KITTELSON & ASSOCIATES
851 SW 6th Avenue, Suite 600
Portland, OR 97204
P 503.228.5230

Traffic Impact Analysis

March 19, 2026 Project# 32068

To: Erich Lais, PE & Clark Idle, City of West Linn
John Russell, PE & Marah Danielson, ODOT
Chad Encinas, MCRT Investments LLC

From: Julia Kuhn, PE; Jackson Lynch, PE; Edward Guo & Chris Brehmer, PE

RE: Modera West Linn Traffic Impact Analysis

Executive Summary

MCRT Investments LLC is proposing to develop approximately 320 apartments and 10,520 square feet of neighborhood retail space (Project) at a site located north of Blankenship Road to the west of Tannler Drive in the City of West Linn (City). The proposed development includes a realignment of the southern portion of Tannler Drive through the site to Blankenship Road.

The development of the site necessitates preparation of a Traffic Impact Analysis (TIA) per the City's Community Development Code (CDC) Section 85.170(B)(2)(d) requirements. This study documents the analysis methodology, findings, and recommendations.

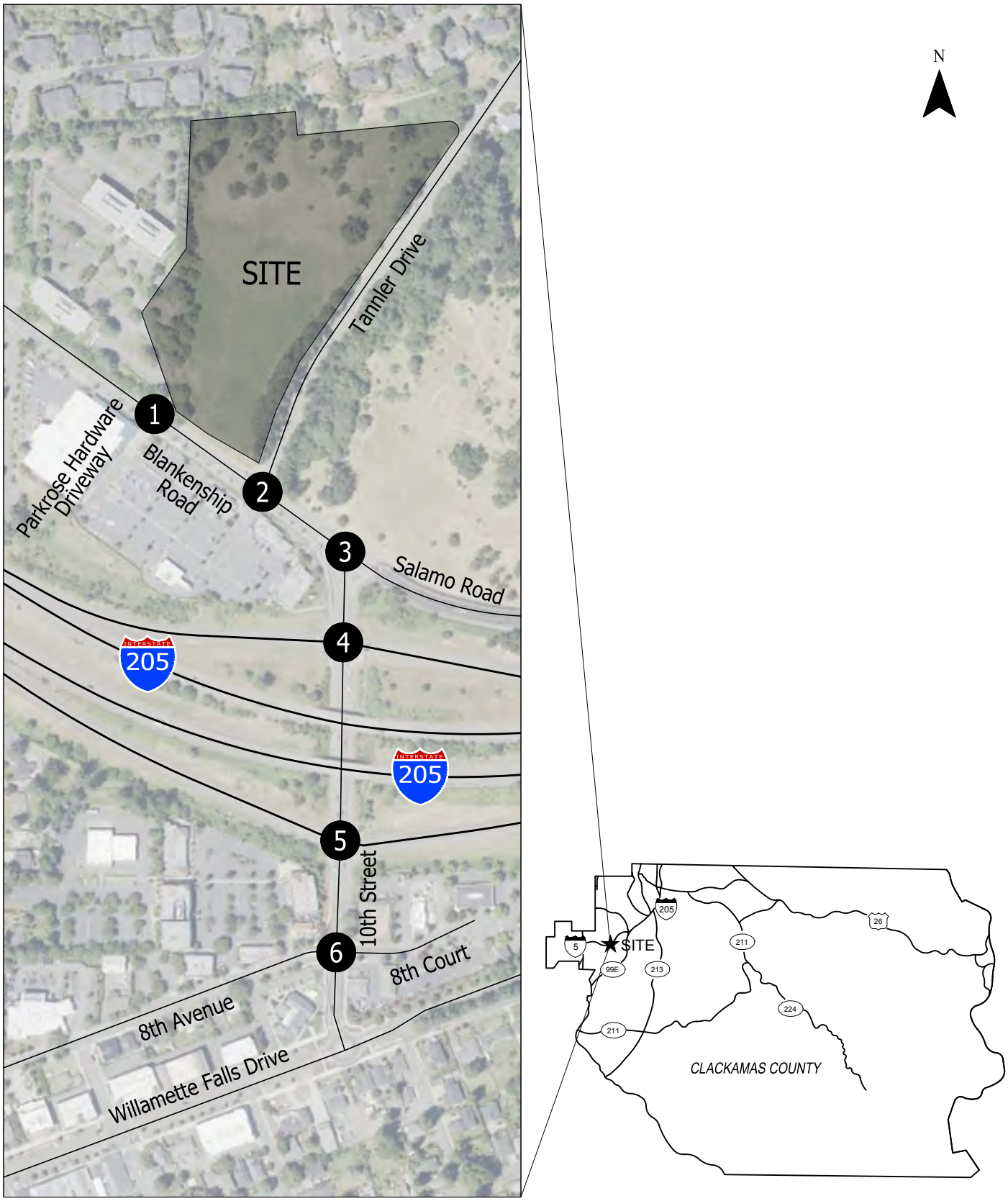
As discussed herein, the proposed uses can be constructed and occupied while maintaining acceptable operations at the study intersections and access points, assuming provision of the following recommendations in conjunction with site development (subject to City and Oregon Department of Transportation (ODOT) approval).

- Construct a southbound right-turn lane with at least 75 feet of storage and a separate shared through/left-turn lane on the proposed relocated Tannler Drive at its intersection with Blankenship Road.
- Construct a traffic signal at the relocated Blankenship Road/Tannler Drive intersection prior to the occupancy of the proposed homes.
- Place and maintain all vegetation, landscaping, and above ground objects adjacent to the site access points, local street intersections, along the public street site frontage, and throughout the site to provide adequate minimum sight distance in accordance with the City requirements.

Introduction

Figure 1 provides the project vicinity map, and Figure 2 provides the site plan. The proposed realignment of Tannler Drive opposite the easternmost Parkrose Hardware Driveway on Blankenship Road is consistent with the City's Transportation System Plan (TSP, Reference 1).

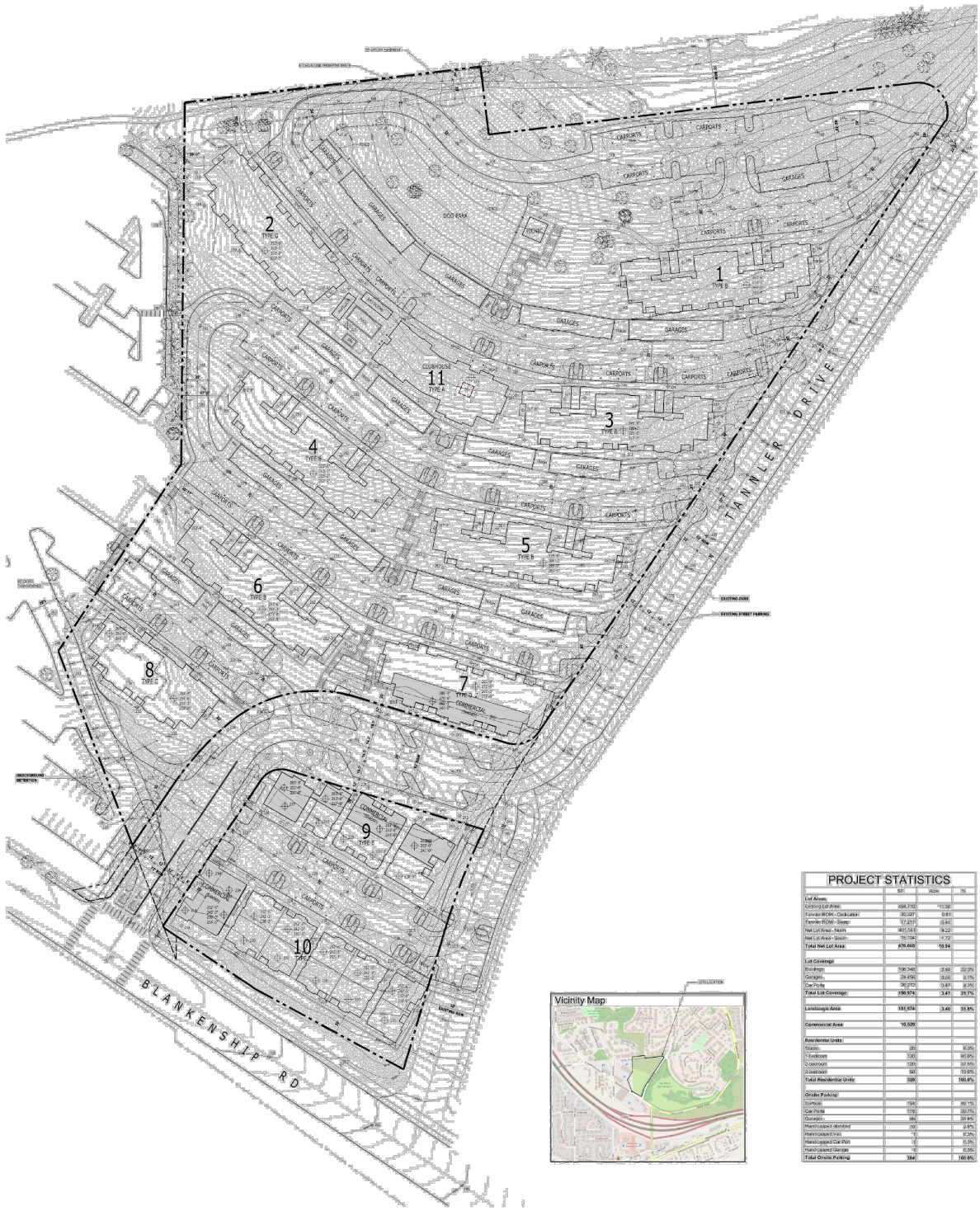
Full occupancy of all the uses on-site is anticipated in February 2029.



Site Vicinity Map
West Linn, OR

Figure
1

C:\Users\jlynch\appdata\local\temp\AcPublish_17824\32068 Figures.dwg Mar 19, 2026 - 8:02pm - jlynch Layout Tab: 1 Site Vicinity Map



RECEIVED FROM HILL ARCHITECTS (FEBRUARY 2026)

Proposed Site Plan
West Linn, OR

Figure
2

C:\Users\jlynch\appdata\local\temp\AcPublish_17824\32068 Figures.dwg Mar 19, 2026 - 8:02pm - jlynch Layout Tab: 2 Proposed Site Plan

SCOPE OF THE REPORT

This report identifies the transportation-related impacts associated with the proposed mixed-use development. The study intersections and scope were determined per the requirements outlined by CDC Section 85.170(B)(2)(d) and direction provided by the City and ODOT staff. *The scoping memorandum is provided in Appendix A.*

The CDC requires analysis of all points of access onto the public street system, all intersections of arterials, collectors, and neighborhoods routes within 1,000 linear feet from all points of access onto the public street system, and all intersections where the traffic generated by the proposed development exceeds five percent of existing AM or PM peak hour total intersection traffic volume. In addition, ODOT requires additional analysis when intersections under its jurisdiction receive more than 50 peak hour trips as the result of a proposed land use action.

Accordingly, operational analyses were performed at the following study intersections during the weekday AM and PM peak periods (numerical identification refers to figures in this report):

1. Blankenship Road/Parkrose Hardware Driveway/Office Driveway
2. Blankenship Road/Tannler Drive;
3. Blankenship Road/Salamo Road/10th Street;
4. 10th Street/Interstate 205 Southbound Ramp;
5. 10th Street/Interstate 205 Northbound Ramp; and,
6. 10th Street/8th Avenue/8th Court.

This report addresses the following transportation topics:

- Existing land use and transportation system conditions within the site vicinity during the weekday AM peak and PM peak periods, including study intersection volume-to-capacity (V/C) ratio and level-of-service (LOS);
- Crash data analysis for the most recent five-year period with complete data;
- Forecast year 2029 background traffic conditions during the weekday AM peak and PM peak periods, considering previously approved developments and funded changes to the transportation system;
- Trip generation and distribution estimates for the proposed development;
- Forecast year 2029 full buildout traffic conditions during the weekday AM peak and PM peak periods, assuming occupancy of the proposed buildings; and,
- Traffic control and lane geometry needs at the realigned Tannler Drive/Blankenship Road intersection.

ANALYSIS METHODOLOGY

The intersection operational analysis was conducted using the procedures outlined in the *Highway Capacity Manual 7th Edition* (HCM, Reference 2) using the PTV Vistro 2025 software.

INTERSECTION PERFORMANCE METRICS

Per the City's *Public Works Design Standards* (PWDS, Reference 3) Section 5.0014(G), the City requires all intersections within the study area to maintain an acceptable level of service (LOS) upon buildout of the proposed land use action. The minimum acceptable LOS for signalized intersections is "D" or better for the intersection as a whole. No approach should operate at worse than LOS "E", and a V/C ratio not higher than 1.0 is required for the sum of critical movements. The minimum acceptable LOS for non-signalized intersections is "E" or better for the poorest operating approach. No movement serving more than 20 peak hour vehicles should operate at worse than LOS "E". LOS "F" will be tolerated for minor movements during a peak hour.

Study intersections #3, #4, #5, and #6 are under the jurisdiction of ODOT. The LOS standards of ODOT intersections are specified in Table 7 of the *Oregon Highway Plan* (Reference 4). Accordingly, the V/C ratio target for these intersections is 0.99 for the first and second hour during the two-hour peak operating conditions.

Existing Conditions

SITE CONDITIONS AND ADJACENT LAND USES

The approximately 11-acre site is located north of Blankenship Road and along the west site of Tannler Drive on land that is not currently developed. Adjacent land uses include office buildings to the west, commercial properties to the south, single-family residential buildings to the north, and a park to the east across Tannler Drive.

TRANSPORTATION FACILITIES

Table 1 identifies the characteristics of key streets located within the vicinity of the site. Figure 3 identifies the existing lane configurations and traffic control devices at the study intersections.

Table 1. Existing Transportation Facilities

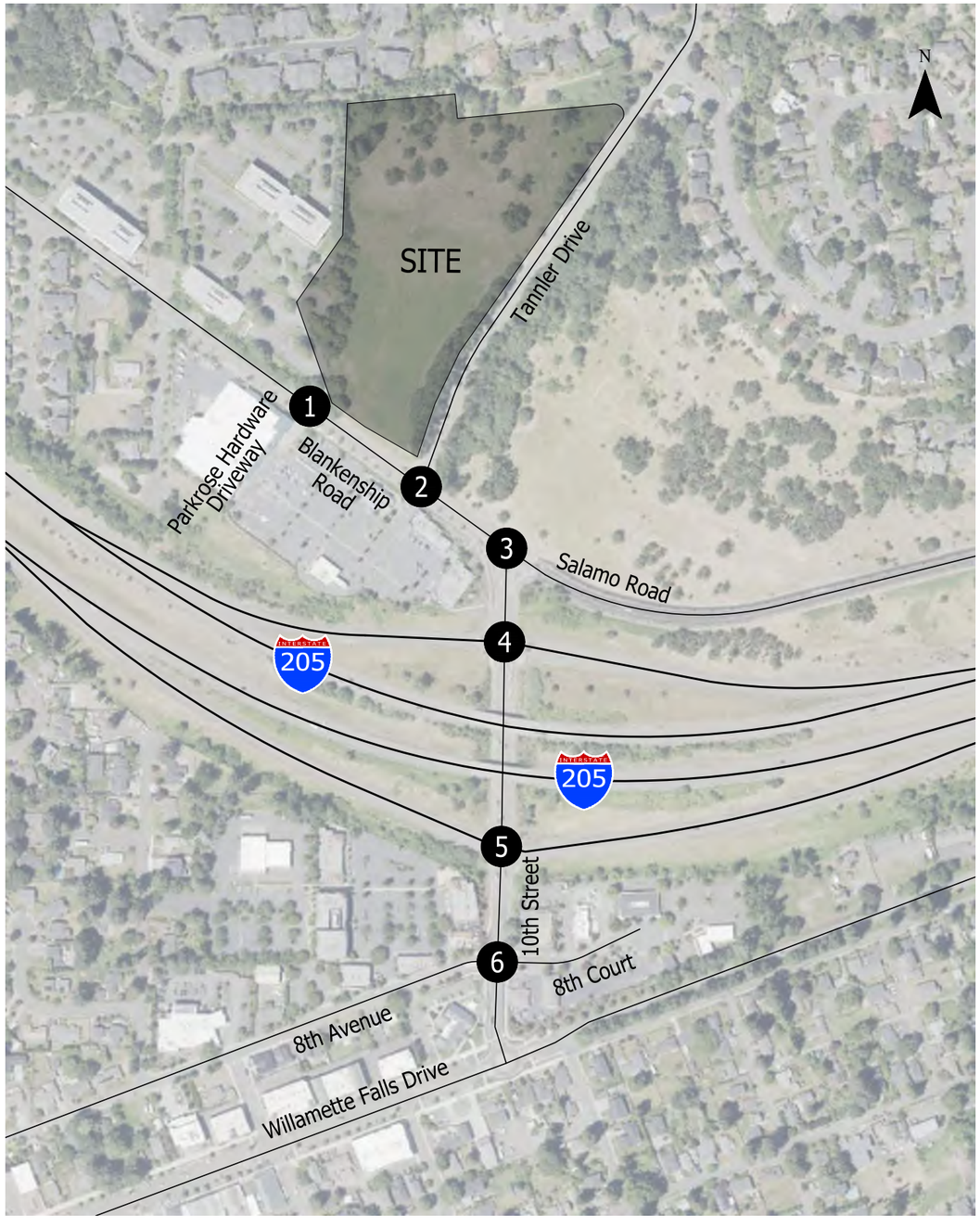
Roadway	Functional Classification[1]	Number of Vehicle Lanes	Posted Speed (miles/hour)	Sidewalks Present?	Bicycle Lanes Present?	On-Street Parking Present?
Tannler Drive	Neighborhood Route	2	25	No	No	No
Blankenship Road	Collector	2	25	Partial[2]	Partial[3]	No
Salamo Road	Minor Arterial	2	35	Partial[2]	Yes[4]	No
10th Street	Minor Arterial	2-4	25	Partial[2]	Partial	No
I-205	Freeway	4	65	No	No	No
8th Avenue	Local	2	25	Partial[2]	No	Yes
8th Court	Local	2	Not Posted	Yes	No	Yes

1. Source: West Linn Transportation System Plan (TSP)

2. Sidewalk on one side only for certain segments of the street

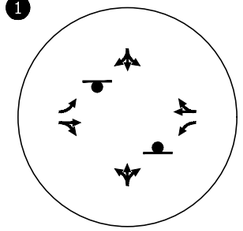
3. Marked bike lanes on both directions along Blankenship Road west of Tannler Drive

4. Provided via multi-use path on the north side of the road



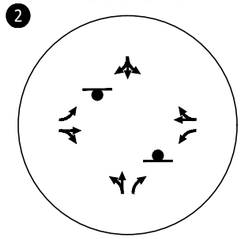
Blankenship Road/
Parkrose Hardware
Driveway/Office Driveway

1



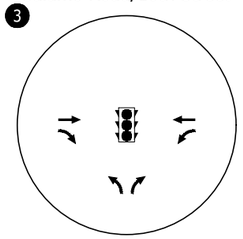
Blankenship Road/
Tannler Drive

2



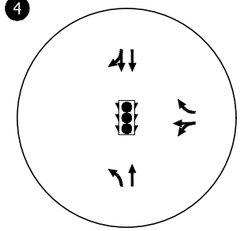
Blankenship Road/
Salamo Road/10th Street

3



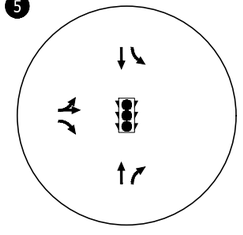
10th Street/
I-205 Southbound Ramp

4



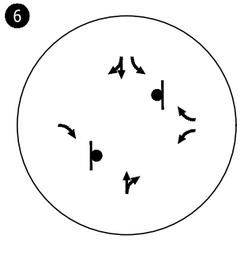
10th Street/
I-205 Northbound Ramp

5



10th Street/
8th Avenue/
8th Court

6



- STOP SIGN

- TRAFFIC SIGNAL

Existing Lane Configurations
and Traffic Control Devices
West Linn, OR

Figure
3

C:\Users\jlynch\appdata\local\temp\AcPublish_17824\32068 Figures.dwg Mar 19, 2026 - 8:02pm - jlynch Layout Tab: 3 Exist TCD & LC

Bicycle and Pedestrian Facilities

The City's TSP identifies several bike and pedestrian projects near the project site. The identified projects include installing sidewalks on the north side of Blankenship Road, installing sidewalks along Tannler Drive from Blankenship Road to Greene Street, and installing two-way cycle tracks on the north side of Salamo Road from Tannler Drive to Barrington Drive. The two-way cycle track along Salamo Road has been completed. Tannler Drive and Blankenship Road in the proposed project area are also listed on the TSP's Trails Master Plan as on-street connection trails.

The development proposes a 12-foot-wide multiuse path along the west side of the realigned Tannler Drive. Near the realigned intersection with Blankenship Road, the multiuse path transitions into separate sidewalks and on-street bike lanes. These pedestrian and bicycle improvements are consistent with the project identified in the City's TSP. Eight-foot-wide sidewalks are proposed along the east side of the realigned Tannler Drive adjacent to the southeastern portion of the development. Additional sidewalk improvements are also proposed along the east side of the existing Tannler Drive alignment, extending north to the point where Tannler Drive realignment begins.

Transit Facilities

The proposed site is located near two pairs of transit stops that enable local and regional transit connections. At the intersection of Tannler Drive and Blankenship Road directly south of the site, access to TriMet line 153 is provided. Less than half a mile away south of the site at the intersection of 10th Street, 8th Avenue, and 8th Court, access is available to TriMet line 76. Further details on the two routes are provided below:

- TriMet Route 153 operates between West Linn and Lake Oswego. The route operates hourly between approximately 6AM and 5PM on weekdays.
- TriMet Route 76 operates between Oregon City and Beaverton. It is a frequent service route that operates between approximately 6AM and 11PM daily at 15-minute intervals for most of the day. The route offers broad regional connectivity via its connection to the TriMet MAX light rail system in Beaverton and the WES commuter rail in Tigard.

At the time this report was prepared, TriMet was evaluating significant changes in service levels, including the potential elimination of Route 153 and shortening Route 76 to extend only from Oregon City Transit Center to Meridian Park Hospital. We also note that TriMet's Forward Together Final report identifies further service reductions within West Linn over time.

Routes to Nearest Schools

According to both the West Linn-Wilsonville School District boundaries for the 2025-26 school year (Reference 5) and the proposed school boundaries for the 2026-27 school year (Reference 6), school-aged children of the proposed development would attend the Willamette Primary School, Athey Creek Middle School, and the West Linn High School. The Primary School is approximately 0.6 miles away, the Middle School is approximately 1.6 miles away and the high school is nearly 3 miles away. As such, the proposed development is located outside of the Walk Zones of all three schools, and busing would be available for students living in the proposed development.

TRAFFIC VOLUMES AND PEAK HOUR OPERATIONS ANALYSIS

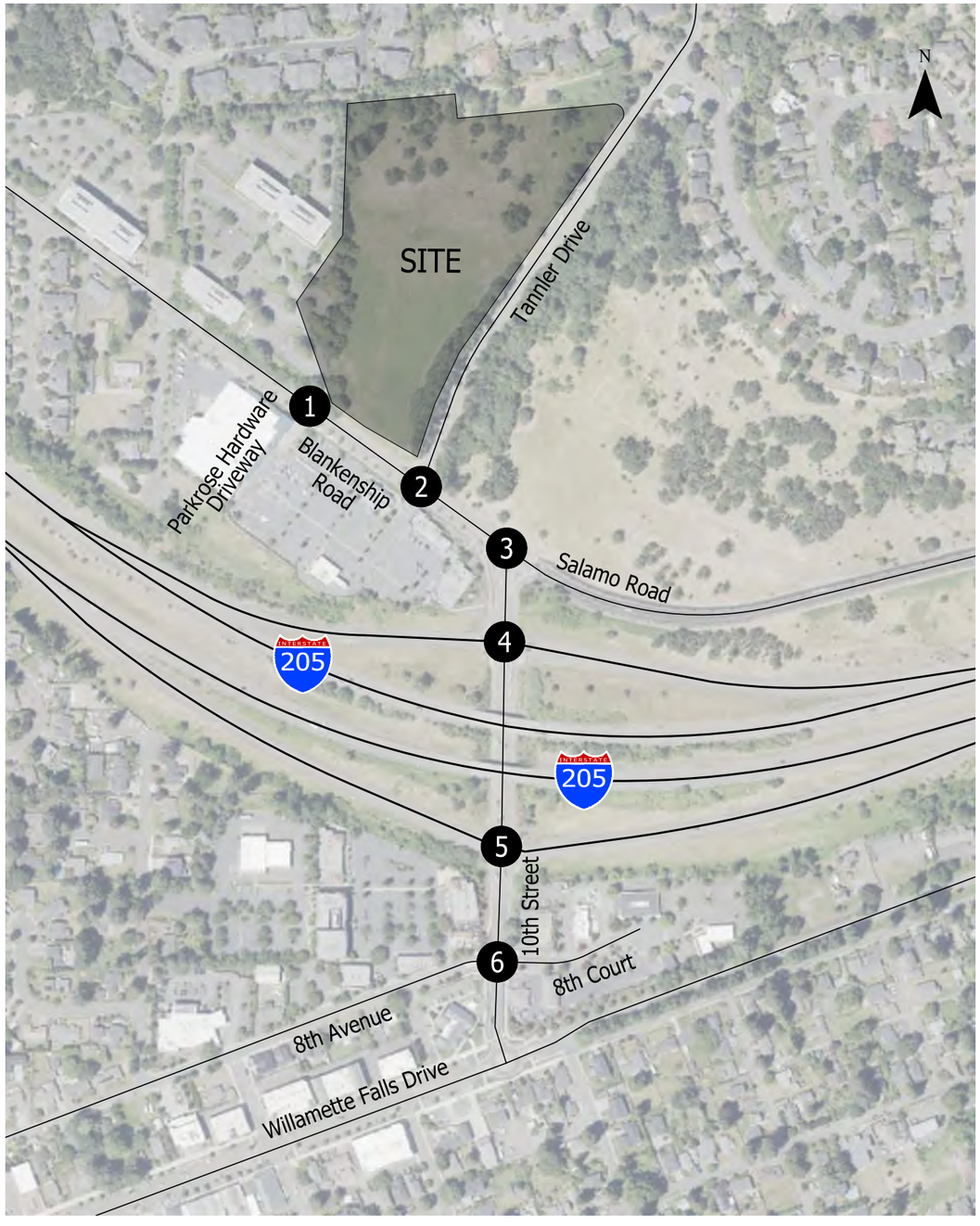
Vehicle turning movement, pedestrian and bicycle counts were collected at the study intersections. Counts were collected on a mid-week day in September 2025 for all study intersections except for study intersection #1. Counts at the Blankenship Road/Parkrose Hardware Driveway/Office Driveway intersection were collected on a mid-week day in December 2025 and adjusted to match the traffic volumes at the other remaining study intersections. All traffic counts were conducted during the weekday morning (7:00 AM - 9:00 AM) and evening (4:00 PM – 6:00 PM) hours and there we no adverse weather conditions. Local schools were in session at the times of the traffic counts.

On the day of the counts, the morning peak hour occurred from 7:40 AM – 8:40 AM at the I-205 ramp intersections (study intersections #4 and #5). The evening peak hour at these two intersections occurred from 4:55 PM – 5:55 PM. These AM and PM peak hours were analyzed at all the study intersections to evaluate operations and queues. Current traffic signal phasing and signal cycle length information for the signalized study intersections were obtained from ODOT, which operates the traffic signals. *Appendix B contains the traffic count worksheets*. Figure 4 and Figure 5 summarize the existing traffic conditions during the weekday AM and PM peak hours, respectively.

For the two City-owned intersections (study intersections #1 and #2), movement and approach delay, V/C, and delay were analyzed to understand compliance with the City's operational performance metrics. Table 2 and Table 3 show the delay, LOS, and V/C by movement and approach for study intersection #1 and #2 during the weekday AM and PM peak hours, respectively, under existing traffic conditions. The intersection operations at the two City of West Linn intersections meet the City's LOS "E" standard during the AM peak hour. During the PM peak hour, the northbound access point from the private Parkrose Hardware driveway and the southbound Tannler Drive approach each operate with delays corresponding to LOS F.

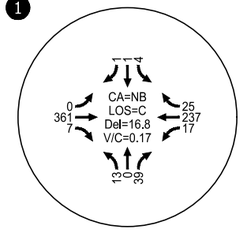
The intersection operations of the four ODOT intersections within the study area satisfy the mobility target during both the AM and PM peak hours (only the first peak hour was analyzed given the mobility targets were satisfied).

Existing conditions operations analysis worksheets are provided in Appendix C.



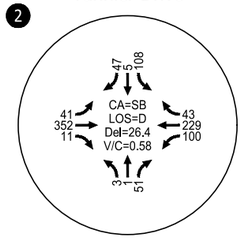
Blankenship Road/
Parkrose Hardware
Driveway/Office Driveway

1



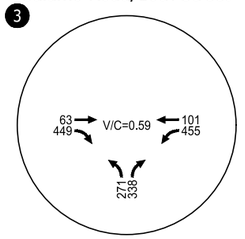
Blankenship Road/
Tannler Drive

2



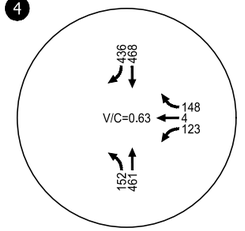
Blankenship Road/
Salamo Road/10th Street

3



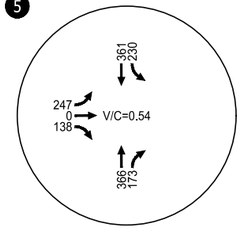
10th Street/
I-205 Southbound Ramp

4



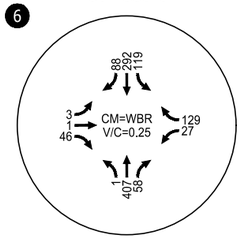
10th Street/
I-205 Northbound Ramp

5



10th Street/
8th Avenue/
8th Court

6



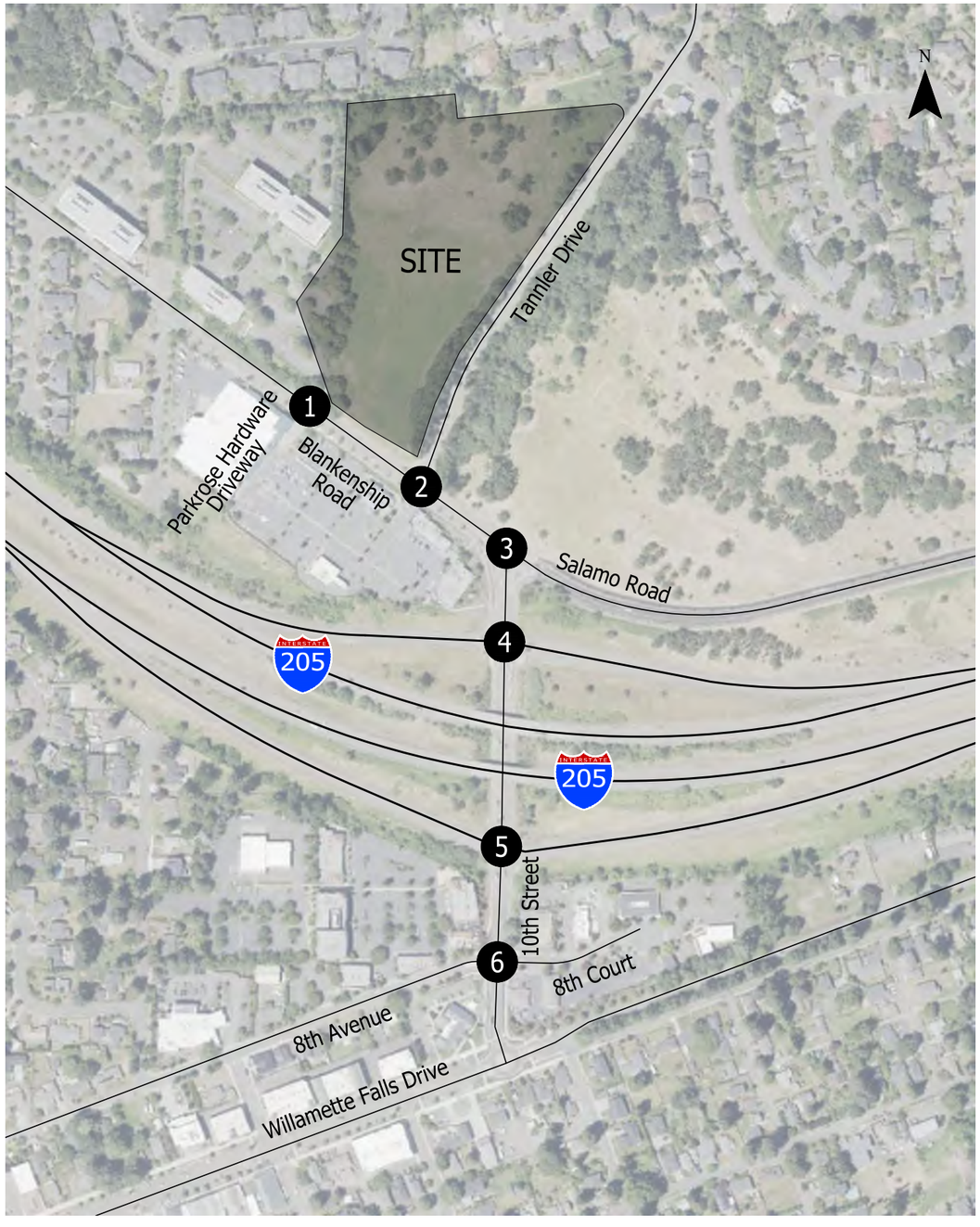
CA = CRITICAL APPROACH (TWSC SINGLE-LANE)
CM = CRITICAL MOVEMENT (TWSC MULTI-LANE)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED) / CRITICAL APPROACH LEVEL OF SERVICE (TWSC)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED) / CRITICAL APPROACH CONTROL DELAY (TWSC)
TWSC = TWO-WAY STOP CONTROL

Existing Traffic Conditions
Weekday AM Peak Hour
West Linn, OR

Figure
4

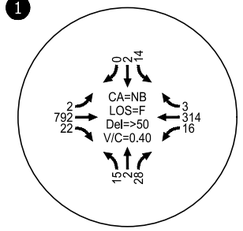
KITTELSON & ASSOCIATES

C:\Users\jlynch\appdata\local\temp\AcPublish_17824\32068 Figures.dwg Mar 19, 2026 - 8:02pm - jlynch Layout Tab: 4 Exist AM Ops



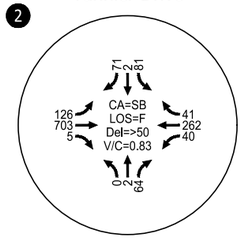
Blankenship Road/
Parkrose Hardware
Driveway/Office Driveway

1



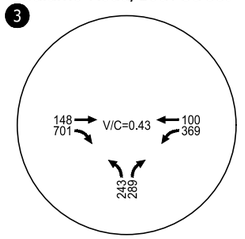
Blankenship Road/
Tannler Drive

2



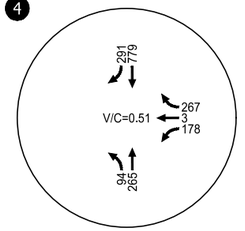
Blankenship Road/
Salamo Road/10th Street

3



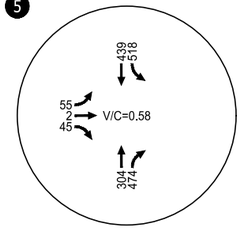
10th Street/
I-205 Southbound Ramp

4



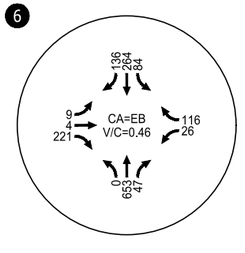
10th Street/
I-205 Northbound Ramp

5



10th Street/
8th Avenue/
8th Court

6



CA = CRITICAL APPROACH (TWSC SINGLE-LANE)
CM = CRITICAL MOVEMENT (TWSC MULTI-LANE)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED) / CRITICAL APPROACH LEVEL OF SERVICE (TWSC)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED) / CRITICAL APPROACH CONTROL DELAY (TWSC)
TWSC = TWO-WAY STOP CONTROL

Existing Traffic Conditions
Weekday PM Peak Hour
West Linn, OR

Figure
5

KITTELSON & ASSOCIATES

C:\Users\jlynch\appdata\local\temp\AcPublish_17824\32068 Figures.dwg Mar 19, 2026 - 8:02pm - jlynch Layout Tab: 5 Exist PM Ops

Table 2. Existing AM Operations Summary by Movement at Site Intersections

Intersection		Int. LOS	Approach	V/C	Delay	LOS	Mvmt	V/C	Delay	LOS
1	Blankenship Road/ Parkrose Hardware Driveway/Office Driveway	D	NB	0.17	16.8	C	NBLTR	0.17	16.8	C
			SB	0.01	14.5	B	SBLTR	0.01	14.5	B
			EB	0	0	A	EBL	0.00	7.8	A
							EBTR	0.00	0.0	A
			WB	0.02	0.5	A	WBL	0.02	8.2	A
							WBTR	0.00	0.0	A
2	Blankenship Road/ Tannler Drive	E	NB	0.14	13.4	B	NBLT	0.04	36.4	E
							NBR	0.10	11.7	B
			SB	0.58	26.4	D	SBLT	0.51	33.3	D
							SBR	0.07	9.8	A
			EB	0.04	0.8	A	EBL	0.04	8.0	A
							EBTR	0.00	0.0	A
			WB	0.10	2.3	A	WBL	0.10	8.5	A
							WBTR	0.00	0.0	A

Where: LOS = Level of Service, V/C = Volume-to-Capacity ratio, NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound, L = Left-turn, T=Through, R = Right-turn

Table 3. Existing PM Operations Summary by Movement at Site Intersections

Intersection		Int. LOS	Approach	V/C	Delay	LOS	Mvmt	V/C	Delay	LOS
1	Blankenship Road/ Parkrose Hardware Driveway/ Office Driveway	F	NB	0.40	52.8	F	NBLTR	0.40	52.8	F
			SB	0.09	26.7	D	SBLTR	0.09	26.7	D
			EB	0	0.02	A	EBL	0.00	7.9	A
							EBTR	0.01	0.0	A
			WB	0.02	0.46	A	WBL	0.02	9.8	A
							WBTR	0.00	0.0	A
2	Blankenship Road/ Tannler Drive	F	NB	0.23	19.4	C	NBLT	0.03	87.1	F
							NBR	0.20	18.1	C
			SB	0.83	52.1	F	SBLT	0.73	88.0	F
							SBR	0.10	10.1	B
			EB	0.11	1.3	A	EBL	0.11	8.3	A
							EBTR	0.01	0.0	A
			WB	0.05	1.1	A	WBL	0.05	9.5	A
							WBTR	0.00	0.0	A

Where: LOS = Level of Service, V/C = Volume-to-Capacity ratio, NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound, L = Left-turn, T=Through, R = Right-turn

TRAFFIC SAFETY

The ODOT Crash Data System was queried to obtain crash records at the study intersections for the five-year period from January 1, 2019 to December 31, 2023 (the 2024 data provided by ODOT was deemed preliminary at the time this report was prepared so was not considered). The crash type classifications at each intersection with reported crashes were reviewed to assess whether crash patterns might be identifiable. Table 4 shows the reported crashes by type and severity. *Appendix D contains detailed crash summary worksheets.*

Table 4. Intersection Crash History (January 1, 2019 – December 31, 2023)

	Location	Crash Type								Severity			Crash Total
		Rear-end	Turning	Angle	Side Swipe	Backing	Fixed Object	Pedestrian or Bike	Head-On	PDO[1]	Minor Injury	Serious Injury	
1	Blankenship Rd/Parkrose Hardware Driveway/Office Driveway	0	0	0	0	0	0	0	0	0	0	0	0
2	Blankenship Rd/Tannler Dr	0	0	1	0	1	0	0	0	1	1	0	2
3	Blankenship Rd/Salamo Rd/10th St	1	0	0	0	0	1	0	1	0	2	1	3
4	10th St/I-205 SB Ramp	3	0	0	0	1	0	0	0	1	3	0	4
5	10th St/I-205 NB Ramp	2	0	0	1	0	0	0	0	3	0	0	3
6	10th St/8th Ave/8th Ct	1	4	3	0	0	0	0	0	7	1	0	8

[1] PDO: Property Damage Only

As shown in Table 4, there were no reported crashes involving someone walking or riding a bike during the five years in which the data was available. No fatal crashes were reported. There was one major injury crash (classified by ODOT as Injury A) at Blankenship Road/Salamo Road/10th Street, as described below:

- On October 23, 2023, at the Blankenship Road/Salamo Road/10th Street intersection, a passenger car turning right from southbound direction to eastbound direction made an improper turn from the wrong lane at approximately midnight, colliding with the curb. The driver sustained incapacitating injuries. There were no passengers. The crash occurred under clear, dry conditions at night with streetlights.

Observed intersection crash rates were calculated and compared to statewide crash rate performance thresholds as shown in Table 5. The observed intersection crash rate was compared to the 90th percentile crash rates for urban intersections by traffic control and 3- versus 4-legged configurations (as appropriate) following the analysis methodology presented in the ODOT *Analysis Procedures Manual* (APM, Reference 7). Per the APM, intersections with observed crash rates that exceed the 90th percentile values shown in APM Exhibit 4-1 should be flagged for further analysis. As shown, all study intersection crash rates are below the 90th percentile crash rate.

Table 5. Intersection Crash Rate Assessment (January 1, 2019 – December 31, 2023)

	Intersection	Total Reported Crashes	Observed Crash Rate per MEV[1]	90th Percentile Crash Rate per MEV[1]	Observed Crash Rate>90th Percentile Crash Rate?
1	Blankenship Rd/Parkrose Hardware Driveway/Office Driveway	0	0	0.408	No
2	Blankenship Rd/Tannler Dr	2	0.08	0.408	No
3	Blankenship Rd/Salamo Rd/10th St	3	0.09	0.509	No
4	10th St/I-205 SB Ramp	4	0.12	0.509	No
5	10th St/I-205 NB Ramp	3	0.09	0.509	No
6	10th St/8th Ave/8th Ct	8	0.28	0.408	No

[1] MEV = Million entering vehicles

The 2023 ODOT Safety Priority Index System (SPIS) was also reviewed to identify any intersections flagged within the top 10 to 15 percent in Region 1 based on crash rate, frequency, and severity. No study intersections were identified as SPIS locations in the 2023 report.

We also note that there were no clear trends in the crash patterns at the study intersections. Based on the above observations, no crash-related changes to the intersections are recommended.

INTERSECTION AND STOPPING SIGHT DISTANCE

Intersection sight distance documentation at the site access points and along the site frontage will be documented on the civil engineering plans provided through the site plan application process.

We recommend that on-site landscaping, signage, and any new above-ground utilities be appropriately located and maintained to provide adequate intersection sight distance per applicable City requirements.

Background Conditions

The background traffic conditions analysis identifies how the study intersections are projected to operate in the 2029 horizon year without the construction of the proposed development.

No in-process developments were identified during the scoping process with City and ODOT staff, and no funded transportation improvements have been identified at the study intersections that will be completed by the horizon year 2029.

We do note that the adopted City of West Linn TSP identifies the following projects within the site vicinity (none of which are currently funded for construction by 2029):

- The provision of continuous sidewalks on the northside of Blankenship Road and Salamo Road in areas where there are currently gaps (*Site frontage improvements along Blankenship Road will be completed as part of the new apartments and retail*).
- The provision of sidewalks on both sides of Tannler Drive north of Blankenship Road. (*Site frontage improvements along Blankenship Road will be completed as part of the new apartments and retail*).
- The installation of a two-way cycle track on the north side of Salamo Road from Tannler Drive to Barrington Drive.
- The widening of 10th Street between Blankenship/Salamo Road and Willamette Falls Drive to provide two travel lanes in each direction, continuous sidewalks and both sides of the street and enhanced bike facilities. Per the City's Capital Improvement Plan (2026 – 2031, Reference 8), construction of these improvements are partially funded in the year 2030 but the bulk of the costs are unfunded at this time.
- The realignment of Tannler Drive as a neighborhood route from its current intersection on Blankenship Road to a location opposite the Parkrose Hardware entry (*The realignment of Tannler Drive is being considered as part of this development proposal*).

TRAFFIC GROWTH ASSUMPTIONS

A two-percent annual growth rate was applied to the existing traffic volumes to reflect near-term growth for background traffic per City staff direction.

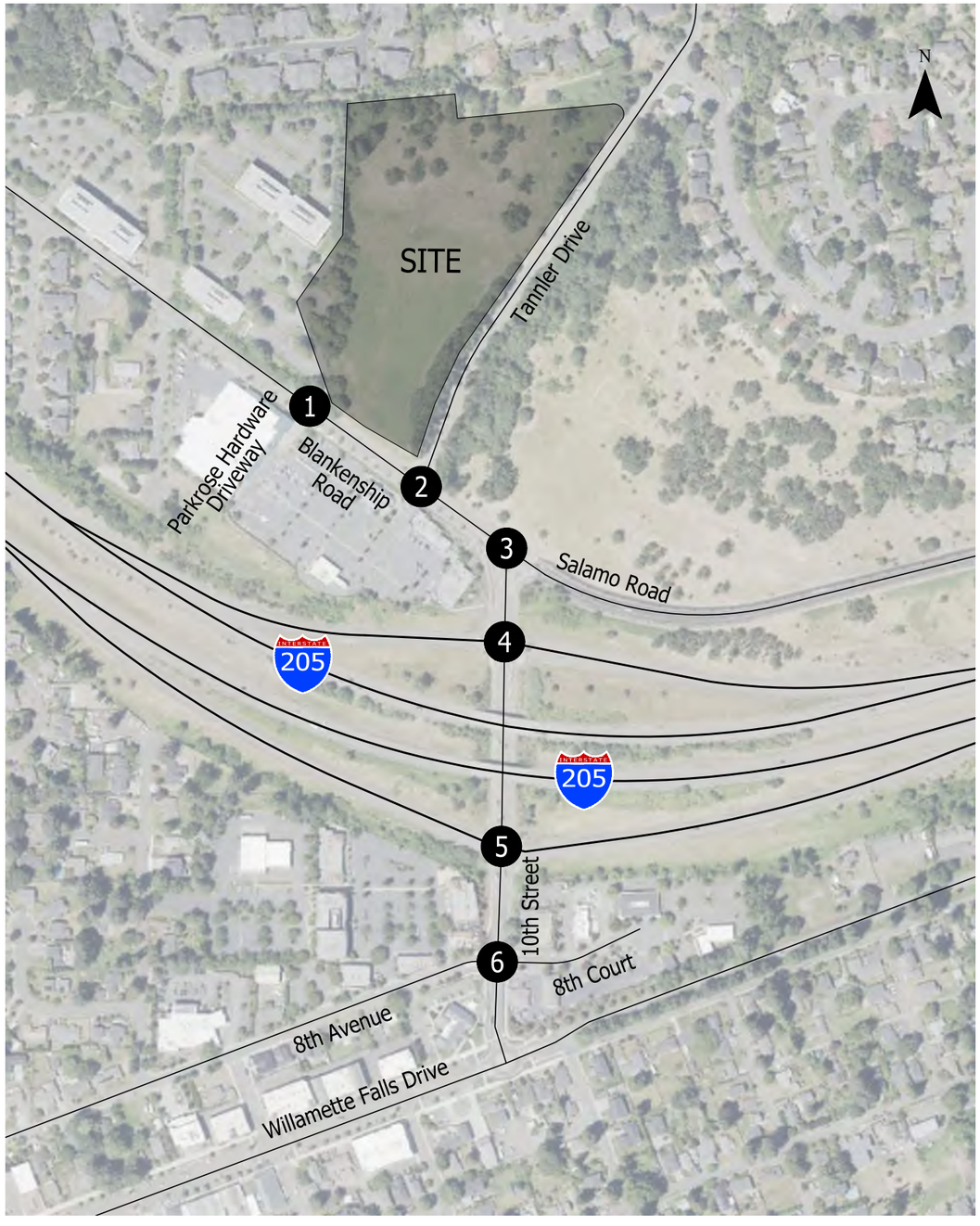
BACKGROUND TRAFFIC VOLUMES AND OPERATIONAL ANALYSIS

The 2025 weekday AM and PM peak hour existing traffic volumes along all public streets were increased with a two-percent annual growth rate to calculate the anticipated 2029 traffic volumes. The resultant year 2029 Background weekday AM and PM peak hour traffic volumes and intersection operations are shown in Figure 6 and Figure 7.

Table 6 and Table 7 show the delay, LOS, and V/C by movement and approach for the two City-owned intersections for the weekday AM and PM peak hours, respectively, under background growth traffic conditions. The intersection operations at the two intersections meet the City's LOS "E" mobility standard during the AM peak hour. During the PM peak hour, neither intersection meets the City's mobility standard. As noted in the existing conditions, during the PM peak hour, the northbound access point from the private Parkrose Hardware driveway and the southbound Tannler Drive approach operate with delays corresponding to LOS F. The background conditions at the two City intersections will be mitigated through a combination of the Tannler Drive realignment, turn lane improvements, and signalization proposed in conjunction with site developed as documented later in this report.

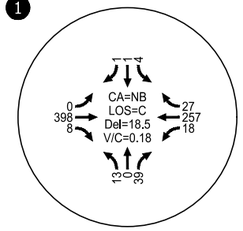
The intersection operations of the four ODOT intersections within the study area satisfy the mobility target during both the AM and PM peak hours.

Appendix E contains the year 2029 background traffic conditions worksheets.



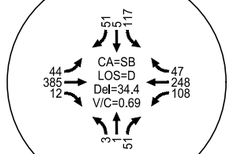
Blankenship Road/
Parkrose Hardware
Driveway/Office Driveway

1



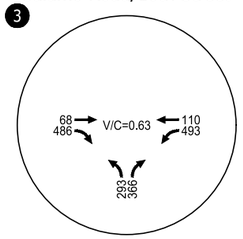
Blankenship Road/
Tannler Drive

2



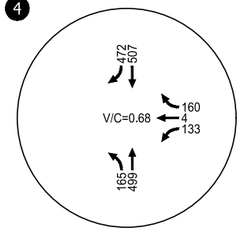
Blankenship Road/
Salamo Road/10th Street

3



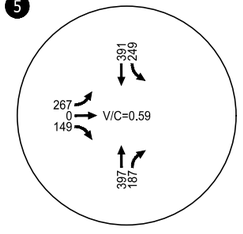
10th Street/
I-205 Southbound Ramp

4



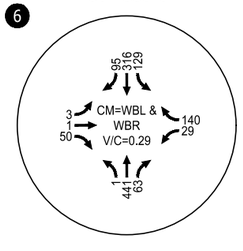
10th Street/
I-205 Northbound Ramp

5



10th Street/
8th Avenue/
8th Court

6

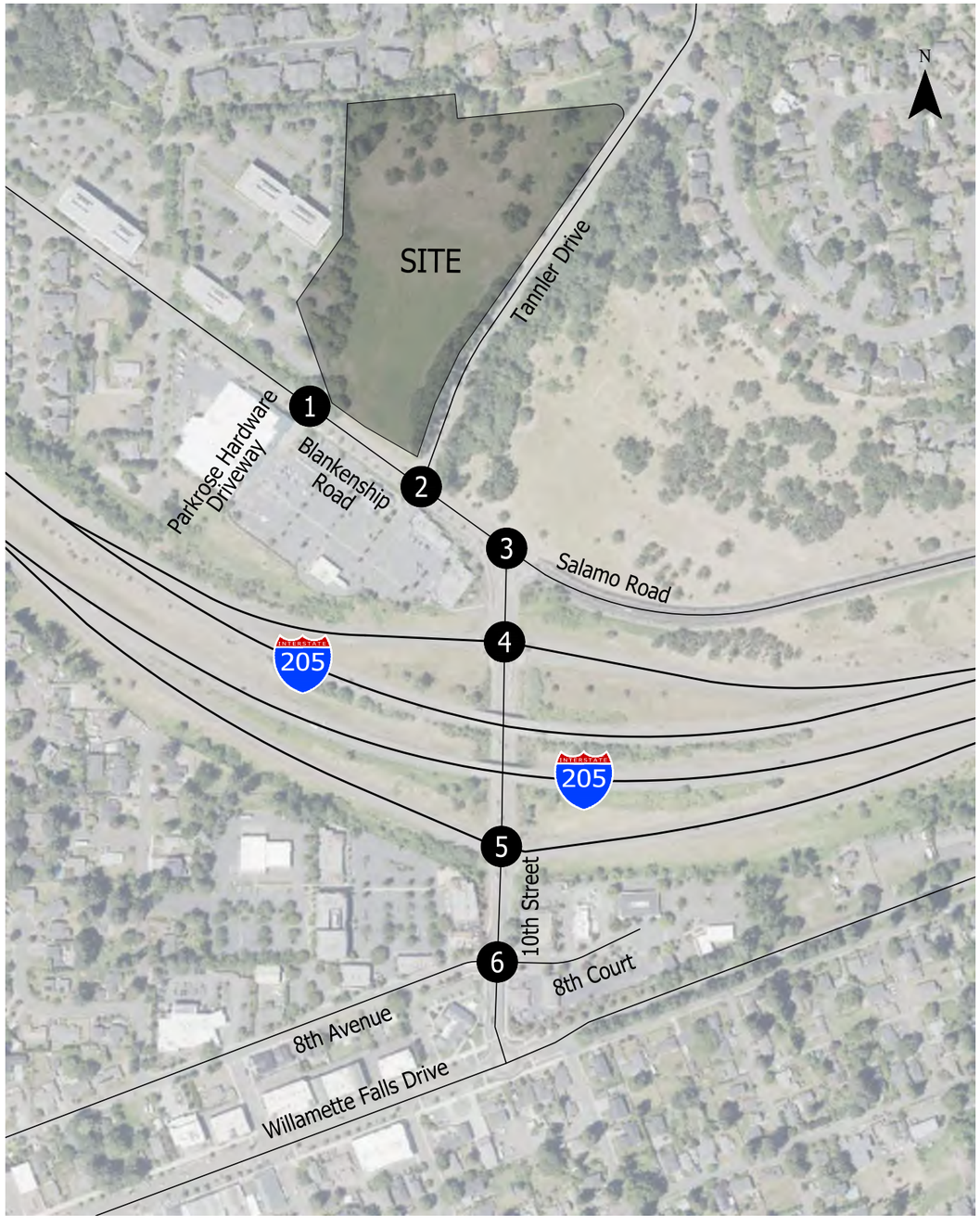


CA = CRITICAL APPROACH (TWSC SINGLE-LANE)
CM = CRITICAL MOVEMENT (TWSC MULTI-LANE)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED) / CRITICAL APPROACH LEVEL OF SERVICE (TWSC)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED) / CRITICAL APPROACH CONTROL DELAY (TWSC)
TWSC = TWO-WAY STOP CONTROL

Background 2029 Traffic Conditions
Weekday AM Peak Hour
West Linn, OR

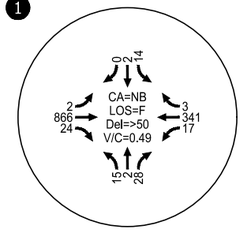
Figure
6

C:\Users\jlynch\appdata\local\temp\AcPublish_17824\32068 Figures.dwg Mar 19, 2026 - 8:02pm - jlynch Layout Tab: 6 Background AM Ops



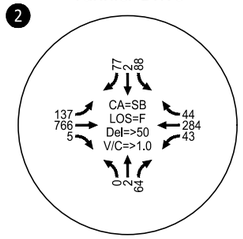
Blankenship Road/
Parkrose Hardware
Driveway/Office Driveway

1



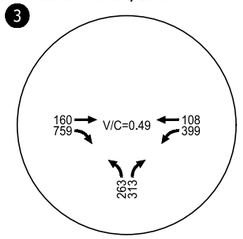
Blankenship Road/
Tannler Drive

2



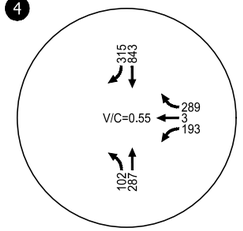
Blankenship Road/
Salamo Road/10th Street

3



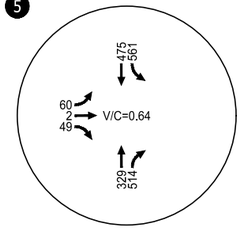
10th Street/
I-205 Southbound Ramp

4



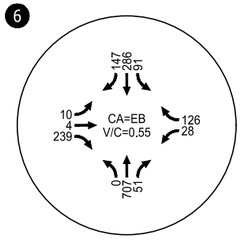
10th Street/
I-205 Northbound Ramp

5



10th Street/
8th Avenue/
8th Court

6



CA = CRITICAL APPROACH (TWSC SINGLE-LANE)
CM = CRITICAL MOVEMENT (TWSC MULTI-LANE)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED) / CRITICAL APPROACH LEVEL OF SERVICE (TWSC)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED) / CRITICAL APPROACH CONTROL DELAY (TWSC)
TWSC = TWO-WAY STOP CONTROL

Background 2029 Traffic Conditions
Weekday PM Peak Hour
West Linn, OR

Figure
7

KITTELSON & ASSOCIATES

C:\Users\jlynch\appdata\local\temp\AcPublish_17824\32068 Figures.dwg Mar 19, 2026 - 8:02pm - jlynch Layout Tab: 7 Background PM Ops

Table 6. Background AM Operations Summary by Movement at Site Intersections

Intersection		Int. LOS	Approach	V/C	Delay	LOS	Mvmt	V/C	Delay	LOS
1	Blankenship Road/ Parkrose Hardware Driveway/ Office Driveway	D	NB	0.18	18.5	C	NBLTR	0.18	18.5	C
			SB	0.02	15.4	C	SBLTR	0.02	15.4	C
			EB	0	0	A	EBL	0.00	7.9	A
							EBTR	0.00	0.0	A
			WB	0.02	0.5	A	WBL	0.02	8.4	A
							WBTR	0.00	0.0	A
2	Blankenship Road/ Tannler Drive	E	NB	0.14	14.2	B	NBLT	0.04	43.3	E
							NBR	0.10	12.2	B
			SB	0.69	34.4	D	SBLT	0.62	44.6	E
							SBR	0.07	9.9	A
			EB	0.04	0.8	A	EBL	0.04	8.1	A
							EBTR	0.00	0.0	A
			WB	0.11	2.3	A	WBL	0.11	8.7	A
							WBTR	0.00	0.0	A

Where: LOS = Level of Service, V/C = Volume-to-Capacity ratio, NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound, L = Left-turn, T=Through, R = Right-turn

Table 7. Background PM Operations Summary by Movement at Site Intersections

Intersection		Int. LOS	Approach	V/C	Delay	LOS	Mvmt	V/C	Delay	LOS
1	Blankenship Road/ Parkrose Hardware Driveway/ Office Driveway	F	NB	0.49	73.3	F	NBLTR	0.49	73.3	F
			SB	0.11	31.2	D	SBLTR	0.11	31.2	D
			EB	0	0.02	A	EBL	0.00	8.0	A
							EBTR	0.01	0.0	A
			WB	0.03	0.47	A	WBL	0.03	10.1	B
							WBTR	0.00	0.0	A
2	Blankenship Road/ Tannler Drive	F	NB	0.27	21.7	C	NBLT	0.04	82.2	F
							NBR	0.23	20.0	C
			SB	1.09	92.2	F	SBLT	0.98	162.4	F
							SBR	0.11	10.3	B
			EB	0.12	1.3	A	EBL	0.12	8.4	A
							EBTR	0.01	0.0	A
			WB	0.06	1.1	A	WBL	0.06	9.8	A
							WBTR	0.00	0.0	A

Where: LOS = Level of Service, V/C = Volume-to-Capacity ratio, NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound, L = Left-turn, T=Through, R = Right-turn

Full Buildout Traffic Conditions

This section forecasts how the study intersections are anticipated to operate at the 2029 horizon year with the additional traffic associated with full construction and occupancy of the proposed development. Tannler Drive will be realigned opposite the existing Blakenship Road/Parkrose Hardware Drive/Office Drive intersection as part of the development, consistent with the City's TSP.

As part of the proposed realignment, the existing Office Driveway on Blankenship Road aligned with the Parkrose Hardware Access will be relocated and tied into the new Tannler Drive alignment approximately 120 feet to the north. The reconfigured driveway for the Office will operate as a right-in/right-out access on Tannler Drive given its proximity to the new Tannler Drive intersection with Blankenship Road. Accordingly, existing traffic entering the Office Driveway was assumed to reroute in the full buildout traffic analysis to reflect this proposed driveway reconfiguration. In addition, the full buildout conditions assume the installation of a traffic signal at the realigned Tannler Drive/Blankenship Road intersection[1]. Figure 8 illustrates the assumed future lane configurations and traffic control devices at the study intersections.

Appendix F shows the rerouted trips as part of the proposed Tannler Drive realignment, and office driveway access restriction.

TRIP GENERATION

Table 8 shows the trip generation estimates prepared for the proposed project based on the rates included in the *Trip Generation Manual, 12th Edition* (Reference 9), as published by the Institute of Transportation Engineers (ITE). The fitted curve equations (when available) were used for the housing and retail land uses, consistent with ITE methodology. Although industry practice would typically involve application of a pass-by rate for the retail trips to recognize retail customers currently driving past the site, the analysis assumes that all trips are new to the intersections in order to provide a more conservative estimation of potential operations at the intersections.

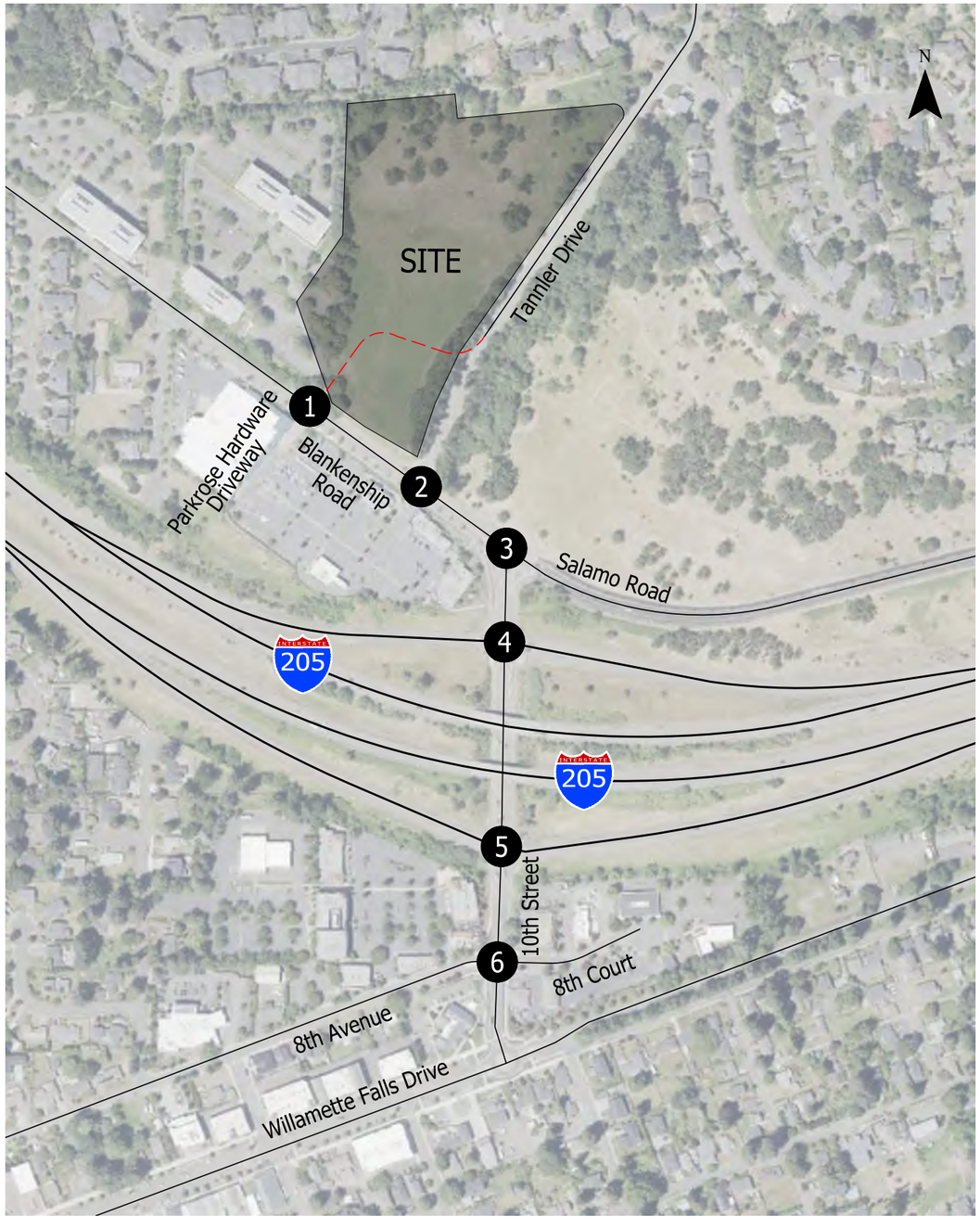
Table 8. Trip Generation Estimate

Land Use	ITE Code	Size	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
				Total	In	Out	Total	In	Out
Mid-Rise Housing	221	320 units	1,438	127	29	98	122	78	44
Retail < 40,000 square feet	822	10,520 sq ft	674	41	23	18	79	40	39
Total Site Trips			2,112	168	52	116	201	118	83

TRIP DISTRIBUTION

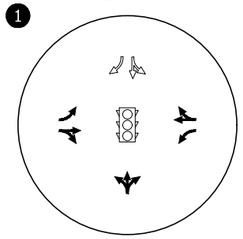
The distribution pattern for the site-generated trips during the weekday AM and PM peak hours shown in Table 8 is reflected Figure 9 and Figure 10 respectively.

[1] If the new intersection were to be operated with two-way stop-control, the peak hours delay and LOS would exceed City requirements and long queuing would result at the Tannler Drive southbound approach similar to the LOS F findings of the background traffic conditions analysis.



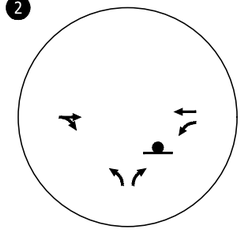
Blankenship Road/
Realigned Tannler
Drive

1



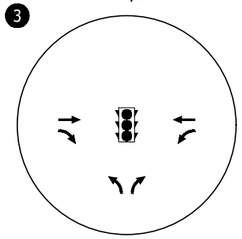
Blankenship Road/
Shopping Center
Driveway

2



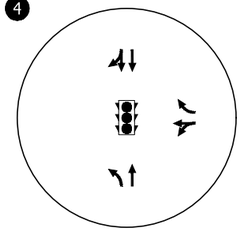
Blankenship Road/
Salamo Road/10th Street

3



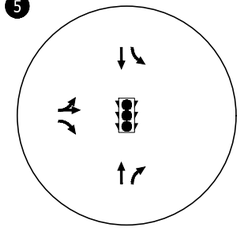
10th Street/
I-205 Southbound Ramp

4



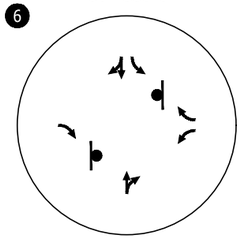
10th Street/
I-205 Northbound Ramp

5



10th Street/
8th Avenue/
8th Court

6

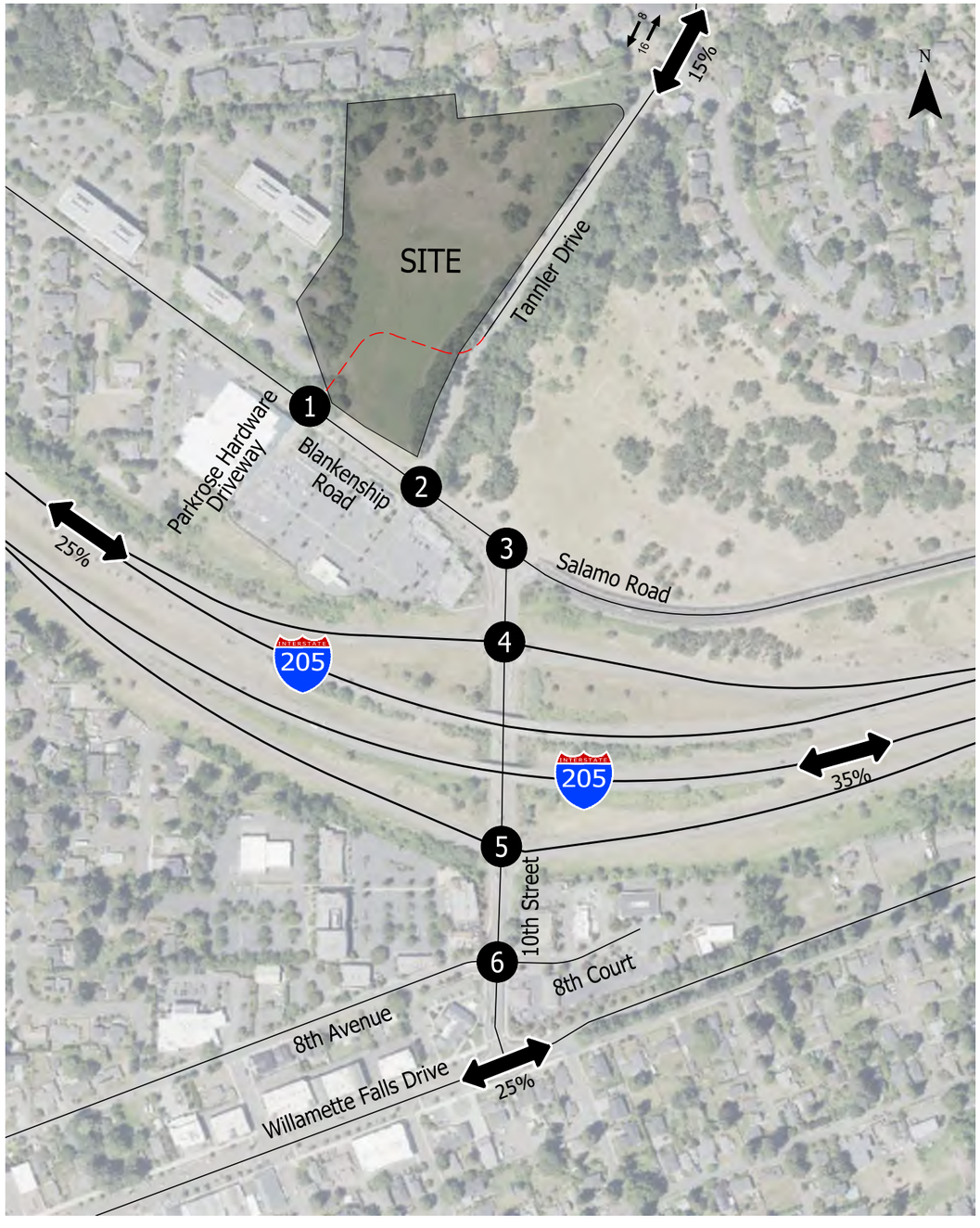


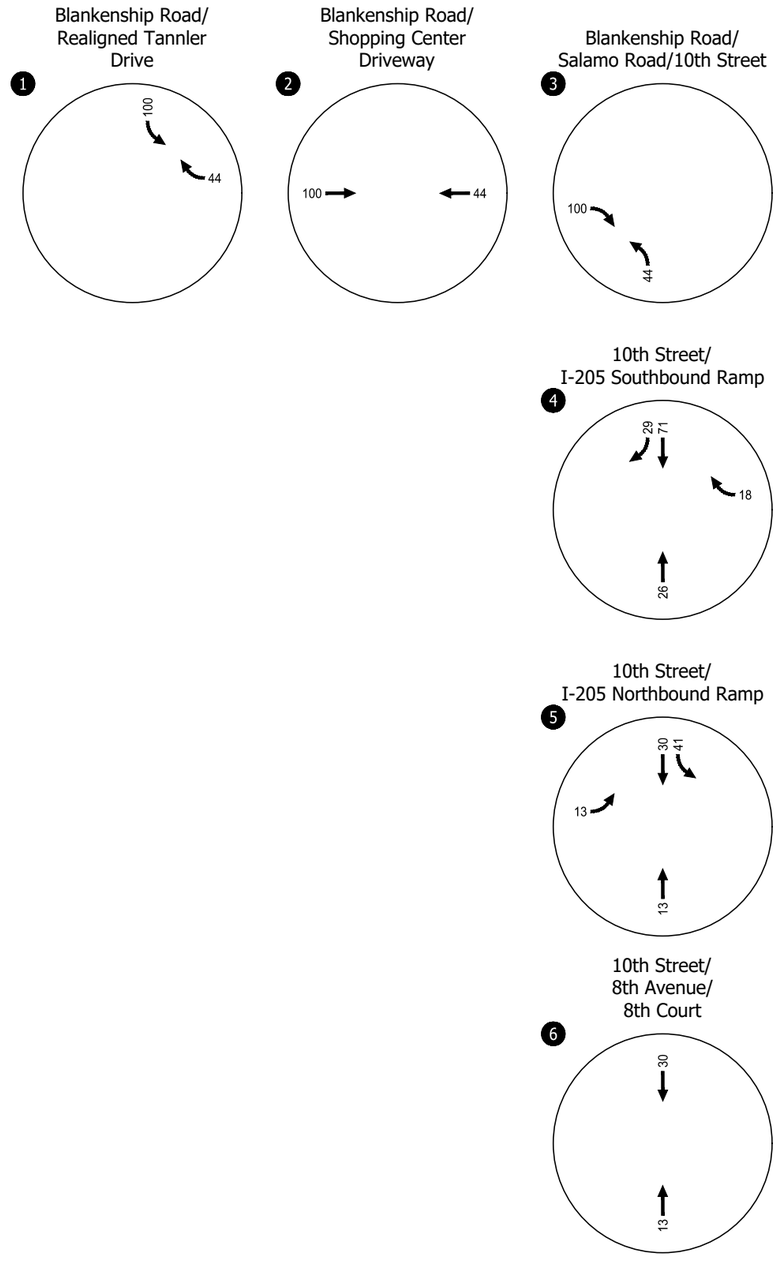
- STOP SIGN
- TRAFFIC SIGNAL
- FUTURE PROPOSED MOVEMENT
- FUTURE PROPOSED ROAD REALIGNMENT
- FUTURE PROPOSED TRAFFIC SIGNAL

Assumed 2029 Lane Configurations
and Traffic Control Devices
West Linn, OR

Figure
8

C:\Users\jlynch\appdata\local\temp\AcPublish_17824\32068 Figures.dwg Mar 19, 2026 - 8:02pm - jlynch Layout Tab: 8 2029 TCD & LC Alt 2





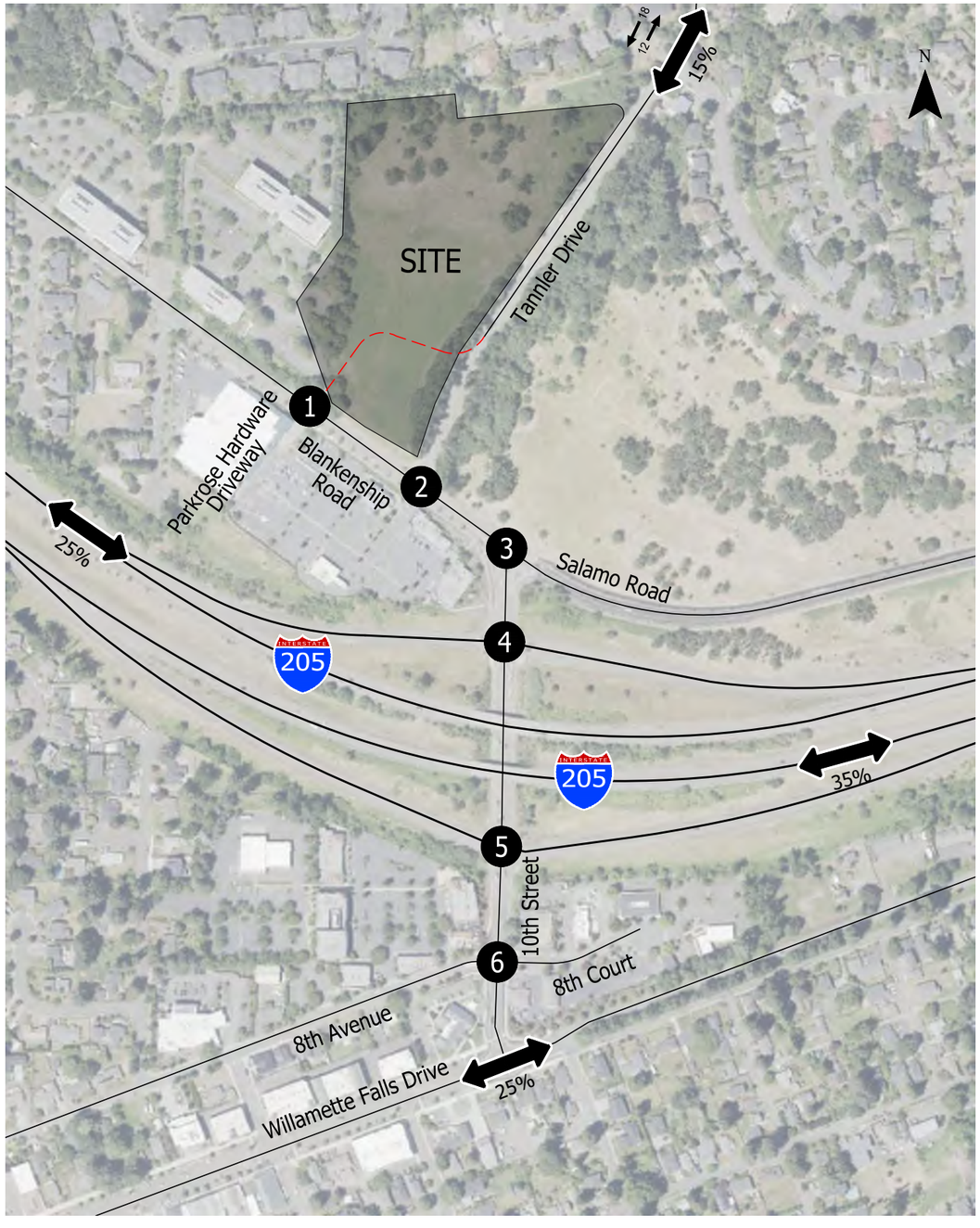
XX% - TRIP DISTRIBUTION PERCENTAGES

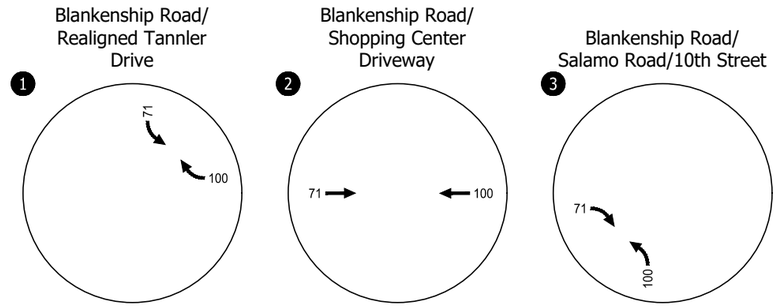
— — - FUTURE PROPOSED ROAD REALIGNMENT

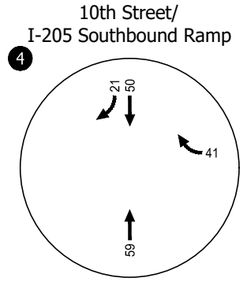
Estimated Trip Distribution Pattern and Site-Generated Trip Assignment
Weekday AM Peak Hour
West Linn, OR

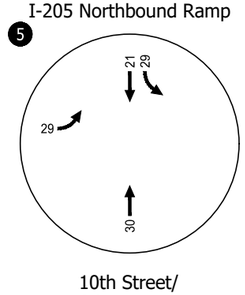
Figure 9

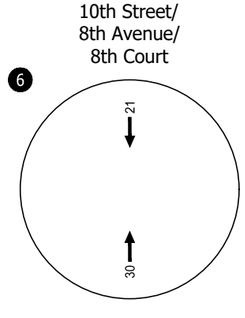
C:\Users\jlynch\appdata\local\temp\AcPublish_17824\32068 Figures.dwg Mar 19, 2026 - 8:02pm - jlynch Layout Tab: 9 AM Site Alt 2











XX% - TRIP DISTRIBUTION PERCENTAGES

— — - FUTURE PROPOSED ROAD REALIGNMENT

Estimated Trip Distribution Pattern and Site-Generated Trip Assignment
Weekday PM Peak Hour
West Linn, OR

Figure
10

C:\Users\jlynch\appdata\local\temp\AcPublish_17824\32068 Figures.dwg Mar 19, 2026 - 8:02pm - jlynch Layout Tab: 10 PM Site Alt 2

FULL BUILDOUT TRAFFIC VOLUMES AND INTERSECTION OPERATIONAL ANALYSIS

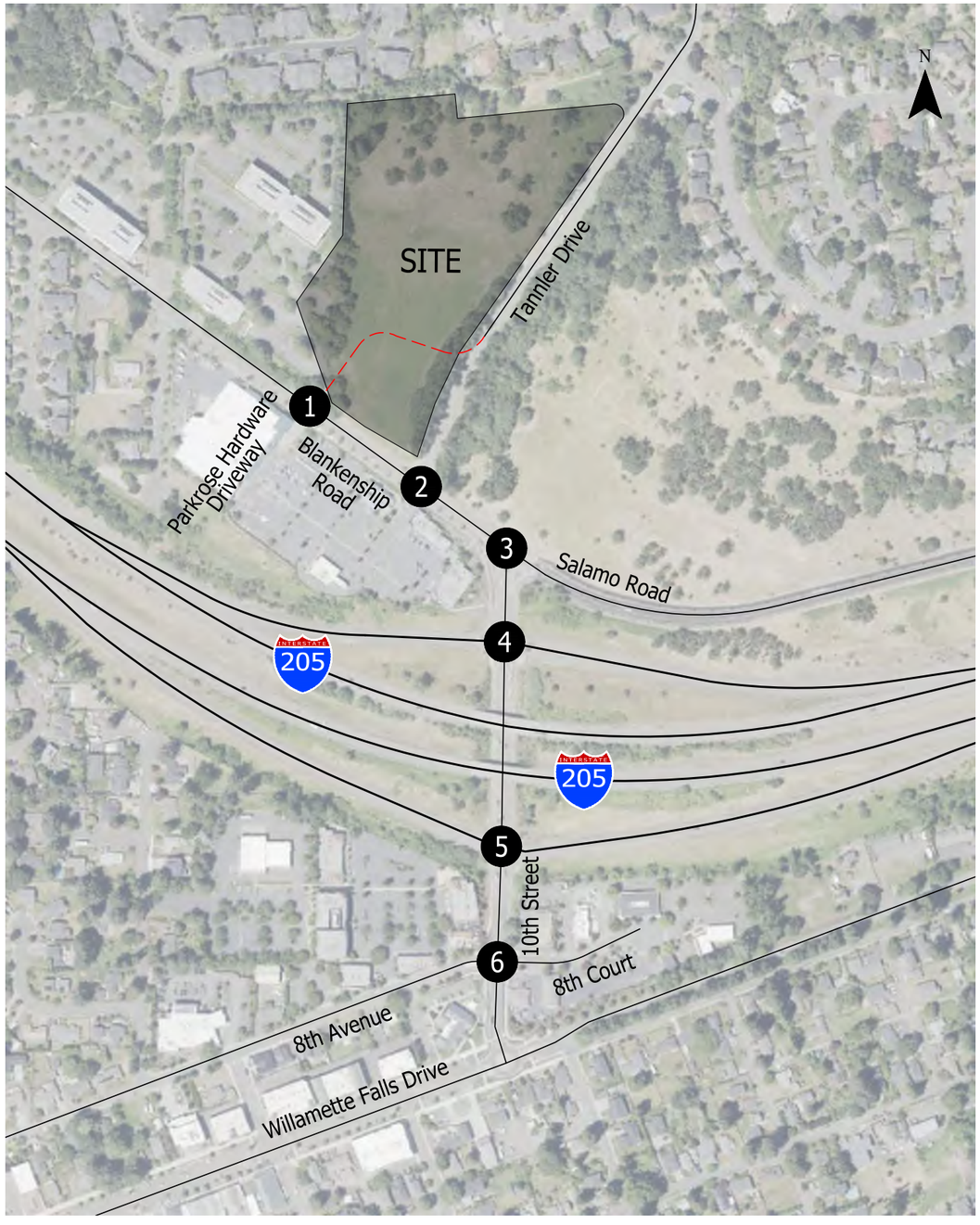
The full buildout traffic conditions analysis forecasts how the study intersections will operate with the traffic associated with full occupancy and operation of the proposed development. The site-generated trips shown in Figure 9 and Figure 10 were added to the 2029 background traffic volumes reflected in Figure 6 and Figure 7 to arrive at the 2029 full buildout traffic volumes shown in Figure 11 and Figure 12.

Figure 11 and Figure 12 also include the resulting intersection operations under full buildout traffic conditions. Table 9 and Table 10 show the delay, LOS, and V/C by movement and approach for the weekday AM and PM peak hours, respectively, under full buildout traffic conditions and assuming a traffic signal at the Blankenship Road/realigned Tannler Drive intersection.

The intersection operations of the four ODOT intersections within the study area satisfy the mobility target during both the AM and PM peak hours. With the proposed signal, the intersection operations at the Blankenship Road/realigned Tannler Drive intersection comply with City standards.

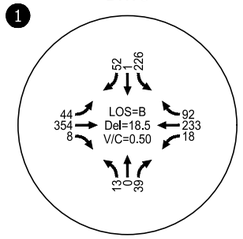
Following a realignment of Tannler Drive to the west, the existing two-way left turn lane along Blankenship Road can be extended to the Shopping Center Driveway (at Intersection 2). This change can allow drivers who are turning left out of the driveway onto Blankenship Road to make the northbound left-turn in two stages, queuing in the two-way left turn lane while awaiting a gap in the westbound through traffic. By providing two-stage gap maneuvers, the traffic operations for this northbound left movement improves from LOS “F” during the PM peak hour to LOS “D”. We further note that the northbound left-turns at this unsignalized access will have alternative access available via the shopping center to the future signalized Blankenship Road/realigned Tannler Drive intersection.

Appendix G contains the year 2029 full buildout traffic analysis worksheets.



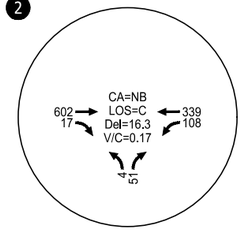
Blankenship Road/
Realigned Tannler
Drive

1



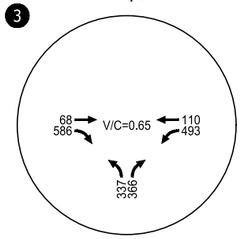
Blankenship Road/
Shopping Center
Driveway

2



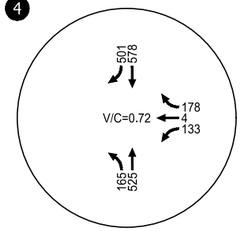
Blankenship Road/
Salamo Road/10th Street

3



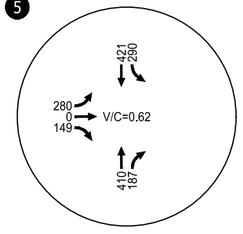
10th Street/
I-205 Southbound Ramp

4



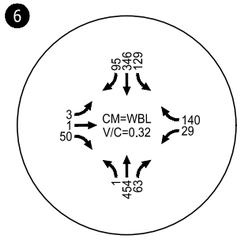
10th Street/
I-205 Northbound Ramp

5



10th Street/
8th Avenue/
8th Court

6



CA = CRITICAL APPROACH (TWSC SINGLE-LANE)
CM = CRITICAL MOVEMENT (TWSC MULTI-LANE)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED) / CRITICAL APPROACH LEVEL OF SERVICE (TWSC)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED) / CRITICAL APPROACH CONTROL DELAY (TWSC)
TWSC = TWO-WAY STOP CONTROL

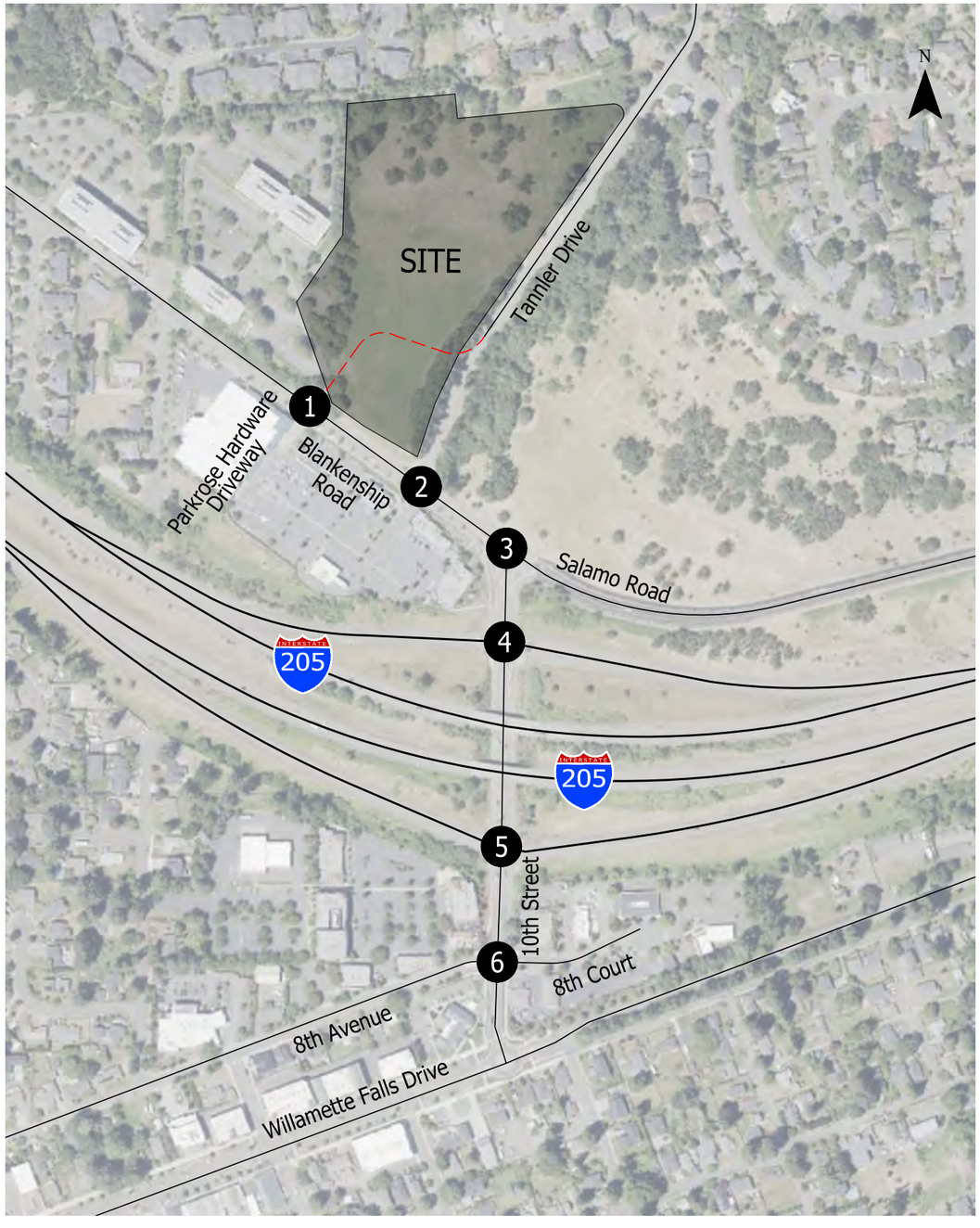
— — - FUTURE PROPOSED ROAD REALIGNMENT

Total 2029 Traffic Conditions
Weekday AM Peak Hour
West Linn, OR

Figure
11

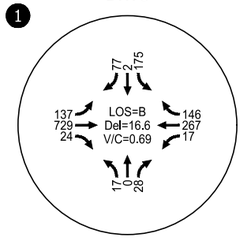
C:\Users\jlynch\appdata\local\temp\AcPublish_17824\32068 Figures.dwg Mar 19, 2026 - 8:02pm - jlynch Layout Tab: 11 TT AM Ops Alt 2

KITTELSON & ASSOCIATES



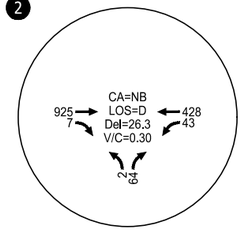
Blankenship Road/
Realigned Tannler
Drive

1



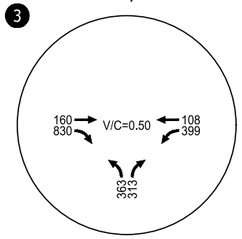
Blankenship Road/
Shopping Center
Driveway

2



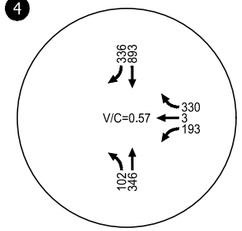
Blankenship Road/
Salamo Road/10th Street

3



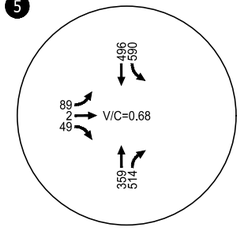
10th Street/
I-205 Southbound Ramp

4



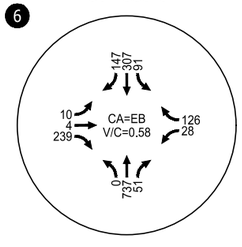
10th Street/
I-205 Northbound Ramp

5



10th Street/
8th Avenue/
8th Court

6



CA = CRITICAL APPROACH (TWSC SINGLE-LANE)
CM = CRITICAL MOVEMENT (TWSC MULTI-LANE)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED) / CRITICAL APPROACH LEVEL OF SERVICE (TWSC)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED) / CRITICAL APPROACH CONTROL DELAY (TWSC)
TWSC = TWO-WAY STOP CONTROL

— — - FUTURE PROPOSED ROAD REALIGNMENT

Total 2029 Traffic Conditions
Weekday PM Peak Hour
West Linn, OR

Figure
12

C:\Users\jlynch\appdata\local\temp\AcPublish_17824\32068 Figures.dwg Mar 19, 2026 - 8:03pm - jlynch Layout Tab: 12 TT PM Ops Alt 2

KITTELSON & ASSOCIATES

Table 9. Total AM Operations Summary by Movement at Blankenship Road/Shopping Center Driveway Intersection (assuming the Center Turn Lane is extended)

Intersection		Int. LOS	Approach	V/C	Delay	LOS	Mvmt	V/C	Delay	LOS
2	Blankenship Road/ Shopping Center Driveway	C	NB	0.19	16.3	C	NBL	0.02	22.2	C
							NBR	0.15	15.8	C
			EB	0	0	A	EBTR	0.01	0.0	A
			WB	0.13	2.3	A	WBL	0.13	9.6	A
							WBT	0.00	0.0	A

Where: LOS = Level of Service, V/C = Volume-to-Capacity ratio, NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound, L = Left-turn, T= Through, R = Right-turn

Table 10. Total PM Operations Summary by Movement at Blankenship Road/Shopping Center Driveway Intersection (assuming the Center Turn Lane is extended)

Intersection		Int. LOS	Approach	V/C	Delay	LOS	Mvmt	V/C	Delay	LOS
2	Blankenship Road/ Shopping Center Driveway	D	NB	0.30	26.3	D	NBL	0.01	26.9	D
							NBR	0.29	26.3	D
			EB	0	0	A	EBTR	0.01	0.0	A
			WB	0.07	1.0	A	WBL	0.07	10.7	B
							WBT	0.00	0.0	A

Where: LOS = Level of Service, V/C = Volume-to-Capacity ratio, NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound, L = Left-turn, T= Through, R = Right-turn

SITE CIRCULATION AND PARKING

Eight curb cuts are proposed along Tannler Drive to provide vehicle access to the proposed buildings . As shown in Figure 2, the four northern curb cuts form two on-site driveway loops that connect buildings and associated parking with Tannler Drive.

The existing Blankenship Road vehicle access to buildings within 205 Willamette Corporate Center will be relocated in conjunction with the Tannler Drive realignment. The new re-aligned office building access will connect to Tannler Drive approximately 120 feet north of Blankenship Road and is recommended to be limited to right-in-right-out access only at Tannler Drive due to its proximity to the Blankenship Road/realigned Tannler Drive intersection. The relocated driveway is anticipated to be blocked by 95th percentile queues southbound queues on Tannler Drive during both the weekday AM and PM peak hours[2]. Full access to the parking lots within 205 Willamette Corporate Center will be maintained at the driveway along 13th Street (Summerlinn Drive), two blocks from the existing site access.

The City's TSP specifies access spacing standards for roads under its jurisdiction. Accordingly, private driveways need to be spaced 100 feet apart along neighborhood routes (i.e., Tannler Drive's classification). The City's Public Works Design Standards Section 5.0070 further requires that each driveway curb cut have a minimum width of 16 feet and a maximum width of 36 feet.

The proposed curb cuts are between 24 and 30 feet in width and are separated over 100 feet apart from each other and existing intersections. The proposed curb cuts and driveway locations meet City standards.

INTERSECTION AND SITE-ACCESS DRIVEWAY QUEUING ANALYSIS

A 95th-percentile queuing analysis was performed in Vistro for intersection #1 and #2, the two intersections that will be impacted directly by the proposed development.

Table 11 shows that the existing and future weekday AM and PM peak hour 95th-percentile queues can be accommodated assuming a peak 15-minute flow rate. Queues are rounded up to the nearest vehicle length. Each vehicle was assumed to occupy approximately 25 feet.

[2] The right-turn only recommendation is predicated on 1) the potential for southbound queues on Tannler Drive to routinely block the access that could in turn lead to northbound Tannler Drive vehicle queue spillback onto Blankenship Road due to the inability to accommodate northbound left-turns into the office property at all times and 2) intersection sight distance limitations for eastbound left-turns out of the office building associated with both the close proximity to Blankenship Road and southbound queues on Tannler Drive.

Table 11. 95th-Percentile Queue Summary

Intersection	Movement	Storage (feet)	95th-Percentile Queue (feet)						Adequate Storage Provided?
			AM Peak Hour			PM Peak Hour			
			EX	BK	TT	EX	BK	TT	
Blankenship Road/ Realigned Tannler Drive	NBLTR	>100[1]	25	25	50	50	75	75	Yes
	SBLT	250[2]	25	25	200	25	25	150	Yes
	SBR	100	N/A	N/A	50	N/A	N/A	75	Yes
	EBL	325	0	0	50	25	25	75	Yes
	EBTR	450	0	0	200	0	0	375	Yes
	WBL	150[3]	25	25	25	25	25	25	Yes
	WBTR	325	0	0	175	0	0	100	Yes
Blankenship Road/ Shopping Center Driveway	NBTL[6]	>100[1]	25	25	25	25	25	25	Yes
	NBR	>100[1]	25	25	25	25	25	50	Yes
	SBTL	1,250[4]	75	100	N/A	125	150	N/A	Yes
	SBR	1,250[4]	25	25	N/A	25	25	N/A	Yes
	EBL	150[5]	25	25	N/A	25	25	N/A	Yes
	EBTR	325	0	0	0	0	0	0	Yes
	WBL	100	25	25	25	25	25	25	Yes
	WBTR[7]	250	0	0	0	0	0	0	Yes

Where: EX = Existing Traffic Conditions, BK = Background Traffic Conditions, TT = Total Traffic Conditions, NB = Northbound, SB = Southbound, EB=Eastbound, WB = Westbound, L = left-turn lane, R = right-turn lane, TL = shared through/left, TR = shared through/right lane, LTR = shared left/through/right lane, N/A = Not applicable (does not exist).

[1] The driveway is connected to the business parking lot which offers additional storage.

[2] Proposed distance to the full-access driveway. The driveway to access the existing office building along Tannler Drive (205 Willamette Corporate Center) is proposed to be configured and operation as a right-in-right-out driveway.

[3] Movement shares a two-way left-turn lane with the Blankenship Road/Tannler Drive intersection.

[4] Existing southbound approach at the Blankenship Road/Tannler Drive intersection features a shared left/through/right lane and has approximately 1,250 feet of storage. Field observation shows existing southbound right-turning vehicles utilizing the additional lane width near the intersection as a flared right-turn lane, similar to as if a separate right-turn lane is provided at the approach. The 95th percentile queue for southbound right-turning vehicles under existing and background conditions are therefore calculated separately from through or left-turning vehicles.

[5] Movement shares a two-way left-turn lane with the Blankenship Road/Parkrose Hardware Driveway/Office Driveway intersection.

[6] Northbound through movement is not possible in full buildout traffic conditions. In full buildout traffic conditions, only northbound left-turn movement is evaluated.

[7] Westbound right-turn movement is not possible in full buildout traffic conditions. In full buildout traffic conditions, only westbound through movement is evaluated.

TRAFFIC SIGNAL WARRANT EVALUATION

The *Manual on Uniform Traffic Control Devices* (MUTCD, Reference 10) identifies nine warrants for traffic signal installation. Table 12 identifies the results of a preliminary traffic signal warrant analysis for each of the nine MUTCD signal warrants at the Blankenship Road/realigned Tannler Drive intersection assuming the development is fully occupied.

Table 12. MUTCD Signal Warrant Analyses

Warrant		Signal Warrant Met?	Assessment
#1	8-Hour Volume	No	This warrant is intended for application where a large volume of intersecting traffic is the principal reason to consider a traffic control signal.
#2	4-Hour Volume	Yes	This warrant is intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal.
#3	Peak Hour	Not Applicable	This warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor street traffic suffers undue delay when entering or crossing the major street. This signal warrant shall be applied only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time.
#4	Pedestrian Volume	No	This warrant is designed to be applied where pedestrians experience excessive delay trying to cross a street due to heavy traffic volumes. Pedestrian volumes alone are not expected to warrant signalization.
#5	School Crossing	Not Applicable	This warrant is designed to be applied at locations where school children are trying to cross a major street and there are not adequate gaps in the major street traffic stream. There is no school in close proximity to justify signalization.
#6	Coordinated Signal System	No	This warrant is intended to facilitate progressed traffic flow within a coordinated traffic signal system and allows for installation of traffic control signals at intersections where they would otherwise not be needed in order to maintain proper platooning of vehicles.
#7	Crash Experience	No	This warrant is intended for application where the severity and frequency of crashes are the principal reasons to consider traffic signal installation. The reported crash patterns did not identify a pattern of five or more crashes within a 12-month period that would warrant signalization.

Warrant		Signal Warrant Met?	Assessment
#8	Roadway Network	Not Applicable	This warrant involves installing a traffic signal at an intersection to encourage concentration and organization of traffic flow on a roadway network. The warrant requires the intersection of two or more major routes that serve as the principal roadway network for through traffic flow. The intersecting streets are neighborhood routes or collectors, so this warrant does not apply.
#9	Intersection Near a Grade Crossing	Not Applicable	This warrant is intended for use at a location where the proximity to the intersection of a railroad grade crossing on an intersection approach controlled by a STOP or YIELD sign is the principal reason to consider installing a traffic signal.

As shown, a signal is anticipated to be warranted at this intersection based on the MUTCD warrants upon buildout.

Appendix H details the preliminary signal warrant #1 and #2 analysis under the full buildout traffic conditions.

Conclusions and Recommendations

As discussed herein, the proposed uses can be constructed and occupied while maintaining acceptable operations at the study intersections and access points, assuming provision of the following recommendations in conjunction with site development (subject to City and ODOT approval).

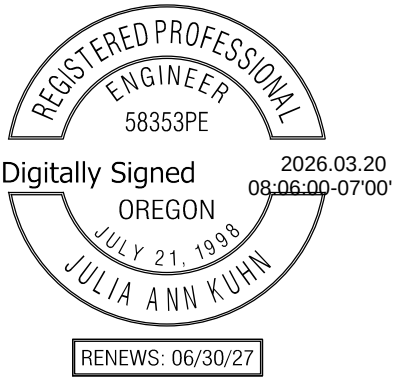
- Construct a southbound right-turn lane with at least 75 feet of storage and a separate shared through/left-turn lane on the proposed relocated Tannler Drive at its intersection with Blankenship Road.
- Construct a traffic signal at the relocated Blankenship Road/Tannler Drive intersection prior to the occupancy of the proposed homes.
- Place and maintain all vegetation, landscaping, and above ground objects adjacent to the site access points, local street intersections, along the public street site frontage, and throughout the site to provide adequate minimum sight distance in accordance with the City requirements.

References

1. City of West Linn. *West Linn Transportation System Plan.* 2016.
2. Transportation Research Board. *Highway Capacity Manual, 7th Edition*. 2022.
3. City of West Linn. *City of West Linn Public Works Design Standards*. 2025.
4. ODOT. *1999 Oregon Highway Plan*. 2023.
5. West Linn-Wilsonville School District. *West Linn-Wilsonville School Locator.* 2025. https://maulfoster.maps.arcgis.com/apps/instant/lookup/index.html?appid=42f61a29e36f4e7c92484539524b42e4.
6. West Linn-Wilsonville School District. *West Linn-Wilsonville School Locator – BTF Recommendation (2026–2027).* 2026. https://maulfoster.maps.arcgis.com/apps/instant/lookup/index.html?appid=4ab35a8e91064fdc928d91bc17fe043c.
7. ODOT. *Analysis Procedures Manual*. 2025.
8. City of West Linn. *City of West Linn Capital Improvement Plan 2026-2031*. 2025
9. Institute of Transportation Engineers. *Trip Generation Manual, 12th Edition*. 2025.
10. U.S Department of Transportation Federal Highway Administration. *Manual on Uniform Traffic Control Devices*. 11th Edition. 2023.

Appendix

A. Scoping Memo
B. Study Intersection Traffic Count Data
C. Existing Traffic Conditions Analysis Worksheets
D. ODOT Crash Data
E. Year 2029 Background Traffic Conditions Analysis Worksheets
F. Existing Network Trip Reassignment
G. Year 2029 Full Buildout Traffic Conditions Analysis Worksheets
H. Signal Warrant Analysis



Appendix A
Scoping Memo

KITTELSON & ASSOCIATES
851 SW 6th Avenue, Suite 600
Portland, OR 97204
P 503.228.5230

SCOPING MEMORANDUM

September 24, 2025 Project# 32068

To: Erich Lais, PE City of West Linn
John Russell, PE & Marah Danielson, ODOT
Chad Encinas, Mill Creek

From: Julia Kuhn, PE, Jackson Lynch, Edward Guo & Nick Polenske, PE

RE: Tannler Drive Development Traffic Impact Analysis Scope – Updated with ODOT Comments

Mill Creek Residential Trust is proposing to develop approximately 320 apartments and 15,000 square feet of neighborhood retail space at the site located north of Blankenship Road along Tannler Drive. Site access is proposed via Blankenship Road and a realigned Tannler Drive.

Per the City of West Linn's Community Development Code (CDC) Section 85.170(B)(2)(d), a Traffic Impact Analysis (TIA) is required to support the development given the site trip generation exceeds 250 average daily trips.

The remainder of this memorandum summarizes the scope of the traffic impact analysis (TIA) to support the site uses. The memorandum includes the study area, estimated trip generation, estimated trip distribution pattern, and the proposed analysis methodology.

PROJECT DESCRIPTION

The development plan envisions up to 320 apartments with associated on-site amenities as well as 15,000 square feet of retail. Consistent with the City's Transportation System Plan (TSP), Tannler Drive will be realigned from its current intersection with Blankenship Road to a location approximately 350 feet to the west opposite the Parkrose Hardware access. Along the realigned Tannler Drive, six access points are proposed to serve the site. No access is proposed to Blankenship Road.

Full occupancy of the site is anticipated in February 2029. A preliminary site plan is provided in Appendix A.

TRIP GENERATION

Table 1 shows the trip generation estimates prepared for the proposed uses using the *Trip Generation Manual, 11th Edition*, as published by the Institute of Transportation Engineers (ITE). The fitted curve equations were used for the housing and retail land uses, consistent with ITE methodology. A 34 percent pass-by rate was assumed for the retail trips.

Table 1. Trip Generation Estimate

Land Use	ITE Code	Size	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
				Total	In	Out	Total	In	Out
Mid-Rise Housing	221	320 units	1,480	129	30	99	125	76	49
Retail < 40,000 square feet	822	15,000 sq ft	863	38	23	15	104	52	52
Pass-by Trips (34%)			293	13	8	5	35	18	17
Net New Retail			570	25	15	10	69	34	35
Total Site Trips			2,343	167	53	114	229	128	101
Net New Site Trips			2,050	154	45	109	194	110	84

TRIP DISTRIBUTION/ASSIGNMENT

Based on the location of employment and retail areas, the trips shown in Table 1 are expected to follow the estimated trip distribution pattern shown below:

- 15 percent to/from the north via Tannler Drive;
- 25 percent to/from the south via Tannler Drive and 10th Street;
- 35 percent to/from the east via Interstate 205; and,
- 25 percent to/from the west via Interstate 205.

STUDY INTERSECTIONS

The TIA study area, per CDC Section 85.170(B)(2)(d), need to include all points of access onto the public street system, all intersections of arterials, collectors, and neighborhoods routes within 1,000 linear feet from all points of access onto the public street system, and all intersections where the traffic generated by the proposed development exceeds five percent of existing AM or PM peak hour total intersection traffic volume.

In addition, Oregon Department of Transportation (ODOT) may require more analysis when intersections under its jurisdiction receive more than 50 peak hour trips as the result of a proposed land use action.

Accordingly, we propose to study the following locations:

- Blankenship Road/Tannler Drive;
- Blankenship Road/Salamo Road/10th Street;
- 10th Street/Interstate 205 Southbound Ramp;
- 10th Street/Interstate 205 Northbound Ramp; and,
- 10th Street/8th Avenue/8th Court.

TRAFFIC VOLUMES & ANALYSIS PERIODS

Traffic counts will be collected on in the fall 2025 on a typical weekday when schools are in-session during the weekday AM (7 – 9 AM) and PM (4 – 6 PM) peak hours. We will assess existing year 2025, future year 2029 background, and future year 2029 total intersection operations during weekday AM and PM peak hours.

INTERSECTION PERFORMANCE METRICS

Per the City's Public Works Design Standards (PWDS) Section 5.0014(G), The City of West Linn requires all intersections within the study area to maintain an acceptable level of service (LOS) upon buildout of the proposed land use action. The minimum acceptable LOS for signalized intersections is "D" or better for the intersection as a whole. No approach should operate at worse than LOS "E", and a volume-to-capacity (V/C) ratio not higher than 1.0 is required for the sum of critical movements. The minimum acceptable LOS for non-signalized intersections is "E" or better for the poorest operating approach. No movement serving more than 20 peak hour vehicles should operate at worse than LOS "E". LOS "F" will be tolerated for minor movements during a peak hour.

Several of the proposed intersections are under the jurisdiction of the Oregon Department of Transportation (ODOT). The LOS standards of ODOT intersections are specified in the Oregon Highway Plan. Accordingly, the V/C ratio target is 0.99 for the first as well as the second hour during the two-hour peak operating conditions.

BACKGROUND AND IN-PROCESS DEVELOPMENTS

We propose applying a two-percent annual background growth rate to the 2025 volumes to account for general regional growth through 2029. Would you please provide us with any in-process developments to include in our study?

SAFETY

We will obtain and review the most recent five-year crash records at the existing study intersections from ODOT. Using the ODOT data, we will calculate intersection crash rates and compare them to statewide crash rate performance thresholds. For this analysis, the critical crash rate will be calculated and compared to the 90th percentile crash rates.

MULTIMODAL FACILITIES

We will document the availability of pedestrian and bicycle facilities as well as the adjacent transit service.

We note that the City's TSP identifies several bike and pedestrian projects near the project site. The projects include installing sidewalks on the north side of Blankenship Road, installing sidewalks along Tannler Drive up to Greene Street, and installing two-way cycle tracks on the north side of Salamo Road from Tannler Drive to Barrington Drive. Tannler Drive and Blankenship Road in the proposed project area are also listed on the TSP's Trails Master Plan as on-street connection trails.

INTERSECTION GEOMETRY AND LANE CONFIGURATION EVALUATION

As part of the TIA, we will evaluate the traffic control and lane geometry needs at the realigned Tannler Drive/Blankenship Road intersection.

TIA SCOPE

Per PWDS 5.0014(C), the TIA will include following items:

- Table of Contents
- Executive Summary
- Introduction and Description of Proposed Development
- Existing Conditions (2025)
- Background Conditions (2029)
- Full Buildout Traffic Conditions, Impacts, and Mitigation (2029)
- Conclusions and Recommendations
- Appendices

NEXT STEPS

We trust this memorandum provides adequate documentation of the key assumptions associated with the TIA for the proposed Mill Creek development. We look forward to working with you on this project.

Appendix A Site Plan

TANNLER DRIVE MASTER PLAN

WEST LINN, OREGON

CONCEPTUAL MASTER PLAN 2.1

JULY 14, 2021

HILL ARCHITECTS

1720 BLANKENSHIP ROAD • SUITE 200 • WEST LINN • OREGON 97068

Appendix B
Study Intersection Traffic Count Data

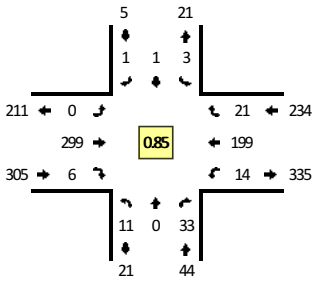
Type of peak hour being reported: User-Defined

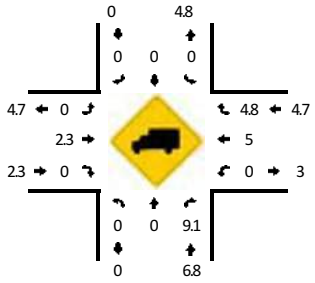
Method for determining peak hour: Total Entering Volume

LOCATION: Parkrose Hardware/office building complex Dwy -- Blankenship Rd
CITY/STATE: West Linn, OR

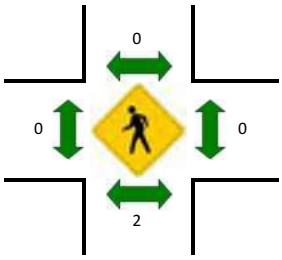
QC JOB #: 17369407
DATE: Wed, Dec 10 2025

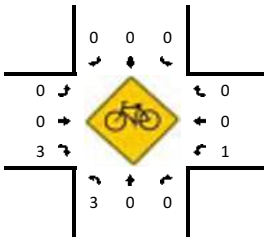
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 7:55 AM -- 8:10 AM

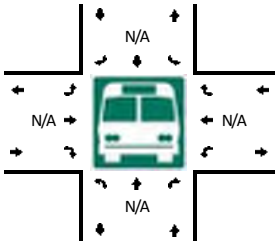


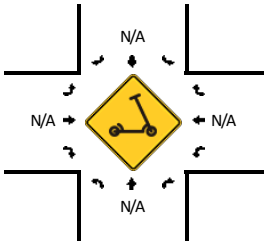


TRUE DATA TO IMPROVE MOBILITY









5-Min Count Period Beginning At	Parkrose Hardware/office building complex Dwy (Northbound)				Parkrose Hardware/office building complex Dwy (Southbound)				Blankenship Rd (Eastbound)				Blankenship Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:40 AM	3	0	0	0	0	0	0	0	0	31	0	0	1	19	2	0	56	
7:45 AM	0	0	3	0	2	0	0	0	0	31	0	0	2	13	2	0	53	
7:50 AM	1	0	3	0	0	0	0	0	0	22	0	0	0	21	1	0	48	
7:55 AM	2	0	2	0	0	0	0	0	0	33	1	0	3	23	4	0	68	
8:00 AM	0	0	5	0	0	0	0	0	0	32	0	0	1	17	1	0	56	
8:05 AM	0	0	2	0	0	0	0	0	0	25	1	0	0	20	1	0	49	
8:10 AM	1	0	4	0	0	0	0	0	0	25	3	0	1	16	1	0	51	
8:15 AM	1	0	5	0	0	0	0	0	0	29	0	0	2	12	1	0	50	
8:20 AM	1	0	1	0	0	0	0	0	0	19	0	0	1	17	2	0	41	
8:25 AM	1	0	2	0	1	0	0	0	0	20	0	0	2	13	2	0	41	
8:30 AM	0	0	3	0	0	1	0	0	0	16	0	0	0	18	1	0	39	
8:35 AM	1	0	3	0	0	0	1	0	0	16	1	0	1	10	3	0	36	588

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	0	36	0	0	0	0	0	0	360	8	0	16	240	24	0	692
Heavy Trucks	0	0	4		0	0	0		0	16	0		0	16	4		40
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/28/2026 4:16 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

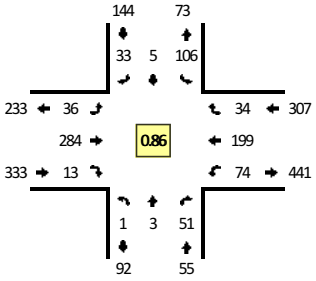
Type of peak hour being reported: User-Defined

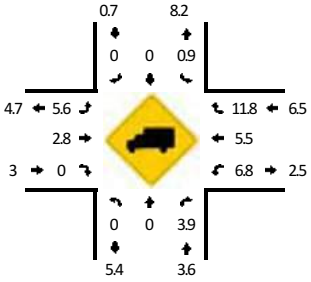
Method for determining peak hour: Total Entering Volume

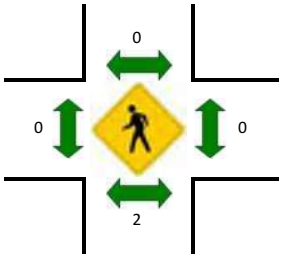
LOCATION: Tannler Dr -- Blankenship Rd
CITY/STATE: West Linn, OR

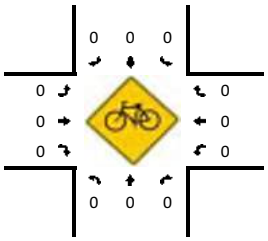
QC JOB #: 17369409
DATE: Wed, Dec 10 2025

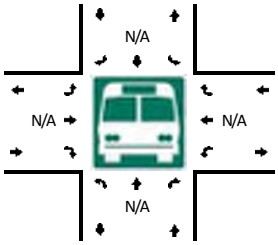
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 7:50 AM -- 8:05 AM

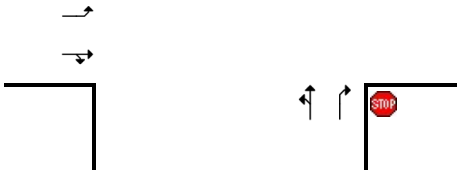


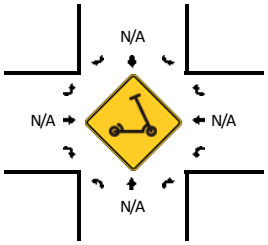












5-Min Count Period Beginning At	Tannler Dr (Northbound)				Tannler Dr (Southbound)				Blankenship Rd (Eastbound)				Blankenship Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:40 AM	0	0	5	0	13	0	3	0	4	23	3	0	6	19	2	0	78	
7:45 AM	0	0	3	0	9	1	3	0	3	34	0	0	6	14	0	0	73	
7:50 AM	0	0	6	0	8	0	7	0	1	22	1	0	8	16	8	0	77	
7:55 AM	0	0	4	0	6	1	5	0	3	31	1	0	6	25	6	0	88	
8:00 AM	0	0	5	0	11	1	2	0	5	29	3	0	6	15	2	0	79	
8:05 AM	0	0	4	0	12	0	3	0	5	22	1	0	6	19	2	0	74	
8:10 AM	0	0	7	0	7	0	1	0	3	26	0	0	6	16	1	0	67	
8:15 AM	0	0	5	0	14	1	0	0	3	29	2	0	7	16	2	0	79	
8:20 AM	0	2	4	0	6	1	4	0	3	16	1	0	4	17	1	0	59	
8:25 AM	0	1	2	0	11	0	3	0	1	20	0	0	7	12	5	0	62	
8:30 AM	0	0	5	0	5	0	0	0	1	16	1	0	6	19	3	0	56	
8:35 AM	1	0	1	0	4	0	2	0	4	16	0	0	6	11	2	0	47	839

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	60	0	100	8	56	0	36	328	20	0	80	224	64	0	976
Heavy Trucks	0	0	4		0	0	0		4	4	0		8	20	8		48
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/28/2026 4:16 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

LOCATION: Tannler Dr -- Blankenship Rd

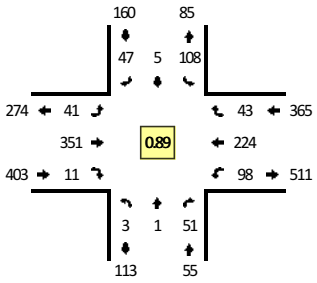
CITY/STATE: West Linn, OR

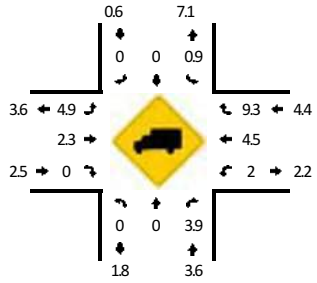
QC JOB #: 17268001

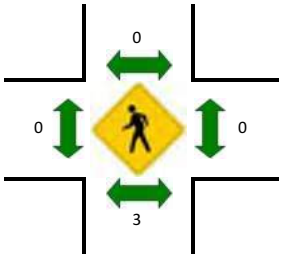
DATE: Tue, Sep 30 2025

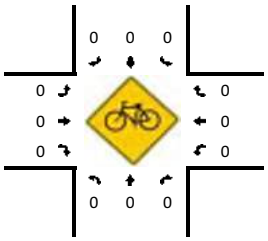
Peak-Hour: 7:40 AM -- 8:40 AM

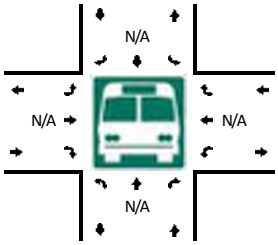
Peak 15-Min: 8:05 AM -- 8:20 AM

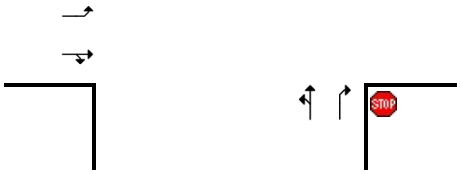


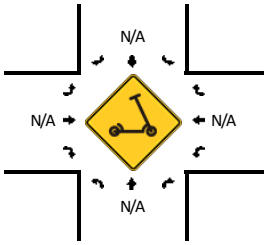












R* = RTOR

5-Min Count Period Beginning At	Tannler Dr (Northbound)					Tannler Dr (Southbound)					Blankenship Rd (Eastbound)					Blankenship Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	0	4	0	0	9	0	0	0	0	3	18	0	0	0	4	19	0	0	0	57	
7:05 AM	0	0	3	0	0	9	0	1	0	0	1	23	1	0	0	3	7	3	0	0	51	
7:10 AM	0	0	3	0	0	5	0	0	0	0	5	20	0	0	0	3	10	4	0	0	50	
7:15 AM	0	0	3	0	0	5	1	0	0	0	4	24	1	0	0	8	14	0	0	0	60	
7:20 AM	0	1	5	0	0	4	0	5	0	0	1	19	0	0	0	3	18	0	0	0	56	
7:25 AM	0	0	6	0	0	4	0	0	0	0	1	21	0	0	0	5	16	0	0	0	53	
7:30 AM	0	0	4	0	0	11	0	4	0	0	3	28	0	0	0	3	17	4	0	0	74	
7:35 AM	0	0	1	0	0	3	0	5	0	0	0	35	0	0	0	8	16	1	1	0	70	
7:40 AM	0	0	2	0	0	15	0	3	0	0	3	44	0	0	0	3	12	4	0	0	86	
7:45 AM	1	1	3	0	0	8	0	5	0	0	4	28	1	0	0	5	23	7	0	0	86	
7:50 AM	0	0	1	0	0	10	0	6	0	0	3	20	1	0	0	6	17	4	0	0	68	
7:55 AM	0	0	9	0	0	4	0	4	0	0	3	15	1	0	0	6	25	4	0	0	71	782
8:00 AM	0	0	5	0	0	9	0	6	0	0	5	24	1	0	0	13	25	3	0	0	91	816
8:05 AM	0	0	3	0	0	10	1	4	0	0	1	34	1	0	0	13	14	5	0	0	86	851
8:10 AM	1	0	9	0	0	14	1	4	0	0	4	33	0	0	0	6	15	2	0	0	89	890
8:15 AM	0	0	5	0	0	6	1	4	0	0	7	47	1	0	0	7	17	4	1	0	100	930
8:20 AM	0	0	5	0	0	11	0	5	0	0	2	25	0	0	0	12	13	2	0	0	75	949
8:25 AM	0	0	3	0	0	8	0	3	0	0	2	24	3	0	0	9	23	1	0	0	76	972
8:30 AM	1	0	2	0	0	6	2	3	0	0	3	30	1	0	0	9	15	4	0	0	76	974
8:35 AM	0	0	4	0	0	7	0	0	0	0	4	27	1	0	0	8	25	3	0	0	79	983
8:40 AM	1	0	2	0	0	6	0	4	0	0	2	28	0	0	0	7	22	3	0	0	75	972
8:45 AM	0	0	4	0	0	9	0	2	0	0	2	22	0	0	0	7	26	1	0	0	73	959
8:50 AM	0	0	2	0	0	7	0	9	0	0	2	15	1	0	0	7	29	5	1	0	78	969
8:55 AM	0	1	3	0	0	9	2	8	0	0	1	28	1	0	0	5	24	3	1	0	86	984

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	4	0	68	0	0	120	12	48	0	0	48	456	8	0	0	104	184	44	4	0	1100
Heavy Trucks	0	0	0			0	0	0			4	20	0			0	8	0			32
Buses																					
Pedestrians		4					0					0					0				4
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

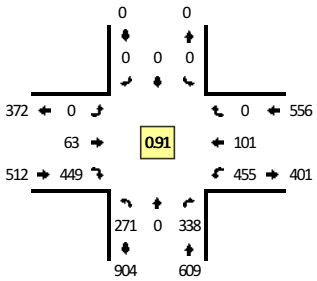
Report generated on 1/28/2026 4:04 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

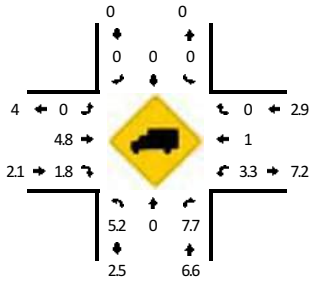
Type of peak hour being reported: User-Defined | Method for determining peak hour: Total Entering Volume

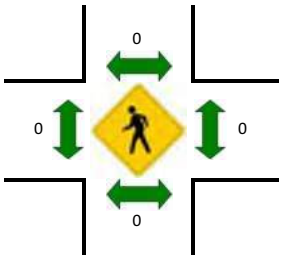
LOCATION: 10th St -- Blankenship Rd/Salamo Rd | **QC JOB #:** 17268003
CITY/STATE: West Linn, OR | **DATE:** Tue, Sep 30 2025

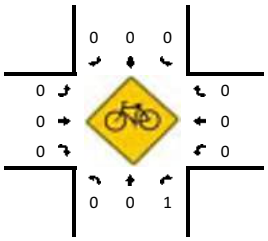
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 8:10 AM -- 8:25 AM

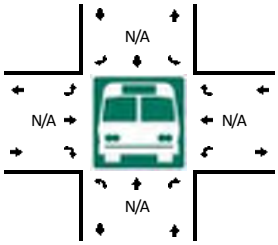


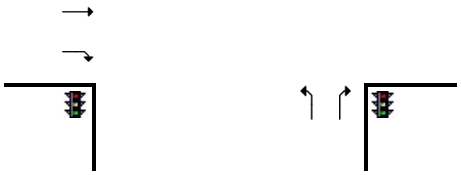
TRUE DATA TO IMPROVE MOBILITY

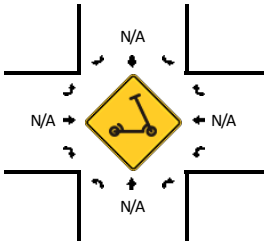












R* = RTOR

5-Min Count Period Beginning At	10th St (Northbound)					10th St (Southbound)					Blankenship Rd/Salamo Rd (Eastbound)					Blankenship Rd/Salamo Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	21	0	17	0	0	0	0	0	0	0	0	4	23	0	4	31	1	0	0	0	101	
7:05 AM	9	0	18	0	0	0	0	0	0	0	0	0	27	0	6	36	2	0	0	0	98	
7:10 AM	16	0	24	0	0	0	0	0	0	0	0	1	25	0	1	33	2	0	0	0	102	
7:15 AM	18	0	19	0	0	0	0	0	0	0	0	3	27	0	5	33	4	0	0	0	109	
7:20 AM	17	0	25	0	0	0	0	0	0	0	0	2	23	0	3	26	4	0	0	0	100	
7:25 AM	16	0	15	0	0	0	0	0	0	0	0	2	27	0	3	45	9	0	0	0	117	
7:30 AM	19	0	14	0	0	0	0	0	0	0	0	2	37	0	1	34	4	0	0	0	111	
7:35 AM	16	0	18	0	0	0	0	0	0	0	0	2	35	0	4	39	10	0	0	0	124	
7:40 AM	11	0	18	0	1	0	0	0	0	0	0	9	45	0	3	38	9	0	0	0	134	
7:45 AM	25	0	17	0	0	0	0	0	0	0	0	6	37	0	1	41	9	0	0	0	136	
7:50 AM	19	0	27	0	0	0	0	0	0	0	0	2	21	0	4	36	11	0	0	0	120	
7:55 AM	23	0	26	0	0	0	0	0	0	0	0	6	24	0	3	43	12	0	0	0	137	1389
8:00 AM	32	0	35	0	1	0	0	0	0	0	0	5	33	0	0	28	10	0	0	0	144	1432
8:05 AM	25	0	33	0	2	0	0	0	0	0	0	5	36	0	2	26	7	0	0	0	136	1470
8:10 AM	17	0	28	0	0	0	0	0	0	0	0	8	46	0	2	47	4	0	0	0	152	1520
8:15 AM	21	0	43	0	0	0	0	0	0	0	0	2	60	0	1	34	9	0	0	0	170	1581
8:20 AM	20	0	28	0	0	0	0	0	0	0	0	9	27	0	2	47	8	0	0	0	141	1622
8:25 AM	30	0	31	0	0	0	0	0	0	0	0	2	35	0	3	37	6	0	0	0	144	1649
8:30 AM	19	0	13	0	0	0	0	0	0	0	0	6	25	0	6	47	10	0	0	0	126	1664
8:35 AM	29	0	35	0	0	0	0	0	0	0	0	3	27	0	6	31	6	0	0	0	137	1677
8:40 AM	26	0	19	0	0	0	0	0	0	0	0	6	29	0	3	36	9	0	0	0	128	1671
8:45 AM	26	0	25	0	0	0	0	0	0	0	0	5	25	0	3	39	5	0	0	0	128	1663
8:50 AM	37	0	26	0	0	0	0	0	0	0	0	4	22	0	2	41	10	0	0	0	142	1685
8:55 AM	20	0	19	0	0	0	0	0	0	0	0	4	33	0	0	36	10	0	0	0	122	1670

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	232	0	396	0	0	0	0	0	0	0	0	76	552	0	20	512	84	0	0	0	1872
Heavy Trucks	8	0	20			0	0	0			0	0	8			20	4	0			60
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	4			0	0	0			0	0	0			0	0	0			4
Scooters																					

Comments:

Report generated on 1/28/2026 4:04 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

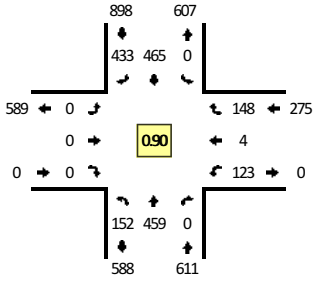
Type of peak hour being reported: User-Defined

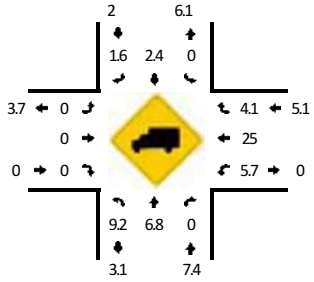
Method for determining peak hour: Total Entering Volume

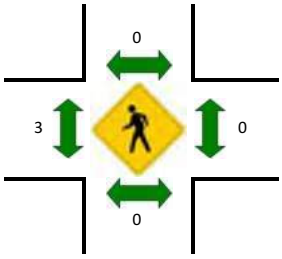
LOCATION: 10th St -- I-205 SB Ramps
CITY/STATE: West Linn, OR

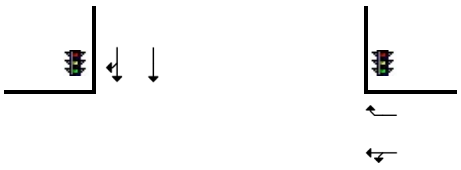
QC JOB #: 17268005
DATE: Tue, Sep 30 2025

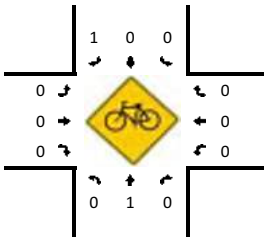
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 8:15 AM -- 8:30 AM

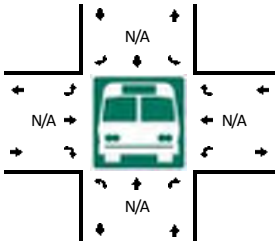


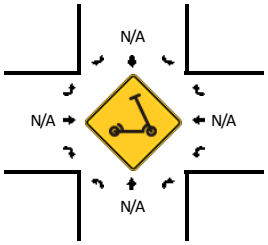












R* = RTOR

5-Min Count Period Beginning At	10th St (Northbound)					10th St (Southbound)					I-205 SB Ramps (Eastbound)					I-205 SB Ramps (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	5	26	0	0	0	0	26	19	0	13	0	0	0	0	0	5	0	5	0	7	106	
7:05 AM	12	17	0	0	0	0	27	22	0	15	0	0	0	0	0	9	0	5	0	5	112	
7:10 AM	18	30	0	0	0	0	25	26	0	9	0	0	0	0	0	8	0	5	0	5	126	
7:15 AM	11	32	0	0	0	0	29	23	0	17	0	0	0	0	0	7	1	1	0	4	125	
7:20 AM	25	33	0	0	0	0	25	19	0	8	0	0	0	0	0	7	0	5	0	4	126	
7:25 AM	11	26	0	0	0	0	33	25	0	13	0	0	0	0	0	13	0	1	0	4	126	
7:30 AM	12	22	0	0	0	0	38	22	0	10	0	0	0	0	0	11	0	7	0	7	129	
7:35 AM	18	22	0	0	0	0	44	27	0	11	0	0	0	0	0	8	0	3	0	7	140	
7:40 AM	10	24	0	0	0	0	39	29	0	14	0	0	0	0	0	15	0	3	0	3	137	
7:45 AM	17	37	0	0	0	0	38	27	0	10	0	0	0	0	0	4	0	3	0	5	141	
7:50 AM	10	34	0	0	0	0	33	16	0	14	0	0	0	0	0	13	2	5	0	3	130	
7:55 AM	13	37	0	0	0	0	30	30	0	7	0	0	0	0	0	12	0	8	0	5	142	1540
8:00 AM	8	49	0	0	0	0	31	27	0	10	0	0	0	0	0	12	0	12	0	7	156	1590
8:05 AM	15	46	0	0	0	0	31	24	0	7	0	0	0	0	0	11	1	8	0	5	148	1626
8:10 AM	8	35	0	0	0	0	51	30	0	10	0	0	0	0	0	11	0	2	0	7	154	1654
8:15 AM	11	57	0	0	0	0	65	21	0	11	0	0	0	0	0	11	1	3	0	7	187	1716
8:20 AM	13	30	0	0	0	0	38	27	0	7	0	0	0	0	0	8	0	9	0	7	139	1729
8:25 AM	19	43	0	0	0	0	36	33	0	10	0	0	0	0	0	9	0	10	0	7	167	1770
8:30 AM	13	22	0	0	0	0	44	23	0	11	0	0	0	0	0	9	0	3	0	8	133	1774
8:35 AM	15	45	0	0	0	0	29	24	0	11	0	0	0	0	0	8	0	9	0	9	150	1784
8:40 AM	8	31	0	0	0	0	34	20	0	16	0	0	0	0	0	12	0	7	0	6	134	1781
8:45 AM	8	31	0	0	0	0	30	22	0	11	0	0	0	0	0	14	0	13	0	9	138	1778
8:50 AM	8	43	0	0	0	0	29	18	0	20	0	0	0	0	0	8	0	10	0	9	145	1793
8:55 AM	15	30	0	0	0	0	35	27	0	5	0	0	0	0	0	17	0	5	0	3	137	1788

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	172	520	0	0	0	0	556	436	0	112	0	0	0	0	0	112	4	172	0	84	2168
Heavy Trucks	20	28	0			0	4	4			0	0	0			4	0	12			72
Buses																					
Pedestrians		0					0					4					0				4
Bicycles	0	4	0			0	0	0			0	0	0			0	0	0			4
Scooters																					

Comments:

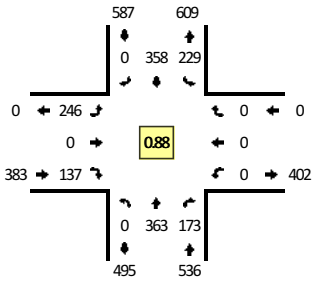
Report generated on 1/28/2026 4:04 PM

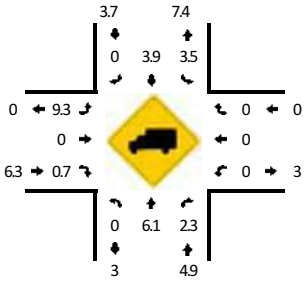
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined | Method for determining peak hour: Total Entering Volume

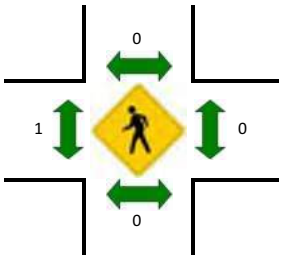
LOCATION: 10th St -- I-205 NB Ramps | **QC JOB #:** 17268007
CITY/STATE: West Linn, OR | **DATE:** Tue, Sep 30 2025

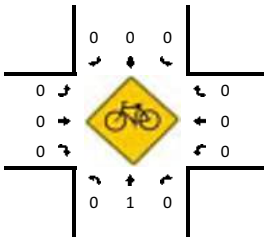
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 8:10 AM -- 8:25 AM

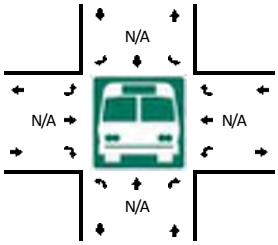


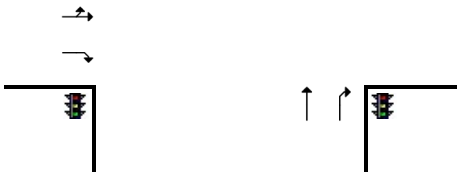


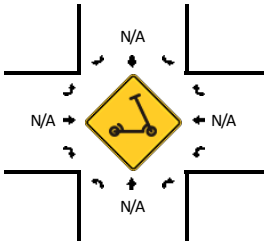
TRUE DATA TO IMPROVE MOBILITY











R* = RTOR

5-Min Count Period Beginning At	10th St (Northbound)					10th St (Southbound)					I-205 NB Ramps (Eastbound)					I-205 NB Ramps (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	15	9	0	3	15	17	0	0	0	20	0	2	0	4	0	0	0	0	0	85	
7:05 AM	0	19	7	0	0	13	22	0	0	0	13	0	3	0	3	0	0	0	0	0	80	
7:10 AM	0	24	11	0	5	14	16	0	0	0	20	0	7	0	3	0	0	0	0	0	100	
7:15 AM	0	38	6	0	2	11	21	0	0	0	14	0	2	0	5	0	0	0	0	0	99	
7:20 AM	0	31	2	0	1	17	21	0	0	0	17	0	3	0	7	0	0	0	0	0	99	
7:25 AM	0	26	8	0	5	19	25	0	0	0	17	0	2	0	9	0	0	0	0	0	111	
7:30 AM	0	25	13	0	1	20	24	0	0	0	9	0	1	0	14	0	0	0	0	0	107	
7:35 AM	0	24	11	0	4	24	32	0	0	0	10	0	3	0	9	0	0	0	0	0	117	
7:40 AM	0	16	5	0	4	16	39	0	0	0	20	0	7	0	4	0	0	0	0	0	111	
7:45 AM	0	38	14	0	5	18	27	0	0	0	11	0	4	0	7	0	0	0	0	0	124	
7:50 AM	0	38	14	0	7	16	29	0	0	0	18	0	3	0	8	0	0	0	0	0	133	
7:55 AM	0	26	13	0	5	8	34	0	0	0	25	0	5	0	11	0	0	0	0	0	127	1293
8:00 AM	0	36	7	0	7	13	25	0	0	0	16	0	3	0	8	0	0	0	0	0	115	1323
8:05 AM	0	29	6	0	3	21	25	0	0	0	25	0	4	0	9	0	0	0	0	0	122	1365
8:10 AM	0	35	3	0	6	28	34	0	0	0	26	0	5	0	12	0	0	0	0	0	149	1414
8:15 AM	0	29	12	0	6	29	41	0	0	0	23	0	2	0	5	0	0	0	0	0	147	1462
8:20 AM	0	29	13	0	4	25	24	0	0	0	28	0	4	0	6	0	0	0	0	0	133	1496
8:25 AM	0	32	3	0	5	17	25	0	0	0	16	0	3	0	11	0	0	0	0	0	112	1497
8:30 AM	0	29	12	0	1	24	31	0	0	0	16	0	5	0	7	0	0	0	0	0	125	1515
8:35 AM	0	26	11	0	7	14	24	0	0	0	22	0	1	0	3	0	0	0	0	0	108	1506
8:40 AM	0	26	8	0	3	19	27	0	0	0	13	0	5	0	7	0	0	0	0	0	108	1503
8:45 AM	0	31	9	0	3	20	23	0	0	0	18	0	1	0	10	0	0	0	0	0	115	1494
8:50 AM	0	21	9	0	5	11	25	0	0	0	19	0	3	0	9	0	0	0	0	0	102	1463
8:55 AM	0	37	13	0	5	14	39	0	0	0	23	1	2	0	10	0	0	0	0	0	144	1480

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	372	176	0	64	328	396	0	0	0	308	0	136	0	92	0	0	0	0	0	1872
Heavy Trucks	0	8	0			8	8	0			12	0	0			0	0	0			36
Buses																					
Pedestrians		0					0					4					0				4
Bicycles	0	4	0			0	0	0			0	0	0			0	0	0			4
Scooters																					

Comments:

Report generated on 1/28/2026 4:04 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

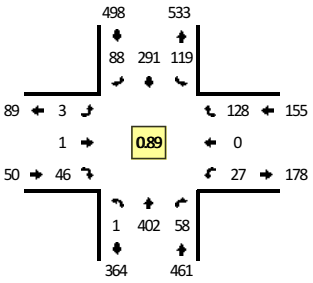
Type of peak hour being reported: User-Defined

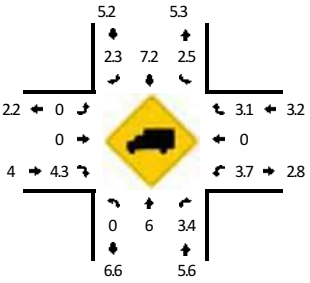
Method for determining peak hour: Total Entering Volume

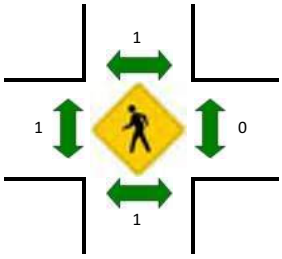
LOCATION: 10th St -- 8th Ave/8th Ct
CITY/STATE: West Linn, OR

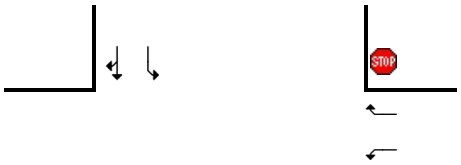
QC JOB #: 17268009
DATE: Tue, Sep 30 2025

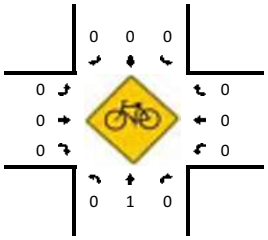
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

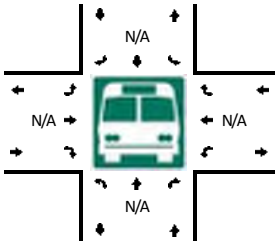


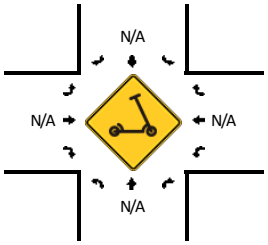












R* = RTOR

5-Min Count Period Beginning At	10th St (Northbound)					10th St (Southbound)					8th Ave/8th Ct (Eastbound)					8th Ave/8th Ct (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	22	2	0	0	7	10	8	0	0	0	0	2	0	0	1	0	6	0	0	58	
7:05 AM	0	15	4	0	0	12	10	5	0	0	0	0	0	0	0	2	0	10	0	0	58	
7:10 AM	0	34	4	0	0	9	14	2	0	0	0	0	4	0	0	3	0	8	0	0	78	
7:15 AM	0	36	5	0	0	9	11	7	0	0	0	0	6	0	0	1	0	8	0	0	83	
7:20 AM	0	20	4	0	0	9	18	7	0	0	0	0	3	0	0	4	0	13	0	0	78	
7:25 AM	0	29	4	0	0	7	15	11	0	0	1	0	3	0	0	1	0	9	0	0	80	
7:30 AM	0	33	4	0	0	11	16	15	0	0	0	0	5	0	0	4	0	7	0	0	95	
7:35 AM	0	30	3	0	0	8	27	9	0	0	2	0	3	0	0	3	0	8	0	0	93	
7:40 AM	0	20	3	0	0	8	27	10	0	0	1	0	3	0	0	4	0	7	0	0	83	
7:45 AM	0	41	5	0	0	11	31	3	0	0	0	0	2	0	0	0	0	11	0	0	104	
7:50 AM	0	53	5	0	0	7	25	7	0	0	1	0	4	0	0	3	0	10	0	0	115	
7:55 AM	0	40	6	0	0	13	26	10	0	0	0	0	6	0	0	1	0	5	0	0	107	1032
8:00 AM	0	35	8	0	0	11	19	5	0	0	0	1	7	0	0	2	0	11	0	0	99	1073
8:05 AM	0	25	3	0	0	15	17	8	0	0	0	0	2	0	0	6	0	10	0	0	86	1101
8:10 AM	0	35	4	0	0	8	33	11	0	0	0	0	2	0	0	2	0	9	0	0	104	1127
8:15 AM	0	31	8	0	0	9	33	6	0	0	0	0	6	0	0	2	0	17	0	0	112	1156
8:20 AM	0	39	4	0	0	8	19	7	0	0	0	0	4	0	0	3	0	10	0	0	94	1172
8:25 AM	1	20	6	0	0	9	24	8	0	0	0	0	3	0	0	1	0	16	0	0	88	1180
8:30 AM	0	33	6	0	0	9	23	10	0	0	1	0	3	0	0	3	0	8	0	0	96	1181
8:35 AM	0	30	0	0	0	11	14	3	0	0	0	0	4	0	0	0	0	14	0	0	76	1164
8:40 AM	0	26	6	0	0	13	18	8	0	0	0	0	7	0	0	3	0	9	0	0	90	1171
8:45 AM	0	29	5	0	0	6	19	7	0	0	0	0	5	0	0	3	0	14	0	0	88	1155
8:50 AM	0	35	7	0	0	13	21	6	0	0	1	0	5	0	0	3	2	8	0	0	101	1141
8:55 AM	0	33	3	0	0	17	16	14	0	0	0	0	6	0	0	4	0	13	0	0	106	1140

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	536	64	0	0	124	328	80	0	0	4	0	48	0	0	16	0	104	0	0	1304
Heavy Trucks	0	28	4			0	24	0			0	0	4			0	0	0			60
Buses																					
Pedestrians		0					4					0					0				4
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 1/28/2026 4:04 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

LOCATION: Parkrose Hardware/office building complex Dwy -- Blankenship Rd

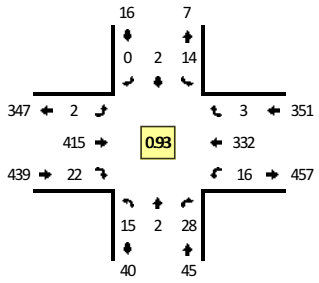
QC JOB #: 17369408

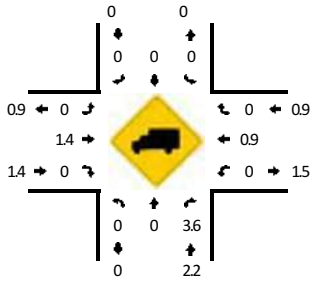
CITY/STATE: West Linn, OR

DATE: Wed, Dec 10 2025

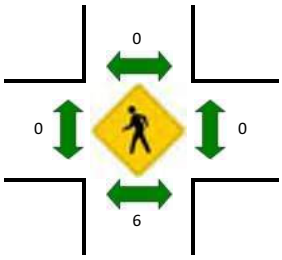
Peak-Hour: 4:55 PM -- 5:55 PM

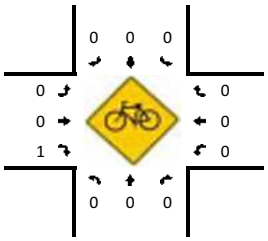
Peak 15-Min: 4:55 PM -- 5:10 PM

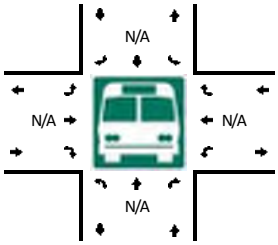


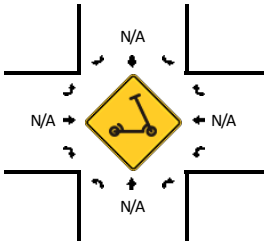


TRUE DATA TO IMPROVE MOBILITY









5-Min Count Period Beginning At	Parkrose Hardware/office building complex Dwy (Northbound)				Parkrose Hardware/office building complex Dwy (Southbound)				Blankenship Rd (Eastbound)				Blankenship Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:55 PM	2	0	1	0	3	1	0	0	0	46	2	0	3	30	2	0	90	
5:00 PM	3	0	1	0	1	0	0	0	1	28	2	0	2	22	0	0	60	
5:05 PM	3	1	1	0	3	0	0	0	0	45	1	0	0	25	0	0	79	
5:10 PM	0	0	1	0	2	0	0	0	1	32	3	0	1	18	0	0	58	
5:15 PM	0	0	2	0	1	0	0	0	0	36	3	0	1	31	0	0	74	
5:20 PM	2	0	2	0	1	1	0	0	0	37	2	0	3	20	0	0	68	
5:25 PM	1	0	5	0	1	0	0	0	0	32	1	0	0	35	1	0	76	
5:30 PM	2	0	3	0	2	0	0	0	0	30	5	0	2	34	0	0	78	
5:35 PM	1	0	1	0	0	0	0	0	0	32	0	0	1	29	0	0	64	
5:40 PM	0	0	2	0	0	0	0	0	0	30	0	0	0	32	0	0	64	
5:45 PM	0	0	7	0	0	0	0	0	0	31	2	0	3	34	0	0	77	
5:50 PM	1	1	2	0	0	0	0	0	0	36	1	0	0	22	0	0	63	851

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	32	4	12	0	28	4	0	0	4	476	20	0	20	308	8	0	916
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	8	0		12
Buses																	
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/28/2026 4:16 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

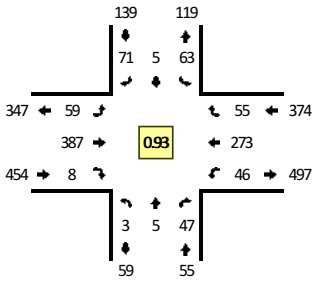
Type of peak hour being reported: User-Defined

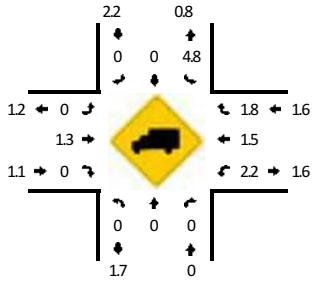
Method for determining peak hour: Total Entering Volume

LOCATION: Tannler Dr -- Blankenship Rd
CITY/STATE: West Linn, OR

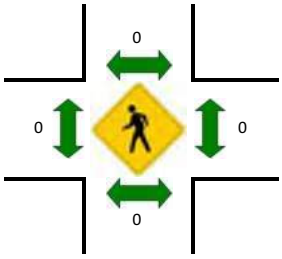
QC JOB #: 17369410
DATE: Wed, Dec 10 2025

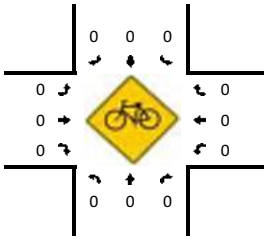
Peak-Hour: 4:55 PM -- 5:55 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

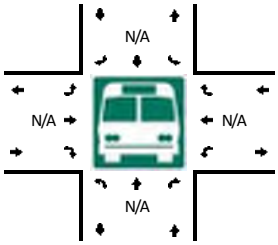


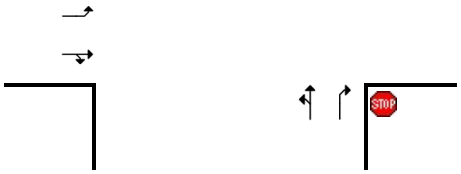


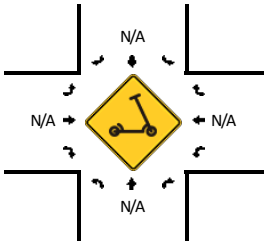
TRUE DATA TO IMPROVE MOBILITY











5-Min Count Period Beginning At	Tannler Dr (Northbound)				Tannler Dr (Southbound)				Blankenship Rd (Eastbound)				Blankenship Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:55 PM	0	0	2	0	4	0	13	0	3	48	1	0	6	21	1	0	99	
5:00 PM	0	1	6	0	1	1	3	0	1	26	0	0	7	20	4	0	70	
5:05 PM	1	1	5	0	3	0	2	0	6	45	1	0	6	21	4	0	95	
5:10 PM	0	1	3	0	8	1	5	0	7	28	0	0	2	16	3	0	74	
5:15 PM	0	1	8	0	4	2	8	0	4	33	1	0	2	23	8	0	94	
5:20 PM	1	1	5	0	4	0	4	0	5	32	0	0	5	23	9	0	89	
5:25 PM	0	0	4	0	7	1	8	0	6	35	1	0	3	25	3	0	93	
5:30 PM	0	0	5	0	8	0	8	0	6	27	1	0	4	28	3	0	90	
5:35 PM	1	0	2	0	5	0	7	0	3	29	0	0	0	19	2	0	68	
5:40 PM	0	0	2	0	7	0	6	0	5	26	1	0	4	27	9	0	87	
5:45 PM	0	0	1	0	4	0	6	0	5	30	2	0	3	29	5	0	85	
5:50 PM	0	0	4	0	8	0	1	0	8	28	0	0	4	21	4	0	78	1022

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	8	68	0	60	12	80	0	60	400	8	0	40	284	80	0	1104
Heavy Trucks	0	0	0		0	0	0		0	8	0		4	4	4		20
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/28/2026 4:16 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

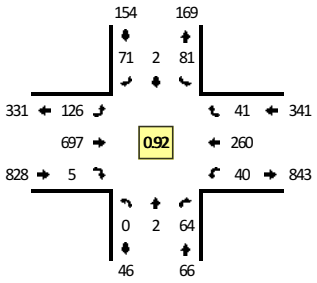
Type of peak hour being reported: User-Defined

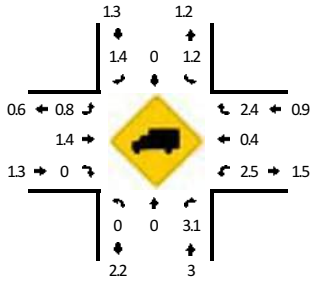
Method for determining peak hour: Total Entering Volume

LOCATION: Tannler Dr -- Blankenship Rd
CITY/STATE: West Linn, OR

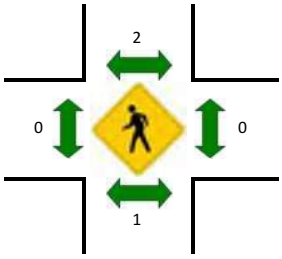
QC JOB #: 17268002
DATE: Tue, Sep 30 2025

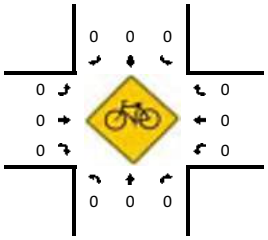
Peak-Hour: 4:55 PM -- 5:55 PM
Peak 15-Min: 4:55 PM -- 5:10 PM

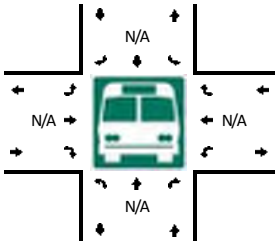


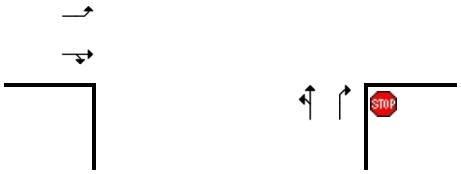


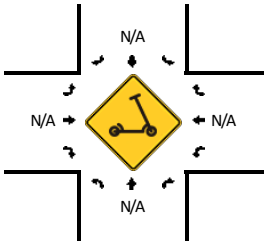
TRUE DATA TO IMPROVE MOBILITY











R* = RTOR

5-Min Count Period Beginning At	Tannler Dr (Northbound)					Tannler Dr (Southbound)					Blankenship Rd (Eastbound)					Blankenship Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	0	6	0	0	2	0	14	0	0	12	53	0	0	0	4	16	2	0	0	109	
4:05 PM	0	0	3	0	0	1	0	6	0	0	8	72	1	0	0	2	19	6	0	0	118	
4:10 PM	0	0	2	0	0	11	0	7	0	0	8	55	0	0	0	4	19	6	0	0	112	
4:15 PM	0	0	3	0	0	7	0	6	0	0	7	60	1	0	0	3	15	1	0	0	103	
4:20 PM	0	1	2	0	0	7	0	9	0	0	7	56	0	0	0	3	23	2	0	0	110	
4:25 PM	0	0	6	0	0	3	0	4	0	0	10	63	1	0	0	6	23	2	0	0	118	
4:30 PM	0	0	4	0	0	8	0	7	0	0	4	69	1	0	0	7	13	3	0	0	116	
4:35 PM	0	0	4	0	0	5	0	5	0	0	10	63	0	0	0	2	18	1	0	0	108	
4:40 PM	0	0	7	0	0	7	0	6	0	0	10	41	0	0	0	2	21	1	0	0	95	
4:45 PM	0	0	3	0	0	8	0	11	0	0	8	52	0	0	0	2	16	4	0	0	104	
4:50 PM	0	1	3	0	0	6	0	13	0	0	10	72	0	0	0	0	16	4	0	0	125	
4:55 PM	0	1	5	0	0	6	0	11	0	0	10	66	0	0	0	5	25	3	0	0	132	1350
5:00 PM	0	0	6	0	0	7	1	11	0	0	13	67	0	0	0	7	24	3	0	0	139	1380
5:05 PM	0	0	6	0	0	6	0	10	0	0	13	56	0	0	0	0	12	5	0	0	108	1370
5:10 PM	0	0	3	0	0	6	0	7	0	0	6	52	1	0	0	1	21	1	1	0	99	1357
5:15 PM	0	0	7	0	0	1	0	4	0	0	8	54	1	0	0	5	27	10	0	0	117	1371
5:20 PM	0	0	10	0	0	6	0	4	0	0	16	52	0	0	0	5	16	5	0	0	114	1375
5:25 PM	0	0	6	0	0	10	0	3	0	0	12	62	0	0	0	4	24	3	0	0	124	1381
5:30 PM	0	0	5	0	0	9	1	3	0	0	11	48	1	0	0	4	20	3	0	0	105	1370
5:35 PM	0	0	9	0	0	7	0	5	0	0	13	57	0	0	0	1	26	2	0	0	120	1382
5:40 PM	0	0	4	0	0	8	0	5	0	0	9	63	1	0	0	3	22	1	0	0	116	1403
5:45 PM	0	1	0	0	0	11	0	3	0	0	11	50	0	0	0	4	19	3	0	0	102	1401
5:50 PM	0	0	3	0	0	4	0	5	0	0	4	70	1	0	0	0	24	2	0	0	113	1389
5:55 PM	0	0	3	0	0	4	0	9	0	0	11	49	0	0	0	3	16	4	0	0	99	1356

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	4	68	0	0	76	4	128	0	0	144	756	0	0	0	48	244	44	0	0	1516
Heavy Trucks	0	0	4			0	0	4			0	12	0			0	4	4			28
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 1/28/2026 4:13 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

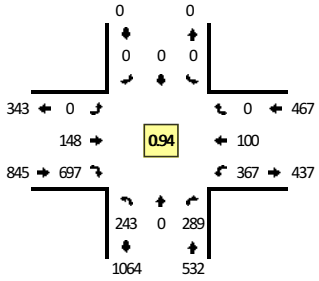
Type of peak hour being reported: User-Defined

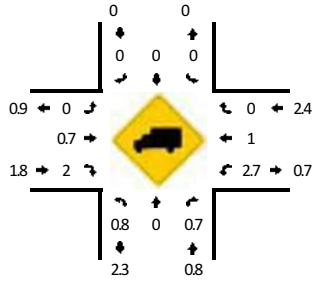
Method for determining peak hour: Total Entering Volume

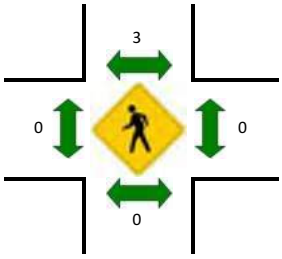
LOCATION: 10th St -- Blankenship Rd/Salamo Rd
CITY/STATE: West Linn, OR

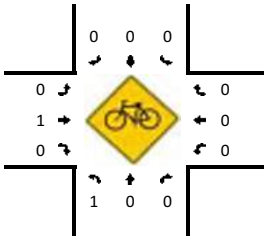
QC JOB #: 17268004
DATE: Tue, Sep 30 2025

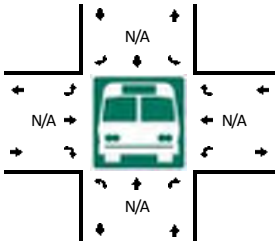
Peak-Hour: 4:55 PM -- 5:55 PM
Peak 15-Min: 4:55 PM -- 5:10 PM

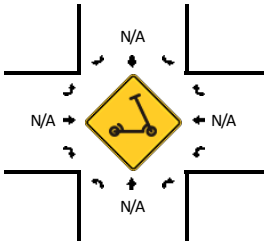












R* = RTOR

5-Min Count Period Beginning At	10th St (Northbound)					10th St (Southbound)					Blankenship Rd/Salamo Rd (Eastbound)					Blankenship Rd/Salamo Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	19	0	18	0	0	0	0	0	0	0	0	15	44	0	2	33	4	0	0	0	135	
4:05 PM	20	0	24	0	1	0	0	0	0	0	0	12	62	0	0	26	6	0	0	0	151	
4:10 PM	26	0	16	0	1	0	0	0	0	0	0	9	58	0	0	35	3	0	0	0	148	
4:15 PM	13	0	16	0	1	0	0	0	0	0	0	22	52	0	0	41	7	0	0	0	152	
4:20 PM	23	0	14	0	0	0	0	0	0	0	0	9	54	0	1	30	5	0	0	0	136	
4:25 PM	25	0	18	0	0	0	0	0	0	0	0	17	52	0	1	30	6	0	0	0	149	
4:30 PM	19	0	24	0	0	0	0	0	0	0	0	12	62	0	3	25	3	0	0	0	148	
4:35 PM	15	0	11	0	0	0	0	0	0	0	0	11	56	0	3	24	8	0	0	0	128	
4:40 PM	18	0	20	0	0	0	0	0	0	0	0	8	51	0	3	15	4	0	0	0	119	
4:45 PM	18	0	23	0	0	0	0	0	0	0	0	6	56	0	3	22	4	0	0	0	132	
4:50 PM	17	0	21	0	0	0	0	0	0	0	0	8	60	0	3	28	5	0	0	0	142	
4:55 PM	16	0	16	0	1	0	0	0	0	0	0	13	57	0	1	44	18	0	0	0	166	1706
5:00 PM	19	0	17	0	1	0	0	0	0	0	0	14	73	0	2	33	15	0	0	0	174	1745
5:05 PM	13	0	26	0	1	0	0	0	0	0	0	17	58	0	0	30	4	0	0	0	149	1743
5:10 PM	23	0	36	0	6	0	0	0	0	0	0	9	51	0	2	29	4	0	0	0	160	1755
5:15 PM	33	0	28	0	2	0	0	0	0	0	0	12	45	0	1	32	8	0	0	0	161	1764
5:20 PM	15	0	23	0	2	0	0	0	0	0	0	6	64	0	1	29	9	0	0	0	149	1777
5:25 PM	20	0	19	0	0	0	0	0	0	0	0	13	60	0	1	33	12	0	0	0	158	1786
5:30 PM	18	0	16	0	0	0	0	0	0	0	0	11	46	0	3	36	8	0	0	0	138	1776
5:35 PM	26	0	20	0	1	0	0	0	0	0	0	17	62	0	1	18	5	0	0	0	150	1798
5:40 PM	20	0	24	0	0	0	0	0	0	0	0	12	59	0	0	31	4	0	0	0	150	1829
5:45 PM	16	0	24	0	1	0	0	0	0	0	0	15	43	0	6	21	10	0	0	0	136	1833
5:50 PM	24	0	23	0	2	0	0	0	0	0	0	9	61	0	0	31	3	0	0	0	153	1844
5:55 PM	17	0	26	0	0	0	0	0	0	0	0	13	42	0	0	41	7	0	0	0	146	1824

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	192	0	248	0	12	0	0	0	0	0	0	176	764	0	12	428	148	0	0	0	1980
Heavy Trucks	4	0	4			0	0	0			0	0	20			12	4	0			44
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 1/28/2026 4:13 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

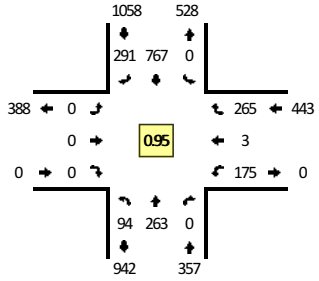
Type of peak hour being reported: User-Defined

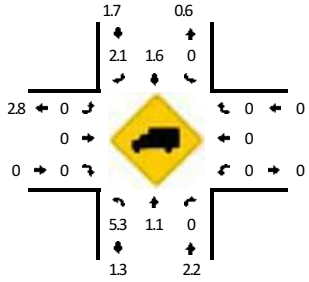
Method for determining peak hour: Total Entering Volume

LOCATION: 10th St -- I-205 SB Ramps
CITY/STATE: West Linn, OR

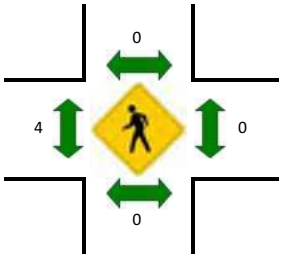
QC JOB #: 17268006
DATE: Tue, Sep 30 2025

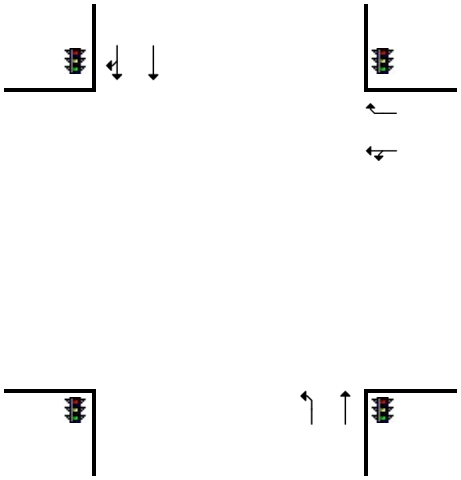
Peak-Hour: 4:55 PM -- 5:55 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

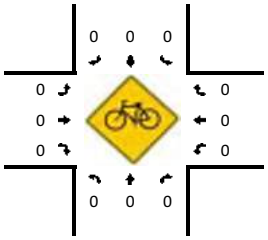


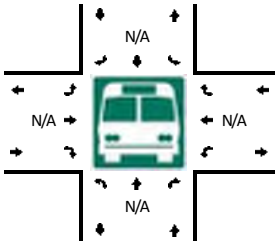


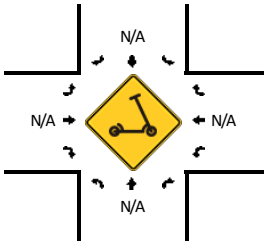
TRUE DATA TO IMPROVE MOBILITY











R* = RTOR

5-Min Count Period Beginning At	10th St (Northbound)					10th St (Southbound)					I-205 SB Ramps (Eastbound)					I-205 SB Ramps (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	5	20	0	0	0	0	46	15	0	11	0	0	0	0	0	7	0	7	0	12	123	
4:05 PM	6	26	0	0	0	0	73	11	0	9	0	0	0	0	0	14	0	4	0	12	155	
4:10 PM	8	21	0	0	0	0	65	17	0	10	0	0	0	0	0	20	0	4	0	19	164	
4:15 PM	5	14	0	0	0	0	65	22	0	7	0	0	0	0	0	9	0	7	0	12	141	
4:20 PM	14	23	0	0	0	0	55	17	0	7	0	0	0	0	0	17	0	1	0	10	144	
4:25 PM	11	15	0	0	0	0	65	16	0	5	0	0	0	0	0	11	0	12	0	16	151	
4:30 PM	1	29	0	0	0	0	67	11	0	6	0	0	0	0	0	22	0	7	0	7	150	
4:35 PM	5	12	0	0	0	0	63	15	0	10	0	0	0	0	0	16	0	6	0	7	134	
4:40 PM	14	22	0	0	0	0	49	11	0	11	0	0	0	0	0	11	0	4	0	12	134	
4:45 PM	9	24	0	0	0	0	60	18	0	2	0	0	0	0	0	8	0	6	0	11	138	
4:50 PM	4	17	0	0	0	0	63	17	0	9	0	0	0	0	0	17	0	5	0	17	149	
4:55 PM	11	21	0	0	0	0	82	20	0	5	0	0	0	0	0	7	0	1	0	12	159	1742
5:00 PM	6	13	0	0	0	0	81	20	0	6	0	0	0	0	0	15	0	3	0	20	164	1783
5:05 PM	10	22	0	0	0	0	53	21	0	13	0	0	0	0	0	18	1	6	0	12	156	1784
5:10 PM	6	38	0	0	0	0	49	17	0	13	0	0	0	0	0	12	0	10	0	19	164	1784
5:15 PM	15	26	0	0	0	0	55	15	0	10	0	0	0	0	0	12	1	9	0	24	167	1810
5:20 PM	8	17	0	0	0	0	82	10	0	3	0	0	0	0	0	17	0	3	0	18	158	1824
5:25 PM	5	15	0	0	0	0	65	19	0	3	0	0	0	0	0	15	1	4	0	20	147	1820
5:30 PM	9	16	0	0	0	0	64	14	0	14	0	0	0	0	0	12	0	5	0	16	150	1820
5:35 PM	7	28	0	0	0	0	63	12	0	4	0	0	0	0	0	7	0	5	0	12	138	1824
5:40 PM	7	22	0	0	0	0	64	21	0	7	0	0	0	0	0	17	0	4	0	18	160	1850
5:45 PM	4	25	0	0	0	0	45	16	0	7	0	0	0	0	0	22	0	9	0	8	136	1848
5:50 PM	6	20	0	0	0	0	64	18	0	3	0	0	0	0	0	21	0	11	0	16	159	1858
5:55 PM	10	23	0	0	0	0	75	10	0	4	0	0	0	0	0	10	1	6	0	16	155	1854

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	116	324	0	0	0	0	744	272	0	104	0	0	0	0	0	164	4	332	0	244	2304
Heavy Trucks	4	4	0			0	16	4			0	0	0			0	0	0			28
Buses																					
Pedestrians		0					0					4					0				4
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 1/28/2026 4:13 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

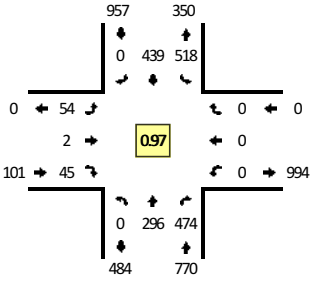
Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

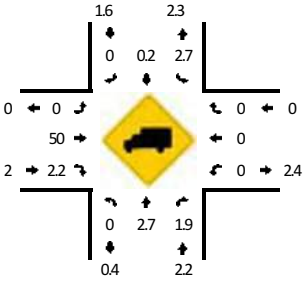
LOCATION: 10th St -- I-205 NB Ramps
CITY/STATE: West Linn, OR

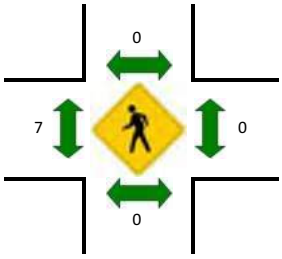
QC JOB #: 17268008
DATE: Tue, Sep 30 2025

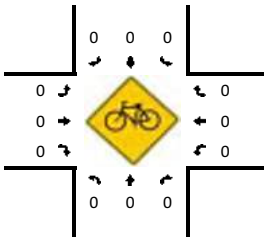
Peak-Hour: 4:55 PM -- 5:55 PM
Peak 15-Min: 4:55 PM -- 5:10 PM

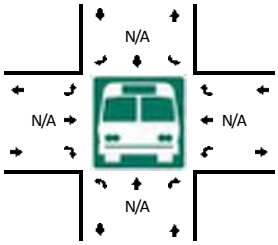


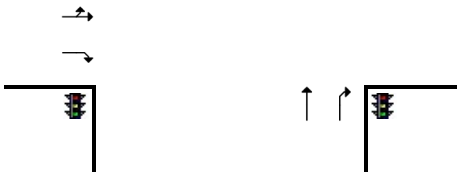
TRUE DATA TO IMPROVE MOBILITY

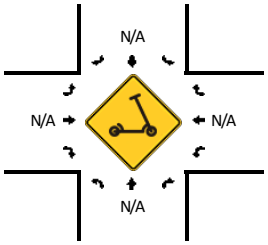












R* = RTOR

5-Min Count Period Beginning At	10th St (Northbound)					10th St (Southbound)					I-205 NB Ramps (Eastbound)					I-205 NB Ramps (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	17	27	0	10	40	18	0	0	0	6	0	0	0	5	0	0	0	0	0	123	
4:05 PM	0	30	35	0	5	48	28	0	0	0	4	0	2	0	5	0	0	0	0	0	157	
4:10 PM	0	22	36	0	7	54	36	0	0	0	8	0	0	0	6	0	0	0	0	0	169	
4:15 PM	0	24	40	0	5	41	35	0	0	0	5	0	0	0	5	0	0	0	0	0	155	
4:20 PM	0	28	38	0	0	33	39	0	0	0	0	0	0	0	3	0	0	0	0	0	141	
4:25 PM	0	23	49	0	6	39	33	0	0	0	3	0	0	0	2	0	0	0	0	0	155	
4:30 PM	0	17	31	0	10	46	43	0	0	0	9	0	0	0	1	0	0	0	0	0	157	
4:35 PM	0	20	48	0	5	32	35	0	0	0	5	0	2	0	4	0	0	0	0	0	151	
4:40 PM	0	32	38	0	2	40	22	0	0	0	2	0	0	0	4	0	0	0	0	0	140	
4:45 PM	0	23	39	0	4	47	29	0	0	0	4	0	0	0	2	0	0	0	0	0	148	
4:50 PM	0	25	33	0	2	44	30	0	0	0	2	0	2	0	5	0	0	0	0	0	143	
4:55 PM	0	25	30	0	7	53	42	0	0	0	6	0	2	0	2	0	0	0	0	0	167	1806
5:00 PM	0	23	28	0	1	50	49	0	0	0	2	0	0	0	3	0	0	0	0	0	156	1839
5:05 PM	0	35	28	0	5	33	42	0	0	0	1	0	2	0	4	0	0	0	0	0	150	1832
5:10 PM	0	30	30	0	6	36	25	0	0	0	6	0	2	0	2	0	0	0	0	0	137	1800
5:15 PM	0	34	39	0	3	33	29	0	0	0	3	0	0	0	2	0	0	0	0	0	143	1788
5:20 PM	0	18	37	0	7	53	44	0	0	0	3	0	0	0	5	0	0	0	0	0	167	1814
5:25 PM	0	21	43	0	4	37	37	0	0	0	4	0	0	0	5	0	0	0	0	0	151	1810
5:30 PM	0	24	32	0	5	51	36	0	0	0	3	0	0	0	2	0	0	0	0	0	153	1806
5:35 PM	0	26	43	0	4	38	31	0	0	0	4	0	0	0	4	0	0	0	0	0	150	1805
5:40 PM	0	16	35	0	10	42	34	0	0	0	9	1	2	0	2	0	0	0	0	0	151	1816
5:45 PM	0	27	41	0	7	40	36	0	0	0	7	1	0	0	2	0	0	0	0	0	161	1829
5:50 PM	0	17	25	0	4	52	34	0	0	0	6	0	2	0	2	0	0	0	0	0	142	1828
5:55 PM	0	36	27	0	2	37	38	0	0	0	9	0	1	0	2	0	0	0	0	0	152	1813

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	332	396	0	52	544	532	0	0	0	36	0	52	0	36	0	0	0	0	0	1980
Heavy Trucks	0	8	4			16	0	0			0	0	4			0	0	0			32
Buses																					
Pedestrians		0					0					8					0				8
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 1/28/2026 4:13 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

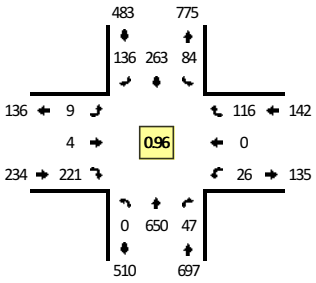
Type of peak hour being reported: User-Defined

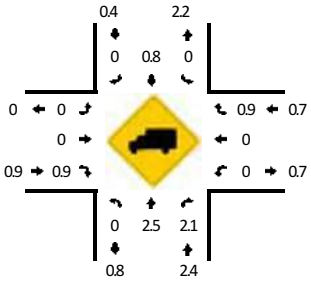
Method for determining peak hour: Total Entering Volume

LOCATION: 10th St -- 8th Ave/8th Ct
CITY/STATE: West Linn, OR

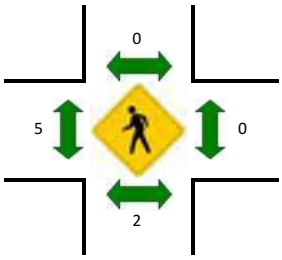
QC JOB #: 17268010
DATE: Tue, Sep 30 2025

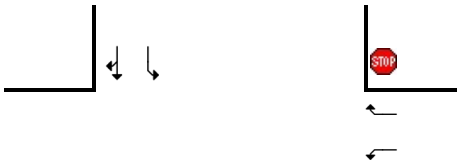
Peak-Hour: 4:55 PM -- 5:55 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

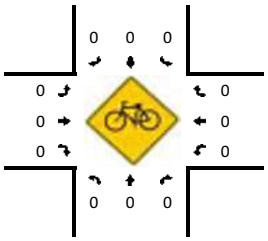


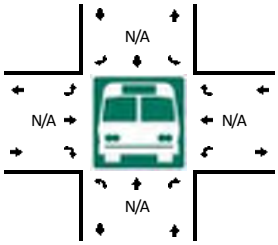


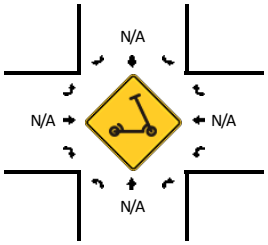
TRUE DATA TO IMPROVE MOBILITY











R* = RTOR

5-Min Count Period Beginning At	10th St (Northbound)					10th St (Southbound)					8th Ave/8th Ct (Eastbound)					8th Ave/8th Ct (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	45	3	0	0	4	12	8	0	0	1	0	13	0	0	1	0	9	0	0	96	
4:05 PM	1	63	3	0	0	2	21	9	0	0	0	0	23	0	0	4	0	8	0	0	134	
4:10 PM	0	57	5	0	0	12	15	14	0	0	0	1	10	0	0	1	0	7	0	0	122	
4:15 PM	0	58	7	0	0	6	22	13	0	0	0	0	19	0	0	1	1	8	0	0	135	
4:20 PM	0	55	4	0	0	6	28	9	0	0	0	1	9	0	0	3	0	12	0	0	127	
4:25 PM	1	65	5	0	0	4	14	16	0	0	1	1	8	0	0	0	0	13	0	0	128	
4:30 PM	0	64	4	0	0	12	31	1	0	0	0	0	11	0	0	3	1	6	0	0	133	
4:35 PM	0	49	2	0	0	11	19	7	0	0	0	0	23	0	0	4	0	11	0	0	126	
4:40 PM	2	62	4	0	0	7	16	7	0	0	0	0	15	0	0	1	0	17	0	0	131	
4:45 PM	0	59	4	0	0	4	18	7	0	0	0	0	13	0	0	4	0	6	0	0	115	
4:50 PM	0	53	2	0	0	8	21	8	0	0	0	0	18	0	0	4	0	3	0	0	117	
4:55 PM	0	55	5	0	0	3	29	15	0	0	0	0	17	0	0	2	0	13	0	0	139	1503
5:00 PM	0	33	6	0	0	10	33	11	0	0	2	0	13	0	0	1	0	11	0	0	120	1527
5:05 PM	0	56	3	0	0	8	35	6	0	0	2	1	22	0	0	1	0	10	0	0	144	1537
5:10 PM	0	56	2	0	0	8	8	12	0	0	1	0	30	0	0	5	0	12	0	0	134	1549
5:15 PM	0	65	3	0	0	7	11	14	0	0	1	0	18	0	0	2	0	6	0	0	127	1541
5:20 PM	0	63	6	0	0	9	24	16	0	0	0	0	17	0	0	1	0	9	0	0	145	1559
5:25 PM	0	46	2	0	0	7	18	14	0	0	1	1	11	0	0	4	0	12	0	0	116	1547
5:30 PM	0	55	4	0	0	5	18	16	0	0	1	0	21	0	0	2	0	10	0	0	132	1546
5:35 PM	0	58	1	0	0	5	21	5	0	0	0	0	19	0	0	2	0	7	0	0	118	1538
5:40 PM	0	63	4	0	0	8	23	10	0	0	0	0	21	0	0	1	0	7	0	0	137	1544
5:45 PM	0	56	4	0	0	6	21	8	0	0	0	1	19	0	0	2	0	9	0	0	126	1555
5:50 PM	0	44	7	0	0	8	22	9	0	0	1	1	13	0	0	3	0	10	0	0	118	1556
5:55 PM	0	44	1	0	0	5	26	11	0	0	3	0	15	0	0	4	0	10	0	0	119	1536

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	736	44	0	0	96	172	168	0	0	8	0	260	0	0	32	0	108	0	0	1624
Heavy Trucks	0	28	4			0	4	0			0	0	0			0	0	0			36
Buses																					
Pedestrians		4					0					12					0				16
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 1/28/2026 4:13 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Appendix C
Existing Traffic Conditions Analysis Worksheets

Intersection Level Of Service Report
Intersection 1: Blankenship Road/Parkrose Hardware Driveway/Office Park Driveway

Control Type:	Two-way stop	Delay (sec / veh):	26.0
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.079

Intersection Setup

Name	Pa Ha			Office Park Driveway			Blankenship Road			Blankenship Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	150.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	12.00			-5.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	Pa Ha			Office Park Driveway			Blankenship Road			Blankenship Road		
Base Volume Input [veh/h]	13	0	39	4	1	1	0	361	7	17	237	25
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	9.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	5.00	5.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	0	39	4	1	1	0	361	7	17	237	25
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	11	1	0	0	0	106	2	5	70	7
Total Analysis Volume [veh/h]	15	0	46	5	1	1	0	425	8	20	279	29
Pedestrian Volume [ped/h]	2			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.00	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	26.01	25.69	13.79	15.50	14.05	9.78	7.85	0.00	0.00	8.23	0.00	0.00
Movement LOS	D	D	B	C	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.59	0.59	0.59	0.06	0.06	0.06	0.00	0.00	0.00	0.05	0.00	0.00
95th-Percentile Queue Length [ft/ln]	14.77	14.77	14.77	1.38	1.38	1.38	0.00	0.00	0.00	1.35	0.00	0.00
d_A, Approach Delay [s/veh]	16.79			14.48			0.00			0.50		
Approach LOS	C			B			A			A		
d_I, Intersection Delay [s/veh]	1.56											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 2: Blankenship Road/Tannler Drive

Control Type:	Two-way stop	Delay (sec / veh):	37.8
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.026

*SB approach modeled with dedicated right-turn lane to match field-observed intersection operations.

Intersection Setup

Name	Dutch Bros Driveway			Tannler Drive			Blankenship Road			Blankenship Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				*								
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	90.00	100.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	7.00			-7.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	Dutch Bros Driveway			Tannler Drive			Blankenship Road			Blankenship Road		
Base Volume Input [veh/h]	3	1	51	108	5	47	41	352	11	100	229	43
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	4.00	1.00	0.00	0.00	5.00	2.00	0.00	2.00	4.00	9.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	1	51	108	5	47	41	352	11	100	229	43
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	14	30	1	13	12	99	3	28	64	12
Total Analysis Volume [veh/h]	3	1	57	121	6	53	46	396	12	112	257	48
Pedestrian Volume [ped/h]	3			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	2	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.10	0.49	0.02	0.07	0.04	0.00	0.00	0.10	0.00	0.00
d_M, Delay for Movement [s/veh]	37.78	32.24	11.74	33.42	30.49	9.78	8.02	0.00	0.00	8.49	0.00	0.00
Movement LOS	E	D	B	D	D	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.10	0.10	0.32	2.64	2.64	0.21	0.12	0.00	0.00	0.32	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.60	2.60	7.97	65.89	65.89	5.27	2.89	0.00	0.00	8.11	0.00	0.00
d_A, Approach Delay [s/veh]	13.36			26.36			0.81			2.28		
Approach LOS	B			D			A			A		
d_I, Intersection Delay [s/veh]	6.19											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 3: Blankenship Road/Salamo Road/10th Street

Control Type:	Signalized	Delay (sec / veh):	23.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.591

Intersection Setup

Name	10th Street		Blankenship Road		Salamo Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	250.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		35.00	
Grade [%]	7.00		0.00		-3.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	10th Street		Blankenship Road		Salamo Road	
Base Volume Input [veh/h]	271	338	63	449	455	101
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	5.00	8.00	5.00	2.00	3.00	1.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	4	0	33	0	0
Total Hourly Volume [veh/h]	271	334	63	416	455	101
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	74	92	17	114	125	28
Total Analysis Volume [veh/h]	298	367	69	457	500	111
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	1		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	Overlap	Overlap	Permissive	Overlap	Protected	Permissive
Flashing Yellow Arrow						
Signal Group	6	6	4	5	3	8
Auxiliary Signal Groups	5,6,7	3,5,6,7		4,5,7		
Maximum Green [s]	6	6	16	40	35	32
Amber [s]	4.0	4.0	4.0	4.0	4.0	5.0
All red [s]	1.5	1.5	1.5	1.5	1.5	1.0
Walk [s]	0.0	0.0	8.0	7.0	7.0	0.0
Pedestrian Clearance [s]	0.0	0.0	27.0	15.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	9.0	9.0	14.0	14.0	9.0	14.0
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	2	2	6	10	4	6
Vehicle Extension [s]	0.5	0.5	2.3	5.2	2.3	2.3
Minimum Recall	No	No	No	Yes	No	No
Maximum Recall	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Calculated Cycle Length [s]	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	46.2	79.1	9.7	51.3	32.8	46.5
g / C, Green / Cycle	0.44	0.76	0.09	0.49	0.31	0.44
(v / s)_i Volume / Saturation Flow Rate	0.20	0.29	0.04	0.29	0.28	0.06
s, saturation flow rate [veh/h]	1476	1264	1825	1589	1767	1885
c, Capacity [veh/h]	610	900	168	733	554	837
d1, Uniform Delay [s]	13.41	0.00	44.91	13.36	34.46	17.23
k, delay calibration	0.26	0.35	0.07	0.50	0.33	0.07
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.44	0.95	0.98	3.97	14.77	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.33	1.33	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.49	0.41	0.41	0.62	0.90	0.13
d, Delay for Lane Group [s/veh]	14.85	0.95	45.89	17.32	49.23	17.27
Lane Group LOS	B	A	D	B	D	B
Critical Lane Group	Yes	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	3.57	0.24	1.75	6.64	14.03	1.55
50th-Percentile Queue Length [ft/ln]	89.20	5.94	43.72	166.11	350.80	38.79
95th-Percentile Queue Length [veh/ln]	6.42	0.43	3.15	10.87	20.18	2.79
95th-Percentile Queue Length [ft/ln]	160.56	10.69	78.70	271.80	504.38	69.82

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	14.85	0.95	45.89	17.32	49.23	17.27
Movement LOS	B	A	D	B	D	B
d_A, Approach Delay [s/veh]	7.18		21.07		43.42	
Approach LOS	A		C		D	
d_I, Intersection Delay [s/veh]	23.52					
Intersection LOS	C					
Intersection V/C	0.591					

Emissions

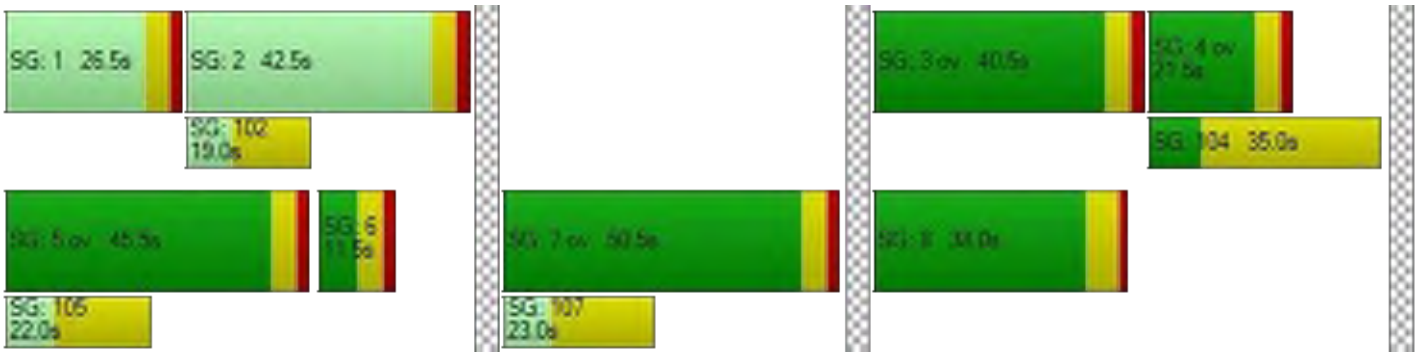
Vehicle Miles Traveled [mph]	14.85	18.29	3.64	24.11	69.28	15.38
Stops [stops/h]	122.65	8.16	60.12	228.41	482.34	53.33
Fuel consumption [US gal/h]	2.04	0.92	1.04	3.57	11.28	1.38
CO [g/h]	142.51	64.63	72.60	249.65	788.24	96.28
NOx [g/h]	27.73	12.57	14.12	48.57	153.36	18.73
VOC [g/h]	33.03	14.98	16.83	57.86	182.68	22.31

Other Modes

g_Walk,mi, Effective Walk Time [s]	12.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.05	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	2.480	0.000	0.000
Crosswalk LOS	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	458	306	611
d_b, Bicycle Delay [s]	31.13	37.59	25.25
l_b,int, Bicycle LOS Score for Intersection	1.560	2.482	2.568
Bicycle LOS	A	B	B

Sequence

Ring 1	1	2	-	3	4	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: 10th Street/I-205 SB Ramp

Control Type:	Signalized	Delay (sec / veh):	32.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.627

Intersection Setup

Name	10th Street			10th Street			I-205 SB Entry Ramp			I-205 SB Exit Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	200.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	200.00
No. of Lanes in Exit Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			30.00			45.00		
Grade [%]	9.00			-4.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	10th Street			10th Street			I-205 SB Entry Ramp			I-205 SB Exit Ramp		
Base Volume Input [veh/h]	152	461	0	0	468	436	0	0	0	123	4	148
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	9.00	7.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	6.00	25.00	4.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	122	0	0	0	0	0	73
Total Hourly Volume [veh/h]	152	461	0	0	468	314	0	0	0	123	4	75
Peak Hour Factor	0.9000	0.9000	1.0000	1.0000	0.9000	0.9000	1.0000	1.0000	1.0000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	128	0	0	130	87	0	0	0	34	1	21
Total Analysis Volume [veh/h]	169	512	0	0	520	349	0	0	0	137	4	83
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			1			2			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			2			1			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	1			1			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	ProtPer	Permiss	Permiss	Permiss	Overlap	Overlap	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow	Yes											
Signal Group	1	5	0	0	2	2	0	0	0	0	7	0
Auxiliary Signal Groups					2,3,4	2,3,4						
Maximum Green [s]	21	40	0	0	37	37	0	0	0	0	45	0
Amber [s]	4.0	4.0	0.0	0.0	4.0	4.0	0.0	0.0	0.0	0.0	4.0	0.0
All red [s]	1.5	1.5	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	1.5	0.0
Walk [s]	0.0	7.0	0.0	0.0	7.0	7.0	0.0	0.0	0.0	0.0	7.0	0.0
Pedestrian Clearance [s]	0.0	15.0	0.0	0.0	12.0	12.0	0.0	0.0	0.0	0.0	16.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	9.0	14.0	0.0	0.0	14.0	14.0	0.0	0.0	0.0	0.0	14.0	0.0
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	4	10	0	0	6	6	0	0	0	0	6	0
Vehicle Extension [s]	2.3	5.2	0.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0
Minimum Recall	No	Yes			Yes	Yes					No	
Maximum Recall	No	No			No	No					No	
Pedestrian Recall	No	No			No	No					No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C		C	R
C, Calculated Cycle Length [s]	110	110	110	110		110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	17.0	41.5	62.8	62.8		14.4	14.4
g / C, Green / Cycle	0.15	0.38	0.57	0.57		0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.13	0.36	0.23	0.27		0.10	0.05
s, saturation flow rate [veh/h]	1344	1441	1869	1606		1454	1564
c, Capacity [veh/h]	208	542	1014	871		190	205
d1, Uniform Delay [s]	45.13	33.35	7.55	7.94		46.18	44.04
k, delay calibration	0.16	0.47	0.23	0.32		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	10.49	26.08	0.62	1.29		5.59	1.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.95	0.43	0.50		0.74	0.41
d, Delay for Lane Group [s/veh]	55.62	59.43	8.16	9.24		51.77	45.33
Lane Group LOS	E	E	A	A		D	D
Critical Lane Group	No	Yes	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	5.10	16.97	2.84	3.12		3.90	2.09
50th-Percentile Queue Length [ft/ln]	127.41	424.36	70.92	77.90		97.38	52.36
95th-Percentile Queue Length [veh/ln]	8.80	23.73	5.11	5.61		7.01	3.77
95th-Percentile Queue Length [ft/ln]	219.97	593.28	127.65	140.21		175.28	94.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	55.62	59.43	0.00	0.00	8.34	9.24	0.00	0.00	0.00	51.77	51.77	45.33
Movement LOS	E	E			A	A				D	D	D
d_A, Approach Delay [s/veh]	58.49			8.70			0.00			49.38		
Approach LOS	E			A			A			D		
d_I, Intersection Delay [s/veh]	32.95											
Intersection LOS	C											
Intersection V/C	0.627											

Emissions

Vehicle Miles Traveled [mph]	17.92	54.30	21.65	21.65		14.15	8.33
Stops [stops/h]	166.46	554.42	92.65	101.77		127.22	68.40
Fuel consumption [US gal/h]	3.36	10.76	2.05	2.18		3.55	1.90
CO [g/h]	234.66	752.16	143.34	152.43		248.29	132.92
NOx [g/h]	45.66	146.34	27.89	29.66		48.31	25.86
VOC [g/h]	54.38	174.32	33.22	35.33		57.54	30.81

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0	11.0	
M_corner, Corner Circulation Area [ft²/ped]	0.00	1031.39	1012.78	0.00	
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00	
d_p, Pedestrian Delay [s]	44.66	0.00	44.66	44.66	
l_p,int, Pedestrian LOS Score for Intersectio	2.413	0.000	2.061	2.046	
Crosswalk LOS	B	F	B	B	
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000	
c_b, Capacity of the bicycle lane [bicycles/h]	726	617	0	817	
d_b, Bicycle Delay [s]	22.38	26.37	55.11	19.30	
l_b,int, Bicycle LOS Score for Intersection	2.683	2.377	4.132	2.050	
Bicycle LOS	B	B	D	B	

Sequence

Ring 1	1	2	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 5: 10th Street/I-205 NB Ramp

Control Type:	Signalized	Delay (sec / veh):	22.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.542

Intersection Setup

Name	10th Street			10th Street			I-205 NB Exit Ramp			I-205 NB Entry Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	60.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			45.00			30.00		
Grade [%]	0.00			0.00			-4.00			0.00		
Curb Present	No			No			No					
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	10th Street			10th Street			I-205 NB Exit Ramp			I-205 NB Entry Ramp		
Base Volume Input [veh/h]	0	366	173	230	361	0	247	0	138	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	6.00	2.00	3.00	4.00	2.00	9.00	0.00	1.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	60	0	0	0	0	0	91	0	0	0
Total Hourly Volume [veh/h]	0	366	113	230	361	0	247	0	47	0	0	0
Peak Hour Factor	1.0000	0.8800	0.8800	0.8800	0.8800	1.0000	0.8800	0.8800	0.8800	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	104	32	65	103	0	70	0	13	0	0	0
Total Analysis Volume [veh/h]	0	416	128	261	410	0	281	0	53	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			1			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			1			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	1			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow				No								
Signal Group	0	6	0	5	2	0	5	8	0	0	0	0
Auxiliary Signal Groups												
Maximum Green [s]	0	50	0	45	30	0	45	20	0	0	0	0
Amber [s]	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0
Walk [s]	0.0	7.0	0.0	0.0	7.0	0.0	0.0	7.0	0.0	0.0	0.0	0.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	15.0	0.0	0.0	17.0	0.0	0.0	0.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	0.0	14.0	0.0	9.0	14.0	0.0	9.0	14.0	0.0	0.0	0.0	0.0
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	4	10	0	4	6	0	0	0	0
Vehicle Extension [s]	0.0	6.9	0.0	2.3	6.9	0.0	2.3	2.3	0.0	0.0	0.0	0.0
Minimum Recall		Yes		No	Yes			No				
Maximum Recall		Yes		No	No			Yes				
Pedestrian Recall		No		No	No			No				

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C	R	
C, Calculated Cycle Length [s]	99	99	99	99	99	99	
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	3.00	3.00	0.00	3.00	3.00	3.00	
g_i, Effective Green Time [s]	50.0	50.0	69.0	69.0	20.0	20.0	
g / C, Green / Cycle	0.50	0.50	0.70	0.70	0.20	0.20	
(v / s)_i Volume / Saturation Flow Rate	0.23	0.08	0.24	0.22	0.16	0.03	
s, saturation flow rate [veh/h]	1810	1557	1072	1840	1809	1602	
c, Capacity [veh/h]	913	785	729	1283	365	323	
d1, Uniform Delay [s]	15.79	13.23	10.35	11.74	40.66	35.48	
k, delay calibration	0.50	0.50	0.66	0.66	0.50	0.50	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.64	0.45	1.80	0.86	14.47	1.09	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	0.67	0.67	0.67	0.67	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.46	0.16	0.36	0.32	0.77	0.16	
d, Delay for Lane Group [s/veh]	17.43	13.67	12.15	12.60	55.13	36.57	
Lane Group LOS	B	B	B	B	E	D	
Critical Lane Group	Yes	No	Yes	No	Yes	No	
50th-Percentile Queue Length [veh/ln]	6.34	1.62	3.91	6.54	8.18	1.19	
50th-Percentile Queue Length [ft/ln]	158.44	40.59	97.65	163.62	204.62	29.85	
95th-Percentile Queue Length [veh/ln]	10.47	2.92	7.03	10.74	12.88	2.15	
95th-Percentile Queue Length [ft/ln]	261.66	73.06	175.76	268.51	321.92	53.73	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	17.43	13.67	12.15	12.60	0.00	55.13	55.13	36.57	0.00	0.00	0.00
Movement LOS		B	B	B	B		E	E	D			
d_A, Approach Delay [s/veh]	16.54			12.43			52.18			0.00		
Approach LOS	B			B			D			A		
d_I, Intersection Delay [s/veh]	22.44											
Intersection LOS	C											
Intersection V/C	0.542											

Emissions

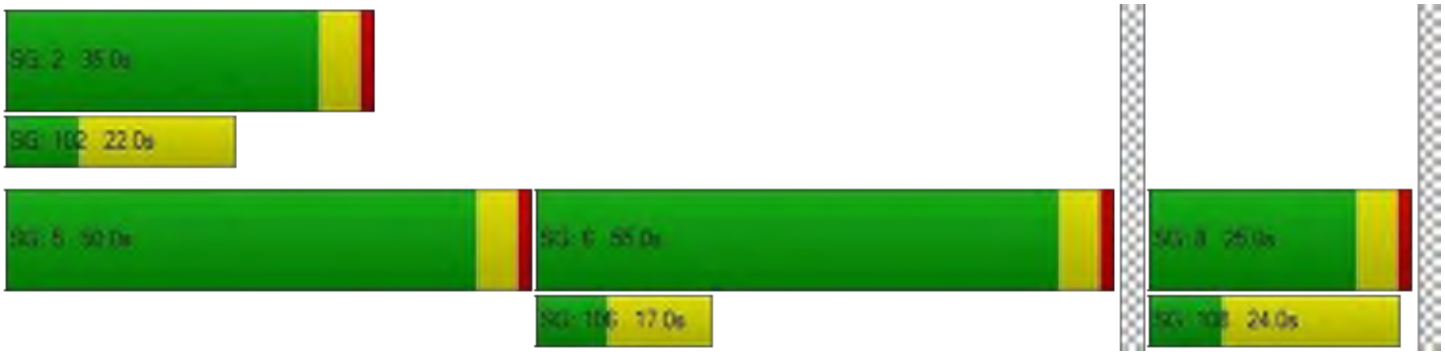
Vehicle Miles Traveled [mph]	24.59	7.57	27.68	43.48	21.56	4.07	
Stops [stops/h]	230.37	59.01	141.97	237.89	297.51	43.40	
Fuel consumption [US gal/h]	3.46	0.92	2.43	3.92	7.59	1.07	
CO [g/h]	242.20	64.50	170.19	273.98	530.57	75.03	
NOx [g/h]	47.12	12.55	33.11	53.31	103.23	14.60	
VOC [g/h]	56.13	14.95	39.44	63.50	122.96	17.39	

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	3150.00	3101.09	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	7628.31	0.00
d_p, Pedestrian Delay [s]	39.13	0.00	39.13	39.13
l_p,int, Pedestrian LOS Score for Intersectio	2.344	0.000	2.159	1.995
Crosswalk LOS	B	F	B	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1010	606	404	0
d_b, Bicycle Delay [s]	12.15	24.06	31.54	49.52
l_b,int, Bicycle LOS Score for Intersection	2.556	2.667	2.261	4.132
Bicycle LOS	B	B	B	D

Sequence

Ring 1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: 10th Street/8th Avenue/8th Court

Control Type:	Two-way stop	Delay (sec / veh):	40.5
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.029

Intersection Setup

*NB approach modeled to permit all movements to match field-observed intersection operations.

*EB approach modeled to permit all movements to match field-observed intersection operations.

Name	10th Street			10th Street			8th Avenue			8th Court		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	*						*					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	90.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	60.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	10th Street			10th Street			8th Avenue			8th Court		
Base Volume Input [veh/h]	1	407	58	119	292	88	3	1	46	27	0	129
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	6.00	3.00	3.00	7.00	2.00	0.00	0.00	4.00	4.00	2.00	3.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	407	58	119	292	88	3	1	46	27	0	129
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	1.0000	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	114	16	33	82	25	1	0	13	8	0	36
Total Analysis Volume [veh/h]	1	457	65	134	328	99	3	1	52	30	0	145
Pedestrian Volume [ped/h]	1			1			1			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.13	0.00	0.00	0.03	0.01	0.08	0.22	0.00	0.25
d_M, Delay for Movement [s/veh]	8.16	0.00	0.00	8.98	0.00	0.00	40.46	27.24	11.37	39.06	0.00	13.35
Movement LOS	A	A	A	A	A	A	E	D	B	E		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.44	0.00	0.00	0.38	0.38	0.38	0.81	0.00	0.99
95th-Percentile Queue Length [ft/ln]	0.04	0.04	0.04	11.06	0.00	0.00	9.51	9.51	9.51	20.15	0.00	24.81
d_A, Approach Delay [s/veh]	0.02			2.14			13.21			17.76		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	3.85											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 1: Blankenship Road/Parkrose Hardware Driveway/Office Park Driveway

Control Type:	Two-way stop	Delay (sec / veh):	80.0
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.252

Intersection Setup

Name	Pa Ha			Office Park Driveway			Blankenship Road			Blankenship Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	150.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	12.00			-5.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	Pa Ha			Office Park Driveway			Blankenship Road			Blankenship Road		
Base Volume Input [veh/h]	15	2	28	14	2	0	2	792	22	16	314	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	4.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	2	28	14	2	0	2	792	22	16	314	3
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	1	8	4	1	0	1	213	6	4	84	1
Total Analysis Volume [veh/h]	16	2	30	15	2	0	2	852	24	17	338	3
Pedestrian Volume [ped/h]	6			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.25	0.03	0.12	0.08	0.01	0.00	0.00	0.01	0.00	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	79.95	72.03	37.08	27.24	22.19	11.85	7.93	0.00	0.00	9.78	0.00	0.00
Movement LOS	F	F	E	D	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.66	1.66	1.66	0.30	0.30	0.30	0.00	0.00	0.00	0.07	0.00	0.00
95th-Percentile Queue Length [ft/ln]	41.52	41.52	41.52	7.56	7.56	7.56	0.12	0.00	0.00	1.69	0.00	0.00
d_A, Approach Delay [s/veh]	52.83			26.65			0.02			0.46		
Approach LOS	F			D			A			A		
d_I, Intersection Delay [s/veh]	2.44											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Blankenship Road/Tannler Drive

Control Type:	Two-way stop	Delay (sec / veh):	88.3
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.717

*SB approach modeled with dedicated right-turn lane to match field-observed intersection operations.

Intersection Setup

Name	Dutch Bros Driveway			Tannler Drive			Blankenship Road			Blankenship Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration					*							
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	90.00	100.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	7.00			-7.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	Dutch Bros Driveway			Tannler Drive			Blankenship Road			Blankenship Road		
Base Volume Input [veh/h]	0	2	64	81	2	71	126	703	5	40	262	41
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	3.00	1.00	0.00	1.00	1.00	1.00	0.00	2.00	0.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2	64	81	2	71	126	703	5	40	262	41
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	17	22	1	19	34	191	1	11	71	11
Total Analysis Volume [veh/h]	0	2	70	88	2	77	137	764	5	43	285	45
Pedestrian Volume [ped/h]	1			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	2	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.03	0.20	0.72	0.01	0.10	0.11	0.01	0.00	0.05	0.00	0.00
d_M, Delay for Movement [s/veh]	87.13	64.45	18.10	88.29	77.10	10.12	8.28	0.00	0.00	9.50	0.00	0.00
Movement LOS	F	F	C	F	F	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.10	0.10	0.75	4.07	4.07	0.33	0.37	0.00	0.00	0.16	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.45	2.45	18.72	101.81	101.81	8.18	9.33	0.00	0.00	4.02	0.00	0.00
d_A, Approach Delay [s/veh]	19.38			52.11			1.25			1.09		
Approach LOS	C			F			A			A		
d_I, Intersection Delay [s/veh]	7.67											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: Blankenship Road/Salamo Road/10th Street

Control Type:	Signalized	Delay (sec / veh):	28.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.429

Intersection Setup

Name	10th Street		Blankenship Road		Salamo Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	250.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		35.00	
Grade [%]	7.00		0.00		-3.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	10th Street		Blankenship Road		Salamo Road	
Base Volume Input [veh/h]	243	289	148	701	369	100
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	2.00	3.00	1.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	17	0	18	0	0
Total Hourly Volume [veh/h]	243	272	148	683	369	100
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	65	72	39	182	98	27
Total Analysis Volume [veh/h]	259	289	157	727	393	106
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	1		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	Overlap	Overlap	Permissive	Overlap	Protected	Permissive
Flashing Yellow Arrow						
Signal Group	6	6	4	5	3	8
Auxiliary Signal Groups	5,6,7	3,5,6,7		4,5,7		
Maximum Green [s]	6	6	16	40	35	32
Amber [s]	4.0	4.0	4.0	4.0	4.0	5.0
All red [s]	1.5	1.5	1.5	1.5	1.5	1.0
Walk [s]	0.0	0.0	8.0	7.0	7.0	0.0
Pedestrian Clearance [s]	0.0	0.0	27.0	15.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	9.0	9.0	14.0	14.0	9.0	14.0
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	2	2	6	10	4	6
Vehicle Extension [s]	0.5	0.5	2.3	5.2	2.3	2.3
Minimum Recall	No	No	No	Yes	No	No
Maximum Recall	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Calculated Cycle Length [s]	127	127	127	127	127	127
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	62.1	93.7	17.5	75.1	31.7	53.2
g / C, Green / Cycle	0.49	0.74	0.14	0.59	0.25	0.42
(v / s)_i Volume / Saturation Flow Rate	0.17	0.21	0.08	0.46	0.22	0.06
s, saturation flow rate [veh/h]	1533	1350	1885	1577	1767	1885
c, Capacity [veh/h]	712	947	259	893	440	788
d1, Uniform Delay [s]	12.22	0.21	51.69	13.73	46.16	22.85
k, delay calibration	0.26	0.27	0.14	0.50	0.30	0.07
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.75	0.45	3.02	8.07	15.27	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.33	1.33	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.36	0.31	0.61	0.81	0.89	0.13
d, Delay for Lane Group [s/veh]	12.97	0.66	54.71	21.80	61.43	22.89
Lane Group LOS	B	A	D	C	E	C
Critical Lane Group	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	3.10	0.21	4.98	13.76	13.71	1.97
50th-Percentile Queue Length [ft/ln]	77.38	5.37	124.55	343.92	342.85	49.29
95th-Percentile Queue Length [veh/ln]	5.57	0.39	8.64	19.84	19.79	3.55
95th-Percentile Queue Length [ft/ln]	139.29	9.66	216.06	495.99	494.68	88.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	12.97	0.66	54.71	21.80	61.43	22.89
Movement LOS	B	A	D	C	E	C
d_A, Approach Delay [s/veh]	6.48		27.65		53.24	
Approach LOS	A		C		D	
d_I, Intersection Delay [s/veh]	28.25					
Intersection LOS	C					
Intersection V/C	0.429					

Emissions

Vehicle Miles Traveled [mph]	12.90	14.40	8.28	38.36	54.45	14.69
Stops [stops/h]	87.59	6.08	140.97	389.26	388.05	55.79
Fuel consumption [US gal/h]	1.60	0.71	2.66	6.44	9.91	1.47
CO [g/h]	111.85	49.61	186.01	450.40	692.43	102.98
NOx [g/h]	21.76	9.65	36.19	87.63	134.72	20.04
VOC [g/h]	25.92	11.50	43.11	104.39	160.48	23.87

Other Modes

g_Walk,mi, Effective Walk Time [s]	12.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	52.18	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	2.517	0.000	0.000
Crosswalk LOS	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	377	252	503
d_b, Bicycle Delay [s]	41.90	48.64	35.64
l_b,int, Bicycle LOS Score for Intersection	1.560	3.048	2.383
Bicycle LOS	A	C	B

Sequence

Ring 1	1	2	-	3	4	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: 10th Street/I-205 SB Ramp

Control Type:	Signalized	Delay (sec / veh):	21.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.505

Intersection Setup

Name	10th Street			10th Street			I-205 SB Entry Ramp			I-205 SB Exit Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	200.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	200.00
No. of Lanes in Exit Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			30.00			45.00		
Grade [%]	9.00			-4.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	10th Street			10th Street			I-205 SB Entry Ramp			I-205 SB Exit Ramp		
Base Volume Input [veh/h]	94	265	0	0	779	291	0	0	0	178	3	267
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	5.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	88	0	0	0	0	0	195
Total Hourly Volume [veh/h]	94	265	0	0	779	203	0	0	0	178	3	72
Peak Hour Factor	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	70	0	0	205	53	0	0	0	47	1	19
Total Analysis Volume [veh/h]	99	279	0	0	820	214	0	0	0	187	3	76
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			2			2			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			2			2			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	127
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow	Yes											
Signal Group	1	5	0	0	2	2	0	0	0	0	7	0
Auxiliary Signal Groups												
Maximum Green [s]	11	56	0	0	86	86	0	0	0	0	18	0
Amber [s]	4.0	4.0	0.0	0.0	4.0	4.0	0.0	0.0	0.0	0.0	4.0	0.0
All red [s]	1.5	1.5	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	1.5	0.0
Walk [s]	0.0	7.0	0.0	0.0	7.0	7.0	0.0	0.0	0.0	0.0	7.0	0.0
Pedestrian Clearance [s]	0.0	15.0	0.0	0.0	12.0	12.0	0.0	0.0	0.0	0.0	16.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	20.0	60.0	0.0	0.0	85.0	85.0	0.0	0.0	0.0	0.0	22.0	0.0
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	10	10	0	0	0	0	10	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C		C	R
C, Calculated Cycle Length [s]	127	127	127	127		127	127
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	99.5	56.0	81.0	81.0		18.0	18.0
g / C, Green / Cycle	0.78	0.44	0.64	0.64		0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.16	0.18	0.28	0.30		0.10	0.05
s, saturation flow rate [veh/h]	605	1531	1869	1740		1811	1615
c, Capacity [veh/h]	521	675	1192	1110		257	229
d1, Uniform Delay [s]	12.79	39.25	4.06	4.14		52.26	49.09
k, delay calibration	0.50	0.50	0.50	0.50		0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	0.81	1.86	1.15	1.41		17.40	3.86
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	0.33	0.33	1.33	1.33		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.19	0.41	0.43	0.47		0.74	0.33
d, Delay for Lane Group [s/veh]	13.60	41.11	5.21	5.55		69.66	52.94
Lane Group LOS	B	D	A	A		E	D
Critical Lane Group	Yes	No	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	2.33	9.03	2.82	2.90		6.91	2.38
50th-Percentile Queue Length [ft/ln]	58.35	225.63	70.52	72.43		172.77	59.40
95th-Percentile Queue Length [veh/ln]	4.20	13.95	5.08	5.21		11.22	4.28
95th-Percentile Queue Length [ft/ln]	105.03	348.81	126.93	130.37		280.55	106.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	13.60	41.11	0.00	0.00	5.34	5.55	0.00	0.00	0.00	69.66	69.66	52.94
Movement LOS	B	D			A	A				E	E	D
d_A, Approach Delay [s/veh]	33.91			5.38			0.00			64.88		
Approach LOS	C			A			A			E		
d_I, Intersection Delay [s/veh]	21.24											
Intersection LOS	C											
Intersection V/C	0.505											

Emissions

Vehicle Miles Traveled [mph]	10.50	29.59	25.76	25.76		19.06	7.62
Stops [stops/h]	66.16	255.84	79.96	82.12		195.90	67.35
Fuel consumption [US gal/h]	1.00	4.65	2.01	2.06		5.78	1.92
CO [g/h]	69.90	324.76	140.76	143.79		404.17	134.03
NOx [g/h]	13.60	63.19	27.39	27.98		78.64	26.08
VOC [g/h]	16.20	75.27	32.62	33.32		93.67	31.06

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	754.39	754.39	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	52.98	0.00	52.98	52.98
l_p,int, Pedestrian LOS Score for Intersectio	2.429	0.000	1.864	2.346
Crosswalk LOS	B	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	858	1252	0	260
d_b, Bicycle Delay [s]	20.69	8.88	63.50	48.07
l_b,int, Bicycle LOS Score for Intersection	2.183	2.485	4.132	2.320
Bicycle LOS	B	B	D	B

Sequence

Ring 1	1	2	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 5: 10th Street/I-205 NB Ramp

Control Type:	Signalized	Delay (sec / veh):	18.9
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.584

Intersection Setup

Name	10th Street			10th Street			I-205 NB Exit Ramp			I-205 NB Entry Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	60.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			45.00			30.00		
Grade [%]	0.00			0.00			-4.00			0.00		
Curb Present	No			No			No					
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	10th Street			10th Street			I-205 NB Exit Ramp			I-205 NB Entry Ramp		
Base Volume Input [veh/h]	0	304	474	518	439	0	55	2	45	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	3.00	0.00	2.00	0.00	50.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	63	0	0	0	0	0	35	0	0	0
Total Hourly Volume [veh/h]	0	304	411	518	439	0	55	2	10	0	0	0
Peak Hour Factor	1.0000	0.9700	0.9700	0.9700	0.9700	1.0000	0.9700	0.9700	0.9700	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	78	106	134	113	0	14	1	3	0	0	0
Total Analysis Volume [veh/h]	0	313	424	534	453	0	57	2	10	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			3			4			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			4			3			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow				No								
Signal Group	0	6	0	5	2	0	5	8	0	0	0	0
Auxiliary Signal Groups												
Maximum Green [s]	0	50	0	45	30	0	45	20	0	0	0	0
Amber [s]	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0
Walk [s]	0.0	7.0	0.0	0.0	7.0	0.0	0.0	7.0	0.0	0.0	0.0	0.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	15.0	0.0	0.0	17.0	0.0	0.0	0.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	0.0	14.0	0.0	9.0	14.0	0.0	9.0	14.0	0.0	0.0	0.0	0.0
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	4	10	0	4	6	0	0	0	0
Vehicle Extension [s]	0.0	6.9	0.0	2.3	6.9	0.0	2.3	2.3	0.0	0.0	0.0	0.0
Minimum Recall		Yes		No	Yes			No				
Maximum Recall		Yes		Yes	Yes			No				
Pedestrian Recall		No		No	No			No				

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C	R	
C, Calculated Cycle Length [s]	117	117	117	117	117	117	
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	3.00	3.00	0.00	3.00	3.00	3.00	
g_i, Effective Green Time [s]	50.0	50.0	100.0	100.0	7.4	7.4	
g / C, Green / Cycle	0.43	0.43	0.85	0.85	0.06	0.06	
(v / s)_i Volume / Saturation Flow Rate	0.17	0.27	0.44	0.24	0.05	0.01	
s, saturation flow rate [veh/h]	1855	1589	1215	1900	1105	1589	
c, Capacity [veh/h]	790	677	1043	1618	70	100	
d1, Uniform Delay [s]	23.28	26.39	7.91	6.87	54.43	51.85	
k, delay calibration	0.50	0.50	0.50	0.50	0.07	0.07	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.49	4.35	1.79	0.43	15.30	0.26	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	0.67	0.67	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.40	0.63	0.51	0.28	0.85	0.10	
d, Delay for Lane Group [s/veh]	24.77	30.74	9.71	7.30	69.73	52.12	
Lane Group LOS	C	C	A	A	E	D	
Critical Lane Group	No	Yes	Yes	No	Yes	No	
50th-Percentile Queue Length [veh/ln]	6.38	10.11	8.76	6.83	1.98	0.28	
50th-Percentile Queue Length [ft/ln]	159.38	252.66	218.99	170.75	49.47	6.97	
95th-Percentile Queue Length [veh/ln]	10.52	15.32	13.61	11.12	3.56	0.50	
95th-Percentile Queue Length [ft/ln]	262.90	383.00	340.34	277.90	89.04	12.55	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	24.77	30.74	9.71	7.30	0.00	69.73	69.73	52.12	0.00	0.00	0.00
Movement LOS		C	C	A	A		E	E	D			
d_A, Approach Delay [s/veh]	28.20			8.61			67.18			0.00		
Approach LOS	C			A			E			A		
d_I, Intersection Delay [s/veh]	18.92											
Intersection LOS	B											
Intersection V/C	0.584											

Emissions

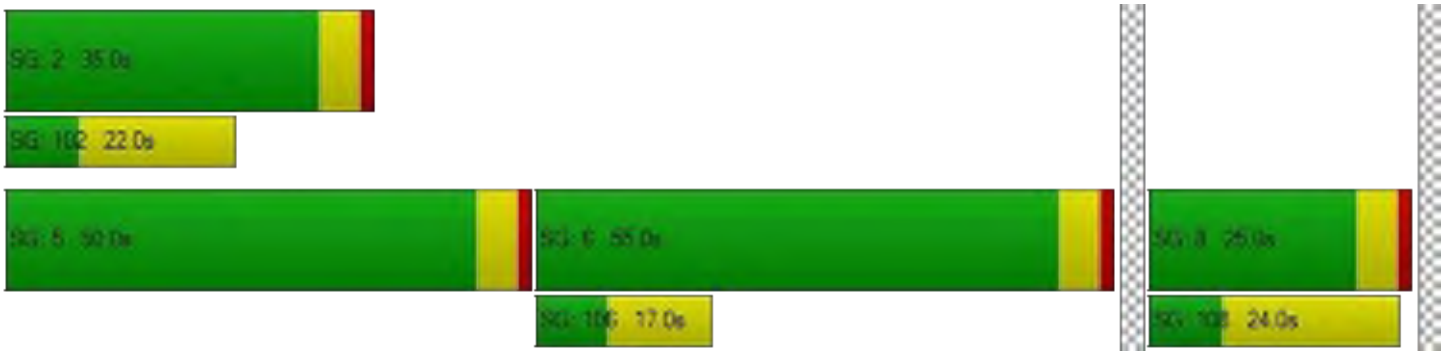
Vehicle Miles Traveled [mph]	18.50	25.06	56.63	48.04	4.53	0.77	
Stops [stops/h]	195.49	309.90	268.61	209.44	60.68	8.55	
Fuel consumption [US gal/h]	3.16	4.97	4.63	3.64	1.75	0.24	
CO [g/h]	220.85	347.28	323.81	254.26	122.10	16.68	
NOx [g/h]	42.97	67.57	63.00	49.47	23.76	3.25	
VOC [g/h]	51.18	80.48	75.05	58.93	28.30	3.87	

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	424.17	415.56	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	917.33	0.00
d_p, Pedestrian Delay [s]	48.22	0.00	48.22	48.22
l_p,int, Pedestrian LOS Score for Intersectio	2.394	0.000	1.853	2.658
Crosswalk LOS	B	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	852	511	341	0
d_b, Bicycle Delay [s]	19.35	32.53	40.40	58.70
l_b,int, Bicycle LOS Score for Intersection	2.880	3.188	1.731	4.132
Bicycle LOS	C	C	A	D

Sequence

Ring 1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: 10th Street/8th Avenue/8th Court

Control Type:	Two-way stop	Delay (sec / veh):	76.6
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.356

*NB approach modeled to permit all movements to match field-observed intersection operations.

*EB approach modeled to permit all movements to match field-observed intersection operations.

Intersection Setup

Name	10th Street			10th Street			8th Avenue			8th Court		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	*						*					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	90.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	60.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	10th Street			10th Street			8th Avenue			8th Court		
Base Volume Input [veh/h]	0	653	47	84	264	136	9	4	221	26	0	116
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	2.00	2.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	2.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	653	47	84	264	136	9	4	221	26	0	116
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	1.0000	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	170	12	22	69	35	2	1	58	7	0	30
Total Analysis Volume [veh/h]	0	680	49	88	275	142	9	4	230	27	0	121
Pedestrian Volume [ped/h]	2			0			5			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.10	0.00	0.00	0.10	0.03	0.33	0.36	0.00	0.28
d_M, Delay for Movement [s/veh]	8.15	0.00	0.00	9.52	0.00	0.00	49.87	33.85	15.84	76.65	0.00	16.31
Movement LOS	A	A	A	A	A	A	E	D	C	F		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.33	0.00	0.00	2.38	2.38	2.38	1.36	0.00	1.11
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	8.26	0.00	0.00	59.47	59.47	59.47	33.91	0.00	27.81
d_A, Approach Delay [s/veh]	0.00			1.66			17.40			27.32		
Approach LOS	A			A			C			D		
d_I, Intersection Delay [s/veh]	5.61											
Intersection LOS	F											

Appendix D
ODOT Crash Data

CITY OF WEST LINN, CLACKAMAS COUNTY

BLANKENSHIP RD at TANNLER DR, City of West Linn, Clackamas County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

1 - 2 of 2 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R G S	J N V	S H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT EVENT	CAUSE
04104	N	N	N	N			11/18/2019	17	BLANKENSHIP RD	INTER	3-LEG	N	N	RAIN	S-OTHER	01	NONE 9	BACK										10
NONE							MO	0	TANNLER DR	CN		NONE	N	WET	BACK		N/A	SE-NW									000	00
N							4P			03	0		Y	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N							45 20 58.17	-122 39 10.12																UNK				
																02	NONE 9	TURN-L										
																	N/A	SE-SW									019	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				
02170	N	N	N	N	N	N	08/13/2020	17	BLANKENSHIP RD	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										02
CITY							TH	0	TANNLER DR	CN		STOP SIGN	N	DRY	ANGL		PRVTE	SE-NW									000	00
N							12P			02	0		Y	DAY	INJ		PSNGR CAR		01	DRVR	INJB	63	F	OR-Y		000	000	00
N							45 20 58.16	-122 39 10.11																OR<25				
																02	NONE 0	STRGHT										
																	PRVTE	SW-NE									015	00
																	PSNGR CAR		01	DRVR	NONE	24	M	OR-Y		028	000	02
																								OR<25				

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CITY OF WEST LINN, CLACKAMAS COUNTY

BLANKENSHIP RD at TANNLER DR, City of West Linn, Clackamas County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CITY OF WEST LINN, CLACKAMAS COUNTY **10TH ST at BLANKENSHIP RD, City of West Linn, Clackamas County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023**

1 - 1 of 1 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R U G S	M J I N V	S C H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	SPCL USE / TRLR QTY / OWNER / V# / TYPE	MOVE / FROM / TO	P# / TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
03635	N	Y	N	N	N	N	10/23/2023	16	BLANKENSHIP RD	INTER	3-LEG	N	Y	CLR	FIX OBJ	01 NONE 0	TURN-R									040	08
CITY							MO		10TH ST	S		TRF SIGNAL	N	DRY	FIX	PRVTE	S -E								000	040	00
N							12A			09	2		N	DLIT	INJ	PSNGR CAR		01	DRVR	INJA	49	M	OR-Y		006	000		08
N							45 20 56.41	-122 39 6.65	0064AI100S00														OR<25					

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CITY OF WEST LINN, CLACKAMAS COUNTY

10TH ST at BLANKENSHIP RD, City of West Linn, Clackamas County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CITY OF WEST LINN, CLACKAMAS COUNTY

10TH ST at SALAMO RD, City of West Linn, Clackamas County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

1 - 2 of 2 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R G	J N S	S H V	W O R L	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
00187	N	N	N	N			01/17/2019	16	SALAMO RD	INTER	3-LEG	N	N	CLD	O-1STOP	01	NONE 0	STRGHT										05
NO RPT							TH	0	10TH ST	SE		TRF SIGNAL	N	DRY	HEAD		PRVTE	NW-SE									000	00
N							4P			06	2		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	28	F	OR-Y		080	000	05
N							45 20 56.41	-122 39 6.66																OR<25				
																02	NONE 0	STOP										
																	PRVTE	SE-NW									012	00
																	PSNGR CAR		01	DRVR	INJB	75	F	OR-Y		000	000	00
																								OR<25				
03162	N	N	N	N	Y		10/22/2021	16	SALAMO RD	INTER	3-LEG	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										29
NONE							FR	0	10TH ST	SE		TRF SIGNAL	N	WET	REAR		PRVTE	SE-NW									000	00
N							1P			06	2		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	74	M	OR-Y		026	000	29
N							45 20 56.41	-122 39 6.65																OR<25				
																02	NONE 0	STOP										
																	PRVTE	SE-NW									012	00
																	PSNGR CAR		01	DRVR	INJC	72	F	OR-Y		000	000	00
																								OR<25				

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CITY OF WEST LINN, CLACKAMAS COUNTY

10TH ST at SALAMO RD, City of West Linn, Clackamas County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CITY OF WEST LINN, CLACKAMAS COUNTY

10TH ST at WB ENFR 10TH, City of West Linn, Clackamas County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

1 - 1 of 1 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R G S	M J N V	S I H L	C O R K	W DAY / TIME / LAT	DATE / CLASS / DIST FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE TRLR QTY / OWNER / MOVE FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
02389	N	N	N	N			09/01/2020	16	10TH ST	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0										013	29
NONE							TU		WB ENFR 10TH	N		TRF SIGNAL	N	DRY	REAR		PRVTE									000		00
N							12P			06	0		N	DAY	INJ		PSNGR CAR	01	DRVR	NONE	33	M	OTH-Y		026	000		29
N							45 20 54.06	-122 39 6.69	0064AI100S00														OR<25					
																02	NONE 0		STOP									
																	PRVTE		N -S							011	013	00
																	PSNGR CAR	01	DRVR	NONE	19	M	OR-Y		000	000		00
																							OR<25					
																03	NONE 0		STOP									
																	PRVTE		N -S							022		00
																	PSNGR CAR	01	DRVR	INJC	19	M	OR-Y		000	000		00
																							OR<25					

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CITY OF WEST LINN, CLACKAMAS COUNTY

10TH ST at WB ENFR 10TH, City of West Linn, Clackamas County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CITY OF WEST LINN, CLACKAMAS COUNTY

10TH ST at WB EXTO 10TH, City of West Linn, Clackamas County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

1 - 3 of 3 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G	J N S	I H V	S L	C K	W O R	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
02610	N	N	N	N	N	N	N		08/26/2022	11	10TH ST	INTER	CROSS	N	N	CLR	O-1STOP	01	NONE 9	BACK										10
CITY			FR								WB EXTO 10TH	SE		TRF SIGNAL	N	DRY	BACK		N/A	NW-SE								000		00
N			12P									06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N			45 20 54.04		-122 39 6.69						0064AK100S00															UNK					
																		02	NONE 9	STOP											
																			N/A	SE-NW									011		00
																			PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																										UNK					
04263	N	N	N	N	N	N	N		12/06/2023	11	10TH ST	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											32,27,29
CITY			WE								WB EXTO 10TH	S		TRF SIGNAL	N	WET	REAR		PRVTE	S -N								000		00
N			2P									06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	36	M	OR-Y		052,016,026	038		32,27,29
N			45 20 54.04		-122 39 6.69						0064AL100S00															OR<25					
																		02	NONE 0	STOP											
																			PRVTE	S -N									012		00
																			PSNGR CAR		01	DRVR	INJC	52	F	OR-Y		000	000		00
																										OR<25					
04306	N	N	N	N	N	N	N		12/09/2023	16	10TH ST	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											29
NONE			SA								WB EXTO 10TH	S		TRF SIGNAL	N	WET	REAR		PRVTE	S -N								000		00
N			8P									06	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	16	F	OR-Y		026	000		29
N			45 20 54.04		-122 39 6.69						0064AI100S00															OR<25					
																		02	NONE 0	STOP											
																			PRVTE	S -N									011		00
																			PSNGR CAR		01	DRVR	INJC	39	M	OR-Y		000	000		00
																										OR<25					
																		02	NONE 0	STOP											
																			PRVTE	S -N									011		00
																			PSNGR CAR		02	PSNG	INJC	39	F			000	000		00
																		02	NONE 0	STOP											
																			PRVTE	S -N									011		00
																			PSNGR CAR		03	PSNG	INJC	06	F			000	000		00
																		02	NONE 0	STOP											
																			PRVTE	S -N									011		00
																			PSNGR CAR		04	PSNG	INJC	08	M			000	000		00

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CITY OF WEST LINN, CLACKAMAS COUNTY

10TH ST at WB EXTO 10TH, City of West Linn, Clackamas County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CITY OF WEST LINN, CLACKAMAS COUNTY **10TH ST at EB EXTO 10TH, City of West Linn, Clackamas County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023**

1 - 1 of 1 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G S	J I N V	S C H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
01948	N	N	N N N	N	N	N	07/01/2022	16	10TH ST	INTER	CROSS	N	N	CLR	S-STRGHT	01	NONE 9	STRGHT										13
CITY			FR						EB EXTO 10TH	CN		TRF SIGNAL	N	DRY	SS-O		N/A	S -N									000	00
N			4P							04	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N			45 20 48.43				-122 39 6.6		0064AI100S00															UNK				
																02	NONE 9	STRGHT										
																	N/A	S -N									000	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CITY OF WEST LINN, CLACKAMAS COUNTY

10TH ST at EB ENFR 10TH, City of West Linn, Clackamas County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

1 - 2 of 2 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G	J N S	I H V	C L L	O W R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
03159	N	N	N	N	N	N	N	09/12/2019	16	10TH ST	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 1	STRGHT										29
CITY			TH							EB ENFR 10TH	S		TRF SIGNAL	N	DRY	REAR		N/A	S -N								000	00
N			7A								06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N			45 20 48.43		-122 39 6.6					0064AI100S00															UNK				
																	02	NONE 9	STOP										
																		N/A	S -N									011	00
																		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																									UNK				
01926	N	N	N	N	N	N	N	06/11/2019	16	10TH ST	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 9	STRGHT										16,07,29
CITY			TU							EB ENFR 10TH	S		TRF SIGNAL	N	DRY	REAR		N/A	S -N								000	00
N			12P								06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N			45 20 48.43		-122 39 6.59					0064AI100S00															UNK				
																	02	NONE 9	STOP										
																		N/A	S -N									011	00
																		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																									UNK				

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CITY OF WEST LINN, CLACKAMAS COUNTY

10TH ST at 8TH AVE, City of West Linn, Clackamas County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

1 - 3 of 3 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G	J N V	S H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT EVENT	CAUSE
01174	N	N	N	N			04/24/2020	16	8TH AVE	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 9	STRGHT										29
NONE							FR		10TH ST	N		STOP SIGN	N	DRY	REAR		N/A	N -S									000	00
N							2P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N							45 20 45.38	-122 39 6.62	0064AI100S00															UNK				
																02	NONE 9	STOP										
																	N/A	N -S									011	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				
03661	N	N	N	N	N	N	11/14/2022	16	8TH AVE	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 9	STRGHT										27,02
CITY							MO		10TH ST	CN		TRF SIGNAL	N	DRY	ANGL		N/A	N -S									000	00
N							4P			01	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N							45 20 45.35	-122 39 6.59	0064AI100S00															UNK				
																02	NONE 9	STRGHT										
																	N/A	E -S									000	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				
01048	N	N	N	N	N	N	04/06/2023	16	8TH AVE	INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE 9	STRGHT										02
NONE							TH		10TH ST	CN		STOP SIGN	N	WET	TURN		N/A	N -S									000	00
N							UNK			01	0		N	DAY	PDO		MTRCYCLE		01	DRVR	NONE	00	Unk	UNK		000	000	00
N							45 20 45.35	-122 39 6.59	0064AI100S00															UNK				
																02	NONE 9	TURN-L										
																	N/A	E -S									000	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CITY OF WEST LINN, CLACKAMAS COUNTY

10TH ST at 8TH AVE, City of West Linn, Clackamas County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CITY OF WEST LINN, CLACKAMAS COUNTY

10TH ST at 8TH CT, City of West Linn, Clackamas County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

1 - 5 of 5 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G	J N S	I H V	C L L	S W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
00311	N	N	N	N	N	N	N	01/28/2022	16	8TH CT	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE	STRGHT										054,121	02
CITY			FR							10TH ST	CN		STOP SIGN	N	DRY	ANGL		PRVTE	E -W									015		00
N			3P								01	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	17	M	OR-Y		028	000		02
N			45 20 45.35						-122 39 6.59	0064AI100S00															OR<25					
																	02	NONE	STRGHT											
																		PRVTE	N -S									000	054,121	00
																		PSNGR CAR		01	DRVR	INJC	63	F	OR-Y		000	000		00
																									OR<25					
02258	N	N	N	N	N	N	N	07/28/2022	16	8TH CT	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 9	STRGHT											02
NONE			TH							10TH ST	CN		STOP SIGN	N	DRY	ANGL		N/A	NW-SE									000		00
N			12P								03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N			45 20 45.35						-122 39 6.59	0064AI100S00															UNK					
																	02	NONE 9	STRGHT											
																		N/A	NE-SW									000		00
																		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																									UNK					
03115	N	N	N	N	N	N	N	10/03/2022	16	8TH CT	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 9	TURN-R											02
NONE			MO							10TH ST	CN		STOP SIGN	N	DRY	TURN		N/A	NE-NW									000		00
N			4P								01	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N			45 20 45.35						-122 39 6.59	0064AI100S00															UNK					
																	02	NONE 9	STRGHT											
																		N/A	SE-NW									000		00
																		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																									UNK					
03441	N	N	N	N	N	N	N	10/09/2023	16	8TH CT	INTER	CROSS	N	N	CLR	S-OTHER	01	NONE 9	TURN-L											08
CITY			MO							10TH ST	CN		STOP SIGN	N	DRY	TURN		N/A	NW-NE									000		00
N			4P								04	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N			45 20 45.35						-122 39 6.59	0064AI100S00															UNK					
																	02	NONE 9	TURN-L											
																		N/A	NW-NE									000		00
																		SEMI TOW		01	DRVR	NONE	00	Unk	UNK		000	000		00
																									UNK					
04246	N	N	N	N	N	N	N	12/05/2023	16	8TH CT	INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE 9	STRGHT											02
CITY			TU							10TH ST	CN		STOP SIGN	N	WET	TURN		N/A	SE-NW									000		00
N			11A								01	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N			45 20 45.35						-122 39 6.59	0064AI100S00															UNK					
																	02	NONE 9	TURN-R											
																		N/A	NE-NW									000		00
																		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																									UNK					

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
000	NONE	NO ACTION OR NON-WARRANTED
001	SKIDDED	SKIDDED
002	ON/OFF V	GETTING ON OR OFF STOPPED OR PARKED VEHICLE
003	LOAD OVR	OVERHANGING LOAD STRUCK ANOTHER VEHICLE, ETC.
006	SLOW DN	SLOWED DOWN
007	AVOIDING	AVOIDING MANEUVER
008	PAR PARK	PARALLEL PARKING
009	ANG PARK	ANGLE PARKING
010	INTERFERE	PASSENGER INTERFERING WITH DRIVER
011	STOPPED	STOPPED IN TRAFFIC NOT WAITING TO MAKE A LEFT TURN
012	STP/L TRN	STOPPED BECAUSE OF LEFT TURN SIGNAL OR WAITING, ETC.
013	STP TURN	STOPPED WHILE EXECUTING A TURN
014	EMR V PKD	EMERGENCY VEHICLE LEGALLY PARKED IN THE ROADWAY
015	GO A/STOP	PROCEED AFTER STOPPING FOR A STOP SIGN/FLASHING RED.
016	TRN A/RED	TURNED ON RED AFTER STOPPING
017	LOSTCTRL	LOST CONTROL OF VEHICLE
018	EXIT DWY	ENTERING STREET OR HIGHWAY FROM ALLEY OR DRIVEWAY
019	ENTR DWY	ENTERING ALLEY OR DRIVEWAY FROM STREET OR HIGHWAY
020	STR ENTR	BEFORE ENTERING ROADWAY, STRUCK PEDESTRIAN, ETC. ON SIDEWALK OR SHOULDER
021	NO DRVR	CAR RAN AWAY - NO DRIVER
022	PREV COL	STRUCK, OR WAS STRUCK BY, VEHICLE OR PEDESTRIAN IN PRIOR COLLISION BEFORE ACC. STABILIZED
023	STALLED	VEHICLE STALLED OR DISABLED
024	DRVR DEAD	DEAD BY UNASSOCIATED CAUSE
025	FATIGUE	FATIGUED, SLEEPY, ASLEEP
026	SUN	DRIVER BLINDED BY SUN
027	HDLGHTS	DRIVER BLINDED BY HEADLIGHTS
028	ILLNESS	PHYSICALLY ILL
029	THRU MED	VEHICLE CROSSED, PLUNGED OVER, OR THROUGH MEDIAN BARRIER
030	PURSUIT	PURSUING OR ATTEMPTING TO STOP A VEHICLE
031	PASSING	PASSING SITUATION
032	PRKOFFRD	VEHICLE PARKED BEYOND CURB OR SHOULDER
033	CROS MED	VEHICLE CROSSED EARTH OR GRASS MEDIAN
034	X N/SGNL	CROSSING AT INTERSECTION - NO TRAFFIC SIGNAL PRESENT
035	X W/ SGNL	CROSSING AT INTERSECTION - TRAFFIC SIGNAL PRESENT
036	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
037	BTWN INT	CROSSING BETWEEN INTERSECTIONS
038	DISTRACT	DRIVER'S ATTENTION DISTRACTED
039	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
040	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
041	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
042	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
043	PLAYINRD	PLAYING IN STREET OR ROAD
044	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
045	WORK ON	WORKING IN ROADWAY OR ALONG SHOULDER
046	W/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. WITH TRAFFIC
047	A/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. FACING TRAFFIC
050	LAY ON RD	STANDING OR LYING IN ROADWAY
051	ENT OFFRD	ENTERING / STARTING IN TRAFFIC LANE FROM OFF ROAD
052	MERGING	MERGING
055	SPRAY	BLINDED BY WATER SPRAY

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
088	OTHER	OTHER ACTION
099	UNK	UNKNOWN ACTION

CAUSE CODE TRANSLATION LIST

CAUSE CODE	SHORT DESCRIPTION	LONG DESCRIPTION
00	NO CODE	NO CAUSE ASSOCIATED AT THIS LEVEL
01	TOO-FAST	TOO FAST FOR CONDITIONS (NOT EXCEED POSTED SPEED
02	NO-YIELD	DID NOT YIELD RIGHT-OF-WAY
03	PAS-STOP	PASSED STOP SIGN OR RED FLASHER
04	DIS SIG	DISREGARDED TRAFFIC SIGNAL
05	LEFT-CTR	DROVE LEFT OF CENTER ON TWO-WAY ROAD; STRADDLING
06	IMP-OVER	IMPROPER OVERTAKING
07	TOO-CLOS	FOLLOWED TOO CLOSELY
08	IMP-TURN	MADE IMPROPER TURN
09	DRINKING	ALCOHOL OR DRUG INVOLVED
10	OTHR-IMP	OTHER IMPROPER DRIVING
11	MECH-DEF	MECHANICAL DEFECT
12	OTHER	OTHER (NOT IMPROPER DRIVING)
13	IMP LN C	IMPROPER CHANGE OF TRAFFIC LANES
14	DIS TCD	DISREGARDED OTHER TRAFFIC CONTROL DEVICE
15	WRNG WAY	WRONG WAY ON ONE-WAY ROAD; WRONG SIDE DIVIDED RO
16	FATIGUE	DRIVER DROWSY/FATIGUED/SLEEPY
17	ILLNESS	PHYSICAL ILLNESS
18	IN RDWY	NON-MOTORIST ILLEGALLY IN ROADWAY
19	NT VISBL	NON-MOTORIST NOT VISIBLE; NON-REFLECTIVE CLOTHIN
20	IMP PKNG	VEHICLE IMPROPERLY PARKED
21	DEF STER	DEFECTIVE STEERING MECHANISM
22	DEF BRKE	INADEQUATE OR NO BRAKES
24	LOADSHFT	VEHICLE LOST LOAD OR LOAD SHIFTED
25	TIREFAIL	TIRE FAILURE
26	PHANTOM	PHANTOM / NON-CONTACT VEHICLE
27	INATTENT	INATTENTION
28	NM INATT	NON-MOTORIST INATTENTION
29	F AVOID	FAILED TO AVOID VEHICLE AHEAD
30	SPEED	DRIVING IN EXCESS OF POSTED SPEED
31	RACING	SPEED RACING (PER PAR)
32	CARELESS	CARELESS DRIVING (PER PAR)
33	RECKLESS	RECKLESS DRIVING (PER PAR)
34	AGGRESV	AGGRESSIVE DRIVING (PER PAR)
35	RD RAGE	ROAD RAGE (PER PAR)
40	VIEW OBS	VIEW OBSCURED
50	USED MDN	IMPROPER USE OF MEDIAN OR SHOULDER
51	FAIL LN	FAILED TO MAINTAIN LANE
52	OFF RD	RAN OFF ROAD

COLLISION TYPE CODE TRANSLATION LIST

COLL CODE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OTH	MISCELLANEOUS
-	BACK	BACKING
0	PED	PEDESTRIAN
1	ANGL	ANGLE
2	HEAD	HEAD-ON
3	REAR	REAR-END
4	SS-M	SIDESWIPE - MEETING
5	SS-O	SIDESWIPE - OVERTAKING
6	TURN	TURNING MOVEMENT
7	PARK	PARKING MANEUVER
8	NCOL	NON-COLLISION
9	FIX	FIXED OBJECT OR OTHER OBJECT

CRASH TYPE CODE TRANSLATION LIST

CRASH TYPE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OVERTURN	OVERTURNED
0	NON-COLL	OTHER NON-COLLISION
1	OTH RDWY	MOTOR VEHICLE ON OTHER ROADWAY
2	PRKD MV	PARKED MOTOR VEHICLE
3	PED	PEDESTRIAN
4	TRAIN	RAILWAY TRAIN
6	BIKE	PEDALCYCLIST
7	ANIMAL	ANIMAL
8	FIX OBJ	FIXED OBJECT
9	OTH OBJ	OTHER OBJECT
A	ANGL-STP	ENTERING AT ANGLE - ONE VEHICLE STOPPED
B	ANGL-OTH	ENTERING AT ANGLE - ALL OTHERS
C	S-STRGHT	FROM SAME DIRECTION - BOTH GOING STRAIGHT
D	S-1TURN	FROM SAME DIRECTION - ONE TURN, ONE STRAIGHT
E	S-1STOP	FROM SAME DIRECTION - ONE STOPPED
F	S-OTHER	FROM SAME DIRECTION-ALL OTHERS, INCLUDING PARKING
G	O-STRGHT	FROM OPPOSITE DIRECTION - BOTH GOING STRAIGHT
H	O-1 L-TURN	FROM OPPOSITE DIRECTION-ONE LEFT TURN,ONE STRAIGHT
I	O-1STOP	FROM OPPOSITE DIRECTION - ONE STOPPED
J	O-OTHER	FROM OPPOSITE DIRECTION-ALL OTHERS INCL. PARKING

DRIVER LICENSE CODE TRANSLATION LIST

LIC CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NOT LICENSED (HAD NEVER BEEN LICENSED)
1	OR-Y	VALID OREGON LICENSE
2	OTH-Y	VALID LICENSE, OTHER STATE OR COUNTRY
3	SUSP	SUSPENDED/REVOKED
4	EXP	EXPIRED
8	N-VAL	OTHER NON-VALID LICENSE
9	UNK	UNKNOWN IF DRIVER WAS LICENSED AT TIME OF CRASH

DRIVER RESIDENCE CODE TRANSLATION LIST

RES CODE	SHORT DESC	LONG DESCRIPTION
1	OR<25	OREGON RESIDENT WITHIN 25 MILE OF HOME
2	OR>25	OREGON RESIDENT 25 OR MORE MILES FROM HOME
3	OR-?	OREGON RESIDENT - UNKNOWN DISTANCE FROM HOME
4	N-RES	NON-RESIDENT
9	UNK	UNKNOWN IF OREGON RESIDENT

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
000	NONE	NO ERROR
001	WIDE TRN	WIDE TURN
002	CUT CORN	CUT CORNER ON TURN
003	FAIL TRN	FAILED TO OBEY MANDATORY TRAFFIC TURN SIGNAL, SIGN OR LANE MARKINGS
004	L IN TRF	LEFT TURN IN FRONT OF ONCOMING TRAFFIC
005	L PROHIB	LEFT TURN WHERE PROHIBITED
006	FRM WRNG	TURNED FROM WRONG LANE
007	TO WRONG	TURNED INTO WRONG LANE
008	ILLEG U	U-TURNED ILLEGALLY
009	IMP STOP	IMPROPERLY STOPPED IN TRAFFIC LANE
010	IMP SIG	IMPROPER SIGNAL OR FAILURE TO SIGNAL
011	IMP BACK	BACKING IMPROPERLY (NOT PARKING)
012	IMP PARK	IMPROPERLY PARKED
013	UNPARK	IMPROPER START LEAVING PARKED POSITION
014	IMP STRT	IMPROPER START FROM STOPPED POSITION
015	IMP LGHT	IMPROPER OR NO LIGHTS (VEHICLE IN TRAFFIC)
016	INATTENT	INATTENTION (FAILURE TO DIM LIGHTS PRIOR TO 4/1/97)
017	UNSF VEH	DRIVING UNSAFE VEHICLE (NO OTHER ERROR APPARENT)
018	OTH PARK	ENTERING/EXITING PARKED POSITION W/ INSUFFICIENT CLEARANCE; OTHER IMPROPER PARKING MANEUVER
019	DIS DRIV	DISREGARDED OTHER DRIVER'S SIGNAL
020	DIS SGNL	DISREGARDED TRAFFIC SIGNAL
021	RAN STOP	DISREGARDED STOP SIGN OR FLASHING RED
022	DIS SIGN	DISREGARDED WARNING SIGN, FLARES OR FLASHING AMBER
023	DIS OFCR	DISREGARDED POLICE OFFICER OR FLAGMAN
024	DIS EMER	DISREGARDED SIREN OR WARNING OF EMERGENCY VEHICLE
025	DIS RR	DISREGARDED RR SIGNAL, RR SIGN, OR RR FLAGMAN
026	REAR-END	FAILED TO AVOID STOPPED OR PARKED VEHICLE AHEAD OTHER THAN SCHOOL BUS
027	BIKE ROW	DID NOT HAVE RIGHT-OF-WAY OVER PEDALCYCLIST
028	NO ROW	DID NOT HAVE RIGHT-OF-WAY
029	PED ROW	FAILED TO YIELD RIGHT-OF-WAY TO PEDESTRIAN
030	PAS CURV	PASSING ON A CURVE
031	PAS WRNG	PASSING ON THE WRONG SIDE
032	PAS TANG	PASSING ON STRAIGHT ROAD UNDER UNSAFE CONDITIONS
033	PAS X-WK	PASSED VEHICLE STOPPED AT CROSSWALK FOR PEDESTRIAN
034	PAS INTR	PASSING AT INTERSECTION
035	PAS HILL	PASSING ON CREST OF HILL
036	N/PAS ZN	PASSING IN "NO PASSING" ZONE
037	PAS TRAF	PASSING IN FRONT OF ONCOMING TRAFFIC
038	CUT-IN	CUTTING IN (TWO LANES - TWO WAY ONLY)
039	WRNGSIDE	DRIVING ON WRONG SIDE OF THE ROAD (2-WAY UNDIVIDED ROADWAYS)
040	THRU MED	DRIVING THROUGH SAFETY ZONE OR OVER ISLAND
041	F/ST BUS	FAILED TO STOP FOR SCHOOL BUS

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
042	F/SLO MV	FAILED TO DECREASE SPEED FOR SLOWER MOVING VEHICLE
043	TOO CLOSE	FOLLOWING TOO CLOSELY (MUST BE ON OFFICER'S REPORT)
044	STRDL LN	STRADDLING OR DRIVING ON WRONG LANES
045	IMP CHG	IMPROPER CHANGE OF TRAFFIC LANES
046	WRNG WAY	WRONG WAY ON ONE-WAY ROADWAY; WRONG SIDE DIVIDED ROAD
047	BASCRULE	DRIVING TOO FAST FOR CONDITIONS (NOT EXCEEDING POSTED SPEED)
048	OPN DOOR	OPENED DOOR INTO ADJACENT TRAFFIC LANE
049	IMPEDING	IMPEDING TRAFFIC
050	SPEED	DRIVING IN EXCESS OF POSTED SPEED
051	RECKLESS	RECKLESS DRIVING (PER PAR)
052	CARELESS	CARELESS DRIVING (PER PAR)
053	RACING	SPEED RACING (PER PAR)
054	X N/SGNL	CROSSING AT INTERSECTION, NO TRAFFIC SIGNAL PRESENT
055	X W/SGNL	CROSSING AT INTERSECTION, TRAFFIC SIGNAL PRESENT
056	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
057	BTWN INT	CROSSING BETWEEN INTERSECTIONS
059	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
060	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
061	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
062	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
063	PLAYINRD	PLAYING IN STREET OR ROAD
064	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
065	WORK IN RD	WORKING IN ROADWAY OR ALONG SHOULDER
070	LAY ON RD	STANDING OR LYING IN ROADWAY
071	NM IMP USE	IMPROPER USE OF TRAFFIC LANE BY NON-MOTORIST
073	ELUDING	ELUDING / ATTEMPT TO ELUDE
079	F NEG CURV	FAILED TO NEGOTIATE A CURVE
080	FAIL LN	FAILED TO MAINTAIN LANE
081	OFF RD	RAN OFF ROAD
082	NO CLEAR	DRIVER MISJUDGED CLEARANCE
083	OVRSTEER	OVER-CORRECTING
084	NOT USED	CODE NOT IN USE
085	OVRLOAD	OVERLOADING OR IMPROPER LOADING OF VEHICLE WITH CARGO OR PASSENGERS
097	UNA DIS TC	UNABLE TO DETERMINE WHICH DRIVER DISREGARDED TRAFFIC CONTROL DEVICE

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
001	FEL/JUMP	OCCUPANT FELL, JUMPED OR WAS EJECTED FROM MOVING VEHICLE
002	INTERFER	PASSENGER INTERFERED WITH DRIVER
003	BUG INTF	ANIMAL OR INSECT IN VEHICLE INTERFERED WITH DRIVER
004	INDRCT PED	PEDESTRIAN INDIRECTLY INVOLVED (NOT STRUCK)
005	SUB-PED	"SUB-PED": PEDESTRIAN INJURED SUBSEQUENT TO COLLISION, ETC.
006	INDRCT BIK	PEDALCYCLIST INDIRECTLY INVOLVED (NOT STRUCK)
007	HITCHIKR	HITCHHIKER (SOLICITING A RIDE)
008	PSNGR TOW	PASSENGER OR NON-MOTORIST BEING TOWED OR PUSHED ON CONVEYANCE
009	ON/OFF V	GETTING ON/OFF STOPPED/PARKED VEHICLE (OCCUPANTS ONLY; MUST HAVE PHYSICAL CONTACT W/ VEHIC
010	SUB OTRN	OVERTURNED AFTER FIRST HARMFUL EVENT
011	MV PUSHD	VEHICLE BEING PUSHED
012	MV TOWED	VEHICLE TOWED OR HAD BEEN TOWING ANOTHER VEHICLE
013	FORCED	VEHICLE FORCED BY IMPACT INTO ANOTHER VEHICLE, PEDALCYCLIST OR PEDESTRIAN
014	SET MOTN	VEHICLE SET IN MOTION BY NON-DRIVER (CHILD RELEASED BRAKES, ETC.)
015	RR ROW	AT OR ON RAILROAD RIGHT-OF-WAY (NOT LIGHT RAIL)
016	LT RL ROW	AT OR ON LIGHT-RAIL RIGHT-OF-WAY
017	RR HIT V	TRAIN STRUCK VEHICLE
018	V HIT RR	VEHICLE STRUCK TRAIN
019	HIT RR CAR	VEHICLE STRUCK RAILROAD CAR ON ROADWAY
020	JACKNIFE	JACKKNIFE; TRAILER OR TOWED VEHICLE STRUCK TOWING VEHICLE
021	TRL OTRN	TRAILER OR TOWED VEHICLE OVERTURNED
022	CN BROKE	TRAILER CONNECTION BROKE
023	DETACH TRL	DETACHED TRAILING OBJECT STRUCK OTHER VEHICLE, NON-MOTORIST, OR OBJECT
024	V DOOR OPN	VEHICLE DOOR OPENED INTO ADJACENT TRAFFIC LANE
025	WHEELOFF	WHEEL CAME OFF
026	HOOD UP	HOOD FLEW UP
028	LOAD SHIFT	LOST LOAD, LOAD MOVED OR SHIFTED
029	TIREFAIL	TIRE FAILURE
030	PET	PET: CAT, DOG AND SIMILAR
031	LVSTOCK	STOCK: COW, CALF, BULL, STEER, SHEEP, ETC.
032	HORSE	HORSE, MULE, OR DONKEY
033	HRSE&RID	HORSE AND RIDER
034	GAME	WILD ANIMAL, GAME (INCLUDES BIRDS; NOT DEER OR ELK)
035	DEER ELK	DEER OR ELK, WAPITI
036	ANML VEH	ANIMAL-DRAWN VEHICLE
037	CULVERT	CULVERT, OPEN LOW OR HIGH MANHOLE
038	ATENUATN	IMPACT ATTENUATOR
039	PK METER	PARKING METER
040	CURB	CURB (ALSO NARROW SIDEWALKS ON BRIDGES)
041	JIGGLE	JIGGLE BAR OR TRAFFIC SNAKE FOR CHANNELIZATION
042	GDRL END	LEADING EDGE OF GUARDRAIL
043	GARDRAIL	GUARD RAIL (NOT METAL MEDIAN BARRIER)
044	BARRIER	MEDIAN BARRIER (RAISED OR METAL)
045	WALL	RETAINING WALL OR TUNNEL WALL
046	BR RAIL	BRIDGE RAILING OR PARAPET (ON BRIDGE OR APPROACH)
047	BR ABUTMNT	BRIDGE ABUTMENT (INCLUDED "APPROACH END" THRU 2013)
048	BR COLMN	BRIDGE PILLAR OR COLUMN
049	BR GIRDR	BRIDGE GIRDER (HORIZONTAL BRIDGE STRUCTURE OVERHEAD)
050	ISLAND	TRAFFIC RAISED ISLAND
051	GORE	GORE
052	POLE UNK	POLE - TYPE UNKNOWN
053	POLE UTL	POLE - POWER OR TELEPHONE
054	ST LIGHT	POLE - STREET LIGHT ONLY
055	TRF SGNL	POLE - TRAFFIC SIGNAL AND PED SIGNAL ONLY
056	SGN BRDG	POLE - SIGN BRIDGE
057	STOPSIGN	STOP OR YIELD SIGN
058	OTH SIGN	OTHER SIGN, INCLUDING STREET SIGNS
059	HYDRANT	HYDRANT

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
060	MARKER	DELINEATOR OR MARKER (REFLECTOR POSTS)
061	MAILBOX	MAILBOX
062	TREE	TREE, STUMP OR SHRUBS
063	VEG OHED	TREE BRANCH OR OTHER VEGETATION OVERHEAD, ETC.
064	WIRE/CBL	WIRE OR CABLE ACROSS OR OVER THE ROAD
065	TEMP SGN	TEMPORARY SIGN OR BARRICADE IN ROAD, ETC.
066	PERM SGN	PERMANENT SIGN OR BARRICADE IN/OFF ROAD
067	SLIDE	SLIDES, FALLEN OR FALLING ROCKS
068	FRGN OBJ	FOREIGN OBSTRUCTION/DEBRIS IN ROAD (NOT GRAVEL)
069	EQP WORK	EQUIPMENT WORKING IN/OFF ROAD
070	OTH EQP	OTHER EQUIPMENT IN OR OFF ROAD (INCLUDES PARKED TRAILER, BOAT)
071	MAIN EQP	WRECKER, STREET SWEEPER, SNOW PLOW OR SANDING EQUIPMENT
072	OTHER WALL	ROCK, BRICK OR OTHER SOLID WALL
073	IRRGL PVMT	OTHER BUMP (NOT SPEED BUMP), POTHOLE OR PAVEMENT IRREGULARITY (PER PAR)
074	OVERHD OBJ	OTHER OVERHEAD OBJECT (HIGHWAY SIGN, SIGNAL HEAD, ETC.); NOT BRIDGE
075	CAVE IN	BRIDGE OR ROAD CAVE IN
076	HI WATER	HIGH WATER
077	SNO BANK	SNOW BANK
078	LO-HI EDGE	LOW OR HIGH SHOULDER AT PAVEMENT EDGE
079	DITCH	CUT SLOPE OR DITCH EMBANKMENT
080	OBJ FRM MV	STRUCK BY ROCK OR OTHER OBJECT SET IN MOTION BY OTHER VEHICLE (INCL. LOST LOADS)
081	FLY-OBJ	STRUCK BY ROCK OR OTHER MOVING OR FLYING OBJECT (NOT SET IN MOTION BY VEHICLE)
082	VEH HID	VEHICLE OBSCURED VIEW
083	VEG HID	VEGETATION OBSCURED VIEW
084	BLDG HID	VIEW OBSCURED BY FENCE, SIGN, PHONE BOOTH, ETC.
085	WIND GUST	WIND GUST
086	IMMERSED	VEHICLE IMMERSED IN BODY OF WATER
087	FIRE/EXP	FIRE OR EXPLOSION
088	FENC/BLD	FENCE OR BUILDING, ETC.
089	OTHR CRASH	CRASH RELATED TO ANOTHER SEPARATE CRASH
090	TO 1 SIDE	TWO-WAY TRAFFIC ON DIVIDED ROADWAY ALL ROUTED TO ONE SIDE
091	BUILDING	BUILDING OR OTHER STRUCTURE
092	PHANTOM	OTHER (PHANTOM) NON-CONTACT VEHICLE
093	CELL PHONE	CELL PHONE (ON PAR OR DRIVER IN USE)
094	VIOL GDL	TEENAGE DRIVER IN VIOLATION OF GRADUATED LICENSE PGM
095	GUY WIRE	GUY WIRE
096	BERM	BERM (EARTHEN OR GRAVEL MOUND)
097	GRAVEL	GRAVEL IN ROADWAY
098	ABR EDGE	ABRUPT EDGE
099	CELL WTNSD	CELL PHONE USE WITNESSED BY OTHER PARTICIPANT
100	UNK FIXD	FIXED OBJECT, UNKNOWN TYPE.
101	OTHER OBJ	NON-FIXED OBJECT, OTHER OR UNKNOWN TYPE
102	TEXTING	TEXTING
103	WZ WORKER	WORK ZONE WORKER
104	ON VEHICLE	PASSENGER RIDING ON VEHICLE EXTERIOR
105	PEDAL PSGR	PASSENGER RIDING ON PEDALCYCLE
106	MAN WHLCHR	PEDESTRIAN IN NON-MOTORIZED WHEELCHAIR
107	MTR WHLCHR	PEDESTRIAN IN MOTORIZED WHEELCHAIR
108	OFFICER	LAW ENFORCEMENT / POLICE OFFICER
109	SUB-BIKE	"SUB-BIKE": PEDALCYCLIST INJURED SUBSEQUENT TO COLLISION, ETC.
110	N-MTR	NON-MOTORIST STRUCK VEHICLE
111	S CAR VS V	STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM) STRUCK VEHICLE
112	V VS S CAR	VEHICLE STRUCK STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM)
113	S CAR ROW	AT OR ON STREET CAR OR TROLLEY RIGHT-OF-WAY
114	RR EQUIP	VEHICLE STRUCK RAILROAD EQUIPMENT (NOT TRAIN) ON TRACKS
115	DSTRCT GPS	DISTRACTED BY NAVIGATION SYSTEM OR GPS DEVICE
116	DSTRCT OTH	DISTRACTED BY OTHER ELECTRONIC DEVICE
117	RR GATE	RAIL CROSSING DROP-ARM GATE

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
118	EXPNSN JNT	EXPANSION JOINT
119	JERSEY BAR	JERSEY BARRIER
120	WIRE BAR	WIRE OR CABLE MEDIAN BARRIER
121	FENCE	FENCE
123	OBJ IN VEH	LOOSE OBJECT IN VEHICLE STRUCK OCCUPANT
124	SLIPPERY	SLIDING OR SWERVING DUE TO WET, ICY, SLIPPERY OR LOOSE SURFACE (NOT GRAVEL)
125	SHLDR	SHOULDER GAVE WAY
126	BOULDER	ROCK(S), BOULDER (NOT GRAVEL; NOT ROCK SLIDE)
127	LAND SLIDE	ROCK SLIDE OR LAND SLIDE
128	CURVE INV	CURVE PRESENT AT CRASH LOCATION
129	HILL INV	VERTICAL GRADE / HILL PRESENT AT CRASH LOCATION
130	CURVE HID	VIEW OBSCURED BY CURVE
131	HILL HID	VIEW OBSCURED BY VERTICAL GRADE / HILL
132	WINDOW HID	VIEW OBSCURED BY VEHICLE WINDOW CONDITIONS
133	SPRAY HID	VIEW OBSCURED BY WATER SPRAY
134	TORRENTIAL	TORRENTIAL RAIN (EXCEPTIONALLY HEAVY RAIN)

FUNCTIONAL CLASSIFICATION TRANSLATION LIST

FUNC CLASS	DESCRIPTION
01	RURAL PRINCIPAL ARTERIAL - INTERSTATE
02	RURAL PRINCIPAL ARTERIAL - OTHER
06	RURAL MINOR ARTERIAL
07	RURAL MAJOR COLLECTOR
08	RURAL MINOR COLLECTOR
09	RURAL LOCAL
11	URBAN PRINCIPAL ARTERIAL - INTERSTATE
12	URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXP
14	URBAN PRINCIPAL ARTERIAL - OTHER
16	URBAN MINOR ARTERIAL
17	URBAN MAJOR COLLECTOR
18	URBAN MINOR COLLECTOR
19	URBAN LOCAL
78	UNKNOWN RURAL SYSTEM
79	UNKNOWN RURAL NON-SYSTEM
98	UNKNOWN URBAN SYSTEM
99	UNKNOWN URBAN NON-SYSTEM

HIGHWAY COMPONENT TRANSLATION LIST

CODE	DESCRIPTION
0	MAINLINE STATE HIGHWAY
1	COUPLET
3	FRONTAGE ROAD
6	CONNECTION
8	HIGHWAY - OTHER

INJURY SEVERITY CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
1	KILL	FATAL INJURY
2	INJA	INCAPACITATING INJURY - BLEEDING, BROKEN BONES
3	INJB	NON-INCAPACITATING INJURY
4	INJC	POSSIBLE INJURY - COMPLAINT OF PAIN
5	PRI	DIED PRIOR TO CRASH
7	NO<5	NO INJURY - 0 TO 4 YEARS OF AGE
9	NONE	PARTICIPANT UNINJURED, OVER THE AGE OF 4

LIGHT CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	DAY	DAYLIGHT
2	DLIT	DARKNESS - WITH STREET LIGHTS
3	DARK	DARKNESS - NO STREET LIGHTS
4	DAWN	DAWN (TWILIGHT)
5	DUSK	DUSK (TWILIGHT)

MEDIAN TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NO MEDIAN
1	RSDMD	SOLID MEDIAN BARRIER
2	DIVMD	EARTH, GRASS OR PAVED MEDIAN

MILEAGE TYPE CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
0	REGULAR MILEAGE
T	TEMPORARY
Y	SPUR
Z	OVERLAPPING

MOVEMENT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	STRGHT	STRAIGHT AHEAD
2	TURN-R	TURNING RIGHT
3	TURN-L	TURNING LEFT
4	U-TURN	MAKING A U-TURN
5	BACK	BACKING
6	STOP	STOPPED IN TRAFFIC
7	PRKD-P	PARKED - PROPERLY
8	PRKD-I	PARKED - IMPROPERLY
9	PARKNG	PARKING MANEUVER

NON-MOTORIST LOCATION CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
00	AT INTERSECTION - NOT IN ROADWAY
01	AT INTERSECTION - INSIDE CROSSWALK
02	AT INTERSECTION - IN ROADWAY, OUTSIDE CROSSWALK
03	AT INTERSECTION - IN ROADWAY, XWALK AVAIL UNKNWN
04	NOT AT INTERSECTION - IN ROADWAY
05	NOT AT INTERSECTION - ON SHOULDER
06	NOT AT INTERSECTION - ON MEDIAN
07	NOT AT INTERSECTION - WITHIN TRAFFIC RIGHT-OF-WAY
08	NOT AT INTERSECTION - IN BIKE PATH OR PARKING LANE
09	NOT-AT INTERSECTION - ON SIDEWALK
10	OUTSIDE TRAFFICWAY BOUNDARIES
13	AT INTERSECTION - IN BIKE LANE
14	NOT AT INTERSECTION - IN BIKE LANE
15	NOT AT INTERSECTION - INSIDE MID-BLOCK CROSSWALK
16	NOT AT INTERSECTION - IN PARKING LANE
18	OTHER, NOT IN ROADWAY
99	UNKNOWN LOCATION

ROAD CHARACTER CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	INTER	INTERSECTION
2	ALLEY	DRIVEWAY OR ALLEY
3	STRGHT	STRAIGHT ROADWAY
4	TRANS	TRANSITION
5	CURVE	CURVE (HORIZONTAL CURVE)
6	OPENAC	OPEN ACCESS OR TURNOUT
7	GRADE	GRADE (VERTICAL CURVE)
8	BRIDGE	BRIDGE STRUCTURE
9	TUNNEL	TUNNEL

PARTICIPANT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	OCC	UNKNOWN OCCUPANT TYPE
1	DRVR	DRIVER
2	PSNG	PASSENGER
3	PED	PEDESTRIAN
4	CONV	PEDESTRIAN USING A PEDESTRIAN CONVEYA
5	PTOW	PEDESTRIAN TOWING OR TRAILERING AN OB
6	BIKE	PEDALCYCLIST
7	BTOW	PEDALCYCLIST TOWING OR TRAILERING AN
8	PRKD	OCCUPANT OF A PARKED MOTOR VEHICLE
9	UNK	UNKNOWN TYPE OF NON-MOTORIST

TRAFFIC CONTROL DEVICE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
000	NONE	NO CONTROL
001	TRF SIGNAL	TRAFFIC SIGNALS
002	FLASHBCN-R	FLASHING BEACON - RED (STOP)
003	FLASHBCN-A	FLASHING BEACON - AMBER (SLOW)
004	STOP SIGN	STOP SIGN
005	SLOW SIGN	SLOW SIGN
006	REG-SIGN	REGULATORY SIGN
007	YIELD	YIELD SIGN
008	WARNING	WARNING SIGN
009	CURVE	CURVE SIGN
010	SCHL X-ING	SCHOOL CROSSING SIGN OR SPECIAL SIGNAL
011	OFCR/FLAG	POLICE OFFICER, FLAGMAN - SCHOOL PATROL
012	BRDG-GATE	BRIDGE GATE - BARRIER
013	TEMP-BARR	TEMPORARY BARRIER
014	NO-PASS-ZN	NO PASSING ZONE
015	ONE-WAY	ONE-WAY STREET
016	CHANNEL	CHANNELIZATION
017	MEDIAN BAR	MEDIAN BARRIER
018	PILOT CAR	PILOT CAR
019	SP PED SIG	SPECIAL PEDESTRIAN SIGNAL
020	X-BUCK	CROSSBUCK
021	THR-GN-SIG	THROUGH GREEN ARROW OR SIGNAL
022	L-GRN-SIG	LEFT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
023	R-GRN-SIG	RIGHT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
024	WIGWAG	WIGWAG OR FLASHING LIGHTS W/O DROP-ARM GATE
025	X-BUCK WRN	CROSSBUCK AND ADVANCE WARNING
026	WW W/ GATE	FLASHING LIGHTS WITH DROP-ARM GATES
027	OVRHD SGNL	SUPPLEMENTAL OVERHEAD SIGNAL (RR XING ONLY)
028	SP RR STOP	SPECIAL RR STOP SIGN
029	ILUM GRD X	ILLUMINATED GRADE CROSSING
037	RAMP METER	METERED RAMPS
038	RUMBLE STR	RUMBLE STRIP
090	L-TURN REF	LEFT TURN REFUGE (WHEN REFUGE IS INVOLVED)
091	R-TURN ALL	RIGHT TURN AT ALL TIMES SIGN, ETC.
092	EMR SGN/FL	EMERGENCY SIGNS OR FLARES
093	ACCEL LANE	ACCELERATION OR DECELERATION LANES
094	R-TURN PRO	RIGHT TURN PROHIBITED ON RED AFTER STOPPING
095	BUS STPSGN	BUS STOP SIGN AND RED LIGHTS
099	UNKNOWN	UNKNOWN OR NOT DEFINITE

VEHICLE TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
00	PDO	NOT COLLECTED FOR PDO CRASHES
01	PSNGR CAR	PASSENGER CAR, PICKUP, LIGHT DELIVERY, ETC.
02	BOBTAIL	TRUCK TRACTOR WITH NO TRAILERS (BOBTAIL)
03	FARM TRCTR	FARM TRACTOR OR SELF-PROPELLED FARM EQUIPMENT
04	SEMI TOW	TRUCK TRACTOR WITH TRAILER/MOBILE HOME IN TOW
05	TRUCK	TRUCK WITH NON-DETACHABLE BED, PANEL, ETC.
06	MOPED	MOPED, MINIBIKE, SEATED MOTOR SCOOTER, MOTOR BIKE
07	SCHL BUS	SCHOOL BUS (INCLUDES VAN)
08	OTH BUS	OTHER BUS
09	MTRCYCLE	MOTORCYCLE, DIRT BIKE
10	OTHER	OTHER: FORKLIFT, BACKHOE, ETC.
11	MOTRHOME	MOTORHOME
12	TROLLEY	MOTORIZED STREET CAR/TROLLEY (NO RAILS/WIRES)
13	ATV	ATV
14	MTRSCTR	MOTORIZED SCOOTER (STANDING)
15	SNOWMOBILE	SNOWMOBILE
99	UNKNOWN	UNKNOWN VEHICLE TYPE

WEATHER CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	CLR	CLEAR
2	CLD	CLOUDY
3	RAIN	RAIN
4	SLT	SLEET
5	FOG	FOG
6	SNOW	SNOW
7	DUST	DUST
8	SMOK	SMOKE
9	ASH	ASH

Appendix E
Year 2029 Background Traffic Conditions Analysis Worksheets

Intersection Level Of Service Report
Intersection 1: Blankenship Road/Parkrose Hardware Driveway/Office Park Driveway

Control Type:	Two-way stop	Delay (sec / veh):	29.8
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.093

Intersection Setup

Name	Pa Ha			Office Park Driveway			Blankenship Road			Blankenship Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	150.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	12.00			-5.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	Pa Ha			Office Park Driveway			Blankenship Road			Blankenship Road		
Base Volume Input [veh/h]	13	0	39	4	1	1	0	398	8	18	257	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	9.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	5.00	5.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	0	39	4	1	1	0	398	8	18	257	27
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	11	1	0	0	0	117	2	5	76	8
Total Analysis Volume [veh/h]	15	0	46	5	1	1	0	468	9	21	302	32
Pedestrian Volume [ped/h]	2			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.00	0.09	0.02	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	29.80	29.15	14.84	16.60	14.78	9.94	7.91	0.00	0.00	8.36	0.00	0.00
Movement LOS	D	D	B	C	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.67	0.67	0.67	0.06	0.06	0.06	0.00	0.00	0.00	0.06	0.00	0.00
95th-Percentile Queue Length [ft/ln]	16.86	16.86	16.86	1.51	1.51	1.51	0.00	0.00	0.00	1.47	0.00	0.00
d_A, Approach Delay [s/veh]	18.52			15.39			0.00			0.49		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	1.57											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 2: Blankenship Road/Tannler Drive

Control Type:	Two-way stop	Delay (sec / veh):	45.2
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.032

Intersection Setup

Name	Dutch Bros Driveway			Tannler Drive			Blankenship Road			Blankenship Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	90.00	100.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	7.00			-7.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	Dutch Bros Driveway			Tannler Drive			Blankenship Road			Blankenship Road		
Base Volume Input [veh/h]	3	1	51	117	5	51	44	385	12	108	248	47
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	4.00	1.00	0.00	0.00	5.00	2.00	0.00	2.00	4.00	9.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	1	51	117	5	51	44	385	12	108	248	47
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	14	33	1	14	12	108	3	30	70	13
Total Analysis Volume [veh/h]	3	1	57	131	6	57	49	433	13	121	279	53
Pedestrian Volume [ped/h]	3			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	2	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.10	0.60	0.02	0.07	0.04	0.00	0.00	0.11	0.00	0.00
d_M, Delay for Movement [s/veh]	45.20	37.61	12.17	44.79	41.15	9.95	8.10	0.00	0.00	8.65	0.00	0.00
Movement LOS	E	E	B	E	E	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.13	0.13	0.34	3.63	3.63	0.23	0.13	0.00	0.00	0.37	0.00	0.00
95th-Percentile Queue Length [ft/ln]	3.16	3.16	8.47	90.81	90.81	5.86	3.16	0.00	0.00	9.17	0.00	0.00
d_A, Approach Delay [s/veh]	14.21			34.44			0.80			2.31		
Approach LOS	B			D			A			A		
d_I, Intersection Delay [s/veh]	7.47											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 3: Blankenship Road/Salamo Road/10th Street

Control Type:	Signalized	Delay (sec / veh):	30.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.630

Intersection Setup

Name	10th Street		Blankenship Road		Salamo Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	250.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		35.00	
Grade [%]	7.00		0.00		-3.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	10th Street		Blankenship Road		Salamo Road	
Base Volume Input [veh/h]	293	366	68	486	493	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	5.00	8.00	5.00	2.00	3.00	1.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	4	0	33	0	0
Total Hourly Volume [veh/h]	293	362	68	453	493	110
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	80	99	19	124	135	30
Total Analysis Volume [veh/h]	322	398	75	498	542	121
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	1		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	Overlap	Overlap	Permissive	Overlap	Protected	Permissive
Flashing Yellow Arrow						
Signal Group	6	6	4	5	3	8
Auxiliary Signal Groups	5,6,7	3,5,6,7		4,5,7		
Maximum Green [s]	6	6	16	40	35	32
Amber [s]	4.0	4.0	4.0	4.0	4.0	5.0
All red [s]	1.5	1.5	1.5	1.5	1.5	1.0
Walk [s]	0.0	0.0	8.0	7.0	7.0	0.0
Pedestrian Clearance [s]	0.0	0.0	27.0	15.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	9.0	9.0	14.0	14.0	9.0	14.0
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	2	2	6	10	4	6
Vehicle Extension [s]	0.5	0.5	2.3	5.2	2.3	2.3
Minimum Recall	No	No	No	Yes	No	No
Maximum Recall	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Calculated Cycle Length [s]	116	116	116	116	116	116
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	51.6	88.1	11.6	58.4	36.5	52.1
g / C, Green / Cycle	0.45	0.76	0.10	0.50	0.32	0.45
(v / s)_i Volume / Saturation Flow Rate	0.22	0.31	0.04	0.31	0.31	0.06
s, saturation flow rate [veh/h]	1476	1264	1825	1589	1767	1885
c, Capacity [veh/h]	621	914	183	762	556	847
d1, Uniform Delay [s]	14.76	0.00	48.95	14.59	39.23	18.77
k, delay calibration	0.31	0.49	0.07	0.50	0.47	0.07
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.88	1.48	0.90	4.34	31.00	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.33	1.33	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.52	0.44	0.41	0.65	0.97	0.14
d, Delay for Lane Group [s/veh]	16.65	1.48	49.85	18.93	70.23	18.81
Lane Group LOS	B	A	D	B	E	B
Critical Lane Group	Yes	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	4.40	0.37	2.10	8.26	19.55	1.89
50th-Percentile Queue Length [ft/ln]	110.02	9.36	52.48	206.43	488.86	47.31
95th-Percentile Queue Length [veh/ln]	7.84	0.67	3.78	12.97	26.81	3.41
95th-Percentile Queue Length [ft/ln]	196.03	16.85	94.46	324.24	670.16	85.16

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	16.65	1.48	49.85	18.93	70.23	18.81
Movement LOS	B	A	D	B	E	B
d_A, Approach Delay [s/veh]	8.26		22.97		60.85	
Approach LOS	A		C		E	
d_I, Intersection Delay [s/veh]	30.40					
Intersection LOS	C					
Intersection V/C	0.630					

Emissions

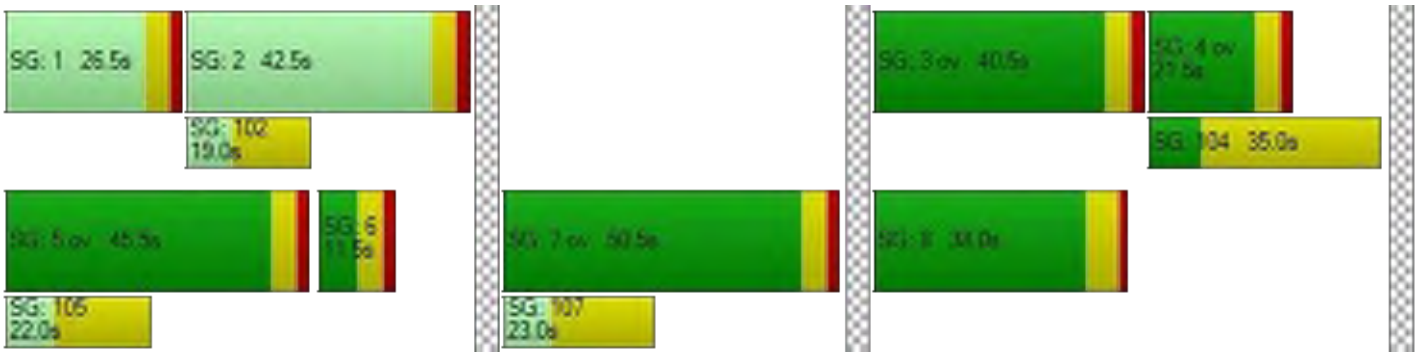
Vehicle Miles Traveled [mph]	16.04	19.83	3.96	26.28	75.09	16.76
Stops [stops/h]	136.96	11.65	65.33	256.98	608.58	58.90
Fuel consumption [US gal/h]	2.34	1.06	1.19	4.09	15.18	1.55
CO [g/h]	163.40	73.81	83.14	285.57	1061.42	108.01
NOx [g/h]	31.79	14.36	16.18	55.56	206.51	21.02
VOC [g/h]	37.87	17.11	19.27	66.18	245.99	25.03

Other Modes

g_Walk,mi, Effective Walk Time [s]	12.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.46	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	2.513	0.000	0.000
Crosswalk LOS	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	415	277	553
d_b, Bicycle Delay [s]	36.34	42.94	30.26
l_b,int, Bicycle LOS Score for Intersection	1.560	2.560	2.654
Bicycle LOS	A	B	B

Sequence

Ring 1	1	2	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: 10th Street/I-205 SB Ramp

Control Type:	Signalized	Delay (sec / veh):	42.1
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.680

Intersection Setup

Name	10th Street			10th Street			I-205 SB Entry Ramp			I-205 SB Exit Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	200.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	200.00
No. of Lanes in Exit Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			30.00			45.00		
Grade [%]	9.00			-4.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	10th Street			10th Street			I-205 SB Entry Ramp			I-205 SB Exit Ramp		
Base Volume Input [veh/h]	165	499	0	0	507	472	0	0	0	133	4	160
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	9.00	7.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	6.00	25.00	4.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	122	0	0	0	0	0	73
Total Hourly Volume [veh/h]	165	499	0	0	507	350	0	0	0	133	4	87
Peak Hour Factor	0.9000	0.9000	1.0000	1.0000	0.9000	0.9000	1.0000	1.0000	1.0000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	139	0	0	141	97	0	0	0	37	1	24
Total Analysis Volume [veh/h]	183	554	0	0	563	389	0	0	0	148	4	97
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			1			2			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			2			1			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	1			1			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	ProtPer	Permiss	Permiss	Permiss	Overlap	Overlap	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow	Yes											
Signal Group	1	5	0	0	2	2	0	0	0	0	7	0
Auxiliary Signal Groups					2,3,4	2,3,4						
Maximum Green [s]	21	40	0	0	37	37	0	0	0	0	45	0
Amber [s]	4.0	4.0	0.0	0.0	4.0	4.0	0.0	0.0	0.0	0.0	4.0	0.0
All red [s]	1.5	1.5	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	1.5	0.0
Walk [s]	0.0	7.0	0.0	0.0	7.0	7.0	0.0	0.0	0.0	0.0	7.0	0.0
Pedestrian Clearance [s]	0.0	15.0	0.0	0.0	12.0	12.0	0.0	0.0	0.0	0.0	16.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	9.0	14.0	0.0	0.0	14.0	14.0	0.0	0.0	0.0	0.0	14.0	0.0
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	4	10	0	0	6	6	0	0	0	0	6	0
Vehicle Extension [s]	2.3	5.2	0.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0
Minimum Recall	No	Yes			Yes	Yes					No	
Maximum Recall	No	No			No	No					No	
Pedestrian Recall	No	No			No	No					No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C		C	R
C, Calculated Cycle Length [s]	113	113	113	113		113	113
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	18.5	41.5	62.8	62.8		15.5	15.5
g / C, Green / Cycle	0.16	0.37	0.56	0.56		0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.14	0.38	0.25	0.30		0.10	0.06
s, saturation flow rate [veh/h]	1344	1441	1869	1602		1454	1564
c, Capacity [veh/h]	220	530	991	849		200	215
d1, Uniform Delay [s]	45.68	35.70	8.38	8.89		46.88	44.76
k, delay calibration	0.21	0.50	0.29	0.39		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	14.35	51.61	0.98	2.09		5.84	1.47
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.83	1.05	0.48	0.56		0.76	0.45
d, Delay for Lane Group [s/veh]	60.03	87.31	9.36	10.98		52.72	46.23
Lane Group LOS	E	F	A	B		D	D
Critical Lane Group	No	Yes	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	5.86	21.95	3.53	3.95		4.31	2.51
50th-Percentile Queue Length [ft/ln]	146.60	548.76	88.32	98.82		107.64	62.84
95th-Percentile Queue Length [veh/ln]	9.84	30.57	6.36	7.11		7.71	4.52
95th-Percentile Queue Length [ft/ln]	245.89	764.21	158.98	177.87		192.72	113.12

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	60.03	87.31	0.00	0.00	9.61	10.98	0.00	0.00	0.00	52.72	52.72	46.23
Movement LOS	E	F			A	B				D	D	D
d_A, Approach Delay [s/veh]	80.53			10.17			0.00			50.19		
Approach LOS	F			B			A			D		
d_I, Intersection Delay [s/veh]	42.07											
Intersection LOS	D											
Intersection V/C	0.680											

Emissions

Vehicle Miles Traveled [mph]	19.41	58.75	23.72	23.72		15.25	9.73
Stops [stops/h]	187.21	700.75	112.78	126.19		137.46	80.25
Fuel consumption [US gal/h]	3.83	15.17	2.41	2.61		3.86	2.24
CO [g/h]	267.44	1060.52	168.19	182.72		269.98	156.85
NOx [g/h]	52.03	206.34	32.72	35.55		52.53	30.52
VOC [g/h]	61.98	245.79	38.98	42.35		62.57	36.35

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	1030.87	1011.73	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	45.92	0.00	45.92	45.92
l_p,int, Pedestrian LOS Score for Intersectio	2.436	0.000	2.115	2.065
Crosswalk LOS	B	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	709	603	0	798
d_b, Bicycle Delay [s]	23.49	27.52	56.38	20.36
l_b,int, Bicycle LOS Score for Intersection	2.776	2.446	4.132	2.091
Bicycle LOS	C	B	D	B

Sequence

Ring 1	1	2	-	3	4	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 5: 10th Street/I-205 NB Ramp

Control Type:	Signalized	Delay (sec / veh):	24.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.586

Intersection Setup

Name	10th Street			10th Street			I-205 NB Exit Ramp			I-205 NB Entry Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	60.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			45.00			30.00		
Grade [%]	0.00			0.00			-4.00			0.00		
Curb Present	No			No			No					
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	10th Street			10th Street			I-205 NB Exit Ramp			I-205 NB Entry Ramp		
Base Volume Input [veh/h]	0	397	187	249	391	0	267	0	149	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	6.00	2.00	3.00	4.00	2.00	9.00	0.00	1.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	60	0	0	0	0	0	91	0	0	0
Total Hourly Volume [veh/h]	0	397	127	249	391	0	267	0	58	0	0	0
Peak Hour Factor	1.0000	0.8800	0.8800	0.8800	0.8800	1.0000	0.8800	0.8800	0.8800	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	113	36	71	111	0	76	0	16	0	0	0
Total Analysis Volume [veh/h]	0	451	144	283	444	0	303	0	66	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			1			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			1			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	1			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow				No								
Signal Group	0	6	0	5	2	0	5	8	0	0	0	0
Auxiliary Signal Groups												
Maximum Green [s]	0	50	0	45	30	0	45	20	0	0	0	0
Amber [s]	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0
Walk [s]	0.0	7.0	0.0	0.0	7.0	0.0	0.0	7.0	0.0	0.0	0.0	0.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	15.0	0.0	0.0	17.0	0.0	0.0	0.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	0.0	14.0	0.0	9.0	14.0	0.0	9.0	14.0	0.0	0.0	0.0	0.0
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	4	10	0	4	6	0	0	0	0
Vehicle Extension [s]	0.0	6.9	0.0	2.3	6.9	0.0	2.3	2.3	0.0	0.0	0.0	0.0
Minimum Recall		Yes		No	Yes			No				
Maximum Recall		Yes		No	No			Yes				
Pedestrian Recall		No		No	No			No				

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C	R	
C, Calculated Cycle Length [s]	100	100	100	100	100	100	
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	3.00	3.00	0.00	3.00	3.00	3.00	
g_i, Effective Green Time [s]	50.0	50.0	70.2	70.2	20.0	20.0	
g / C, Green / Cycle	0.50	0.50	0.70	0.70	0.20	0.20	
(v / s)_i Volume / Saturation Flow Rate	0.25	0.09	0.27	0.24	0.17	0.04	
s, saturation flow rate [veh/h]	1810	1557	1054	1840	1809	1602	
c, Capacity [veh/h]	902	776	710	1290	361	319	
d1, Uniform Delay [s]	16.80	13.87	10.54	12.08	41.92	36.41	
k, delay calibration	0.50	0.50	0.66	0.66	0.50	0.50	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.98	0.53	2.19	0.96	20.43	1.46	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	0.67	0.67	0.67	0.67	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.50	0.19	0.40	0.34	0.84	0.21	
d, Delay for Lane Group [s/veh]	18.77	14.40	12.73	13.04	62.35	37.87	
Lane Group LOS	B	B	B	B	E	D	
Critical Lane Group	Yes	No	Yes	No	Yes	No	
50th-Percentile Queue Length [veh/ln]	7.28	1.90	4.43	7.26	9.47	1.53	
50th-Percentile Queue Length [ft/ln]	182.05	47.57	110.80	181.40	236.76	38.27	
95th-Percentile Queue Length [veh/ln]	11.71	3.43	7.88	11.67	14.52	2.76	
95th-Percentile Queue Length [ft/ln]	292.69	85.63	197.11	291.85	362.94	68.88	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	18.77	14.40	12.73	13.04	0.00	62.35	62.35	37.87	0.00	0.00	0.00
Movement LOS		B	B	B	B		E	E	D			
d_A, Approach Delay [s/veh]	17.71			12.92			57.97			0.00		
Approach LOS	B			B			E			A		
d_I, Intersection Delay [s/veh]	24.44											
Intersection LOS	C											
Intersection V/C	0.586											

Emissions

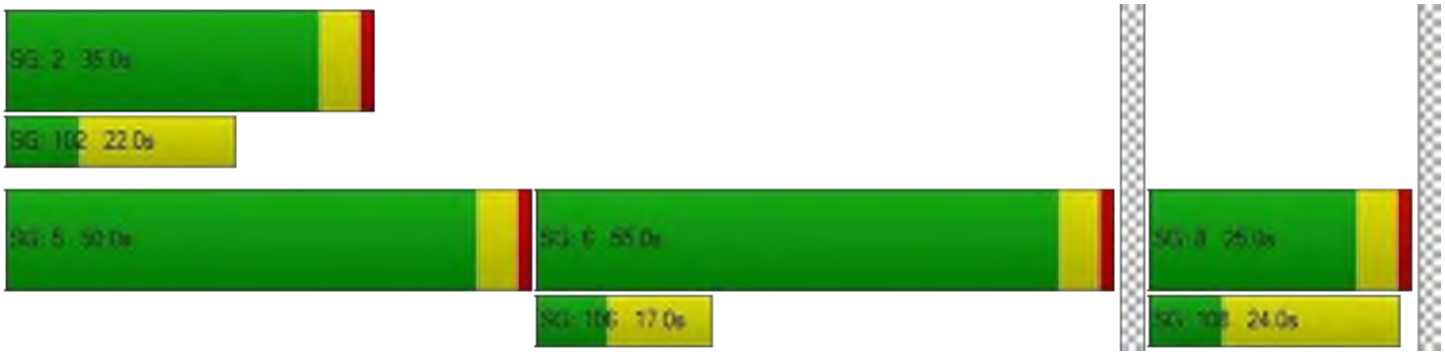
Vehicle Miles Traveled [mph]	26.66	8.51	30.01	47.09	23.25	5.07	
Stops [stops/h]	261.51	68.33	159.16	260.59	340.11	54.97	
Fuel consumption [US gal/h]	3.93	1.07	2.69	4.30	8.87	1.37	
CO [g/h]	274.36	74.57	188.28	300.27	620.02	95.47	
NOx [g/h]	53.38	14.51	36.63	58.42	120.63	18.57	
VOC [g/h]	63.59	17.28	43.64	69.59	143.70	22.13	

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	3150.00	3100.34	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	7536.64	0.00
d_p, Pedestrian Delay [s]	39.73	0.00	39.73	39.73
l_p,int, Pedestrian LOS Score for Intersectio	2.371	0.000	2.186	2.042
Crosswalk LOS	B	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	998	599	399	0
d_b, Bicycle Delay [s]	12.60	24.61	32.12	50.12
l_b,int, Bicycle LOS Score for Intersection	2.640	2.759	2.319	4.132
Bicycle LOS	B	C	B	D

Sequence

Ring 1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: 10th Street/8th Avenue/8th Court

Control Type:	Two-way stop	Delay (sec / veh):	49.8
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.293

Intersection Setup

Name	10th Street			10th Street			8th Avenue			8th Court		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	90.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	60.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	10th Street			10th Street			8th Avenue			8th Court		
Base Volume Input [veh/h]	1	441	63	129	316	95	3	1	50	29	0	140
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	6.00	3.00	3.00	7.00	2.00	0.00	0.00	4.00	4.00	2.00	3.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	441	63	129	316	95	3	1	50	29	0	140
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	1.0000	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	124	18	36	89	27	1	0	14	8	0	39
Total Analysis Volume [veh/h]	1	496	71	145	355	107	3	1	56	33	0	157
Pedestrian Volume [ped/h]	1			1			1			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.14	0.00	0.00	0.04	0.01	0.09	0.29	0.00	0.29
d_M, Delay for Movement [s/veh]	8.25	0.00	0.00	9.21	0.00	0.00	49.57	31.02	11.85	49.77	0.00	14.26
Movement LOS	A	A	A	A	A	A	E	D	B	E		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.51	0.00	0.00	0.45	0.45	0.45	1.12	0.00	1.19
95th-Percentile Queue Length [ft/ln]	0.04	0.04	0.04	12.66	0.00	0.00	11.22	11.22	11.22	27.98	0.00	29.65
d_A, Approach Delay [s/veh]	0.01			2.20			14.05			20.43		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	4.26											
Intersection LOS	E											

Intersection Level Of Service Report

Intersection 1: Blankenship Road/Parkrose Hardware Driveway/Office Park Driveway

Control Type:	Two-way stop	Delay (sec / veh):	109.6
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.325

Intersection Setup

Name	Pa Ha			Office Park Driveway			Blankenship Road			Blankenship Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	150.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	12.00			-5.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	Pa Ha			Office Park Driveway			Blankenship Road			Blankenship Road		
Base Volume Input [veh/h]	15	2	28	14	2	0	2	866	24	17	341	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	4.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	2	28	14	2	0	2	866	24	17	341	3
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	1	8	4	1	0	1	233	6	5	92	1
Total Analysis Volume [veh/h]	16	2	30	15	2	0	2	931	26	18	367	3
Pedestrian Volume [ped/h]	6			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.33	0.03	0.13	0.10	0.01	0.00	0.00	0.01	0.00	0.03	0.00	0.00
d_M, Delay for Movement [s/veh]	109.63	97.92	52.31	31.95	25.10	12.88	8.01	0.00	0.00	10.14	0.00	0.00
Movement LOS	F	F	F	D	D	B	A	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	2.16	2.16	2.16	0.36	0.36	0.36	0.01	0.00	0.00	0.08	0.00	0.00
95th-Percentile Queue Length [ft/ln]	53.89	53.89	53.89	9.08	9.08	9.08	0.13	0.00	0.00	1.92	0.00	0.00
d_A, Approach Delay [s/veh]	73.32			31.15			0.02			0.47		
Approach LOS	F			D			A			A		
d_I, Intersection Delay [s/veh]	3.01											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Blankenship Road/Tannler Drive

Control Type:	Two-way stop	Delay (sec / veh):	162.7
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.968

*SB approach modeled with dedicated right-turn lane to match field-observed intersection operations.

Intersection Setup

Name	Dutch Bros Driveway			Tannler Drive			Blankenship Road			Blankenship Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				*								
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	90.00	100.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	7.00			-7.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	Dutch Bros Driveway			Tannler Drive			Blankenship Road			Blankenship Road		
Base Volume Input [veh/h]	0	2	64	88	2	77	137	766	5	43	284	44
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	3.00	1.00	0.00	1.00	1.00	1.00	0.00	2.00	0.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2	64	88	2	77	137	766	5	43	284	44
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	17	24	1	21	37	208	1	12	77	12
Total Analysis Volume [veh/h]	0	2	70	96	2	84	149	833	5	47	309	48
Pedestrian Volume [ped/h]	1			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	2	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.04	0.23	0.97	0.01	0.11	0.12	0.01	0.00	0.06	0.00	0.00
d_M, Delay for Movement [s/veh]	116.07	82.19	19.96	162.73	147.54	10.34	8.40	0.00	0.00	9.81	0.00	0.00
Movement LOS	F	F	C	F	F	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.13	0.13	0.85	5.94	5.94	0.37	0.42	0.00	0.00	0.19	0.00	0.00
95th-Percentile Queue Length [ft/ln]	3.15	3.15	21.26	148.40	148.40	9.30	10.53	0.00	0.00	4.70	0.00	0.00
d_A, Approach Delay [s/veh]	21.69			92.23			1.27			1.14		
Approach LOS	C			F			A			A		
d_I, Intersection Delay [s/veh]	12.19											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: Blankenship Road/Salamo Road/10th Street

Control Type:	Signalized	Delay (sec / veh):	32.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.485

Intersection Setup

Name	10th Street		Blankenship Road		Salamo Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	250.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		35.00	
Grade [%]	7.00		0.00		-3.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	10th Street		Blankenship Road		Salamo Road	
Base Volume Input [veh/h]	263	313	160	759	399	108
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	2.00	3.00	1.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	17	0	18	0	0
Total Hourly Volume [veh/h]	263	296	160	741	399	108
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	70	79	43	197	106	29
Total Analysis Volume [veh/h]	280	315	170	788	424	115
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	1		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	Overlap	Overlap	Permissive	Overlap	Protected	Permissive
Flashing Yellow Arrow						
Signal Group	6	6	4	5	3	8
Auxiliary Signal Groups	5,6,7	3,5,6,7		4,5,7		
Maximum Green [s]	6	6	16	40	35	32
Amber [s]	4.0	4.0	4.0	4.0	4.0	5.0
All red [s]	1.5	1.5	1.5	1.5	1.5	1.0
Walk [s]	0.0	0.0	8.0	7.0	7.0	0.0
Pedestrian Clearance [s]	0.0	0.0	27.0	15.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	9.0	9.0	14.0	14.0	9.0	14.0
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	2	2	6	10	4	6
Vehicle Extension [s]	0.5	0.5	2.3	5.2	2.3	2.3
Minimum Recall	No	No	No	Yes	No	No
Maximum Recall	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Calculated Cycle Length [s]	131	131	131	131	131	131
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	63.0	97.5	17.5	76.0	34.5	56.0
g / C, Green / Cycle	0.48	0.74	0.13	0.58	0.26	0.43
(v / s)_i Volume / Saturation Flow Rate	0.18	0.23	0.09	0.50	0.24	0.06
s, saturation flow rate [veh/h]	1533	1351	1885	1577	1767	1885
c, Capacity [veh/h]	702	959	252	878	466	806
d1, Uniform Delay [s]	13.33	0.09	54.12	16.20	46.75	22.86
k, delay calibration	0.29	0.35	0.20	0.50	0.37	0.07
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.98	0.64	5.81	13.87	19.46	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.33	1.33	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.40	0.33	0.68	0.90	0.91	0.14
d, Delay for Lane Group [s/veh]	14.32	0.73	59.92	30.06	66.21	22.91
Lane Group LOS	B	A	E	C	E	C
Critical Lane Group	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	3.63	0.22	5.80	18.33	15.74	2.18
50th-Percentile Queue Length [ft/ln]	90.87	5.41	145.02	458.37	393.45	54.53
95th-Percentile Queue Length [veh/ln]	6.54	0.39	9.75	25.36	22.24	3.93
95th-Percentile Queue Length [ft/ln]	163.56	9.73	243.76	633.93	556.10	98.16

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	14.32	0.73	59.92	30.06	66.21	22.91
Movement LOS	B	A	E	C	E	C
d_A, Approach Delay [s/veh]	7.12		35.36		56.98	
Approach LOS	A		D		E	
d_I, Intersection Delay [s/veh]	32.90					
Intersection LOS	C					
Intersection V/C	0.485					

Emissions

Vehicle Miles Traveled [mph]	13.95	15.69	8.97	41.58	58.75	15.93
Stops [stops/h]	99.87	5.94	159.39	503.81	432.45	59.94
Fuel consumption [US gal/h]	1.83	0.78	3.09	8.62	11.20	1.59
CO [g/h]	127.65	54.19	215.82	602.76	783.17	111.44
NOx [g/h]	24.84	10.54	41.99	117.27	152.38	21.68
VOC [g/h]	29.58	12.56	50.02	139.69	181.51	25.83

Other Modes

g_Walk,mi, Effective Walk Time [s]	12.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	54.06	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	2.547	0.000	0.000
Crosswalk LOS	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	366	244	489
d_b, Bicycle Delay [s]	43.73	50.51	37.41
l_b,int, Bicycle LOS Score for Intersection	1.560	3.170	2.449
Bicycle LOS	A	C	B

Sequence

Ring 1	1	2	-	3	4	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: 10th Street/I-205 SB Ramp

Control Type:	Signalized	Delay (sec / veh):	23.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.549

Intersection Setup

Name	10th Street			10th Street			I-205 SB Entry Ramp			I-205 SB Exit Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	200.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	200.00
No. of Lanes in Exit Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			30.00			45.00		
Grade [%]	9.00			-4.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	10th Street			10th Street			I-205 SB Entry Ramp			I-205 SB Exit Ramp		
Base Volume Input [veh/h]	102	287	0	0	843	315	0	0	0	193	3	289
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	5.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00	0.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	88	0	0	0	0	0	195
Total Hourly Volume [veh/h]	102	287	0	0	843	227	0	0	0	193	3	94
Peak Hour Factor	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	76	0	0	222	60	0	0	0	51	1	25
Total Analysis Volume [veh/h]	107	302	0	0	887	239	0	0	0	203	3	99
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			2			2			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			2			2			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	131
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow	Yes											
Signal Group	1	5	0	0	2	2	0	0	0	0	7	0
Auxiliary Signal Groups												
Maximum Green [s]	11	56	0	0	86	86	0	0	0	0	18	0
Amber [s]	4.0	4.0	0.0	0.0	4.0	4.0	0.0	0.0	0.0	0.0	4.0	0.0
All red [s]	1.5	1.5	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	1.5	0.0
Walk [s]	0.0	7.0	0.0	0.0	7.0	7.0	0.0	0.0	0.0	0.0	7.0	0.0
Pedestrian Clearance [s]	0.0	15.0	0.0	0.0	12.0	12.0	0.0	0.0	0.0	0.0	16.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	22.0	60.0	0.0	0.0	86.0	86.0	0.0	0.0	0.0	0.0	23.0	0.0
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	10	10	0	0	0	0	10	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C		C	R
C, Calculated Cycle Length [s]	131	131	131	131		131	131
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	102.5	56.0	82.0	82.0		19.0	19.0
g / C, Green / Cycle	0.78	0.43	0.63	0.63		0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.18	0.20	0.30	0.32		0.11	0.06
s, saturation flow rate [veh/h]	590	1531	1869	1737		1811	1615
c, Capacity [veh/h]	501	654	1170	1087		263	234
d1, Uniform Delay [s]	13.55	42.33	4.95	5.08		54.02	51.00
k, delay calibration	0.50	0.50	0.50	0.50		0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	0.97	2.33	1.42	1.76		20.57	5.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	0.33	0.33	1.33	1.33		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.21	0.46	0.48	0.52		0.78	0.42
d, Delay for Lane Group [s/veh]	14.53	44.66	6.37	6.84		74.59	56.51
Lane Group LOS	B	D	A	A		E	E
Critical Lane Group	Yes	No	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	2.72	10.22	3.61	3.72		7.90	3.26
50th-Percentile Queue Length [ft/ln]	67.93	255.62	90.16	92.90		197.59	81.59
95th-Percentile Queue Length [veh/ln]	4.89	15.47	6.49	6.69		12.51	5.87
95th-Percentile Queue Length [ft/ln]	122.27	386.72	162.29	167.21		312.85	146.86

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	14.53	44.66	0.00	0.00	6.54	6.84	0.00	0.00	0.00	74.59	74.59	56.51
Movement LOS	B	D			A	A				E	E	E
d_A, Approach Delay [s/veh]	36.78			6.61			0.00			68.72		
Approach LOS	D			A			A			E		
d_I, Intersection Delay [s/veh]	23.61											
Intersection LOS	C											
Intersection V/C	0.549											

Emissions

Vehicle Miles Traveled [mph]	11.35	32.03	28.05	28.05		20.67	9.93
Stops [stops/h]	74.67	280.98	99.11	102.12		217.20	89.69
Fuel consumption [US gal/h]	1.11	5.26	2.37	2.44		6.54	2.59
CO [g/h]	77.81	367.85	165.78	170.34		456.84	181.32
NOx [g/h]	15.14	71.57	32.25	33.14		88.88	35.28
VOC [g/h]	18.03	85.25	38.42	39.48		105.88	42.02

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	753.15	753.15	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	54.96	0.00	54.96	54.96
l_p,int, Pedestrian LOS Score for Intersectio	2.454	0.000	1.899	2.376
Crosswalk LOS	B	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	832	1229	0	267
d_b, Bicycle Delay [s]	22.34	9.73	65.50	49.17
l_b,int, Bicycle LOS Score for Intersection	2.234	2.561	4.132	2.385
Bicycle LOS	B	B	D	B

Sequence

Ring 1	1	2	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 5: 10th Street/I-205 NB Ramp

Control Type:	Signalized	Delay (sec / veh):	20.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.637

Intersection Setup

Name	10th Street			10th Street			I-205 NB Exit Ramp			I-205 NB Entry Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	60.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			45.00			30.00		
Grade [%]	0.00			0.00			-4.00			0.00		
Curb Present	No			No			No					
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	10th Street			10th Street			I-205 NB Exit Ramp			I-205 NB Entry Ramp		
Base Volume Input [veh/h]	0	329	514	561	475	0	60	2	49	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	3.00	0.00	2.00	0.00	50.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	63	0	0	0	0	0	35	0	0	0
Total Hourly Volume [veh/h]	0	329	451	561	475	0	60	2	14	0	0	0
Peak Hour Factor	1.0000	0.9700	0.9700	0.9700	0.9700	1.0000	0.9700	0.9700	0.9700	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	85	116	145	122	0	15	1	4	0	0	0
Total Analysis Volume [veh/h]	0	339	465	578	490	0	62	2	14	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			3			4			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			4			3			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow				No								
Signal Group	0	6	0	5	2	0	5	8	0	0	0	0
Auxiliary Signal Groups												
Maximum Green [s]	0	50	0	45	30	0	45	20	0	0	0	0
Amber [s]	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0
Walk [s]	0.0	7.0	0.0	0.0	7.0	0.0	0.0	7.0	0.0	0.0	0.0	0.0
Pedestrian Clearance [s]	0.0	10.0	0.0	0.0	15.0	0.0	0.0	17.0	0.0	0.0	0.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	0.0	14.0	0.0	9.0	14.0	0.0	9.0	14.0	0.0	0.0	0.0	0.0
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	4	10	0	4	6	0	0	0	0
Vehicle Extension [s]	0.0	6.9	0.0	2.3	6.9	0.0	2.3	2.3	0.0	0.0	0.0	0.0
Minimum Recall		Yes		No	Yes			No				
Maximum Recall		Yes		Yes	Yes			No				
Pedestrian Recall		No		No	No			No				

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C	R	
C, Calculated Cycle Length [s]	118	118	118	118	118	118	
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	3.00	3.00	0.00	3.00	3.00	3.00	
g_i, Effective Green Time [s]	50.0	50.0	100.0	100.0	8.2	8.2	
g / C, Green / Cycle	0.42	0.42	0.85	0.85	0.07	0.07	
(v / s)_i Volume / Saturation Flow Rate	0.18	0.29	0.48	0.26	0.06	0.01	
s, saturation flow rate [veh/h]	1855	1589	1192	1900	1105	1589	
c, Capacity [veh/h]	785	673	1014	1608	76	110	
d1, Uniform Delay [s]	24.06	27.79	8.66	7.45	54.35	51.65	
k, delay calibration	0.50	0.50	0.50	0.50	0.07	0.07	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.73	5.76	2.33	0.49	13.59	0.32	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	0.67	0.67	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.43	0.69	0.57	0.30	0.84	0.13	
d, Delay for Lane Group [s/veh]	25.79	33.55	10.98	7.94	67.94	51.97	
Lane Group LOS	C	C	B	A	E	D	
Critical Lane Group	No	Yes	Yes	No	Yes	No	
50th-Percentile Queue Length [veh/ln]	7.13	11.77	9.92	7.63	2.12	0.39	
50th-Percentile Queue Length [ft/ln]	178.20	294.30	247.95	190.83	53.05	9.77	
95th-Percentile Queue Length [veh/ln]	11.51	17.40	15.08	12.16	3.82	0.70	
95th-Percentile Queue Length [ft/ln]	287.66	434.97	377.07	304.11	95.48	17.59	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	25.79	33.55	10.98	7.94	0.00	67.94	67.94	51.97	0.00	0.00	0.00
Movement LOS		C	C	B	A		E	E	D			
d_A, Approach Delay [s/veh]	30.28			9.59			65.07			0.00		
Approach LOS	C			A			E			A		
d_I, Intersection Delay [s/veh]	20.34											
Intersection LOS	C											
Intersection V/C	0.637											

Emissions

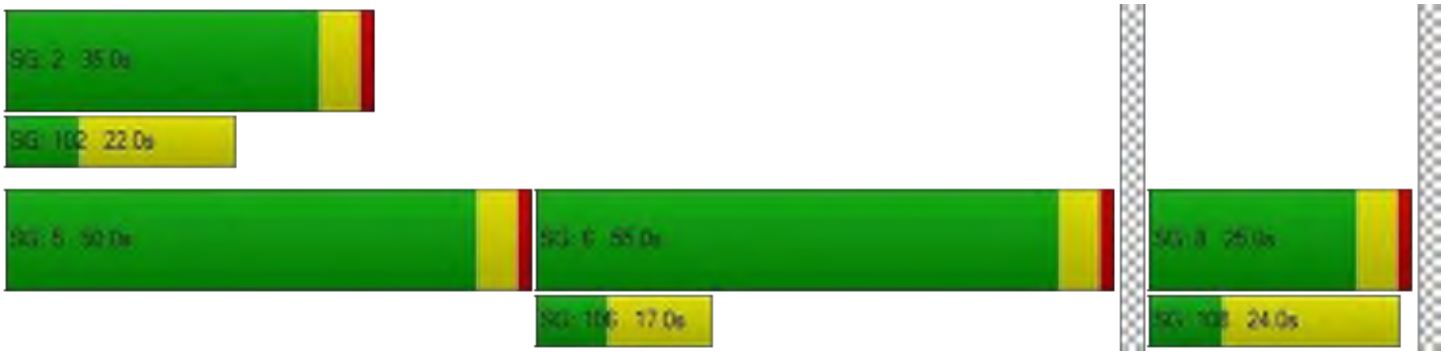
Vehicle Miles Traveled [mph]	20.04	27.49	61.30	51.97	4.91	1.07	
Stops [stops/h]	217.18	358.68	302.19	232.58	64.65	11.91	
Fuel consumption [US gal/h]	3.51	5.79	5.21	4.02	1.86	0.33	
CO [g/h]	245.59	404.48	364.03	281.10	129.80	23.27	
NOx [g/h]	47.78	78.70	70.83	54.69	25.25	4.53	
VOC [g/h]	56.92	93.74	84.37	65.15	30.08	5.39	

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	423.97	415.29	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	911.46	0.00
d_p, Pedestrian Delay [s]	48.59	0.00	48.59	48.59
l_p,int, Pedestrian LOS Score for Intersectio	2.424	0.000	1.860	2.758
Crosswalk LOS	B	F	A	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	846	508	339	0
d_b, Bicycle Delay [s]	19.66	32.89	40.77	59.08
l_b,int, Bicycle LOS Score for Intersection	2.990	3.322	1.746	4.132
Bicycle LOS	C	C	A	D

Sequence

Ring 1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: 10th Street/8th Avenue/8th Court

Control Type:	Two-way stop	Delay (sec / veh):	115.8
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.495

Intersection Setup

*NB approach modeled to permit all movements to match field-observed intersection operations.

*EB approach modeled to permit all movements to match field-observed intersection operations.

Name	10th Street			10th Street			8th Avenue			8th Court		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	*						*					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	90.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	60.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	10th Street			10th Street			8th Avenue			8th Court		
Base Volume Input [veh/h]	0	707	51	91	286	147	10	4	239	28	0	126
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	2.00	2.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	2.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	707	51	91	286	147	10	4	239	28	0	126
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	1.0000	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	184	13	24	74	38	3	1	62	7	0	33
Total Analysis Volume [veh/h]	0	736	53	95	298	153	10	4	249	29	0	131
Pedestrian Volume [ped/h]	2			0			5			0		

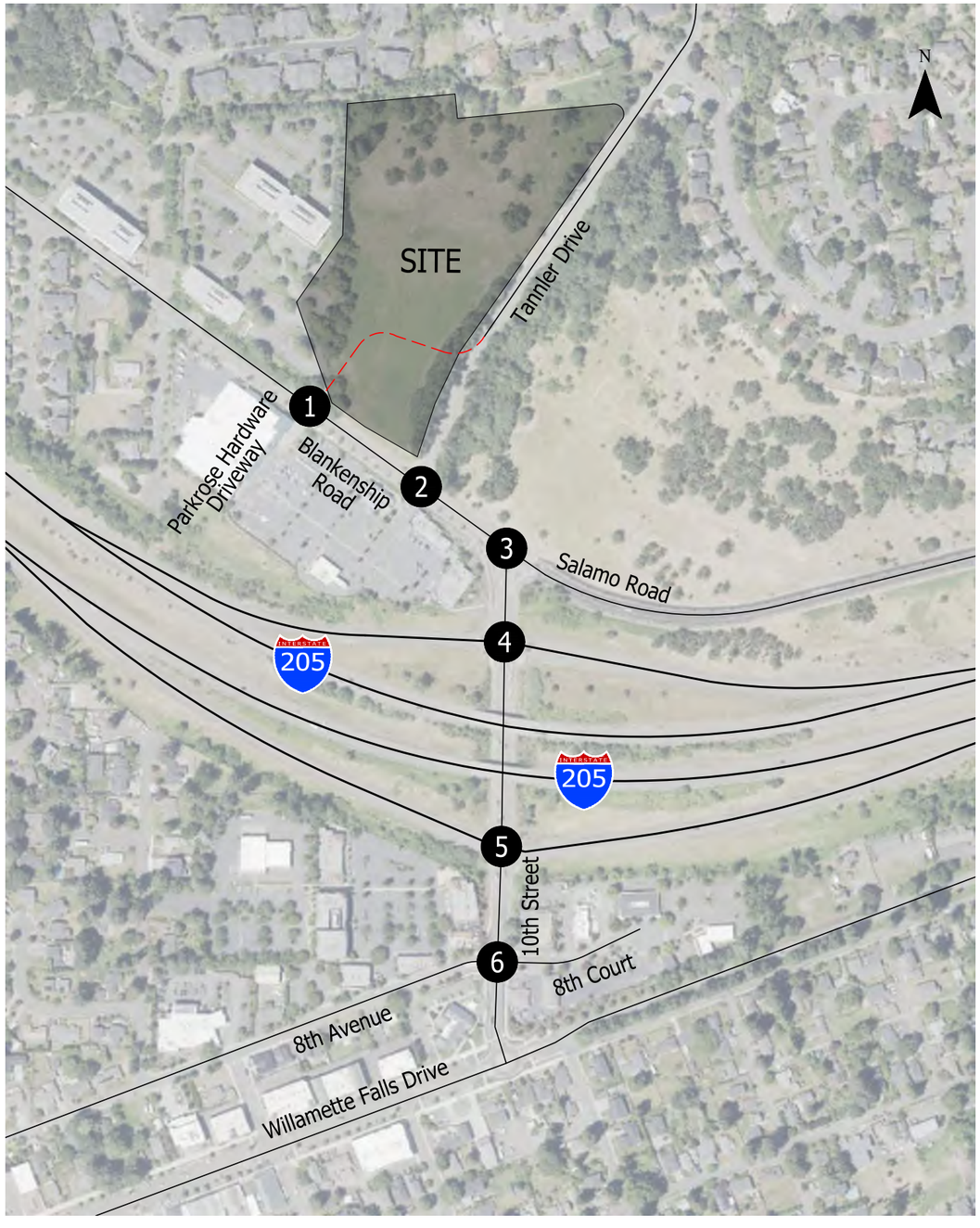
Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

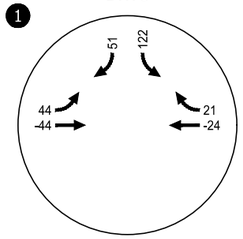
V/C, Movement V/C Ratio	0.00	0.01	0.00	0.11	0.00	0.00	0.14	0.03	0.38	0.49	0.00	0.32
d_M, Delay for Movement [s/veh]	8.24	0.00	0.00	9.83	0.00	0.00	63.98	40.78	19.02	115.81	0.00	18.03
Movement LOS	A	A	A	A	A	A	F	E	C	F		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.38	0.00	0.00	3.22	3.22	3.22	1.93	0.00	1.37
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	9.53	0.00	0.00	80.53	80.53	80.53	48.26	0.00	34.33
d_A, Approach Delay [s/veh]	0.00			1.71			21.06			35.75		
Approach LOS	A			A			C			E		
d_I, Intersection Delay [s/veh]	6.94											
Intersection LOS	F											

Appendix F
Existing Network Trip Reassignment



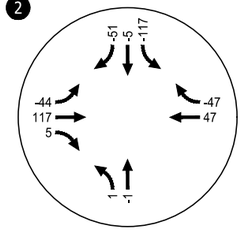
Blankenship Road/
Realigned Tannler
Drive

1



Blankenship Road/
Shopping Center
Driveway

2



Blankenship Road/
Salamo Road/10th Street

3

NO REROUTED
TRIPS

10th Street/
I-205 Southbound Ramp

4

NO REROUTED
TRIPS

10th Street/
I-205 Northbound Ramp

5

NO REROUTED
TRIPS

10th Street/
8th Avenue/
8th Court

6

NO REROUTED
TRIPS

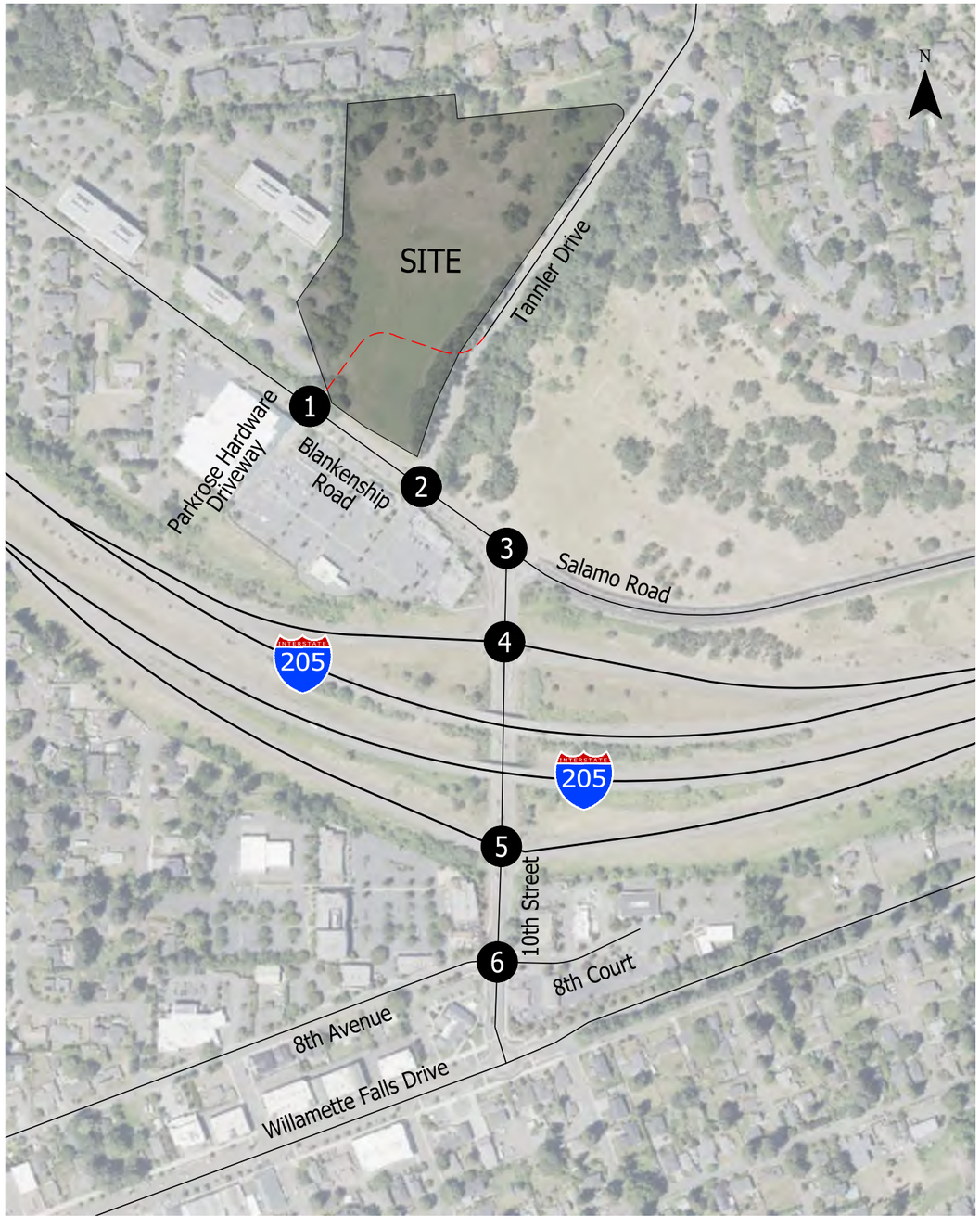
— — - FUTURE PROPOSED ROAD REALIGNMENT

Existing Network Trip Re-assignment
Weekday AM Peak Hour
West Linn, OR

Figure
F-1

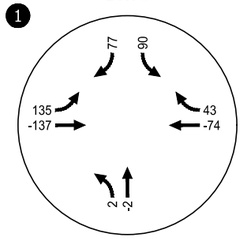
C:\Users\jlynch\agpdata\local\temp\AcPublish_17824\32068 Figures.dwg Mar 19, 2026 - 8:03pm - jlynch Layout Tab: F-1 TT AM Alt 2 Reroute

KITTELSON & ASSOCIATES



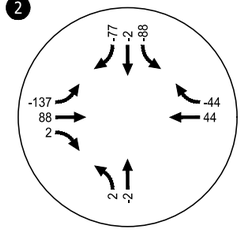
Blankenship Road/
Realigned Tannler
Drive

1



Blankenship Road/
Shopping Center
Driveway

2



Blankenship Road/
Salamo Road/10th Street

3

NO REROUTED TRIPS

10th Street/
I-205 Southbound Ramp

4

NO REROUTED TRIPS

10th Street/
I-205 Northbound Ramp

5

NO REROUTED TRIPS

10th Street/
8th Avenue/
8th Court

6

NO REROUTED TRIPS

— — - FUTURE PROPOSED ROAD REALIGNMENT

Existing Network Trip Re-assignment
Weekday PM Peak Hour
West Linn, OR

Figure
F-2

C:\Users\jlynch\appdata\local\temp\AcPublish_17824\32068 Figures.dwg Mar 19, 2026 - 8:03pm - jlynch Layout Tab: F-1 TT PM Alt 2 Reroute

KITTELSON & ASSOCIATES

Appendix G
Year 2029 Full Buildout Traffic Conditions Analysis Worksheets

Intersection Level Of Service Report
Intersection 1: Blankenship Road/Realigned Tannler Drive

Control Type:	Signalized	Delay (sec / veh):	18.5
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.497

Intersection Setup

Name	Pa Ha			Realigned Tannler Drive			Blankenship Road			Blankenship Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	120.00	100.00	100.00	100.00	150.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	12.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pa Ha			Realigned Tannler Drive			Blankenship Road			Blankenship Road		
Base Volume Input [veh/h]	13	0	39	226	1	52	44	354	8	18	233	92
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	9.00	1.00	0.00	0.00	5.00	2.00	0.00	0.00	5.00	5.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	0	39	226	1	52	44	354	8	18	233	92
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	11	63	0	15	12	99	2	5	65	26
Total Analysis Volume [veh/h]	15	0	44	254	1	58	49	398	9	20	262	103
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	3			0			3			1		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	Split	Split	Split	Split	Split	Split	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow							No			No		
Signal Group	0	8	0	0	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Maximum Green [s]	0	10	0	0	15	0	0	30	0	0	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	0.0	1.5	0.0	0.0	1.5	0.0	0.0	1.5	0.0	0.0	1.5	0.0
Walk [s]	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	0.0	17.0	0.0	0.0	17.0	0.0	0.0	17.0	0.0	0.0	17.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.5	0.0	0.0	3.5	0.0	0.0	3.5	0.0	0.0	3.5	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	0.0	14.0	0.0	0.0	14.0	0.0	0.0	14.0	0.0	0.0	14.0	0.0
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			Yes			Yes	
Pedestrian Recall		No			No			No			No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	L	C	L	C
C, Calculated Cycle Length [s]	64	64	64	64	64	64	64
L, Total Lost Time per Cycle [s]	5.50	5.50	5.50	5.50	5.50	5.50	5.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	3.50	3.50	3.50	3.50	3.50	3.50	3.50
g_i, Effective Green Time [s]	6.6	11.1	11.1	30.0	30.0	30.0	30.0
g / C, Green / Cycle	0.10	0.17	0.17	0.47	0.47	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.04	0.14	0.04	0.05	0.22	0.02	0.21
s, saturation flow rate [veh/h]	1317	1810	1615	992	1862	994	1727
c, Capacity [veh/h]	136	315	281	398	868	391	805
d1, Uniform Delay [s]	27.08	25.55	22.77	17.13	11.72	16.96	11.62
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.17	4.99	0.36	0.63	1.82	0.25	1.84
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.81	0.21	0.12	0.47	0.05	0.45
d, Delay for Lane Group [s/veh]	29.25	30.54	23.13	17.76	13.54	17.21	13.46
Lane Group LOS	C	C	C	B	B	B	B
Critical Lane Group	Yes	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.91	4.02	0.76	0.59	4.00	0.23	3.57
50th-Percentile Queue Length [ft/ln]	22.65	100.59	18.88	14.65	99.95	5.85	89.37
95th-Percentile Queue Length [veh/ln]	1.63	7.24	1.36	1.06	7.20	0.42	6.43
95th-Percentile Queue Length [ft/ln]	40.77	181.05	33.99	26.38	179.92	10.53	160.87

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.25	29.25	29.25	30.54	30.54	23.13	17.76	13.54	13.54	17.21	13.46	13.46
Movement LOS	C	C	C	C	C	C	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	29.25			29.17			13.99			13.65		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	18.54											
Intersection LOS	B											
Intersection V/C	0.497											

Emissions

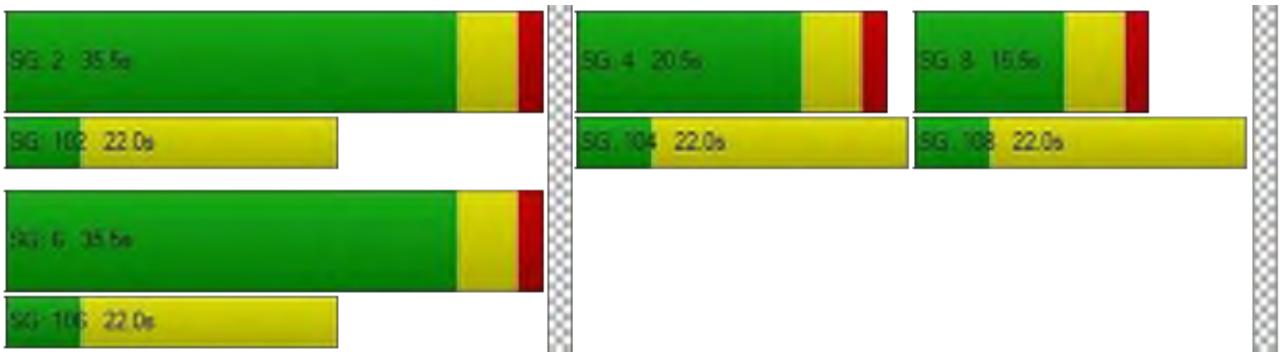
Vehicle Miles Traveled [mph]	1.93	15.08	3.43	1.79	14.88	1.41	25.74
Stops [stops/h]	50.83	225.70	42.37	32.88	224.28	13.13	200.54
Fuel consumption [US gal/h]	0.63	3.13	0.59	0.38	2.65	0.18	2.93
CO [g/h]	44.26	218.71	41.23	26.83	185.33	12.85	204.55
NOx [g/h]	8.61	42.55	8.02	5.22	36.06	2.50	39.80
VOC [g/h]	10.26	50.69	9.56	6.22	42.95	2.98	47.41

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	23.72	23.72	23.72	23.72
l_p,int, Pedestrian LOS Score for Intersectio	1.764	2.120	2.139	2.217
Crosswalk LOS	A	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	312	467	935	935
d_b, Bicycle Delay [s]	22.90	18.84	9.11	9.10
l_b,int, Bicycle LOS Score for Intersection	1.657	2.076	2.312	2.195
Bicycle LOS	A	B	B	B

Sequence

Ring 1	2	-	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 1: Blankenship Road/Realigned Tannler Drive

Control Type:	Signalized	Delay (sec / veh):	16.6
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.693

Intersection Setup

Name	Pa Ha			Realigned Tannler Drive			Blankenship Road			Blankenship Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	120.00	100.00	100.00	100.00	150.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	12.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pa Ha			Realigned Tannler Drive			Blankenship Road			Blankenship Road		
Base Volume Input [veh/h]	17	0	28	175	2	77	137	729	24	17	267	146
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	4.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	0	28	175	2	77	137	729	24	17	267	146
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	0	8	47	1	21	37	196	6	5	72	39
Total Analysis Volume [veh/h]	18	0	30	188	2	83	147	784	26	18	287	157
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	3			0			3			0		
v_ci, Inbound Pedestrian Volume crossing mi	3			0			3			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			1			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	Split	Split	Split	Split	Split	Split	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Flashing Yellow Arrow							No			No		
Signal Group	0	8	0	0	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Maximum Green [s]	0	5	0	0	10	0	0	40	0	0	40	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	0.0	1.5	0.0	0.0	1.5	0.0	0.0	1.5	0.0	0.0	1.5	0.0
Walk [s]	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	0.0	17.0	0.0	0.0	17.0	0.0	0.0	17.0	0.0	0.0	17.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.5	0.0	0.0	3.5	0.0	0.0	3.5	0.0	0.0	3.5	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	0.0	14.0	0.0	0.0	14.0	0.0	0.0	14.0	0.0	0.0	14.0	0.0
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	10	0	0	10	0	0	10	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			Yes			Yes	
Pedestrian Recall		No			No			No			No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	L	C	L	C
C, Calculated Cycle Length [s]	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	5.50	5.50	5.50	5.50	5.50	5.50	5.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	3.50	3.50	3.50	3.50	3.50	3.50	3.50
g_i, Effective Green Time [s]	3.1	10.0	10.0	40.0	40.0	40.0	40.0
g / C, Green / Cycle	0.04	0.14	0.14	0.58	0.58	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.04	0.10	0.05	0.15	0.43	0.03	0.25
s, saturation flow rate [veh/h]	1334	1810	1615	953	1873	684	1774
c, Capacity [veh/h]	61	259	231	536	1076	252	1020
d1, Uniform Delay [s]	32.90	28.56	26.95	12.26	11.10	15.71	4.18
k, delay calibration	0.11	0.14	0.11	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	20.22	5.16	0.94	1.26	4.88	0.55	1.35
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.33	1.33
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.73	0.36	0.27	0.75	0.07	0.44
d, Delay for Lane Group [s/veh]	53.12	33.72	27.89	13.52	15.98	16.26	5.53
Lane Group LOS	D	C	C	B	B	B	A
Critical Lane Group	Yes	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.13	3.32	1.28	1.56	9.38	0.23	1.95
50th-Percentile Queue Length [ft/ln]	28.17	83.01	31.90	38.93	234.46	5.71	48.76
95th-Percentile Queue Length [veh/ln]	2.03	5.98	2.30	2.80	14.40	0.41	3.51
95th-Percentile Queue Length [ft/ln]	50.70	149.43	57.43	70.07	360.01	10.28	87.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	53.12	53.12	53.12	33.72	33.72	27.89	13.52	15.98	15.98	16.26	5.53	5.53
Movement LOS	D	D	D	C	C	C	B	B	B	B	A	A
d_A, Approach Delay [s/veh]	53.12			31.95			15.60			5.95		
Approach LOS	D			C			B			A		
d_I, Intersection Delay [s/veh]	16.64											
Intersection LOS	B											
Intersection V/C	0.693											

Emissions

Vehicle Miles Traveled [mph]	1.57	11.99	5.24	5.38	29.62	1.27	31.31
Stops [stops/h]	58.33	171.90	66.06	80.61	485.49	11.82	100.96
Fuel consumption [US gal/h]	0.81	2.50	0.96	0.96	5.83	0.16	2.30
CO [g/h]	56.86	174.91	67.10	66.80	407.43	11.32	160.43
NOx [g/h]	11.06	34.03	13.06	13.00	79.27	2.20	31.21
VOC [g/h]	13.18	40.54	15.55	15.48	94.43	2.62	37.18

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	1715.71	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	26.35	26.35	26.35	26.35
l_p,int, Pedestrian LOS Score for Intersectio	1.767	2.294	2.293	2.325
Crosswalk LOS	A	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	144	288	1150	1150
d_b, Bicycle Delay [s]	29.95	25.49	6.28	6.27
l_b,int, Bicycle LOS Score for Intersection	1.639	2.010	3.139	2.322
Bicycle LOS	A	B	C	B

Sequence

Ring 1	2	-	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix H
Signal Warrant Analysis

KITTELSON & ASSOCIATES

Project #:	32068
Project Name:	Modera West Linn
Analyst:	EYG
Analysis Date:	2/25/2026
File:	H:\32\32068 - Mill Creek Confidential Mixed Use\Analysis\Signal Warrants\[Alt 2 Signal-Warrant-Analysis_2.24.2026.xlsm]Data Input
Intersection:	Blankenship at Realigned Tannler
Scenario:	2029 Total
Data Date:	12/10/2025

Warrant Summary

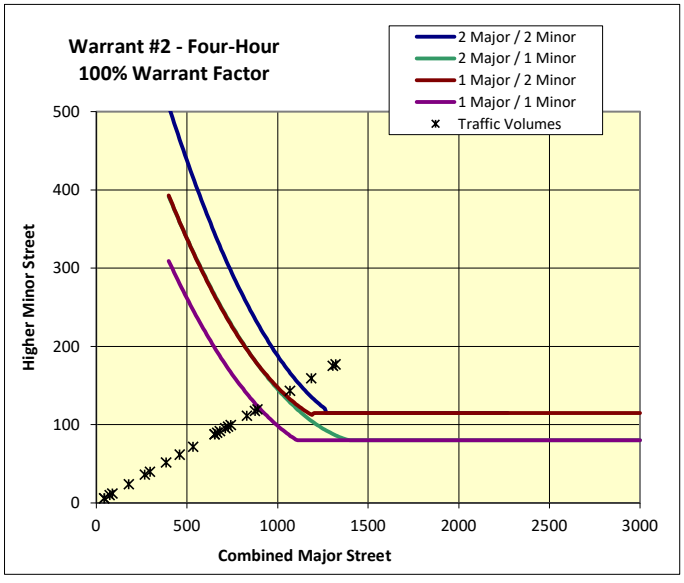
Warrant	Name	Analyzed?	Met?
#1	Eight-Hour Vehicular Volume	Yes	No
#2	Four-Hour Vehicular volume	Yes	Yes
#3	Peak Hour	No	-
#4	Pedestrian Volume	No	-
#5	School Crossing	No	-
#6	Coordinated Signal System	No	-
#7	Crash Experience	No	-
#8	Roadway Network	No	-
#9	Intersection Near a Grade Crossing	No	-

Analysis Traffic Volumes

Hour		Major Street		Minor Street	
Begin	End	EB	WB	NB	SB
5:00 PM	6:00 PM	890	430	17	177
2nd Highest Hour		880	425	17	175
3rd Highest Hour		800	387	15	159
4th Highest Hour		720	348	14	143
5th Highest Hour		600	290	11	119
6th Highest Hour		590	285	11	117
7th Highest Hour		560	271	11	111
8th Highest Hour		500	242	10	99
9th Highest Hour		490	237	9	97
10th Highest Hour		480	232	9	95
11th Highest Hour		460	222	9	91
12th Highest Hour		450	217	9	89
13th Highest Hour		440	213	8	88
14th Highest Hour		440	213	8	88
15th Highest Hour		360	174	7	72
16th Highest Hour		310	150	6	62
17th Highest Hour		260	126	5	52
18th Highest Hour		200	97	4	40
19th Highest Hour		180	87	3	36
20th Highest Hour		120	58	2	24
21st Highest Hour		60	29	1	12
22nd Highest Hour		50	24	1	10
23rd Highest Hour		30	14	1	6
24th Highest Hour		30	14	1	6

Input Parameters

Volume Adjustment Factor =	1.0
North-South Approach =	Minor
East-West Approach =	Major
Major Street Thru Lanes =	1
Minor Street Thru Lanes =	1
Speed > 40 mph?	No
Population < 10,000?	No
Warrant Factor	100%
Peak Hour or Daily Count?	Peak Hour
Major Street: 4th-Highest Hour / Peak Hour	81%
Major Street: 8th-Highest Hour / Peak Hour	56%
Minor Street: 4th-Highest Hour / Peak Hour	81%
Minor Street: 8th-Highest Hour / Peak Hour	56%

Warrant #1 - Eight Hour

Warrant Factor	Condition	Major Street Requirement	Minor Street Requirement	Hours That Condition Is Met	Condition for Warrant Factor Met?	Signal Warrant Met?
100%	A	500	150	3	No	**No**
	B	750	75	7	No	
80%	A	400	120	5	No	**Yes**
	B	600	60	14	Yes	
70%	A	350	105	7	No	**Yes**
	B	525	53	15	Yes	
56%	A	280	84	14	Yes	**Yes**
	B	420	42	16	Yes