January 2010 - August 2020

TravelDirection	Year	Month	AvgSunday	AvgMonday	AvgTuesday	AvgWednesday	AvgThursday	AvgFriday	AvgSaturday	AvgWkday	AvgDay	SingleUnitTruckPct	DoubleUnitTruckPct	TripleUnitTruckPct	VehicleClassificationType
Northbound	2010	1	1167	1676	1712	1747	1778	1690	1440	1746	1601	7.13	0.5		0 Axle Spacing Classification
Southbound	2010	1	1179	1723	1788	1798	1797	1715	1455	1794	1636				
Northbound	2010	2	1326	1758	1784	1825	1868	1921	1758	1826	1749	7.03	0.69		0 Axle Spacing Classification
Southbound	2010	2	1327	1782	1840	1864	1889	1963	1787	1864	1779	7.42	1.91	0.06	Axle Spacing Classification
Northbound	2010	3	1319	1844	1850	1910	1977	1770	1884	1794		6.8	0.67		0 Axle Spacing Classification
Southbound	2010	3	1347	1882	1873	1925	1935	2001	1807	1911	1824	7.35	1.59	0.11	Axle Spacing Classification
Northbound	2010	4	1453	1888	1959	1984	1973	2029	1668	1972	1851	7.68	0.75		0 Axle Spacing Classification
Southbound	2010	4	1471	1930	1998	2008	2031	2067	1730	2012	1891	7.52	2.1	0.26	Axle Spacing Classification
Northbound	2010	5	1434	1831	1923	1947	1970	2081	1777	1947	1852	7.46	0.71		0 Axle Spacing Classification
Southbound	2010	5	1446	1852	1986	1988	1989	2122	1806	1988	1884	7.34	2.04	0.11	Axle Spacing Classification
Northbound	2010	6	1426	1903	1966	1949	1974	2026	1861	1963	1872	7.52	0.96	0.05	Axle Spacing Classification
Southbound	2010	6	1432	1965	2010	2003	2038	2096	1879	2017	1918	7.47	2.35	0.21	Axle Spacing Classification
Northbound	2010	7	1458	1831	1992	2040	2043	2129	1809	2025	1900	6.91	1.1		0 Axle Spacing Classification
Southbound	2010	7	1555	1864	2051	2133	2114	2216	1920	2099	1979	7.33	2.09	0.2	Axle Spacing Classification
Northbound	2010	8	1451	1870	1950	2023	2002	2037	1710	1992	1863	7.41	1.03	0.05	Axle Spacing Classification
Southbound	2010	8	1523	1967	1979	2047	2078	2119	1765	2035	1925	7.7	1.99	0.21	Axle Spacing Classification
Northbound	2010	9	1413	1790	1943	1968	1961	2032	1842	1957	1850	7.59	0.91		0 Axle Spacing Classification
Southbound	2010	9	1425	1830	1963	2009	2024	2113	1843	1999	1887	7.92	2.27	0.21	Axle Spacing Classification
Northbound	2010	10	1307	1815	1901	1953	1890	2000	1679	1915	1792	7.25	0.73	0.06	Axle Spacing Classification
Southbound	2010	10	1307	1887	1941	1972	1929	2061	1711	1947	1830	7.71	1.98	0.17	Axle Spacing Classification
Northbound	2010	11	1196	1643	1583	1662	1622	1756	1434	1622	1557	7.46	0.58		0 Axle Spacing Classification
Southbound	2010	11	1166	1660	1624	1701	1658	1785	1462	1661	1579	8.05	1.33	0.13	Axle Spacing Classification
Northbound	2010	12	1226	1694	1707	1733	1722	1747	1456	1721	1612	7.27	0.43		0 Axle Spacing Classification
Southbound	2010	12	1245	1715	1757	1765	1758	1781	1485	1760	1644	7.92	1.09	0.12	Axle Spacing Classification
Northbound	2011	1	1036	1412	1583	1657	1674	1722	1331	1638	1488	7.71	0.55		0 Axle Spacing Classification
Southbound	2011	1	1032	1438	1611	1659	1719	1782	1318	1663	1508	8.29	1.82	0.13	Axle Spacing Classification
Northbound	2011	2	1111	1640	1679	1663	1584	1572	1373	1642	1517	7.95	0.46		0 Axle Spacing Classification
Southbound	2011	2	1111	1672	1742	1696	1604	1564	1380	1681	1538	8.3	1.9	0.07	Axle Spacing Classification
Northbound	2011	3	1172	1643	1599	1686	1699	1814	1541	1661	1593	7.18	0.62	0.06	Axle Spacing Classification
Southbound	2011	3	1194	1672	1616	1733	1696	1816	1542	1682	1610	7.74	1.55	0.12	Axle Spacing Classification
Northbound	2011	4	1305	1654	1737	1752	1746	1851	1636	1745	1669	7.71	1.2	0.18	Axle Spacing Classification
Southbound	2011	4	1298	1689	1755	1772	1732	1871	1639	1753	1679	8.66	2.14	0.12	Axle Spacing Classification
Northbound	2011	5	1359	1667	1873	1856	1891	1973	1641	1873	1751	7.25	0.81		0 Axle Spacing Classification
Southbound	2011	5	1346	1738	1929	1920	1903	1987	1640	1917	1780	7.68	1.98	0.11	Axle Spacing Classification
Northbound	2011	6	1484	1789	1815	1824	1882	2066	1800	1840	1809	7.18	0.88		0 Axle Spacing Classification
Southbound	2011	6	1515	1821	1856	1864	1823	2110	1802	1878	1840	7.55	1.95	0.11	Axle Spacing Classification
Northbound	2011	7	1398	1674	1817	1901	1893	2021	1685	1870	1770	6.64	1.02		0 Axle Spacing Classification
Southbound	2011	7	1441	1745	1843	1926	1882	2027	1688	1884	1793	7.45	1.89	0.11	Axle Spacing Classification
Northbound	2011	8	1419	1800	1846	1896	1874	1986	1747	1872	1795	6.61	1.17		0 Axle Spacing Classification
Southbound	2011	8	1466	1846	1876	1898	1886	1979	1735	1887	1812	7.43	1.98	0.11	Axle Spacing Classification
Northbound	2011	9	1399	1692	1843	1896	1907	2013	1704	1882	1779	6.87	0.95		0 Axle Spacing Classification
Southbound	2011	9	1398	1754	1888	1927	1965	2064	1741	1927	1820	7.42	1.97	0.05	Axle Spacing Classification
Northbound	2011	10	1290	1758	1774	1787	1766	1805	1664	1776	1692	6.88	0.71		0 Axle Spacing Classification
Southbound	2011	10	1274	1793	1812	1800	1819	1857	1702	1810	1722	7.76	1.63	0.12	Axle Spacing Classification
Northbound	2011	11	1161	1628	1692	1697	1601	1686	1379	1663	1549	7	0.58		0 Axle Spacing Classification
Southbound	2011	11	1115	1683	1722	1773	1623	1677	1371	1706	1566	7.98	1.27	0.13	Axle Spacing Classification
Northbound	2011	12	1205	1488	1611	1625	1648	1779	1497	1628	1550	6.76	0.51		0 Axle Spacing Classification
Southbound	2011	12	1215	1546	1661	1656	1665	1778	1488	1661	1573	7.5	1.27	0.06	Axle Spacing Classification
Northbound	2012	1	1040	1350	1505	1399	1561	1647	1387	1488	1413	7.13	0.5		0 Axle Spacing Classification
Southbound	2012	1	1026	1367	1544	1409	1578	1645	1369	1510	1420	7.94	1.28	0.07	Axle Spacing Classification
Northbound	2012	2	1177	1568	1671	1620	1547	1757	1449	1613	1541	6.75	0.71		0 Axle Spacing Classification
Southbound	2012	2	1163	1596	1681	1689	1446	1789	1438	1605	1543	7.45	1.75	0.13	Axle Spacing Classification
Northbound	2012	3	1283	1600	1639	1671	1704	1804	1499	1671	1600	6.98	0.62		0 Axle Spacing Classification
Southbound	2012	3	1262	1609	1645	1685	1717	1832	1529	1682	1611	7.6	1.67	0.06	Axle Spacing Classification
Northbound	2012	4	1409	1735	1786	1754	1766	1920	1706	1769	1725	6.76	0.87		0 Axle Spacing Classification
Southbound	2012	4	1406	1750	1812	1765	1764	1933	1719	1780	1736	7.42	1.86	0.17	Axle Spacing Classification
Northbound	2012	5	1416	1517	1670	1691	1655	1883	1732	1672	1652	6.95	0.79		0 Axle Spacing Classification
Southbound	2012	5	1434	1503	1670	1685	1656	1880	1750	1670	1654	7.19	1.75	0.24	Axle Spacing Classification
Northbound	2012	6	1375	1717	1783	1858	1834	1958	1684	1825	1744	6.86	0.8		0 Axle Spacing Classification
Southbound	2012	6	1418	1758	1780	1909	1801	1986	1706	1830	1765	7.4	1.75	0.23	Axle Spacing Classification
Northbound	2012	7	1376	1707	1826	1708	1824	1903	1703	1786	1721	6.72	1.17		0 Axle Spacing Classification
Southbound	2012	7	1419	1741	1826	1718	1815	1890	1638	1786	1721	7.3	2.14	0.17	Axle Spacing Classification
Northbound	2012	8	1389	1739	1781	1815	1845	1950	1687	1814	1744	7	1.08	0.06	Axle Spacing Classification
Southbound	2012	8	1408	1767	1815	1801	1829	1991	1695	1815	1758	7.41	2.15	0.17	Axle Spacing Classification
Northbound	2012	9	1354	1675	1834	1846	1804	1924	1710	1828	1735	6.62	1.1		0 Axle Spacing Classification

WSDOT Permanent Traffic Recorder - S819: On SR 411 at milepost 7.97 A: S/O SANDY BEND ROAD - LEXINGTON

January 2010 - August 2020

TravelDirection	Year	Month	AvgSunday	AvgMonday	AvgTuesday	AvgWednesday	AvgThursday	AvgFriday	AvgSaturday	AvgWkday	AvgDay	SingleUnitTruckPct	DoubleUnitTruckPct	TripleUnitTruckPct	VehicleClassificationType
Southbound	2012	9	1369	1711	1844	1848	1825	1943	1749	1839	1756	6.94	1.95	0.17	Axle Spacing Classification
Northbound	2012	10	1211	1686	1716	1759	1733	1802	1560	1736	1638	7.29	0.73	0	Axle Spacing Classification
Southbound	2012	10	1196	1688	1739	1791	1765	1824	1594	1765	1657	7.81	1.8	0.18	Axle Spacing Classification
Northbound	2012	11	1131	1530	1654	1675	1563	1677	1358	1631	1513	7.18	0.59	0	Axle Spacing Classification
Southbound	2012	11	1127	1516	1685	1706	1600	1695	1366	1664	1528	7.62	1.89	0.2	Axle Spacing Classification
Northbound	2012	12	1179	1580	1471	1599	1610	1658	1417	1560	1502	6.97	0.6	0	Axle Spacing Classification
Southbound	2012	12	1176	1639	1497	1601	1666	1703	1457	1588	1534	7.76	1.51	0.13	Axle Spacing Classification
Northbound	2013	1	1015	1471	1410	1535	1553	1655	1184	1499	1403	7.59	0.71	0	Axle Spacing Classification
Southbound	2013	1	1037	1506	1425	1558	1571	1650	1259	1518	1429	8.42	2.09	0.21	Axle Spacing Classification
Northbound	2013	2	1174	1521	1597	1626	1609	1698	1448	1611	1525	6.89	0.72	0	Axle Spacing Classification
Southbound	2013	2	1170	1563	1627	1662	1636	1744	1472	1642	1553	7.92	1.99	0.13	Axle Spacing Classification
Northbound	2013	3	1308	1661	1672	1720	1726	1811	1614	1706	1645	3.22	0.55	0	Axle Spacing Classification
Southbound	2013	3	1332	1696	1685	1698	1703	1831	1613	1695	1651	4.71	1.39	0.12	Axle Spacing Classification
Northbound	2013	4	1296	1753	1803	1792	1730	1872	1652	1775	1700	3.11	0.53	0	Axle Spacing Classification
Southbound	2013	4	1286	1822	1847	1825	1759	1872	1688	1810	1728	4.27	1.79	0.12	Axle Spacing Classification
Northbound	2013	5	1343	1626	1754	1801	1768	1936	1687	1774	1702	2.8	0.47	0	Axle Spacing Classification
Southbound	2013	5	1364	1660	1790	1805	1796	1964	1705	1797	1726	3.86	1.73	0.17	Axle Spacing Classification
Northbound	2013	6	1439	1745	1770	1845	1820	2002	1844	1812	1781	2.82	0.56	0	Axle Spacing Classification
Southbound	2013	6	1489	1820	1781	1834	1822	2014	1843	1812	1800	3.85	1.45	0.06	Axle Spacing Classification
Northbound	2013	7	1366	1753	1788	1845	1757	1876	1626	1797	1716	2.84	0.52	0	Axle Spacing Classification
Southbound	2013	7	1397	1817	1830	1847	1796	1864	1606	1824	1737	4.1	1.59	0.11	Axle Spacing Classification
Northbound	2013	8	1404	1676	1657	1720	1689	1842	1679	1689	1667	2.92	0.48	0	Axle Spacing Classification
Southbound	2013	8	1439	1714	1745	1748	1748	1874	1699	1747	1710	4.25	1.57	0.12	Axle Spacing Classification
Northbound	2013	9	1132	1354	1610	1675	1661	1729	1508	1649	1524	2.66	0.53	0	Axle Spacing Classification
Southbound	2013	9	1188	1434	1637	1659	1676	1755	1556	1657	1558	4.15	1.36	0.13	Axle Spacing Classification
Northbound	2013	10	1130	1297	1229	1239	1262	1318	1218	1243	1242	2.98	0.48	0	Axle Spacing Classification
Southbound	2013	10	1112	1338	1288	1297	1308	1399	1291	1298	1290	4.57	1.16	0.08	Axle Spacing Classification
Northbound	2013	11	1060	1244	1288	1402	1305	1358	1227	1332	1269	2.6	0.47	0	Axle Spacing Classification
Southbound	2013	11	1078	1266	1300	1361	1296	1375	1247	1319	1275	4.07	1.25	0.08	Axle Spacing Classification
Northbound	2013	12	1085	1463	1429	1351	1423	1476	1334	1401	1366	2.87	0.29	0	Axle Spacing Classification
Southbound	2013	12	1091	1498	1434	1356	1432	1451	1345	1407	1372	4.16	0.95	0.07	Axle Spacing Classification
Northbound	2014	1	1015	1354	1399	1330	1399	1483	1250	1376	1319	2.49	0.3	0	Axle Spacing Classification
Southbound	2014	1	1033	1397	1453	1368	1464	1533	1272	1428	1360	3.8	1.39	0.07	Axle Spacing Classification
Northbound	2014	2	904	1229	1353	1433	1381	1329	1184	1389	1259	2.78	0.24	0	Axle Spacing Classification
Southbound	2014	2	929	1314	1410	1466	1427	1393	1223	1434	1309	4.2	1.22	0.08	Axle Spacing Classification
Northbound	2014	3	1106	1408	1451	1463	1434	1535	1470	1449	1410	2.61	0.35	0	Axle Spacing Classification
Southbound	2014	3	1129	1495	1499	1592	1473	1612	1525	1521	1475	4.04	1.28	0.07	Axle Spacing Classification
Northbound	2014	4	1285	1559	1545	1610	1559	1667	1472	1571	1528	2.61	0.52	0	Axle Spacing Classification
Southbound	2014	4	1286	1600	1590	1614	1575	1730	1466	1593	1552	3.92	1.22	0.06	Axle Spacing Classification
Northbound	2014	5	1254	1536	1680	1709	1693	1746	1546	1694	1595	2.56	0.56	0	Axle Spacing Classification
Southbound	2014	5	1294	1581	1723	1725	1707	1803	1558	1718	1627	3.92	1.1	0.06	Axle Spacing Classification
Northbound	2014	6	1801	1594	1641	1710	1659	1827	1646	1670	1697	2.89	0.65	0.06	Axle Spacing Classification
Southbound	2014	6	1422	1663	1685	1766	1684	1865	1683	1712	1681	4.13	1.38	0.06	Axle Spacing Classification
Northbound	2014	7	1385	1711	1745	1782	1785	1821	1559	1771	1684	2.96	0.59	0	Axle Spacing Classification
Southbound	2014	7	1441	1734	1758	1747	1765	1807	1593	1757	1692	4.22	1.35	0.12	Axle Spacing Classification
Northbound	2014	8	1360	1718	1703	1686	1688	1828	1633	1692	1659	2.66	0.48	0.06	Axle Spacing Classification
Southbound	2014	8	1383	1720	1716	1700	1671	1858	1646	1696	1671	4.14	1.26	0.12	Axle Spacing Classification
Northbound	2014	9	1344	1623	1689	1722	1724	1816	1653	1712	1653	3.15	0.42	0.06	Axle Spacing Classification
Southbound	2014	9	1364	1650	1704	1756	1721	1819	1659	1727	1668	4.68	1.68	0.18	Axle Spacing Classification
Northbound	2014	10	1239	1659	1603	1707	1682	1788	1536	1664	1602	3.34	0.43	0.06	Axle Spacing Classification
Southbound	2014	10	1212	1693	1641	1720	1694	1809	1547	1685	1617	4.48	1.96	0.18	Axle Spacing Classification
Northbound	2014	11	1101	1590	1577	1615	1537	1683	1383	1576	1498	2.83	0.34	0	Axle Spacing Classification
Southbound	2014	11	1102	1585	1576	1629	1553	1688	1373	1586	1501	4.16	1.34	0.2	Axle Spacing Classification
Northbound	2014	12	1174	1553	1545	1546	1514	1651	1427	1535	1487	2.68	0.34	0	Axle Spacing Classification
Southbound	2014	12	1169	1587	1535	1533	1577	1683	1419	1548	1500	4.13	1.26	0.13	Axle Spacing Classification
Northbound	2015	1	1110	1514	1598	1592	1423	1624	1406	1538	1467	2.93	0.34	0	Axle Spacing Classification
Southbound	2015	1	1099	1543	1593	1604	1442	1652	1397	1546	1476	4.26	1.56	0.07	Axle Spacing Classification
Northbound	2015	2	1227	1593	1621	1675	1660	1746	1825	1652	1621	2.78	0.37	0	Axle Spacing Classification
Southbound	2015	2	1206	1594	1640	1644	1662	1780	1837	1649	1623	4.19	1.17	0.06	Axle Spacing Classification
Northbound	2015	3	1305	1668	1705	1706	1652	1832	1589	1721	1651	3.02	0.42	0.06	Axle Spacing Classification
Southbound	2015	3	1294	1665	1692	1695	1737	1826	1572	1708	1640	4.33	1.28	0.12	Axle Spacing Classification
Northbound	2015	4	1388	1811	1748	1820	1803	1884	1674	1790	1733	2.99	0.4	0.06	Axle Spacing Classification
Southbound	2015	4	1422	1818	1758	1829	1794	1912	1676	1794	1744	4.23	1.32	0.11	Axle Spacing Classification
Northbound	2015	5	1470	1660	1812	1901	1914	1999	1764	1876	1789	3.31	0.5	0	Axle Spacing Classification
Southbound	2015	5	1464	1702	1800	1883	1897	1992	1753	1860	1784	4.22	1.69	0.17	Axle Spacing Classification

WSDOT Permanent Traffic Recorder - S819: On SR 411 at milepost 7.97 A: S/O SANDY BEND ROAD - LEXINGTON

January 2010 - August 2020

TravelDirection	Year	Month	AvgSunday	AvgMonday	AvgTuesday	AvgWednesday	AvgThursday	AvgFriday	AvgSaturday	AvgWkday	AvgDay	SingleUnitTruckPct	DoubleUnitTruckPct	TripleUnitTruckPct	VehicleClassificationType
Northbound	2015	6	1525	1863	1898	1952	1976	2092	1842	1942	1878	3.14	0.48	0	0 Axle Spacing Classification
Southbound	2015	6	1555	1901	1896	1938	1964	2083	1859	1933	1885	4.35	1.43	0.16	0.16 Axle Spacing Classification
Northbound	2015	7	1435	1885	1936	1978	1969	2004	1579	1961	1827	2.93	0.43	0	0 Axle Spacing Classification
Southbound	2015	7	1410	1881	1923	1952	2013	2027	1580	1963	1827	4.23	1.57	0.11	0.11 Axle Spacing Classification
Northbound	2015	8	1464	1871	1898	1959	1945	1972	1706	1934	1831	3.08	0.5	0	0 Axle Spacing Classification
Southbound	2015	8	1504	1882	1905	1954	1943	2012	1701	1934	1843	4.37	1.64	0.16	0.16 Axle Spacing Classification
Northbound	2015	9	1467	1801	1946	1953	1935	2044	1793	1945	1848	2.86	0.59	0	0 Axle Spacing Classification
Southbound	2015	9	1455	1813	1958	1953	1980	2046	1810	1964	1859	4.03	1.93	0.16	0.16 Axle Spacing Classification
Northbound	2015	10	1335	1830	1890	1905	1900	2004	1736	1898	1800	2.54	0.39	0	0 Axle Spacing Classification
Southbound	2015	10	1367	1853	1897	1901	1919	2028	1745	1906	1816	3.84	1.48	0.05	0.05 Axle Spacing Classification
Northbound	2015	11	1170	1663	1812	1759	1585	1733	1385	1719	1587	2.61	0.45	0.06	0.06 Axle Spacing Classification
Southbound	2015	11	1192	1646	1813	1759	1572	1865	1385	1715	1605	3.97	1.32	0.19	0.19 Axle Spacing Classification
Northbound	2015	12	1135	1594	1646	1663	1579	1739	1368	1629	1509	3.22	0.33	0.07	0.07 Axle Spacing Classification
Southbound	2015	12	1141	1614	1653	1683	1560	1574	1379	1632	1515	4.33	1.38	0.2	0.2 Axle Spacing Classification
Northbound	2016	1	1060	1468	1592	1643	1627	1592	1367	1621	1478	3	0.34	0	0 Axle Spacing Classification
Southbound	2016	1	1061	1474	1609	1617	1624	1596	1346	1617	1475	4.17	1.5	0.14	0.14 Axle Spacing Classification
Northbound	2016	2	1269	1671	1744	1771	1745	1768	1662	1753	1661	3.02	0.36	0	0 Axle Spacing Classification
Southbound	2016	2	1252	1669	1766	1770	1731	1794	1648	1756	1661	4.23	1.63	0.06	0.06 Axle Spacing Classification
Northbound	2016	3	1293	1667	1751	1783	1779	1893	1594	1771	1680	3.17	0.41	0	0 Axle Spacing Classification
Southbound	2016	3	1324	1687	1788	1790	1779	1901	1618	1786	1698	4.24	1.8	0.12	0.12 Axle Spacing Classification
Northbound	2016	4	1480	1811	1839	1852	1851	1955	1741	1847	1790	3.12	0.45	0	0 Axle Spacing Classification
Southbound	2016	4	1491	1825	1853	1829	1878	1981	1753	1853	1801	4.21	1.5	0.11	0.11 Axle Spacing Classification
Northbound	2016	5	1435	1761	1917	1924	1869	1962	1662	1903	1790	2.98	0.45	0	0 Axle Spacing Classification
Southbound	2016	5	1425	1802	1957	1924	1893	1982	1653	1925	1805	3.84	1.67	0.11	0.11 Axle Spacing Classification
Northbound	2016	6	1590	1840	1854	1884	1852	1977	1797	1863	1828	3.11	0.6	0	0 Axle Spacing Classification
Southbound	2016	6	1595	1858	1859	1897	1870	2012	1808	1875	1843	4.34	1.9	0.16	0.16 Axle Spacing Classification
Northbound	2016	7	1424	1630	1734	1821	1819	1881	1614	1791	1703	2.83	0.59	0	0 Axle Spacing Classification
Southbound	2016	7	1490	1676	1724	1768	1806	1910	1602	1766	1711	4.37	1.52	0.17	0.17 Axle Spacing Classification
Northbound	2016	8	1386	1703	1764	1600	1664	1745	1578	1676	1634	2.76	0.49	0.06	0.06 Axle Spacing Classification
Southbound	2016	8	1462	1751	1761	1854	1822	1893	1644	1812	1741	4.07	2.12	0.4	0.4 Axle Spacing Classification
Northbound	2016	9	1364	1621	1824	1782	1689	1807	1625	1765	1673	2.75	0.48	0	0 Axle Spacing Classification
Southbound	2016	9	1364	1621	1824	1782	1689	1807	1625	1765	1673	2.75	0.48	0	0 Axle Spacing Classification
Northbound	2016	10	1186	1682	1725	1691	1719	1803	1458	1712	1609	2.99	0.37	0	0 Axle Spacing Classification
Southbound	2016	10	1223	1757	1840	1743	1727	1897	1484	1770	1667	4.32	1.8	0.24	0.24 Axle Spacing Classification
Northbound	2016	11	1212	1629	1697	1690	1618	1660	1425	1668	1562	2.55	0.45	0	0 Axle Spacing Classification
Southbound	2016	11	1230	1664	1708	1731	1649	1681	1444	1696	1587	3.82	1.25	0.06	0.06 Axle Spacing Classification
Northbound	2016	12	1187	1438	1653	1610	1423	1588	1378	1562	1468	2.86	0.34	0	0 Axle Spacing Classification
Southbound	2016	12	1219	1505	1689	1605	1440	1601	1418	1578	1497	4.28	1.14	0.07	0.07 Axle Spacing Classification
Northbound	2017	1	959	1387	1569	1386	1450	1583	1219	1468	1365	3.31	0.29	0	0 Axle Spacing Classification
Southbound	2017	1	1004	1486	1598	1458	1493	1634	1251	1516	1418	4.72	1.22	0.21	0.21 Axle Spacing Classification
Northbound	2017	2	1122	1473	1668	1691	1677	1755	1763	1679	1593	3.2	0.44	0	0 Axle Spacing Classification
Southbound	2017	2	1122	1473	1668	1691	1677	1755	1763	1679	1593	3.2	0.44	0	0 Axle Spacing Classification
Northbound	2017	3	1267	1641	1700	1699	1696	1833	1527	1698	1623	2.98	0.55	0	0 Axle Spacing Classification
Southbound	2017	3	1285	1674	1737	1728	1718	1828	1556	1728	1647	4.13	1.74	0.12	0.12 Axle Spacing Classification
Northbound	2017	4	1371	1740	1806	1779	1783	1880	1616	1789	1711	2.77	0.47	0	0 Axle Spacing Classification
Southbound	2017	4	1394	1790	1836	1792	1802	1870	1666	1810	1736	3.96	1.4	0.12	0.12 Axle Spacing Classification
Northbound	2017	5	1546	1740	1815	1909	1823	2002	1783	1849	1803	2.67	0.39	0	0 Axle Spacing Classification
Southbound	2017	5	1599	1789	1855	1939	2129	2025	1836	1974	1882	3.96	1.5	0.11	0.11 Axle Spacing Classification
Northbound	2017	6	1558	1776	1793	1804	1857	2012	1767	1818	1795	3	0.39	0	0 Axle Spacing Classification
Southbound	2017	6	1588	1901	1879	1879	1897	2045	1842	1885	1862	4.07	1.82	0.11	0.11 Axle Spacing Classification
Northbound	2017	7	1473	1823	1805	1774	1893	1941	1750	1827	1781	2.94	0.45	0	0 Axle Spacing Classification
Southbound	2017	7	1540	1853	1876	1956	2008	1978	1706	1947	1845	3.91	2.12	0.27	0.27 Axle Spacing Classification
Northbound	2017	8	1458	1992	1876	1791	1839	1940	1719	1835	1802	3.05	0.44	0	0 Axle Spacing Classification
Southbound	2017	8	1616	1859	1856	1867	1861	1974	1768	1861	1829	3.93	2.24	0.22	0.22 Axle Spacing Classification
Northbound	2017	9	1394	1640	1841	1837	1865	1975	1756	1848	1758	2.83	0.51	0	0 Axle Spacing Classification
Southbound	2017	9	1425	1753	1884	1872	1865	2003	1788	1874	1799	3.94	1.83	0.17	0.17 Axle Spacing Classification
Northbound	2017	10	1350	1739	1848	1830	1858	1885	1615	1845	1732	2.96	0.46	0	0 Axle Spacing Classification
Southbound	2017	10	1301	1795	1865	1829	1833	1935	1614	1842	1739	3.93	1.68	0.23	0.23 Axle Spacing Classification
Northbound	2017	11	1200	1685	1686	1768	1637	1735	1431	1697	1592	3.13	0.38	0	0 Axle Spacing Classification
Southbound	2017	11	1205	1733	1749	1776	1669	1752	1460	1731	1621	4	1.78	0.18	0.18 Axle Spacing Classification
Northbound	2017	12	1213	1469	1606	1678	1651	1757	1468	1645	1549	2.66	0.39	0	0 Axle Spacing Classification
Southbound	2017	12	1207	1507	1639	1691	1669	1800	1487	1666	1571	3.84	1.47	0.13	0.13 Axle Spacing Classification
Northbound	2018	1	1198	1486	1631	1673	1673	1724	1405	1659	1541	2.85	0.45	0	0 Axle Spacing Classification
Southbound	2018	1	1181	1475	1714	1691	1700	1748	1400	1702	1558	3.93	1.54	0.19	0.19 Axle Spacing Classification
Northbound	2018	2	1170	1627	1672	1569	1671	1747	1496	1637	1565	2.84	0.44	0	0 Axle Spacing Classification
Southbound	2018	2	1220	1731	1668	1527	1666	1877	1511	1620	1600	4.04	1.62	0.12	0.12 Axle Spacing Classification
Northbound	2018	3	1394	1797	1846	1861	1832	1916	1682	1846	1761	3.41	0.56	0	0 Axle Spacing Classification

WSDOT Permanent Traffic Recorder - S819: On SR 411 at milepost 7.97 A: S/O SANDY BEND ROAD - LEXINGTON

January 2010 - August 2020

TravelDirection	Year	Month	AvgSunday	AvgMonday	AvgTuesday	AvgWednesday	AvgThursday	AvgFriday	AvgSaturday	AvgWkday	AvgDay	SingleUnitTruckPct	DoubleUnitTruckPct	TripleUnitTruckPct	VehicleClassificationType
Southbound	2018	3	1401	1832	1865	1873	1867	2251	1718	1868	1830	4.19	1.88		0.44 Axle Spacing Classification
Northbound	2018	4	1382	1860	1872	1922	1910	1965	1620	1901	1790	2.92	0.45		0.06 Axle Spacing Classification
Southbound	2018	4	1412	1892	1916	1926	1928	1961	1626	1923	1809	3.96	1.67		0.28 Axle Spacing Classification
Northbound	2018	5	1612	1828	1998	2007	1986	2086	1792	1997	1901	3.09	0.47		0 Axle Spacing Classification
Southbound	2018	5	1650	1873	2016	1992	2026	2094	1835	2011	1927	3.98	1.96		0.16 Axle Spacing Classification
Northbound	2018	6	1572	1895	1975	1988	1952	2086	1831	1972	1900	2.94	0.53		0 Axle Spacing Classification
Southbound	2018	6	1611	1942	1982	1973	1945	2097	1825	1967	1911	4.03	1.41		0.1 Axle Spacing Classification
Northbound	2018	7	1519	1913	1988	1945	1978	2075	1732	1970	1879	3.1	0.53		0 Axle Spacing Classification
Southbound	2018	7	1543	1926	1998	1941	1966	2061	1698	1968	1876	4.33	1.6		0.05 Axle Spacing Classification
Northbound	2018	8	1453	1870	1901	1904	1913	1962	1750	1906	1822	3.17	0.71		0 Axle Spacing Classification
Southbound	2018	8	1488	1917	1924	1925	1904	1996	1747	1918	1843	4.48	1.73		0.11 Axle Spacing Classification
Northbound	2018	9	1392	1736	1968	1929	1933	1994	1729	1943	1812	3.12	0.56		0 Axle Spacing Classification
Southbound	2018	9	1402	1787	1966	1944	1922	1997	1774	1944	1827	4.42	1.49		0.11 Axle Spacing Classification
Northbound	2018	10	1330	1832	1885	1945	1924	1977	1679	1918	1796	3.27	0.39		0 Axle Spacing Classification
Southbound	2018	10	1343	1884	1925	1962	1973	2012	1686	1953	1826	4.68	1.36		0.11 Axle Spacing Classification
Northbound	2018	11	1287	1693	1778	1820	1711	1804	1490	1770	1655	3.16	0.42		0 Axle Spacing Classification
Southbound	2018	11	1273	1741	1798	1842	1764	1839	1534	1801	1684	4.69	1.41		0.18 Axle Spacing Classification
Northbound	2018	12	1256	1684	1645	1738	1759	1847	1581	1714	1644	3.49	0.37		0 Axle Spacing Classification
Southbound	2018	12	1288	1723	1692	1791	1808	1854	1594	1764	1679	4.68	1.86		0.18 Axle Spacing Classification
Northbound	2019	1	1201	1624	1592	1694	1729	1813	1452	1672	1586	3.64	0.44		0 Axle Spacing Classification
Southbound	2019	1	1202	1689	1615	1742	1787	1839	1479	1715	1622	5.03	2.08		0.25 Axle Spacing Classification
Northbound	2019	2	1128	1459	1701	1749	1787	1781	1340	1746	1564	3.9	0.32		0 Axle Spacing Classification
Southbound	2019	2	1154	1489	1744	2254	1816	1842	1345	1938	1663	4.97	2.01		0.25 Axle Spacing Classification
Northbound	2019	3	1487	1809	1931	1926	1908	1909	1664	1922	1805	3.94	0.55		0 Axle Spacing Classification
Southbound	2019	3	1546	1895	1967	1937	1937	2010	1685	1947	1854	4.76	2.38		0.43 Axle Spacing Classification
Northbound	2019	4	1432	1857	1906	1928	1983	1983	1738	1939	1832	3.98	0.6		0.05 Axle Spacing Classification
Southbound	2019	4	1442	1924	1954	2001	1981	2023	1765	1979	1870	5.34	2.24		0.32 Axle Spacing Classification
Northbound	2019	5	1555	1821	1947	2010	2018	2098	1841	1992	1899	3.5	0.52		0 Axle Spacing Classification
Southbound	2019	5	1598	1870	1976	2014	2054	2105	1878	2015	1928	5.02	1.76		0.16 Axle Spacing Classification
Northbound	2019	6	1606	1935	2031	1988	1991	2117	1880	2003	1935	3.33	0.52		0 Axle Spacing Classification
Southbound	2019	6	1655	2035	2067	2037	2029	2129	1883	2044	1976	4.69	1.63		0.15 Axle Spacing Classification
Northbound	2019	7	1605	1945	1989	2078	1964	2086	1743	2010	1916	3.57	0.83		0 Axle Spacing Classification
Southbound	2019	7	1619	2015	2050	2047	1999	2121	1749	2032	1943	4.89	2.09		0.2 Axle Spacing Classification
Northbound	2019	8	1578	1961	2011	2039	2051	2099	1799	2034	1934	3.25	0.77		0.05 Axle Spacing Classification
Southbound	2019	8	1615	2042	2056	2030	2074	2157	1841	2053	1974	4.61	2.08		0.15 Axle Spacing Classification
Northbound	2019	9	1407	1846	2012	2065	2062	2121	1873	2046	1912	3.38	1.32		0 Axle Spacing Classification
Southbound	2019	9	1438	1917	2099	2127	2119	2204	1926	2115	1976	4.75	2.66		0.1 Axle Spacing Classification
Northbound	2019	10	1351	1851	1969	1978	2008	2075	1729	1985	1852	3.54	1.13		0 Axle Spacing Classification
Southbound	2019	10	1386	1921	1990	1982	2044	2115	1760	2005	1885	4.75	2.32		0.21 Axle Spacing Classification
Northbound	2019	11	1256	1845	1916	1974	1792	1955	1570	1894	1758	3.38	2.7		0.06 Axle Spacing Classification
Southbound	2019	11	1280	1886	1931	1954	1824	1992	1590	1903	1780	4.62	3.73		0.33 Axle Spacing Classification
Northbound	2019	12	1261	1818	1909	1755	1866	1913	1565	1843	1727	3.37	1.16		0.12 Axle Spacing Classification
Southbound	2019	12	1258	1890	1860	1766	1897	1933	1564	1841	1738	4.5	1.73		0.23 Axle Spacing Classification
Northbound	2020	1	1227	1791	1830	1714	1807	1880	1525	1784	1682	3.44	1.19		0.06 Axle Spacing Classification
Southbound	2020	1	1211	1777	1832	1706	1782	1896	1522	1773	1675	4.37	1.92		0.3 Axle Spacing Classification
Northbound	2020	2	1358	1794	1891	2157	1946	2107	1575	1998	1833	3.72	1.19		0.05 Axle Spacing Classification
Southbound	2020	2	1345	1799	1881	2100	1942	2139	1568	1974	1825	4.66	1.79		0.49 Axle Spacing Classification
Northbound	2020	3	1237	1603	1652	1761	1737	1715	1334	1717	1577	3.86	0.7		0 Axle Spacing Classification
Southbound	2020	3	1244	1632	1655	1777	1738	1704	1347	1723	1585	5.16	1.57		0.19 Axle Spacing Classification
Northbound	2020	4	1178	1514	1563	1557	1603	1641	1355	1574	1487	3.75	0.8		0 Axle Spacing Classification
Southbound	2020	4	1221	1544	1566	1554	1617	1637	1364	1579	1500	4.98	1.73		0.2 Axle Spacing Classification
Northbound	2020	5	1485	1578	1805	1823	1842	1968	1647	1823	1735	3.7	0.75		0 Axle Spacing Classification
Southbound	2020	5	1519	1655	1850	1813	1881	1997	1687	1848	1772	5.2	1.47		0.11 Axle Spacing Classification
Northbound	2020	6	1498	1845	1935	1961	1985	2048	1660	1960	1847	3.78	0.92		0 Axle Spacing Classification
Southbound	2020	6	1516	1899	1965	1974	2013	2071	1658	1984	1871	5.01	1.87		0.16 Axle Spacing Classification
Northbound	2020	7	1630	1932	2011	2044	1988	2083	1790	2014	1925	4.14	0.93		0 Axle Spacing Classification
Southbound	2020	7	1643	1959	2020	2024	2016	2119	1798	2020	1940	5.18	2.21		0.21 Axle Spacing Classification

APPENDIX B

Level of Service Definitions & LOS Calculation Sheets



**Transportation Technical Report for
Huntington Middle School Interim Use of Catlin Elementary School Site**

Levels of service (LOS) are qualitative descriptions of traffic operating conditions. These levels of service are designated with letters ranging from LOS A, which is indicative of good operating conditions with little or no delay, to LOS F, which is indicative of stop-and-go conditions with frequent and lengthy delays. Levels of service for this analysis were developed using procedures presented in the *Highway Capacity Manual, Sixth Edition* (Transportation Research Board, 2016).

Signalized Intersections

Level of service for signalized intersections is defined in terms of average delay for all vehicles that travel through the intersection. Delay can be a cause of driver discomfort, frustration, inefficient fuel consumption, and lost travel time. Specifically, level-of-service criteria are stated in terms of the average delay per vehicle in seconds. Delay is a complex measure and is dependent on a number of variables including: number and type of vehicles by movement, intersection lane geometry, signal phasing, the amount of green time allocated to each phase, transit stops and parking maneuvers. Table B-1 shows the level of service criteria for signalized intersections from the *Highway Capacity Manual, Sixth Edition*.

Table B-1. Level of Service for Signalized Intersections

Level of Service	Average Control Delay Per Vehicle
A	≤ 10 seconds
B	> 10 – 20 seconds
C	> 20 – 35 seconds
D	> 35 – 55 seconds
E	> 55 – 80 seconds
F	> 80 seconds

Source: Transportation Research Board, Highway Capacity Manual, Exhibit 19.8, 2016.

Unsignalized Intersections

For unsignalized intersections, level of service is based on the average delay per vehicle for each turning movement. The level of service for all-way stop or roundabout-controlled intersections is based upon the average delay for all vehicles that travel through the intersection. The level of service for a one- or two-way, stop-controlled intersection, delay is related to the availability of gaps in the main street's traffic flow, and the ability of a driver to enter or pass through those gaps. Table B-2 shows the level of service criteria for unsignalized intersections from the *Highway Capacity Manual, Sixth Edition*.

Table B-2. Level of Service Criteria for Unsignalized Intersections













Level of Service	Average Control Delay per Vehicle
A	0 – 10 seconds
B	> 10 – 15 seconds
C	> 15 – 25 seconds
D	> 25 – 35 seconds
E	> 35 – 50 seconds
F	> 50 seconds







Source: Transportation Research Board, Highway Capacity Manual, Exhibit 20.2, 2016.



Kelso School District - Huntington MS Interim Site
1: NW 1st Av

2020 Existing Conditions - AM Peak
Lanes, Volumes, Timings

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	68	107	29	141	554	219
Future Volume (vph)	68	107	29	141	554	219
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	11	12	10	10
Grade (%)	4%			0%	-1%	
Storage Length (ft)	0	0	200			300
Storage Lanes	1	1	1			1
Taper Length (ft)	50		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.98
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1710	1583	1694	1845	1765	1500
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1710	1583	1694	1845	1765	1465
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		104				237
Link Speed (mph)	30			35	35	
Link Distance (ft)	315			1448	419	
Travel Time (s)	7.2			28.2	8.2	
Confl. Bikes (#/hr)		2				3
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	0%	0%	3%	3%	1%	1%
Adj. Flow (vph)	83	130	35	172	676	267
Shared Lane Traffic (%)						
Lane Group Flow (vph)	83	130	35	172	676	267
Turn Type	Perm	pt+ov	Prot	NA	NA	Perm
Protected Phases		4 5	5	2	6	
Permitted Phases	4					6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	4.0		7.0	4.0	4.0	4.0
Minimum Split (s)	20.0		13.0	20.0	26.0	26.0
Total Split (s)	36.0		36.0	54.0	54.0	54.0
Total Split (%)	28.6%		28.6%	42.9%	42.9%	42.9%
Maximum Green (s)	30.0		30.0	48.0	48.0	48.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0		6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0		3.0	4.0	4.0	4.0
Recall Mode	None		None	Min	Min	Min
Walk Time (s)					5.0	5.0
Flash Dont Walk (s)					15.0	15.0
Pedestrian Calls (#/hr)					0	0
Act Effect Green (s)	9.3	17.0	7.7	55.1	47.3	47.3

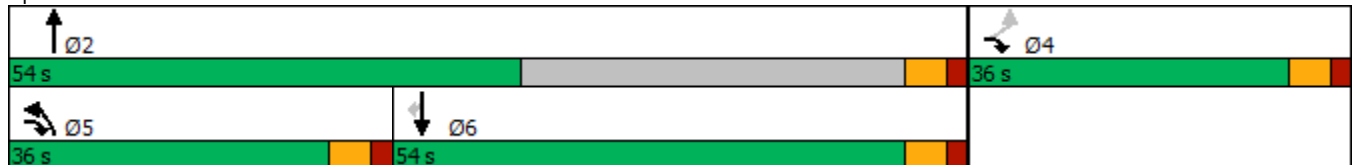
Lane Group						
Actuated g/C Ratio	0.12	0.22	0.10	0.72	0.62	0.62
v/c Ratio	0.40	0.30	0.20	0.13	0.62	0.27
Control Delay	39.0	9.1	37.9	3.7	14.4	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.0	9.1	37.9	3.7	14.4	2.7
LOS	D	A	D	A	B	A
Approach Delay	20.8			9.5	11.1	
Approach LOS	C			A	B	
Queue Length 50th (ft)	39	9	17	20	216	6
Queue Length 95th (ft)	78	40	42	38	330	32
Internal Link Dist (ft)	235			1368	339	
Turn Bay Length (ft)			200			300
Base Capacity (vph)	682	693	675	1825	1142	1031
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	0.12	0.19	0.05	0.09	0.59	0.26

Intersection Summary

Area Type: Other
 Cycle Length: 126
 Actuated Cycle Length: 76.6
 Natural Cycle: 65
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 12.4
 Intersection Capacity Utilization 45.8%
 Analysis Period (min) 15
 Description: From TMC

Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 1: NW 1st Av



Intersection

Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑	↑	
Traffic Vol, veh/h	160	0	10	232	5	10
Future Vol, veh/h	160	0	10	232	5	10
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	174	0	11	252	5	11

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	175	0	449
Stage 1	-	-	-	-	175
Stage 2	-	-	-	-	274
Critical Hdwy	-	-	4.1	-	6.6
Critical Hdwy Stg 1	-	-	-	-	5.8
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1414	-	557
Stage 1	-	-	-	-	844
Stage 2	-	-	-	-	777
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1413	-	551
Mov Cap-2 Maneuver	-	-	-	-	551
Stage 1	-	-	-	-	843
Stage 2	-	-	-	-	770

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	769	-	-	1413	-
HCM Lane V/C Ratio	0.021	-	-	0.008	-
HCM Control Delay (s)	9.8	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection												
Int Delay, s/veh	17.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	
Traffic Vol, veh/h	4	14	8	190	9	26	1	71	61	90	275	2
Future Vol, veh/h	4	14	8	190	9	26	1	71	61	90	275	2
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	75	75	75	79	79	79	83	83	83
Heavy Vehicles, %	4	4	4	1	1	1	2	2	2	1	1	1
Mvmt Flow	6	19	11	253	12	35	1	90	77	108	331	2

Major/Minor	Minor2		Minor1			Major1		Major2				
Conflicting Flow All	703	718	333	694	681	129	334	0	0	167	0	0
Stage 1	549	549	-	131	131	-	-	-	-	-	-	-
Stage 2	154	169	-	563	550	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.11	6.51	6.21	4.12	-	-	4.11	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.509	4.009	3.309	2.218	-	-	2.209	-	-
Pot Cap-1 Maneuver	350	352	704	359	374	924	1225	-	-	1417	-	-
Stage 1	516	513	-	875	790	-	-	-	-	-	-	-
Stage 2	844	755	-	513	517	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	304	318	703	313	338	924	1224	-	-	1417	-	-
Mov Cap-2 Maneuver	304	318	-	313	338	-	-	-	-	-	-	-
Stage 1	515	464	-	874	789	-	-	-	-	-	-	-
Stage 2	799	754	-	438	468	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.5	50.8	0.1	1.9
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1224	-	-	379	314	924	1417	-	-
HCM Lane V/C Ratio	0.001	-	-	0.095	0.845	0.038	0.077	-	-
HCM Control Delay (s)	7.9	0	-	15.5	56.3	9	7.8	0	-
HCM Lane LOS	A	A	-	C	F	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	7.4	0.1	0.2	-	-

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations						
---------------------	--	--	--	--	--	--

Traffic Vol, veh/h	5	10	5	160	665	5
--------------------	---	----	---	-----	-----	---

Future Vol, veh/h	5	10	5	160	665	5
-------------------	---	----	---	-----	-----	---

Conflicting Peds, #/hr	0	0	2	0	0	2
------------------------	---	---	---	---	---	---

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, %	1	-	-	1	0	-
----------	---	---	---	---	---	---

Peak Hour Factor	92	92	92	92	92	92
------------------	----	----	----	----	----	----

Heavy Vehicles, %	2	2	2	2	2	2
-------------------	---	---	---	---	---	---

Mvmt Flow	5	11	5	174	723	5
-----------	---	----	---	-----	-----	---

Major/Minor	Minor2	Major1	Major2
-------------	--------	--------	--------

Conflicting Flow All	825	366	730	0	-	0
----------------------	-----	-----	-----	---	---	---

Stage 1	728	-	-	-	-	-
---------	-----	---	---	---	---	---

Stage 2	97	-	-	-	-	-
---------	----	---	---	---	---	---

Critical Hdwy	7.04	7.04	4.14	-	-	-
---------------	------	------	------	---	---	---

Critical Hdwy Stg 1	6.04	-	-	-	-	-
---------------------	------	---	---	---	---	---

Critical Hdwy Stg 2	6.04	-	-	-	-	-
---------------------	------	---	---	---	---	---

Follow-up Hdwy	3.52	3.32	2.22	-	-	-
----------------	------	------	------	---	---	---

Pot Cap-1 Maneuver	297	625	870	-	-	-
--------------------	-----	-----	-----	---	---	---

Stage 1	421	-	-	-	-	-
---------	-----	---	---	---	---	---

Stage 2	911	-	-	-	-	-
---------	-----	---	---	---	---	---

Platoon blocked, %				-	-	-
--------------------	--	--	--	---	---	---

Mov Cap-1 Maneuver	294	624	868	-	-	-
--------------------	-----	-----	-----	---	---	---

Mov Cap-2 Maneuver	294	-	-	-	-	-
--------------------	-----	---	---	---	---	---

Stage 1	418	-	-	-	-	-
---------	-----	---	---	---	---	---

Stage 2	909	-	-	-	-	-
---------	-----	---	---	---	---	---

Approach	EB	NB	SB
----------	----	----	----

HCM Control Delay, s	13.2	0.3	0
----------------------	------	-----	---

HCM LOS	B		
---------	---	--	--

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
-----------------------	-----	-----	-------	-----	-----

Capacity (veh/h)	868	-	454	-	-
------------------	-----	---	-----	---	---

HCM Lane V/C Ratio	0.006	-	0.036	-	-
--------------------	-------	---	-------	---	---







HCM Control Delay (s)	9.2	0	13.2	-	-
-----------------------	-----	---	------	---	---

HCM Lane LOS	A	A	B	-	-
--------------	---	---	---	---	---













HCM 95th %tile Q(veh)	0	-	0.1	-	-
-----------------------	---	---	-----	---	---

Kelso School District - Huntington MS Interim Site
5: W Main St & NW 2nd Av

2020 Existing Conditions - AM Peak
HCM Unsignalized Intersection Capacity Analysis

							
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		↑↑↑	↑↑				↑
Traffic Volume (veh/h)	0	371	453	5	0	0	15
Future Volume (Veh/h)	0	371	453	5	0	0	15
Sign Control		Free	Free		Stop		
Grade		0%	-1%		0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	403	492	5	0	0	16
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type		None	None				
Median storage (veh)							
Upstream signal (ft)			256				
pX, platoon unblocked	0.96				0.96	0.96	
vC, conflicting volume	497				595	248	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	384				486	124	
tC, single (s)	4.1				6.8	6.9	
tC, 2 stage (s)							
tF (s)	2.2				3.5	3.3	
p0 queue free %	100				100	98	
cM capacity (veh/h)	1121				488	864	
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	SB 1
Volume Total	101	101	101	101	328	169	16
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	5	16
cSH	1700	1700	1700	1700	1700	1700	864
Volume to Capacity	0.06	0.06	0.06	0.06	0.19	0.10	0.02
Queue Length 95th (ft)	0	0	0	0	0	0	1
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	9.2
Lane LOS							A
Approach Delay (s)	0.0				0.0		9.2
Approach LOS							A
Intersection Summary							
Average Delay			0.2				
Intersection Capacity Utilization			22.7%		ICU Level of Service		A
Analysis Period (min)			15				

Kelso School District - Huntington MS Interim Site 2020 Existing Conditions - Afternoon Peak
 1: NW 1st Av Lanes, Volumes, Timings

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	298	55	67	580	428	162
Future Volume (vph)	298	55	67	580	428	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	11	12	10	10
Grade (%)	4%			0%	-1%	
Storage Length (ft)	0	0	200			300
Storage Lanes	1	1	1			1
Taper Length (ft)	50		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			1.00			0.97
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1710	1583	1745	1900	1765	1500
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1710	1583	1739	1900	1765	1459
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		57				169
Link Speed (mph)	30			35	35	
Link Distance (ft)	315			1448	419	
Travel Time (s)	7.2			28.2	8.2	
Confl. Peds. (#/hr)			2			2
Confl. Bikes (#/hr)		2				1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%
Adj. Flow (vph)	310	57	70	604	446	169
Shared Lane Traffic (%)						
Lane Group Flow (vph)	310	57	70	604	446	169
Turn Type	Perm	pt+ov	Prot	NA	NA	Perm
Protected Phases		4 5	5	2	6	
Permitted Phases	4					6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	4.0		7.0	4.0	4.0	4.0
Minimum Split (s)	20.0		13.0	20.0	26.0	26.0
Total Split (s)	36.0		36.0	54.0	54.0	54.0
Total Split (%)	28.6%		28.6%	42.9%	42.9%	42.9%
Maximum Green (s)	30.0		30.0	48.0	48.0	48.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0		6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0		3.0	4.0	4.0	4.0
Recall Mode	None		None	Min	Min	Min
Walk Time (s)					5.0	5.0
Flash Dont Walk (s)					15.0	15.0
Pedestrian Calls (#/hr)					0	0

Kelso School District - Huntington MS Interim Site 2020 Existing Conditions - Afternoon Peak
 1: NW 1st Av Lanes, Volumes, Timings

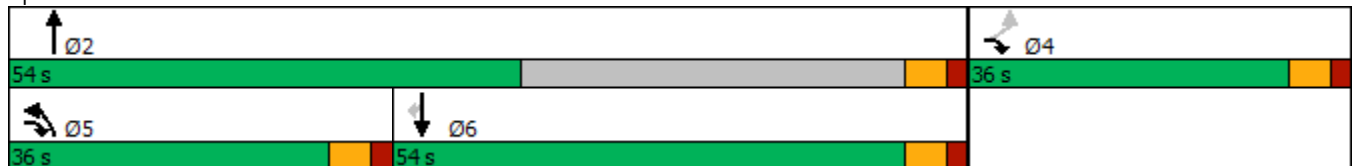
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Act Effect Green (s)	20.8	32.5	9.7	41.0	29.3	29.3
Actuated g/C Ratio	0.28	0.43	0.13	0.55	0.39	0.39
v/c Ratio	0.65	0.08	0.31	0.58	0.65	0.25
Control Delay	34.1	4.3	40.0	13.8	26.0	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.1	4.3	40.0	13.8	26.0	4.3
LOS	C	A	D	B	C	A
Approach Delay	29.5			16.5	20.0	
Approach LOS	C			B	C	
Queue Length 50th (ft)	129	0	31	163	172	0
Queue Length 95th (ft)	273	21	87	316	337	40
Internal Link Dist (ft)	235			1368	339	
Turn Bay Length (ft)			200			300
Base Capacity (vph)	749	842	765	1810	1196	1043
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	0.41	0.07	0.09	0.33	0.37	0.16

Intersection Summary

Area Type: Other
 Cycle Length: 126
 Actuated Cycle Length: 74.9
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 20.7
 Intersection Capacity Utilization 59.9%
 Analysis Period (min) 15
 Description: From TMC

Intersection LOS: C
 ICU Level of Service B

Splits and Phases: 1: NW 1st Av



Intersection

Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑	↑	
Traffic Vol, veh/h	314	5	10	216	5	10
Future Vol, veh/h	314	5	10	216	5	10
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	341	5	11	235	5	11

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	348	0	603
Stage 1	-	-	-	-	346
Stage 2	-	-	-	-	257
Critical Hdwy	-	-	4.1	-	6.6
Critical Hdwy Stg 1	-	-	-	-	5.8
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1222	-	450
Stage 1	-	-	-	-	694
Stage 2	-	-	-	-	791
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1220	-	445
Mov Cap-2 Maneuver	-	-	-	-	445
Stage 1	-	-	-	-	693
Stage 2	-	-	-	-	783

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	649	-	-	1220	-
HCM Lane V/C Ratio	0.025	-	-	0.009	-
HCM Control Delay (s)	10.7	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Kelso School District - Huntington MS Interim Site 2020 Existing Conditions - Afternoon Peak
 3: Long Av/Columbia Hts Rd & Fishers Ln HCM 6th TWSC

Intersection												
Int Delay, s/veh	6.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	
Traffic Vol, veh/h	6	13	8	158	13	59	12	218	251	33	166	2
Future Vol, veh/h	6	13	8	158	13	59	12	218	251	33	166	2
Conflicting Peds, #/hr	0	0	6	6	0	0	0	0	3	3	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	100	100	100	89	89	89	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	1	1	1
Mvmt Flow	7	14	9	158	13	59	13	245	282	39	198	2

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	725	833	205	710	693	389	200	0	0	530	0	0
Stage 1	277	277	-	415	415	-	-	-	-	-	-	-
Stage 2	448	556	-	295	278	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.11	-	-
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	3.3	2.2	-	-	2.209	-	-
Pot Cap-1 Maneuver	343	307	841	351	369	664	1384	-	-	1042	-	-
Stage 1	734	685	-	619	596	-	-	-	-	-	-	-
Stage 2	594	516	-	718	684	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	291	290	835	317	348	662	1384	-	-	1040	-	-
Mov Cap-2 Maneuver	291	290	-	317	348	-	-	-	-	-	-	-
Stage 1	724	656	-	609	586	-	-	-	-	-	-	-
Stage 2	522	508	-	661	655	-	-	-	-	-	-	-

Approach	EB		WB			NB			SB		
HCM Control Delay, s	15.9		24.1			0.2			1.4		
HCM LOS	C		C								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1384	-	-	360	319	662	1040	-	-
HCM Lane V/C Ratio	0.01	-	-	0.082	0.536	0.089	0.038	-	-
HCM Control Delay (s)	7.6	0	-	15.9	28.6	11	8.6	0	-
HCM Lane LOS	A	A	-	C	D	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	3	0.3	0.1	-	-

Kelso School District - Huntington MS Interim Site 2020 Existing Conditions - Afternoon Peak
 4: NW 1st Av & Grant St HCM 6th TWSC

Intersection

Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	15	5	10	628	453	15
Future Vol, veh/h	15	5	10	628	453	15
Conflicting Peds, #/hr	0	0	5	0	0	5
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, %	1	-	-	1	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	2	2	2	2
Mvmt Flow	16	5	11	683	492	16

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	869	259	513	0	0
Stage 1	505	-	-	-	-
Stage 2	364	-	-	-	-
Critical Hdwy	7	7	4.14	-	-
Critical Hdwy Stg 1	6	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.22	-	-
Pot Cap-1 Maneuver	281	741	1049	-	-
Stage 1	561	-	-	-	-
Stage 2	666	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	273	737	1044	-	-
Mov Cap-2 Maneuver	273	-	-	-	-
Stage 1	549	-	-	-	-
Stage 2	663	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.9	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1044	-	324	-	-
HCM Lane V/C Ratio	0.01	-	0.067	-	-
HCM Control Delay (s)	8.5	0.1	16.9	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Kelso School District - Huntington MS Interim Site 2020 Existing Conditions - Afternoon Peak
 5: W Main St & NW 2nd Av HCM 6th TWSC

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑			↑
Traffic Vol, veh/h	0	618	495	15	0	5
Future Vol, veh/h	0	618	495	15	0	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	30	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	-1	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	672	538	16	0	5













Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	6.94
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.32
Pot Cap-1 Maneuver	0	-	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	720
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	WBR	SBLn1
Capacity (veh/h)	-	-	-	720
HCM Lane V/C Ratio	-	-	-	0.008
HCM Control Delay (s)	-	-	-	10
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0

Kelso School District - Huntington MS Interim Site
 1: NW 1st Av & Fishers Ln

2022 Without-Proj - AM Peak
 Lanes, Volumes, Timings

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	69	109	29	144	565	224
Future Volume (vph)	69	109	29	144	565	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	11	12	10	10
Grade (%)	4%			0%	-1%	
Storage Length (ft)	0	0	200			300
Storage Lanes	1	1	1			1
Taper Length (ft)	50		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.98
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1710	1583	1694	1845	1765	1500
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1710	1583	1694	1845	1765	1465
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		99				238
Link Speed (mph)	25			35	35	
Link Distance (ft)	315			1448	419	
Travel Time (s)	8.6			28.2	8.2	
Confl. Bikes (#/hr)		2				3
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	0%	0%	3%	3%	1%	1%
Adj. Flow (vph)	84	133	35	176	689	273
Shared Lane Traffic (%)						
Lane Group Flow (vph)	84	133	35	176	689	273
Turn Type	Perm	pt+ov	Prot	NA	NA	Perm
Protected Phases		4 5	5	2	6	
Permitted Phases	4					6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	4.0		7.0	4.0	4.0	4.0
Minimum Split (s)	20.0		13.0	20.0	26.0	26.0
Total Split (s)	36.0		36.0	54.0	54.0	54.0
Total Split (%)	28.6%		28.6%	42.9%	42.9%	42.9%
Maximum Green (s)	30.0		30.0	48.0	48.0	48.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0		6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0		3.0	4.0	4.0	4.0
Recall Mode	None		None	Min	Min	Min
Walk Time (s)					5.0	5.0
Flash Dont Walk (s)					15.0	15.0
Pedestrian Calls (#/hr)					0	0
Act Effect Green (s)	9.4	17.2	7.7	57.2	49.3	49.3

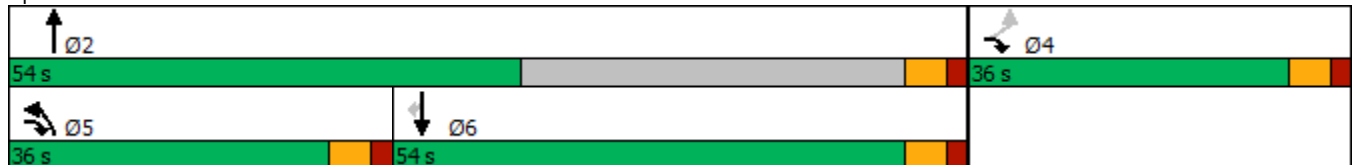
Lane Group						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Actuated g/C Ratio	0.12	0.22	0.10	0.73	0.63	0.63
v/c Ratio	0.41	0.31	0.21	0.13	0.62	0.27
Control Delay	39.8	10.0	38.4	3.7	14.5	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	10.0	38.4	3.7	14.5	2.8
LOS	D	A	D	A	B	A
Approach Delay	21.5			9.5	11.2	
Approach LOS	C			A	B	
Queue Length 50th (ft)	41	13	17	21	224	7
Queue Length 95th (ft)	78	44	42	39	341	34
Internal Link Dist (ft)	235			1368	339	
Turn Bay Length (ft)			200			300
Base Capacity (vph)	660	672	654	1824	1132	1025
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	0.13	0.20	0.05	0.10	0.61	0.27

Intersection Summary

Area Type: Other
 Cycle Length: 126
 Actuated Cycle Length: 78.7
 Natural Cycle: 65
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 12.5
 Intersection Capacity Utilization 46.5%
 Analysis Period (min) 15
 Description: From TMC

Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 1: NW 1st Av & Fishers Ln



Intersection

Int Delay, s/veh 0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations	↑↑			↑	↑	
Traffic Vol, veh/h	163	0	11	236	5	11
Future Vol, veh/h	163	0	11	236	5	11
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	177	0	12	257	5	12

Major/Minor	Major1	Major2	Minor1
-------------	--------	--------	--------

Conflicting Flow All	0	0	178	0	459	90
Stage 1	-	-	-	-	178	-
Stage 2	-	-	-	-	281	-
Critical Hdwy	-	-	4.1	-	6.6	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1410	-	550	956
Stage 1	-	-	-	-	841	-
Stage 2	-	-	-	-	771	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1409	-	544	955
Mov Cap-2 Maneuver	-	-	-	-	544	-
Stage 1	-	-	-	-	840	-
Stage 2	-	-	-	-	763	-

Approach	EB	WB	NB
----------	----	----	----

HCM Control Delay, s	0	0.3	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
-----------------------	-------	-----	-----	-----	-----

Capacity (veh/h)	773	-	-	1409	-
HCM Lane V/C Ratio	0.022	-	-	0.008	-
HCM Control Delay (s)	9.8	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection												
Int Delay, s/veh	19.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	
Traffic Vol, veh/h	4	15	8	193	9	26	1	73	62	91	281	2
Future Vol, veh/h	4	15	8	193	9	26	1	73	62	91	281	2
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	75	75	75	79	79	79	83	83	83
Heavy Vehicles, %	4	4	4	1	1	1	2	2	2	1	1	1
Mvmt Flow	6	21	11	257	12	35	1	92	78	110	339	2

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	718	733	341	709	695	131	342	0	0	170	0	0
Stage 1	561	561	-	133	133	-	-	-	-	-	-	-
Stage 2	157	172	-	576	562	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.11	6.51	6.21	4.12	-	-	4.11	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.509	4.009	3.309	2.218	-	-	2.209	-	-
Pot Cap-1 Maneuver	342	345	697	350	367	921	1217	-	-	1413	-	-
Stage 1	509	507	-	873	788	-	-	-	-	-	-	-
Stage 2	841	753	-	504	511	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	296	311	696	303	331	921	1216	-	-	1413	-	-
Mov Cap-2 Maneuver	296	311	-	303	331	-	-	-	-	-	-	-
Stage 1	508	458	-	872	787	-	-	-	-	-	-	-
Stage 2	796	752	-	428	461	-	-	-	-	-	-	-




Approach	EB	WB	NB	SB
HCM Control Delay, s	15.9	58.2	0.1	1.9
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1216	-	-	369	304	921	1413	-	-
HCM Lane V/C Ratio	0.001	-	-	0.102	0.886	0.038	0.078	-	-
HCM Control Delay (s)	8	0	-	15.9	64.5	9.1	7.8	0	-
HCM Lane LOS	A	A	-	C	F	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	8.1	0.1	0.3	-	-

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations						
Traffic Vol, veh/h	5	11	5	163	678	5
Future Vol, veh/h	5	11	5	163	678	5
Conflicting Peds, #/hr	0	0	2	0	0	2
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, %	1	-	-	1	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	12	5	177	737	5

Major/Minor	Minor2	Major1	Major2
-------------	--------	--------	--------

Conflicting Flow All	841	373	744	0	-	0
Stage 1	742	-	-	-	-	-
Stage 2	99	-	-	-	-	-
Critical Hdwy	7.04	7.04	4.14	-	-	-
Critical Hdwy Stg 1	6.04	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	290	618	859	-	-	-
Stage 1	414	-	-	-	-	-
Stage 2	909	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	287	617	857	-	-	-
Mov Cap-2 Maneuver	287	-	-	-	-	-
Stage 1	411	-	-	-	-	-
Stage 2	907	-	-	-	-	-

Approach	EB	NB	SB
----------	----	----	----

HCM Control Delay, s	13.2	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
-----------------------	-----	-----	-------	-----	-----

Capacity (veh/h)	857	-	454	-	-
HCM Lane V/C Ratio	0.006	-	0.038	-	-
HCM Control Delay (s)	9.2	0	13.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection

Int Delay, s/veh 0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations		↑↑↑	↑↑			↑
Traffic Vol, veh/h	0	378	462	5	0	16
Future Vol, veh/h	0	378	462	5	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	30	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	-1	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	411	502	5	0	17

Major/Minor	Major1	Major2	Minor2
-------------	--------	--------	--------

Conflicting Flow All	-	0	-	0	-	254
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	745
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	745
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
----------	----	----	----













HCM Control Delay, s	0	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
-----------------------	-----	-----	-----	-------

Capacity (veh/h)	-	-	-	745
HCM Lane V/C Ratio	-	-	-	0.023
HCM Control Delay (s)	-	-	-	9.9
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0.1

Kelso School District - Huntington MS Interim Site
1: NW 1st Av & Fishers Ln

2022 Without-Proj - Afternoon Peak
Lanes, Volumes, Timings

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	304	56	68	592	436	165
Future Volume (vph)	304	56	68	592	436	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	11	12	10	10
Grade (%)	4%			0%	-1%	
Storage Length (ft)	0	0	200			300
Storage Lanes	1	1	1			1
Taper Length (ft)	50		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			1.00			0.97
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1710	1583	1745	1900	1765	1500
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1710	1583	1739	1900	1765	1459
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		58				172
Link Speed (mph)	25			35	35	
Link Distance (ft)	315			1448	419	
Travel Time (s)	8.6			28.2	8.2	
Confl. Peds. (#/hr)			2			2
Confl. Bikes (#/hr)		2				1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%
Adj. Flow (vph)	317	58	71	617	454	172
Shared Lane Traffic (%)						
Lane Group Flow (vph)	317	58	71	617	454	172
Turn Type	Perm	pt+ov	Prot	NA	NA	Perm
Protected Phases		4 5	5	2	6	
Permitted Phases	4					6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	4.0		7.0	4.0	4.0	4.0
Minimum Split (s)	20.0		13.0	20.0	26.0	26.0
Total Split (s)	36.0		36.0	54.0	54.0	54.0
Total Split (%)	28.6%		28.6%	42.9%	42.9%	42.9%
Maximum Green (s)	30.0		30.0	48.0	48.0	48.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0		6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0		3.0	4.0	4.0	4.0
Recall Mode	None		None	Min	Min	Min
Walk Time (s)					5.0	5.0
Flash Dont Walk (s)					15.0	15.0
Pedestrian Calls (#/hr)					0	0

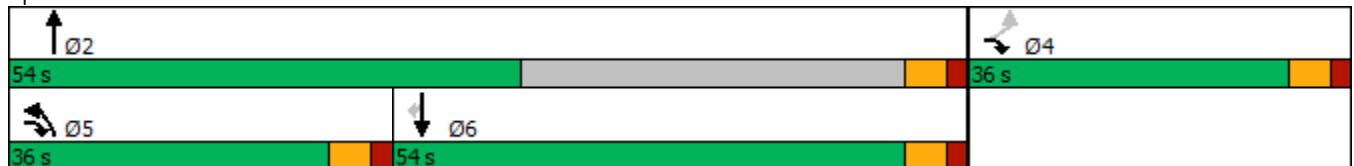
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Act Effect Green (s)	21.3	33.1	9.8	41.6	29.9	29.9
Actuated g/C Ratio	0.28	0.43	0.13	0.55	0.39	0.39
v/c Ratio	0.66	0.08	0.32	0.59	0.66	0.25
Control Delay	34.7	4.4	40.7	14.2	26.4	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.7	4.4	40.7	14.2	26.4	4.3
LOS	C	A	D	B	C	A
Approach Delay	30.0			16.9	20.4	
Approach LOS	C			B	C	
Queue Length 50th (ft)	135	0	32	174	180	0
Queue Length 95th (ft)	283	21	88	325	344	40
Internal Link Dist (ft)	235			1368	339	
Turn Bay Length (ft)			200			300
Base Capacity (vph)	738	837	753	1825	1182	1034
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	0.43	0.07	0.09	0.34	0.38	0.17

Intersection Summary

Area Type: Other
 Cycle Length: 126
 Actuated Cycle Length: 76.1
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.66
 Intersection Signal Delay: 21.1
 Intersection Capacity Utilization 60.6%
 Analysis Period (min) 15
 Description: From TMC

Intersection LOS: C
 ICU Level of Service B

Splits and Phases: 1: NW 1st Av & Fishers Ln



Intersection

Int Delay, s/veh 0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations	↑↑			↑	↑	
Traffic Vol, veh/h	321	5	11	221	5	11
Future Vol, veh/h	321	5	11	221	5	11
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	349	5	12	240	5	12

Major/Minor	Major1	Major2	Minor1
-------------	--------	--------	--------

Conflicting Flow All	0	0	356	0	618	179
Stage 1	-	-	-	-	354	-
Stage 2	-	-	-	-	264	-
Critical Hdwy	-	-	4.1	-	6.6	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1214	-	441	839
Stage 1	-	-	-	-	687	-
Stage 2	-	-	-	-	785	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1212	-	436	838
Mov Cap-2 Maneuver	-	-	-	-	436	-
Stage 1	-	-	-	-	686	-
Stage 2	-	-	-	-	776	-

Approach	EB	WB	NB
----------	----	----	----

HCM Control Delay, s	0	0.4	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
-----------------------	-------	-----	-----	-----	-----

Capacity (veh/h)	651	-	-	1212	-
HCM Lane V/C Ratio	0.027	-	-	0.01	-
HCM Control Delay (s)	10.7	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection												
Int Delay, s/veh	6.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	
Traffic Vol, veh/h	6	14	8	161	14	60	13	223	256	34	169	2
Future Vol, veh/h	6	14	8	161	14	60	13	223	256	34	169	2
Conflicting Peds, #/hr	0	0	6	6	0	0	0	0	3	3	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	100	100	100	89	89	89	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	1	1	1
Mvmt Flow	7	15	9	161	14	60	15	251	288	40	201	2

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	744	854	208	728	711	398	203	0	0	542	0	0
Stage 1	282	282	-	428	428	-	-	-	-	-	-	-
Stage 2	462	572	-	300	283	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.11	-	-
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	3.3	2.2	-	-	2.209	-	-
Pot Cap-1 Maneuver	333	298	837	341	361	656	1381	-	-	1032	-	-
Stage 1	729	681	-	609	588	-	-	-	-	-	-	-
Stage 2	584	508	-	713	681	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	280	280	831	306	339	654	1381	-	-	1030	-	-
Mov Cap-2 Maneuver	280	280	-	306	339	-	-	-	-	-	-	-
Stage 1	717	651	-	598	577	-	-	-	-	-	-	-
Stage 2	509	499	-	654	651	-	-	-	-	-	-	-

Approach	EB		WB			NB			SB		
HCM Control Delay, s	16.5		25.9			0.2			1.4		
HCM LOS	C		D								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1381	-	-	345	308	654	1030	-	-
HCM Lane V/C Ratio	0.011	-	-	0.089	0.568	0.092	0.039	-	-
HCM Control Delay (s)	7.6	0	-	16.5	31	11.1	8.6	0	-
HCM Lane LOS	A	A	-	C	D	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	3.3	0.3	0.1	-	-

Intersection

Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	16	5	11	641	462	16
Future Vol, veh/h	16	5	11	641	462	16
Conflicting Peds, #/hr	0	0	5	0	0	5
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, %	1	-	-	1	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	2	2	2	2
Mvmt Flow	17	5	12	697	502	17

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	889	265	524	0	0
Stage 1	516	-	-	-	-
Stage 2	373	-	-	-	-
Critical Hdwy	7	7	4.14	-	-
Critical Hdwy Stg 1	6	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.22	-	-
Pot Cap-1 Maneuver	273	734	1039	-	-
Stage 1	554	-	-	-	-
Stage 2	659	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	265	731	1034	-	-
Mov Cap-2 Maneuver	265	-	-	-	-
Stage 1	541	-	-	-	-
Stage 2	656	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.4	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1034	-	312	-	-
HCM Lane V/C Ratio	0.012	-	0.073	-	-
HCM Control Delay (s)	8.5	0.1	17.4	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection

Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑			↑
Traffic Vol, veh/h	0	631	504	16	0	5
Future Vol, veh/h	0	631	504	16	0	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	30	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	-1	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	686	548	17	0	5













Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	6.94
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.32
Pot Cap-1 Maneuver	0	-	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	714
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	WBR	SBLn1
Capacity (veh/h)	-	-	-	714
HCM Lane V/C Ratio	-	-	-	0.008
HCM Control Delay (s)	-	-	-	10.1
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0

Kelso School District - Huntington MS Interim Site
 1: NW 1st Av & Fishers Ln

2022 With-Proj - AM Peak
 Lanes, Volumes, Timings

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	86	109	29	144	508	385
Future Volume (vph)	86	109	29	144	508	385
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	11	12	10	10
Grade (%)	4%			0%	-1%	
Storage Length (ft)	0	0	200			300
Storage Lanes	1	1	1			1
Taper Length (ft)	50		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.98
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1710	1583	1694	1845	1765	1500
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1710	1583	1694	1845	1765	1465
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		127				455
Link Speed (mph)	25			35	35	
Link Distance (ft)	315			1448	419	
Travel Time (s)	8.6			28.2	8.2	
Confl. Bikes (#/hr)		2				3
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	0%	0%	3%	3%	1%	1%
Adj. Flow (vph)	105	133	35	176	620	470
Shared Lane Traffic (%)						
Lane Group Flow (vph)	105	133	35	176	620	470
Turn Type	Perm	pt+ov	Prot	NA	NA	Perm
Protected Phases		4 5	5	2	6	
Permitted Phases	4					6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	4.0		7.0	4.0	4.0	4.0
Minimum Split (s)	20.0		13.0	20.0	26.0	26.0
Total Split (s)	36.0		36.0	54.0	54.0	54.0
Total Split (%)	28.6%		28.6%	42.9%	42.9%	42.9%
Maximum Green (s)	30.0		30.0	48.0	48.0	48.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0		6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0		3.0	4.0	4.0	4.0
Recall Mode	None		None	Min	Min	Min
Walk Time (s)					5.0	5.0
Flash Dont Walk (s)					15.0	15.0
Pedestrian Calls (#/hr)					0	0
Act Effect Green (s)	10.4	17.7	8.0	48.3	41.0	41.0

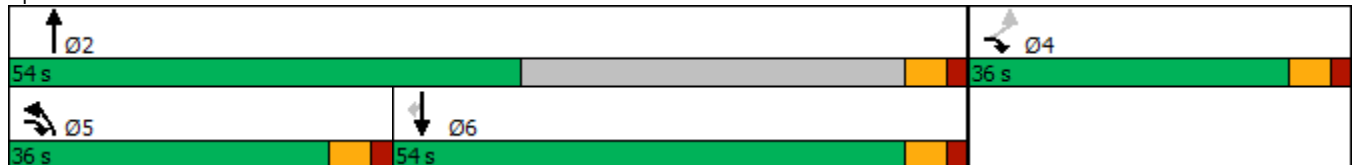
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Actuated g/C Ratio	0.15	0.25	0.11	0.68	0.57	0.57
v/c Ratio	0.42	0.27	0.19	0.14	0.61	0.45
Control Delay	37.1	6.5	37.3	4.3	15.1	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.1	6.5	37.3	4.3	15.1	2.9
LOS	D	A	D	A	B	A
Approach Delay	20.0			9.8	9.8	
Approach LOS	B			A	A	
Queue Length 50th (ft)	46	2	16	22	196	3
Queue Length 95th (ft)	94	32	43	42	304	31
Internal Link Dist (ft)	235			1368	339	
Turn Bay Length (ft)			200			300
Base Capacity (vph)	758	772	751	1814	1252	1171
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	0.14	0.17	0.05	0.10	0.50	0.40

Intersection Summary

Area Type: Other
 Cycle Length: 126
 Actuated Cycle Length: 71.4
 Natural Cycle: 65
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.61
 Intersection Signal Delay: 11.4
 Intersection Capacity Utilization 43.5%
 Analysis Period (min) 15
 Description: From TMC

Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 1: NW 1st Av & Fishers Ln



Intersection

Int Delay, s/veh 4.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations	↑↑			↑	↑	
Traffic Vol, veh/h	163	21	162	246	38	28
Future Vol, veh/h	163	21	162	246	38	28
Conflicting Peds, #/hr	0	10	10	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	55	55
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	199	26	198	300	69	51

Major/Minor	Major1	Major2	Minor1
-------------	--------	--------	--------

Conflicting Flow All	0	0	235	0	918	123
Stage 1	-	-	-	-	222	-
Stage 2	-	-	-	-	696	-
Critical Hdwy	-	-	4.1	-	6.6	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1344	-	289	911
Stage 1	-	-	-	-	800	-
Stage 2	-	-	-	-	498	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1334	-	236	904
Mov Cap-2 Maneuver	-	-	-	-	236	-
Stage 1	-	-	-	-	794	-
Stage 2	-	-	-	-	409	-

Approach	EB	WB	NB
----------	----	----	----

HCM Control Delay, s	0	3.2	21
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
-----------------------	-------	-----	-----	-----	-----

Capacity (veh/h)	344	-	-	1334	-
HCM Lane V/C Ratio	0.349	-	-	0.148	-
HCM Control Delay (s)	21	-	-	8.2	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.5	-	-	0.5	-

Intersection												
Int Delay, s/veh	40.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	
Traffic Vol, veh/h	4	15	8	228	9	34	1	73	67	102	287	2
Future Vol, veh/h	4	15	8	228	9	34	1	73	67	102	287	2
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	75	75	75	79	79	79	83	83	83
Heavy Vehicles, %	4	4	4	1	1	1	2	2	2	1	1	1
Mvmt Flow	6	21	11	304	12	45	1	92	85	123	346	2

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	759	773	348	746	732	135	349	0	0	177	0	0
Stage 1	594	594	-	137	137	-	-	-	-	-	-	-
Stage 2	165	179	-	609	595	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.11	6.51	6.21	4.12	-	-	4.11	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.509	4.009	3.309	2.218	-	-	2.209	-	-
Pot Cap-1 Maneuver	321	327	691	331	349	917	1210	-	-	1405	-	-
Stage 1	488	490	-	869	785	-	-	-	-	-	-	-
Stage 2	832	747	-	484	494	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	271	291	690	~ 282	310	917	1209	-	-	1405	-	-
Mov Cap-2 Maneuver	271	291	-	~ 282	310	-	-	-	-	-	-	-
Stage 1	487	436	-	868	784	-	-	-	-	-	-	-
Stage 2	778	746	-	404	440	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB		
HCM Control Delay, s	16.6		113.2		0.1		2		
HCM LOS	C		F						

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1209	-	-	347	283	917	1405	-	-
HCM Lane V/C Ratio	0.001	-	-	0.108	1.117	0.049	0.087	-	-
HCM Control Delay (s)	8	0	-	16.6	128.1	9.1	7.8	0	-
HCM Lane LOS	A	A	-	C	F	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	13.1	0.2	0.3	-	-

Notes
 -: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh	3.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	5	113	8	163	610	16
Future Vol, veh/h	5	113	8	163	610	16
Conflicting Peds, #/hr	0	0	2	0	0	2
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, %	1	-	-	1	0	-
Peak Hour Factor	92	49	92	92	92	53
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	231	9	177	663	30

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	787	349	695	0	0
Stage 1	680	-	-	-	-
Stage 2	107	-	-	-	-
Critical Hdwy	7.04	7.04	4.14	-	-
Critical Hdwy Stg 1	6.04	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-
Pot Cap-1 Maneuver	315	641	897	-	-
Stage 1	447	-	-	-	-
Stage 2	900	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	310	640	895	-	-
Mov Cap-2 Maneuver	310	-	-	-	-
Stage 1	441	-	-	-	-
Stage 2	898	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.2	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	895	-	625	-	-
HCM Lane V/C Ratio	0.01	-	0.378	-	-
HCM Control Delay (s)	9.1	0	14.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	1.8	-	-

Intersection

Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑			↑
Traffic Vol, veh/h	0	378	462	5	0	33
Future Vol, veh/h	0	378	462	5	0	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	30	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	-1	-	0	-
Peak Hour Factor	92	92	92	92	92	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	411	502	5	0	44

Major/Minor	Major1	Major2	Minor2	
Conflicting Flow All	-	0	-	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0
Stage 1	0	-	-	0
Stage 2	0	-	-	0
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	745
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	WBR	SBLn1
Capacity (veh/h)	-	-	-	745
HCM Lane V/C Ratio	-	-	-	0.059
HCM Control Delay (s)	-	-	-	10.1
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.2

Intersection

Intersection Delay, s/veh	18.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	
Traffic Vol, veh/h	4	15	8	228	9	34	1	73	67	102	287	2
Future Vol, veh/h	4	15	8	228	9	34	1	73	67	102	287	2
Peak Hour Factor	0.72	0.72	0.72	0.75	0.75	0.75	0.79	0.79	0.79	0.83	0.83	0.83
Heavy Vehicles, %	4	4	4	1	1	1	2	2	2	1	1	1
Mvmt Flow	6	21	11	304	12	45	1	92	85	123	346	2
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	2			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			2		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			2			1		
HCM Control Delay	10.2			18.3			11.2			22.3		
HCM LOS	B			C			B			C		

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	
Vol Left, %		1%	15%	96%	0%	26%
Vol Thru, %		52%	56%	4%	0%	73%
Vol Right, %		48%	30%	0%	100%	1%
Sign Control		Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane		141	27	237	34	391
LT Vol		1	4	228	0	102
Through Vol		73	15	9	0	287
RT Vol		67	8	0	34	2
Lane Flow Rate		178	38	316	45	471
Geometry Grp		2	5	7	7	2
Degree of Util (X)		0.286	0.07	0.605	0.072	0.73
Departure Headway (Hd)		5.77	6.716	6.895	5.693	5.579
Convergence, Y/N		Yes	Yes	Yes	Yes	Yes
Cap		618	537	521	627	645
Service Time		3.851	4.716	4.657	3.454	3.642
HCM Lane V/C Ratio		0.288	0.071	0.607	0.072	0.73
HCM Control Delay		11.2	10.2	19.7	8.9	22.3
HCM Lane LOS		B	B	C	A	C
HCM 95th-tile Q		1.2	0.2	4	0.2	6.3

Intersection						
Int Delay, s/veh	7.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔			↑		
Traffic Vol, veh/h	34	119	0	30	33	0
Future Vol, veh/h	34	119	0	30	33	0
Conflicting Peds, #/hr	10	10	20	0	0	20
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	45	45	45	45	45	45
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	76	264	0	67	73	0

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	150	83	-	0	-
Stage 1	73	-	-	-	-
Stage 2	77	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	-
Pot Cap-1 Maneuver	847	982	0	-	0
Stage 1	955	-	0	-	0
Stage 2	951	-	0	-	0
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	847	976	-	-	-
Mov Cap-2 Maneuver	847	-	-	-	-
Stage 1	955	-	-	-	-
Stage 2	951	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT EBLn1	SBT
Capacity (veh/h)	- 944	-
HCM Lane V/C Ratio	- 0.36	-
HCM Control Delay (s)	- 10.9	-
HCM Lane LOS	- B	-
HCM 95th %tile Q(veh)	- 1.7	-

Intersection

Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑			↑
Traffic Vol, veh/h	5	5	136	0	0	523
Future Vol, veh/h	5	5	136	0	0	523
Conflicting Peds, #/hr	20	0	0	20	20	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	45	45	79	79	79	79
Heavy Vehicles, %	0	0	2	2	1	1
Mvmt Flow	11	11	172	0	0	662

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	854	172	0	-	-	-
Stage 1	172	-	-	-	-	-
Stage 2	682	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	-	-
Pot Cap-1 Maneuver	332	877	-	0	0	-
Stage 1	863	-	-	0	0	-
Stage 2	506	-	-	0	0	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	326	877	-	-	-	-
Mov Cap-2 Maneuver	326	-	-	-	-	-
Stage 1	863	-	-	-	-	-
Stage 2	496	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	- 475	-
HCM Lane V/C Ratio	- 0.047	-
HCM Control Delay (s)	- 13	-
HCM Lane LOS	- B	-
HCM 95th %tile Q(veh)	- 0.1	-

Intersection

Int Delay, s/veh	1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	14	2	141	9	4	521
Future Vol, veh/h	14	2	141	9	4	521
Conflicting Peds, #/hr	20	0	0	20	20	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	45	45	79	79	79	79
Heavy Vehicles, %	100	2	2	0	1	1
Mvmt Flow	31	4	178	11	5	659













Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	893	204	0	0	209
Stage 1	204	-	-	-	-
Stage 2	689	-	-	-	-
Critical Hdwy	7.4	6.22	-	-	4.11
Critical Hdwy Stg 1	6.4	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-
Follow-up Hdwy	4.4	3.318	-	-	2.209
Pot Cap-1 Maneuver	214	837	-	-	1368
Stage 1	643	-	-	-	-
Stage 2	356	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	205	821	-	-	1342
Mov Cap-2 Maneuver	205	-	-	-	-
Stage 1	631	-	-	-	-
Stage 2	347	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	23.9	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	226	1342
HCM Lane V/C Ratio	-	-	0.157	0.004
HCM Control Delay (s)	-	-	23.9	7.7
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.5	0

Kelso School District - Huntington MS Interim Site
1: NW 1st Av & Fishers Ln

2022 Without-Proj - Afternoon Peak
Lanes, Volumes, Timings

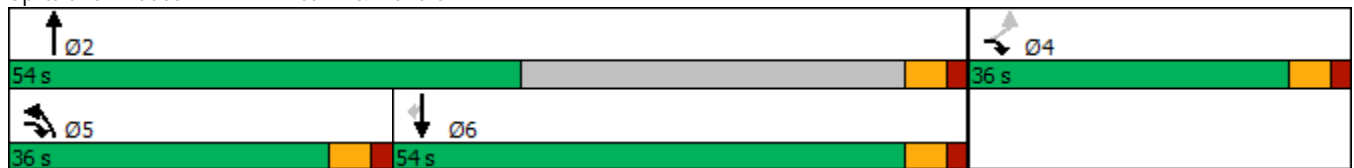
						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	384	56	68	580	447	203
Future Volume (vph)	384	56	68	580	447	203
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	11	12	10	10
Grade (%)	4%			0%	-1%	
Storage Length (ft)	0	0	200			300
Storage Lanes	1	1	1			1
Taper Length (ft)	50		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			1.00			0.97
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1710	1583	1745	1900	1765	1500
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1710	1583	1739	1900	1765	1459
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		58				211
Link Speed (mph)	25			35	35	
Link Distance (ft)	315			1448	419	
Travel Time (s)	8.6			28.2	8.2	
Confl. Peds. (#/hr)			2			2
Confl. Bikes (#/hr)		2				1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%
Adj. Flow (vph)	400	58	71	604	466	211
Shared Lane Traffic (%)						
Lane Group Flow (vph)	400	58	71	604	466	211
Turn Type	Perm	pt+ov	Prot	NA	NA	Perm
Protected Phases		4 5	5	2	6	
Permitted Phases	4					6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	4.0		7.0	4.0	4.0	4.0
Minimum Split (s)	20.0		13.0	20.0	26.0	26.0
Total Split (s)	36.0		36.0	54.0	54.0	54.0
Total Split (%)	28.6%		28.6%	42.9%	42.9%	42.9%
Maximum Green (s)	30.0		30.0	48.0	48.0	48.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0		6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0		3.0	4.0	4.0	4.0
Recall Mode	None		None	Min	Min	Min
Walk Time (s)					5.0	5.0
Flash Dont Walk (s)					15.0	15.0
Pedestrian Calls (#/hr)					0	0

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Act Effect Green (s)	29.2	41.1	9.6	43.2	31.3	31.3
Actuated g/C Ratio	0.34	0.48	0.11	0.51	0.37	0.37
v/c Ratio	0.68	0.07	0.36	0.63	0.72	0.31
Control Delay	34.8	4.4	45.0	17.4	31.2	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.8	4.4	45.0	17.4	31.2	4.2
LOS	C	A	D	B	C	A
Approach Delay	31.0			20.3	22.8	
Approach LOS	C			C	C	
Queue Length 50th (ft)	186	0	37	221	225	0
Queue Length 95th (ft)	#417	22	90	313	354	43
Internal Link Dist (ft)	235			1368	339	
Turn Bay Length (ft)			200			300
Base Capacity (vph)	633	814	646	1762	1045	950
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	0.63	0.07	0.11	0.34	0.45	0.22

Intersection Summary

Area Type: Other
 Cycle Length: 126
 Actuated Cycle Length: 85
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 23.9
 Intersection Capacity Utilization 65.6%
 Analysis Period (min) 15
 Description: From TMC
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 1: NW 1st Av & Fishers Ln



Intersection

Int Delay, s/veh 2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations	↑↑			↑	↑	
Traffic Vol, veh/h	334	10	49	221	16	78
Future Vol, veh/h	334	10	49	221	16	78
Conflicting Peds, #/hr	0	15	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	363	11	53	240	17	85

Major/Minor	Major1	Major2	Minor1
-------------	--------	--------	--------

Conflicting Flow All	0	0	389	0	730	202
Stage 1	-	-	-	-	384	-
Stage 2	-	-	-	-	346	-
Critical Hdwy	-	-	4.1	-	6.6	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1181	-	377	811
Stage 1	-	-	-	-	664	-
Stage 2	-	-	-	-	721	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1168	-	354	802
Mov Cap-2 Maneuver	-	-	-	-	354	-
Stage 1	-	-	-	-	657	-
Stage 2	-	-	-	-	684	-

Approach	EB	WB	NB
----------	----	----	----

HCM Control Delay, s	0	1.5	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
-----------------------	-------	-----	-----	-----	-----

Capacity (veh/h)	660	-	-	1168	-
HCM Lane V/C Ratio	0.155	-	-	0.046	-
HCM Control Delay (s)	11.5	-	-	8.2	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

Intersection												
Int Delay, s/veh	7.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	
Traffic Vol, veh/h	6	14	8	165	14	67	13	224	270	38	170	2
Future Vol, veh/h	6	14	8	165	14	67	13	224	270	38	170	2
Conflicting Peds, #/hr	0	0	6	6	0	0	0	0	3	3	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	100	100	100	89	89	89	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	1	1	1
Mvmt Flow	7	15	9	165	14	67	15	252	303	45	202	2

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	767	881	209	748	731	407	204	0	0	558	0	0
Stage 1	293	293	-	437	437	-	-	-	-	-	-	-
Stage 2	474	588	-	311	294	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.11	-	-
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	3.3	2.2	-	-	2.209	-	-
Pot Cap-1 Maneuver	322	288	836	331	351	648	1380	-	-	1018	-	-
Stage 1	719	674	-	602	583	-	-	-	-	-	-	-
Stage 2	575	499	-	704	673	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	265	268	830	295	327	646	1380	-	-	1016	-	-
Mov Cap-2 Maneuver	265	268	-	295	327	-	-	-	-	-	-	-
Stage 1	707	640	-	591	572	-	-	-	-	-	-	-
Stage 2	494	490	-	641	639	-	-	-	-	-	-	-

Approach	EB		WB			NB			SB		
HCM Control Delay, s	17		27.7			0.2			1.6		
HCM LOS	C		D								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1380	-	-	331	297	646	1016	-	-
HCM Lane V/C Ratio	0.011	-	-	0.093	0.603	0.104	0.045	-	-
HCM Control Delay (s)	7.6	0	-	17	33.9	11.2	8.7	0	-
HCM Lane LOS	A	A	-	C	D	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	3.6	0.3	0.1	-	-

Intersection

Int Delay, s/veh 0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations						
Traffic Vol, veh/h	16	9	21	629	462	27
Future Vol, veh/h	16	9	21	629	462	27
Conflicting Peds, #/hr	0	0	5	0	0	5
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, %	1	-	-	1	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	2	2	2	2
Mvmt Flow	17	10	23	684	502	29

Major/Minor	Minor2	Major1	Major2
-------------	--------	--------	--------

Conflicting Flow All	910	271	536	0	-	0
Stage 1	522	-	-	-	-	-
Stage 2	388	-	-	-	-	-
Critical Hdwy	7	7	4.14	-	-	-
Critical Hdwy Stg 1	6	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.22	-	-	-
Pot Cap-1 Maneuver	264	727	1028	-	-	-
Stage 1	549	-	-	-	-	-
Stage 2	647	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	252	724	1023	-	-	-
Mov Cap-2 Maneuver	252	-	-	-	-	-
Stage 1	526	-	-	-	-	-
Stage 2	644	-	-	-	-	-

Approach	EB	NB	SB
----------	----	----	----

HCM Control Delay, s	16.9	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
-----------------------	-----	-----	-------	-----	-----

Capacity (veh/h)	1023	-	329	-	-
HCM Lane V/C Ratio	0.022	-	0.083	-	-
HCM Control Delay (s)	8.6	0.1	16.9	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection

Int Delay, s/veh 0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations		↑↑↑	↑↑			↑
Traffic Vol, veh/h	0	631	504	25	0	10
Future Vol, veh/h	0	631	504	25	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	30	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	-1	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	686	548	27	0	11

Major/Minor	Major1	Major2	Minor2
-------------	--------	--------	--------

Conflicting Flow All	-	0	-	0	-	288
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	709
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	709
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
----------	----	----	----

HCM Control Delay, s	0	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
-----------------------	-----	-----	-----	-------

Capacity (veh/h)	-	-	-	709
HCM Lane V/C Ratio	-	-	-	0.015
HCM Control Delay (s)	-	-	-	10.2
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0

Intersection

Intersection Delay, s/veh	17.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	
Traffic Vol, veh/h	6	14	8	165	14	67	13	224	270	38	170	2
Future Vol, veh/h	6	14	8	165	14	67	13	224	270	38	170	2
Peak Hour Factor	0.91	0.91	0.91	1.00	1.00	1.00	0.89	0.89	0.89	0.84	0.84	0.84
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	1	1	1
Mvmt Flow	7	15	9	165	14	67	15	252	303	45	202	2
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	2			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			2		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			2			1		
HCM Control Delay	10			12.5			22.4			12.3		
HCM LOS	A			B			C			B		

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	3%	21%	92%	0%	18%
Vol Thru, %	44%	50%	8%	0%	81%
Vol Right, %	53%	29%	0%	100%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	507	28	179	67	210
LT Vol	13	6	165	0	38
Through Vol	224	14	14	0	170
RT Vol	270	8	0	67	2
Lane Flow Rate	570	31	179	67	250
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.771	0.056	0.352	0.11	0.391
Departure Headway (Hd)	4.873	6.564	7.079	5.895	5.636
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	741	542	507	606	638
Service Time	2.914	4.644	4.832	3.647	3.689
HCM Lane V/C Ratio	0.769	0.057	0.353	0.111	0.392
HCM Control Delay	22.4	10	13.7	9.4	12.3
HCM Lane LOS	C	A	B	A	B
HCM 95th-tile Q	7.5	0.2	1.6	0.4	1.9

Intersection

Int Delay, s/veh	5.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			↑		
Traffic Vol, veh/h	62	9	0	62	16	0
Future Vol, veh/h	62	9	0	62	16	0
Conflicting Peds, #/hr	15	0	20	0	0	20
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	40	40	40	60	60	60
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	155	23	0	103	27	0

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	145	27	-	0	-
Stage 1	27	-	-	-	-
Stage 2	118	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	-
Pot Cap-1 Maneuver	852	1054	0	-	0
Stage 1	1001	-	0	-	0
Stage 2	912	-	0	-	0
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	852	1054	-	-	-
Mov Cap-2 Maneuver	852	-	-	-	-
Stage 1	1001	-	-	-	-
Stage 2	912	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT EBLn1	SBT
Capacity (veh/h)	- 873	-
HCM Lane V/C Ratio	- 0.203	-
HCM Control Delay (s)	- 10.2	-
HCM Lane LOS	- B	-
HCM 95th %tile Q(veh)	- 0.8	-

Intersection

Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑			↑
Traffic Vol, veh/h	5	8	499	0	0	343
Future Vol, veh/h	5	8	499	0	0	343
Conflicting Peds, #/hr	15	0	0	20	20	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	40	40	89	89	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	13	20	561	0	0	381

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	957	561	0	-	-	-
Stage 1	561	-	-	-	-	-
Stage 2	396	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	-	-
Pot Cap-1 Maneuver	288	531	-	0	0	-
Stage 1	575	-	-	0	0	-
Stage 2	684	-	-	0	0	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	284	531	-	-	-	-
Mov Cap-2 Maneuver	284	-	-	-	-	-
Stage 1	575	-	-	-	-	-
Stage 2	674	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	- 398	-
HCM Lane V/C Ratio	- 0.082	-
HCM Control Delay (s)	- 14.8	-
HCM Lane LOS	- B	-
HCM 95th %tile Q(veh)	- 0.3	-

Intersection

Int Delay, s/veh	1.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	R	T	R	L	T
Traffic Vol, veh/h	19	7	497	0	0	347
Future Vol, veh/h	19	7	497	0	0	347
Conflicting Peds, #/hr	20	0	0	20	20	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	40	40	89	89	90	90
Heavy Vehicles, %	74	0	0	0	0	0
Mvmt Flow	48	18	558	0	0	386

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	984	578	0	0	578
Stage 1	578	-	-	-	-
Stage 2	406	-	-	-	-
Critical Hdwy	7.14	6.2	-	-	4.1
Critical Hdwy Stg 1	6.14	-	-	-	-
Critical Hdwy Stg 2	6.14	-	-	-	-
Follow-up Hdwy	4.166	3.3	-	-	2.2
Pot Cap-1 Maneuver	206	519	-	-	1006
Stage 1	442	-	-	-	-
Stage 2	542	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	198	509	-	-	987
Mov Cap-2 Maneuver	198	-	-	-	-
Stage 1	434	-	-	-	-
Stage 2	532	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25.8	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	237	987
HCM Lane V/C Ratio	-	-	0.274	-
HCM Control Delay (s)	-	-	25.8	0
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	1.1	0