

TRAFFIC IMPACT ANALYSIS

HIGHWAY 101 US MARKETS
Traffic Impact Analysis

FLORENCE, OREGON

July 19, 2024

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Highway 101 US Markets



RENEWAL 06/30/26

Florence, Oregon
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EXECUTIVE SUMMARY

This report provides the Traffic Impact Analysis and findings prepared for the proposed US Markets gas station and convenience store with an attached drive-through coffee shop located in Florence, Oregon. The subject site is located at Tax Lot 6800 of Assessor's Map 18-12-23-22. This site is approximately 0.99 acres and is currently vacant.

The development proposal is a 3,434-sf convenience store with an attached 2,201-sf coffee shop with a drive-through lane and a gas station with 8 vehicle fueling locations.

The analysis evaluates the transportation impacts per the City of Florence and Oregon Department of Transportation (ODOT) criteria, evaluating adjacent roadway and intersection operations.

FINDINGS

The following report recommendations are based on the information and analysis documented in this report.

- All intersections meet the applicable operational standards for both the AM and PM peak hours.
- The addition of development trips does not trigger intersection mitigation.
- The addition of development trips does not negatively increase queuing conditions at the study area intersections.
- The crash rates and crash patterns in the study area do not trigger mitigation.

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1.0 BACKGROUND

1.1 SITE INFORMATION

This report provides the Traffic Impact Analysis and findings prepared for the US Markets gas station and convenience store with an attached drive-through coffee shop located in Florence, Oregon. The site is located on Tax Lot 6800 of Assessor's Map 18-12W-23-22 and is located on the east side of Highway 101 between 35th Street and 36th Street just north of the Burger King. The site is approximately 0.99 acres and is currently vacant.

Figure 1 contains the site location and vicinity map.

1.2 DEVELOPMENT PROPOSAL

The applicant is proposing the construction of a 3,434-sf convenience store with an attached 2,201-sf coffee shop with a drive-through lane and a gas station with 8 vehicle fueling positions.

Access to the site will be via an existing right-in, right-out driveway to Highway 101 and a full-movement driveway to 35th Street across from Redwood Avenue. Both accesses are shared with the Burger King located to the south of the project site.

Appendix A contains the site plan.

1.3 ANALYSIS SCOPE

As per the City of Florence code FCC 10-1-1-4:E(2)(c), a TIA is required if the development will increase the ADT by 250. As described in Section 4, the site meets the criteria for requiring a Traffic Impact Analysis. Direct access is via Highway 101, which is within ODOT's jurisdiction. Therefore, the scope of work was coordinated with ODOT. Appendix B contains the scope of work letter. The following summarizes the analysis requirements.

Locations evaluated include:

- Highway 101 at 35th Street
- Highway 101 at Site Access
- 35th St at Site Access/Redwood Street.

The evaluation is prepared for the AM Peak Period (7:00-9:00 AM) and the PM Peak Period (4:00-6:00 PM). The evaluation is prepared for the following time periods:

- Existing conditions, year 2024
- Estimated year of completion, year 2025, with and without the proposed development
- Five-year planning horizon year, year 2030, with and without the proposed development

Analysis includes:

- Level of Service and V/C
- Queuing
- Crash Evaluation
- Turn Pocket Evaluation
- Mitigation Evaluation as necessary



US Markets, Florence, OR

Figure 1: Site Location and Vicinity Map

2.0 EXISTING INFRASTRUCTURE

2.1 STREET NETWORK

Public streets included within the study area are Highway 101 and 35th Street. The roadway characteristics within the study area are included in Table 1.

TABLE 1: ROADWAY CHARACTERISTICS WITHIN STUDY AREA

Characteristic	35 th Street	Highway 101
Jurisdiction	City	ODOT
Classification	Minor Arterial/ Collector	Statewide Highway
Lanes per Direction	1	2
Center Left-Turn Lane	No	Yes
Restrictions in the Median	None	None
Bike Lanes Present	No	Yes
Sidewalks Present	Yes	Yes
Transit Route	No	No*
On-Street Parking	No	No

*Transit on Highway 101 north of 42nd and south of 35th

2.2 STUDY INTERSECTIONS

The following intersections are included in this study:

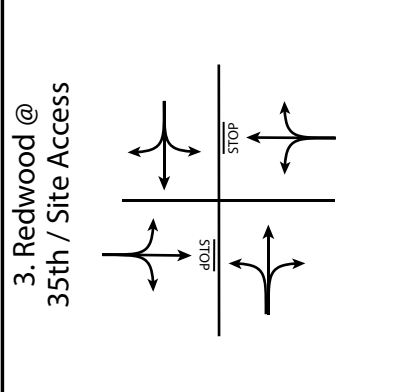
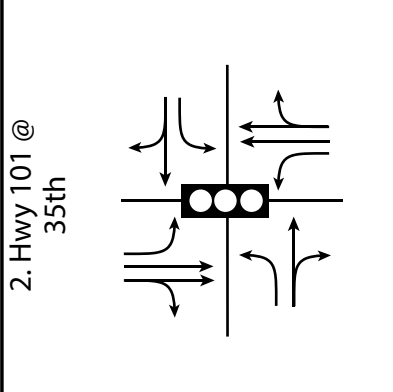
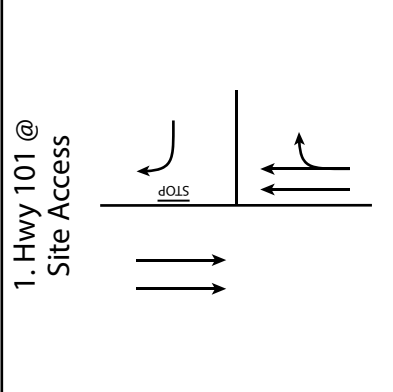
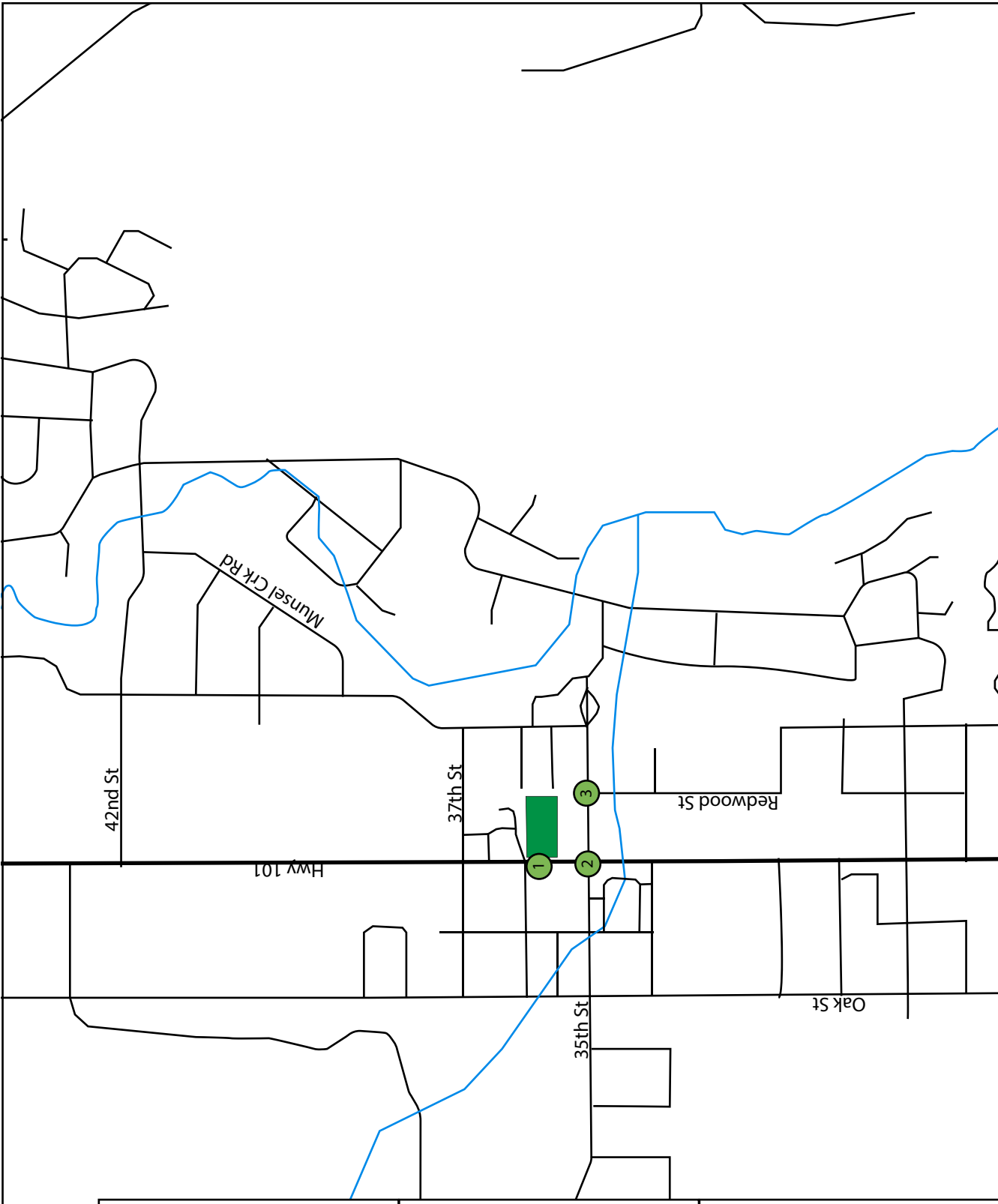
Highway 101 at 35th Street: This is a 4-legged two-way signalized intersection. This intersection is constructed with one lane and separate left turn lanes on the 35th Street approaches, 2 travel lanes and a center turn lane on the Highway 101 approaches, and bike lanes and sidewalks on all approaches.

35th Street at Redwood Street: The shared full-movement access to 35th St is slightly offset to the west from the intersection of Redwood Street. This intersection is a T-intersection with Redwood Street as the stopped approach. This intersection is one lane in each direction.

Figure 2 illustrates the study area intersection geometry and control.

2.3 TRANSIT SERVICE

The Rhody Express provides transit service on Highway 101 north of 42nd Street and south of 35th Street. Service is provided Monday-Friday from 10:00 AM to 6:00 PM.



US Markets, Florence, OR Figure 2: Lane Configuration and Intersection Control

3.0 CRASH ANALYSIS

A crash evaluation was performed for the study area intersections. The analysis investigates crash data available for the most recent 5 years, 1/1/2018-12/31/2022, to determine the crash rate in crashes per million entering vehicles and the type of crashes that occurred. The year 2023 crash data is currently not available for use. The crash analysis follows the HCM Critical Crash Rate methodology. The calculated intersection crash rates are compared to the critical crash rate. If the calculated crash rate exceeds the critical crash rate, the location is considered for further mitigation measures. Crash data was provided by ODOT for the study area and is included in Appendix C. The results of the crash analysis are provided in Table 2. Table 3 provides the crash types.

TABLE 2: INTERSECTION CRASH RATES

Location	Intersection Type	Number of Crashes	ADT	MEV	Crash Rate*	Critical Crash Rate*	
Highway 101 at 35 th	Signal	10	15,590	28.45	0.35	0.55	Under
35 th at Redwood/Site Access	Stop	0	2,170	3.96	0.00	0.00	

*(crashes/million entering vehicles)

TABLE 3: INTERSECTION CRASH PATTERNS

Location	Severity			Type				
	PDO	Injury	Fatal	Head	Rear	Turn	Other	Side
Highway 101 at 35 th	6	4	0	0	2	2	4	2

PDO=property damage only

There were no reported crashes at the intersection of 35th Street at Redwood/Site Access in the past 5 years.

The intersection of Hwy 101 at 35th Street has a calculated crash rate below the critical crash rate. There were 10 reported crashes. The crashes were identified as:

- **Rear End:** 2 total, with 1 occurring in the northbound approach and 1 in the southbound approach.
- **Turn:** There were 2 crashes classified as turn-crashes. One involved a southbound through vehicle and a northbound left-turning vehicle. The other crash involved a northbound through vehicle and a southbound left-turning vehicle. The error was assigned to the left-turning vehicle for both crashes.
- **Side:** There were 2 sideswipe collisions. Both collisions involved northbound traveling vehicles.

- **Other:** There were 4 collisions classified as “other” crash types. One crash involved a single vehicle traveling northbound, hitting an adjacent pole. There is no listed reason for this crash occurring. Three crashes involved T-style crashes or “T-bone” crashes. One involved a southbound through vehicle and a westbound through vehicle. The error was assigned to the southbound vehicle. One crash involved a southbound through vehicle and an eastbound through vehicle. The error was assigned to the southbound vehicle. One crash involved a northbound through vehicle and an eastbound through vehicle. The error was assigned to the northbound vehicle.

There are no geometric concerns that likely resulted in the crashes or would be a concern with the added site trips.

4.0 DEVELOPMENT TRIP GENERATION AND DISTRIBUTION

4.1 DEVELOPMENT TRIP GENERATION

The ITE Trip Generation Manual 11th ed is used to estimate the AM peak hour, PM peak hour, and daily trip generation. Tables 4, 5, and 6 provide the trip generation estimates. The most reasonable ITE Land Uses/rates for each use are:

- **945- Convenience Store with Gas Station:** This land use includes the convenience store and fuel pumps only. The convenience store does not include the attached coffee shop. ITE provides trip rates using a subcategory of square feet of the convenience store or vehicle fueling positions. The primary use will be the vehicle fueling stations, with the convenience store as a secondary use. Therefore, the number of vehicle fueling positions is the appropriate subcategory to use. The convenience store square footage is used as the independent variable.
- **937- Coffee/Donut Shop with Drive-Through Window and Indoor Seating:** This ITE Land Use is used for the drive-through coffee shop with indoor seating. The rate is based on the use’s square footage.
- **Internal Trips:** The site’s internal trips are calculated using NEHRP 684 and ITE Methodology. The AM peak hour is anticipated to have 9% internal trips. The PM peak hour is anticipated to have 24% internal trips. The ITE spreadsheets are attached.
- **Pass-by Trips:** The ITE Trip Generation handbook and trip generation online appendices provide the following pass-by trip rate:
 - 945 Convenience Store with Gas Station:
 - 76% AM Peak Hour
 - 75% PM Peak Hour

The ITE Manuals do not have a pass-by trip rate specifically for ITE Land Use Code 937- Coffee Shop w/Drive-Through and No Indoor Seating. The two most closely matched pass-by rates are:

- 938- Coffee/Donut Shop w/ Drive-Through Window and No Indoor Seating:
 - 90% AM Peak Hour
 - 98% PM Peak Hour
- 934- Fast-Food Restaurant with Drive-Through Window and Indoor Seating
 - 50% AM Peak Hour
 - 50% PM Peak Hour

Land Use 938- Coffee/Donut Shop has no indoor seating. Therefore, to account for the patrons that would use the indoor seating as a destination, the rates for Land Use 938 and 934 are averaged. Therefore, the pass-by rate for the coffee shop on site is:

- 70% AM Peak Hour
- 77% PM Peak Hour

Following the ITE Methodology, the internal trips are removed from the total trips prior to the application of pass-by trips.

TABLE 4: PEAK HOUR TRIP GENERATION- AM PEAK HOUR

ITE Code	Units	Rate	Trips	In	Out	
945- Convenience Store with Gas Station	3.43 ksf	40.59	139	70 (50%)	69 (50%)	
937- Coffee Shop with Drive-Through Window	2.2 ksf	85.88	189	96 (51%)	93 (49%)	
Subtotal			328	166	162	
Internal Trips						
		9%	30	-15	-15	
External Trips			299	151	147	
Pass-by						
		945	76%	96	48	48
		937	70%	120	61	56
Total Pass-by			217	110	107	
Total New Trips			82	42	41	

TABLE 5: PEAK HOUR TRIP GENERATION- PM PEAK HOUR

ITE Code	Units	Rate	Trips	In	Out	
945- Convenience Store with Gas Station	3.43 ksf	48.48	166	83 (50%)	83 (50%)	
937- Coffee Shop with Drive-Through Window	2.2 ksf	38.95	86	43 (51%)	43 (49%)	
Subtotal			252	126	126	
Internal Trips						
		24%	-60	-30	-30	
External Trips			192	96	96	
Pass-by						
		945	75%	95	47	46
		937	77%	50	25	25
Total Pass-by			145	73	72	
Total New Trips			47	23	23	

TABLE 6: PEAK HOUR TRIP GENERATION- DAILY

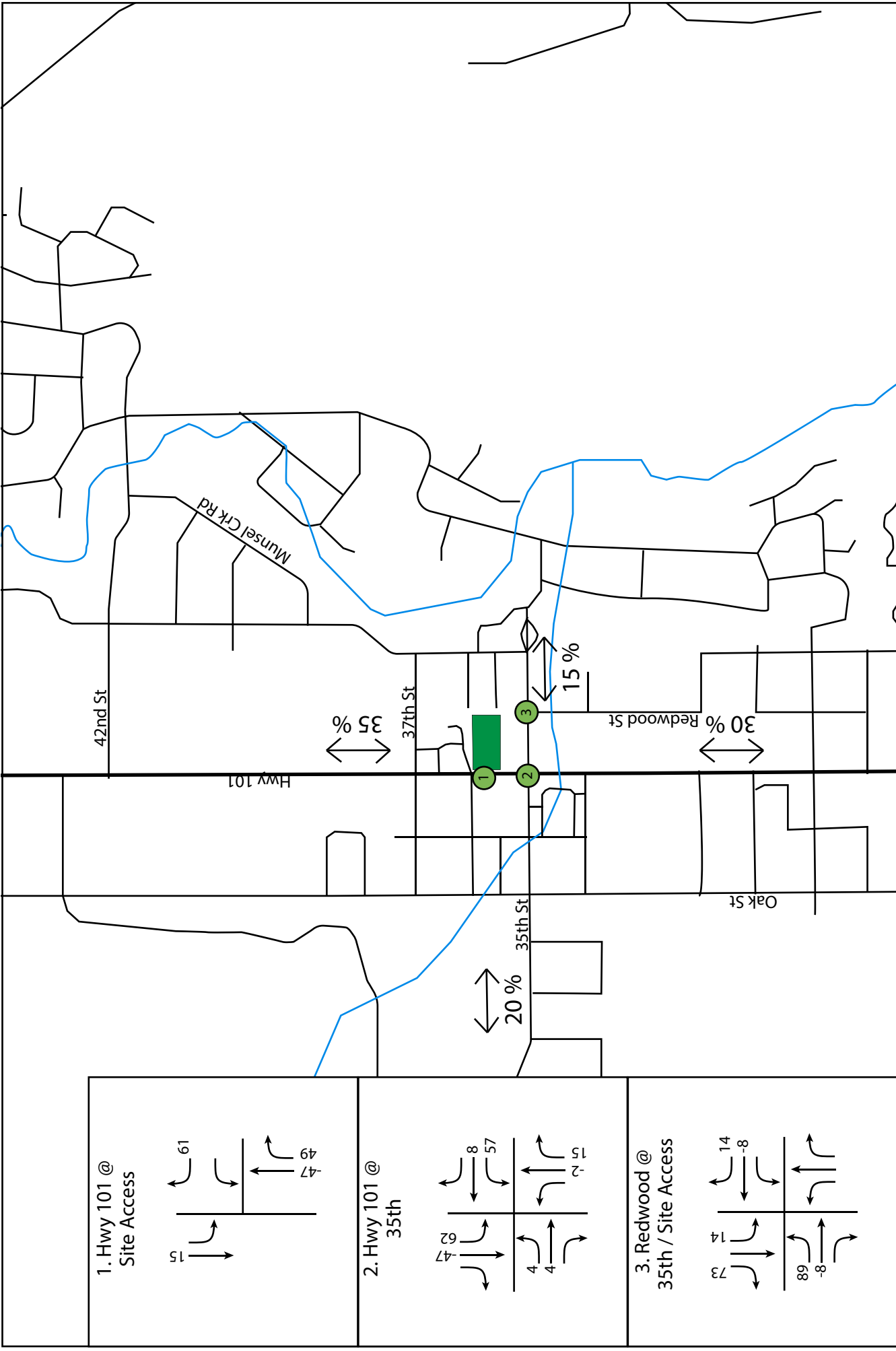
ITE Code	Units	Rate	Trips	In	Out	
945- Convenience Store with Gas Station	3.43 ksf	624.2	2,114	1,072 (50%)	1,072 (50%)	
937- Coffee Shop with Drive-Through Window	2.2 ksf	533.52	1,174	587 (51%)	587 (49%)	
Subtotal			3,318	398	398	
Internal Trips						
		24%	-796	-398	-398	
External Trips			2,522	1,261	1,261	
Pass-by						
		945	75%	1,222	611	611
		937	98%	687	344	343
Total Pass-by			1,909	955	954	
Total New Trips			613	306	307	

4.2 DEVELOPMENT TRIP DISTRIBUTION

The existing travel patterns from the traffic counts are used to estimate how the development trips will use the surrounding transportation system to access the site with modifications for reasonable origins and destinations. The trip origins/destinations are:

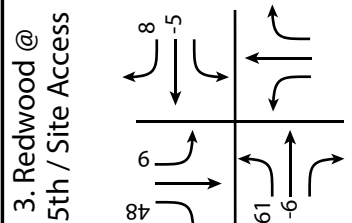
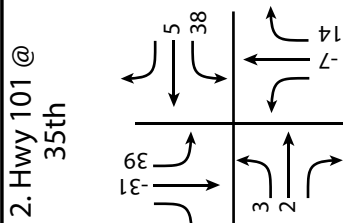
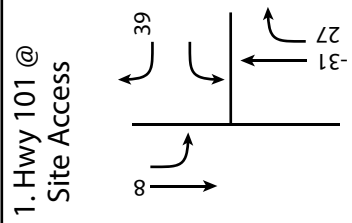
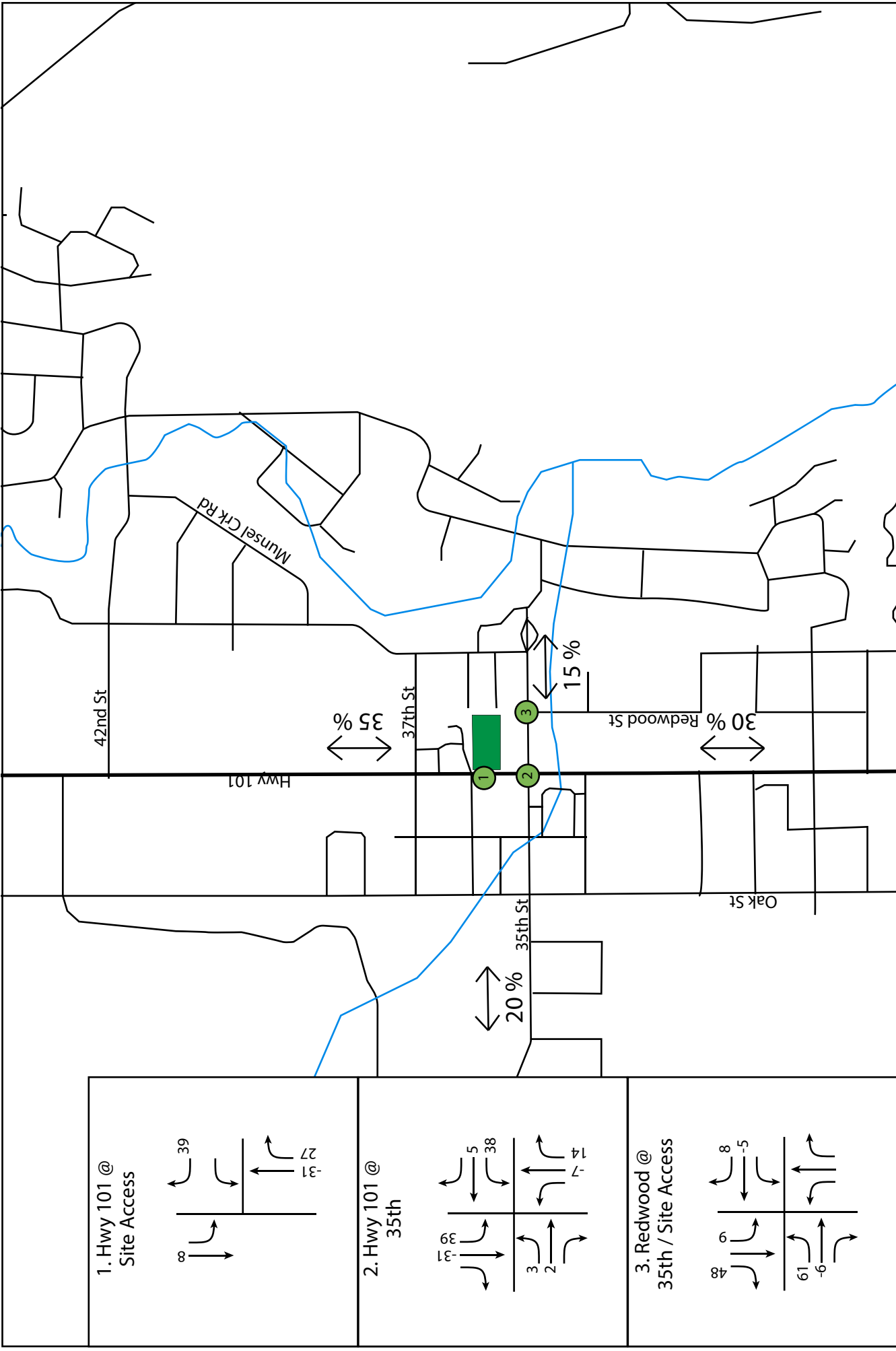
- East on 35th St= 15%
- West on 35th St= 20%
- North on Hwy 101= 35%
- South on Hwy 101= 30%

Figure 3 illustrates the development trip distribution for the AM Peak Hour and Figure 4 for the PM Peak Hour.



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Figure 3: AM Development Trip Distribution



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Figure 4: PM Development Trip Distribution

5.0 BACKGROUND TRAFFIC VOLUMES

5.1 INTERSECTION COUNTS

Traffic counts were collected on October 10, 2023, for the intersections of Highway 101 at 35th and 35th at Redwood and June 19, 2024, for the site access to Highway 101. The peak hours of the system occur from 8:00-9:00 AM and 4:00-5:00 PM. The counts are provided in Appendix D.

5.2 ADJUSTMENTS

Seasonal Adjustment

The application of seasonal adjustment factors accounts for the fact that volumes along State Highways and recreational routes tend to fluctuate from month to month due to changes in recreational behavior, etc. Monthly volume variations for routes with recreational traffic show much higher seasonal peaking than routes with predominantly intercity traffic. The roadways in Florence have a seasonal peak associated with summer recreational activities. ODOT has an Automatic Traffic Recorder (ATR) located on Highway 101 north of Florence. The data from that ATR (ATR 20-026) illustrates that the peak months for traffic are July and August.

The counts for this project were taken in October and June, which is outside of the peak month. Therefore, a seasonal adjustment factor is applied.

ODOT's Analysis Procedures Manual details the methodology for calculating the seasonal adjustment factor. The ATR Methodology using the ATR data was deemed not appropriate for this project. The ATR Methodology should not be used when the daily traffic volumes at the ATR are more than a 10% difference from the site area. The ATR has an AADT of 7,165 for the most recent year (2022). Highway 101 at 35th St has an AADT of 12,800. The study area AADT is 78% higher than the AADT at the ATR. This is due to the rural nature of the roadway at the ATR. The ATR is located north of Heceta Beach Road where Hwy 101 becomes more rural with limited access points. This means that traffic variations between the low and peak seasons will be greater at the ATR than near the project site. Due to these factors, strictly applying a factor associated with seasonal fluctuation from the ATR will overestimate traffic flow. The more appropriate method is to use ODOT's Seasonal Trend Table. The Coast Destination trend is the most appropriate to use for this study and aligns with the trend used in the City of Florence Transportation System Plan. The Coastal Destination trend is based on the peak season being the last half of August. Using the Coastal Destination trend, the SAF applied to the October counts is 1.215, and the June count is 1.09. The SAF is applied to the traffic volumes to reflect peak season conditions. The seasonal adjustment factor calculation is provided in Appendix D.

In Progress Developments

Trips from following adjacent developments are added to the background traffic volumes. These projects have been approved but are not yet completed. Therefore, the trips are not accounted for within the current traffic count data.

Florence Subdivision

This is a residential subdivision that has been approved but not completed. It is located at tax

lots 700 and 3800 at the NE corner of Rhododendron and 35th St. Therefore, the trips generated by this proposed development are added to the background traffic volumes.

Fawn Ridge

Fawn Ridge is located on Rhododendron Drive, approximately 2.5 miles north of 35th Street. The development trips from this site are added to the background traffic volumes.

Sandpines

A portion of Phase 1 of the Sandpines/Fairway Estates has been completed. Phase 1 is proposed at 40 lots, and 18 lots have been completed. The trip generation for the remaining 22 lots was added as background traffic. Additionally, Sandpines Phase 2 has been approved but not completed. The development trips from both phases have been added to the background traffic volumes.

Myrtle Glen

This residential development is located at 37th and Oak Street. Myrtle Glen is currently being constructed. Therefore, the trips from this development are added to the background traffic volumes.

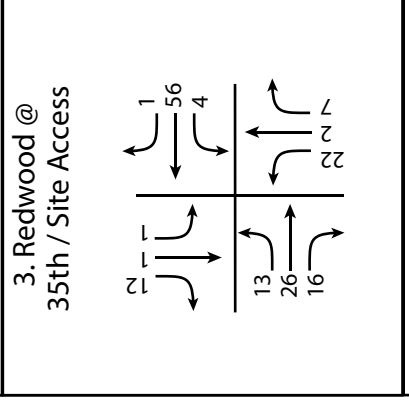
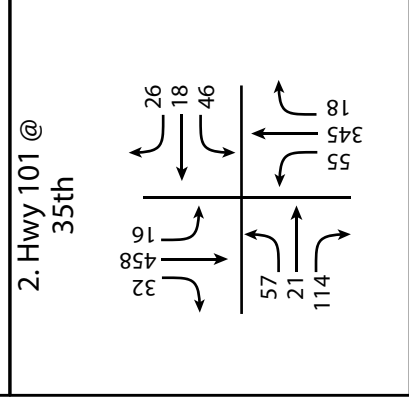
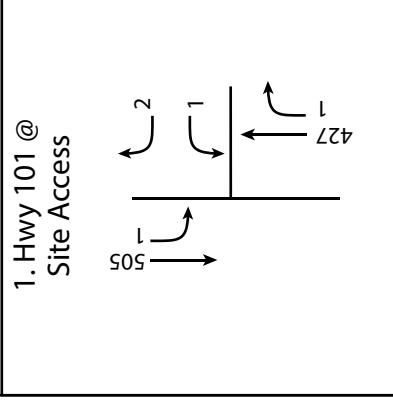
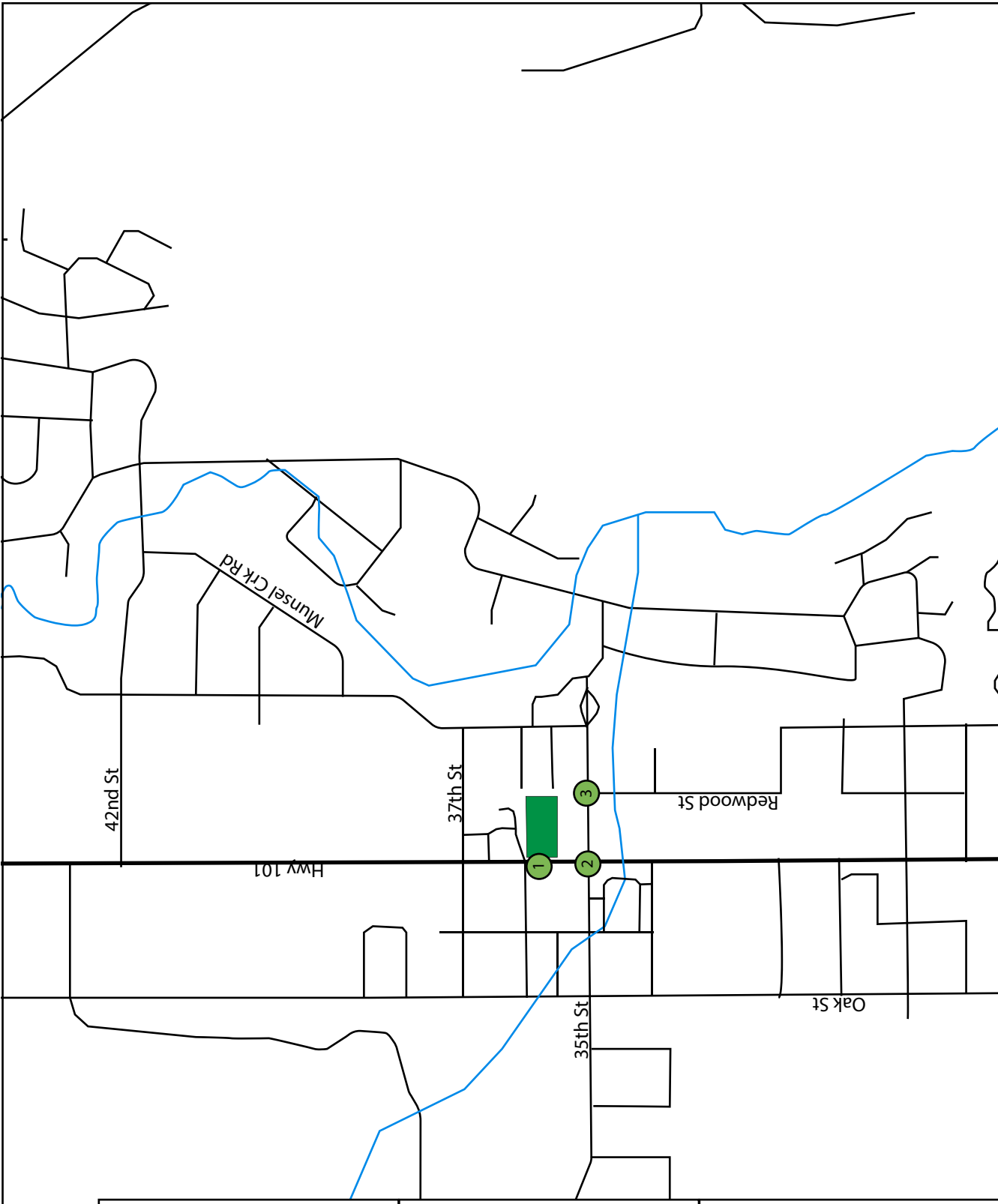
5.3 FUTURE YEAR BACKGROUND VOLUMES

The proposed site development is projected to be completed by the year 2025. Consistent with the traffic impact analysis criteria, the intersections were evaluated for the year of completion and 5-year planning horizon. To account for naturally occurring traffic increases between the count year and the future analysis year, an annual growth rate is applied. ODOT's Future Volume tables illustrate a nominal growth rate. The City of Florence's TSP update predicts a growth rate of 1% at adjacent intersections. Therefore, a 1% growth rate was used.

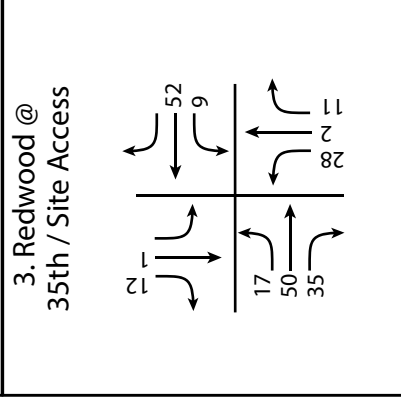
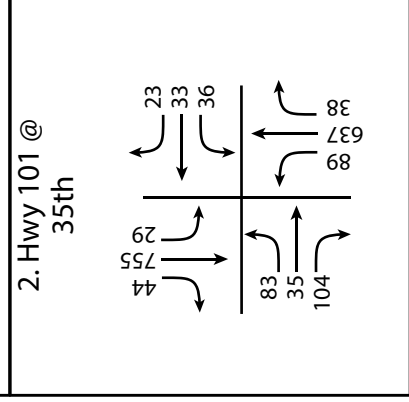
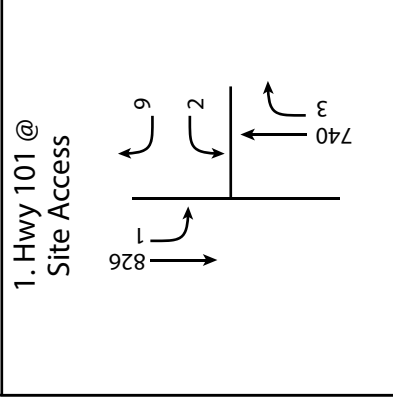
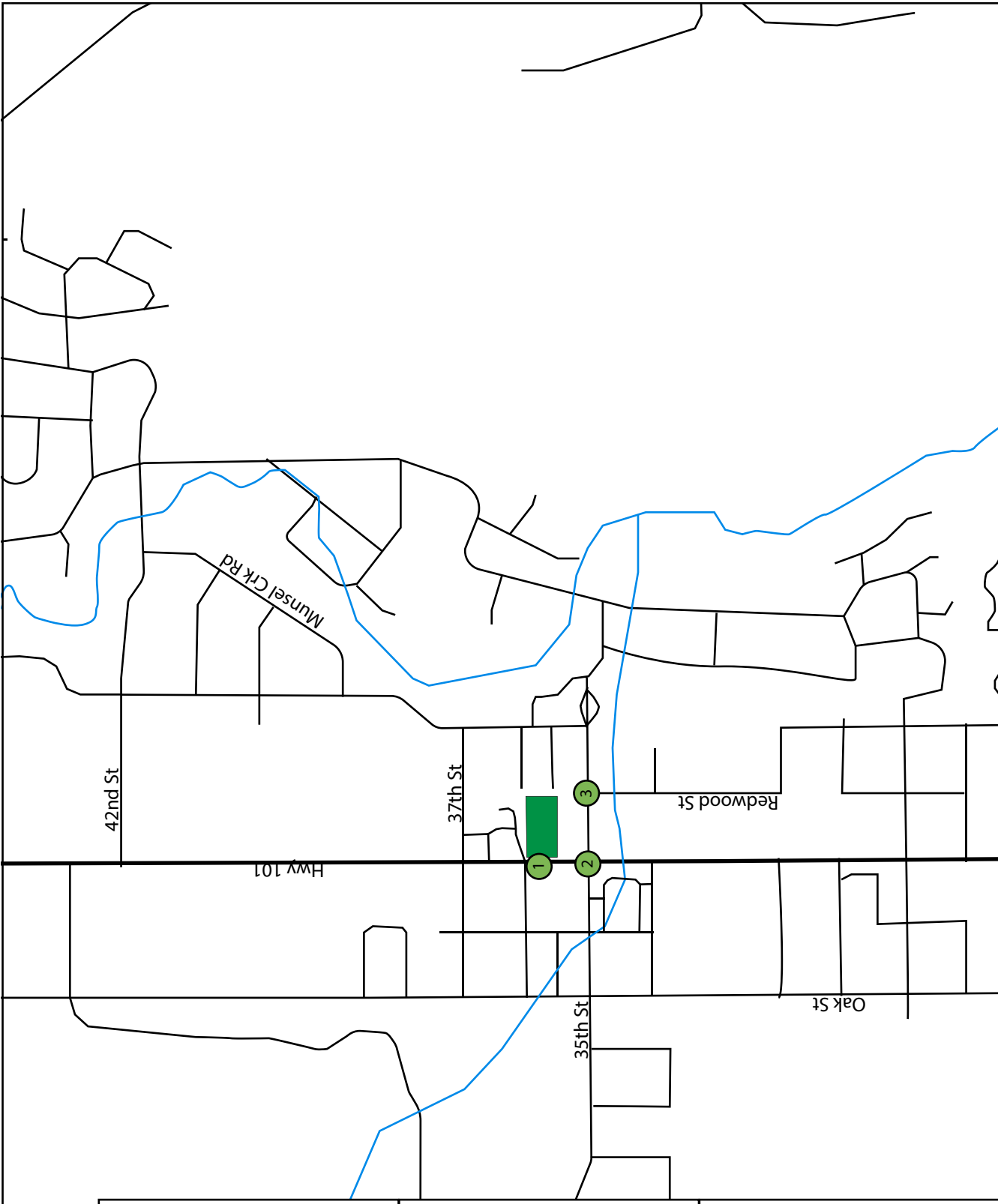
5.4 FINAL TRAFFIC VOLUMES

The existing traffic volumes were adjusted according to the methodology described above. Appendix D provides the traffic volume calculations. The development trips are added to the background traffic volumes to represent the build conditions. The traffic volumes are illustrated in the following figures:

- Figure 5- Year 2024 AM Peak Hour Existing Traffic Volumes
- Figure 6- Year 2024 PM Peak Hour Existing Traffic Volumes
- Figure 7- Year 2025 AM Peak Hour Traffic Volumes
- Figure 8- Year 2025 PM Peak Hour Traffic Volumes
- Figure 9- Year 2030 AM Peak Hour Traffic Volumes
- Figure 10- Year 2030 PM Peak Hour Traffic Volumes

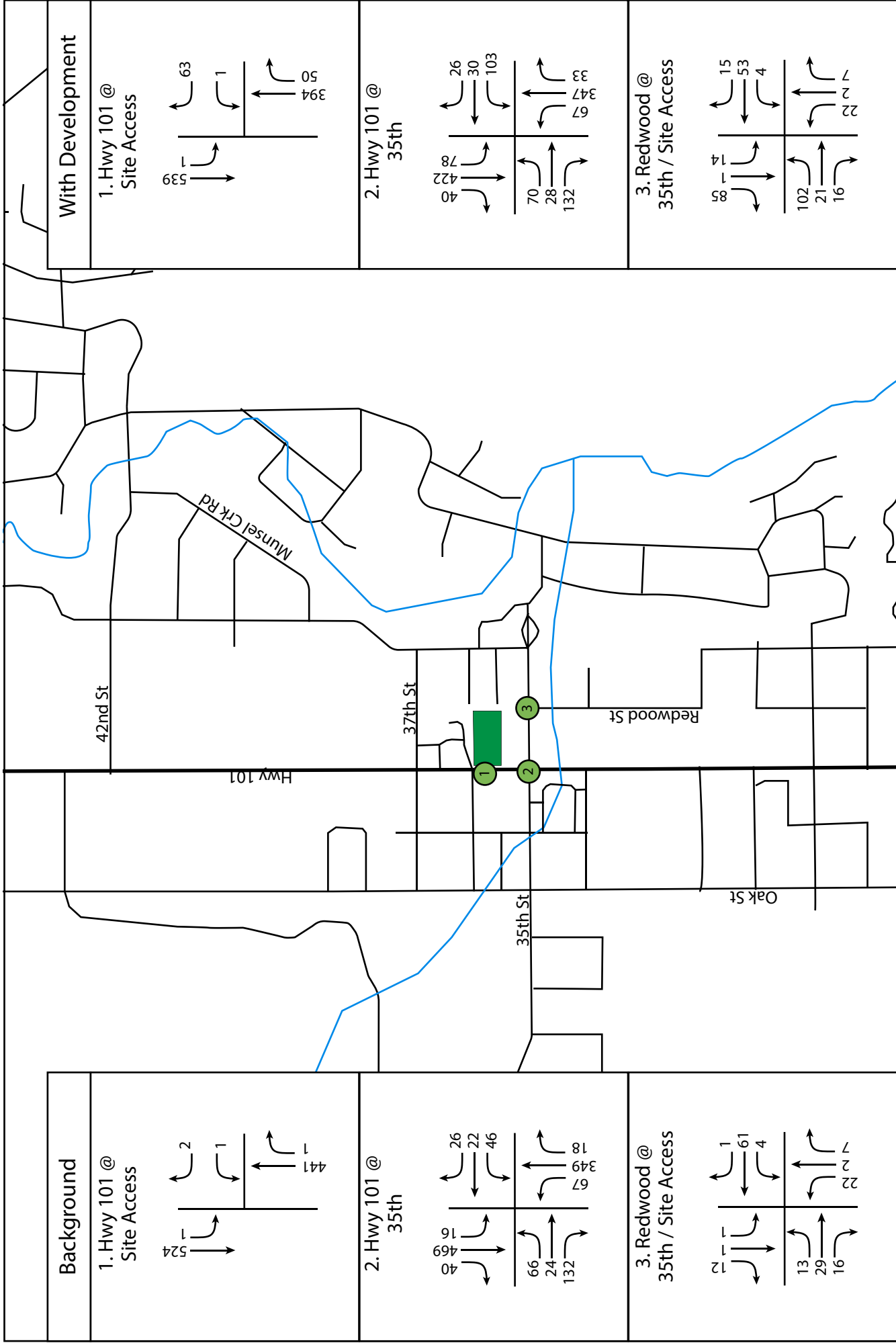


US Markets, Florence, OR Figure 5: Year 2024 AM Background Traffic Volumes



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Figure 6: Year 2024 PM Background Traffic Volumes



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Figure 7: Year 2025 AM Traffic Volumes

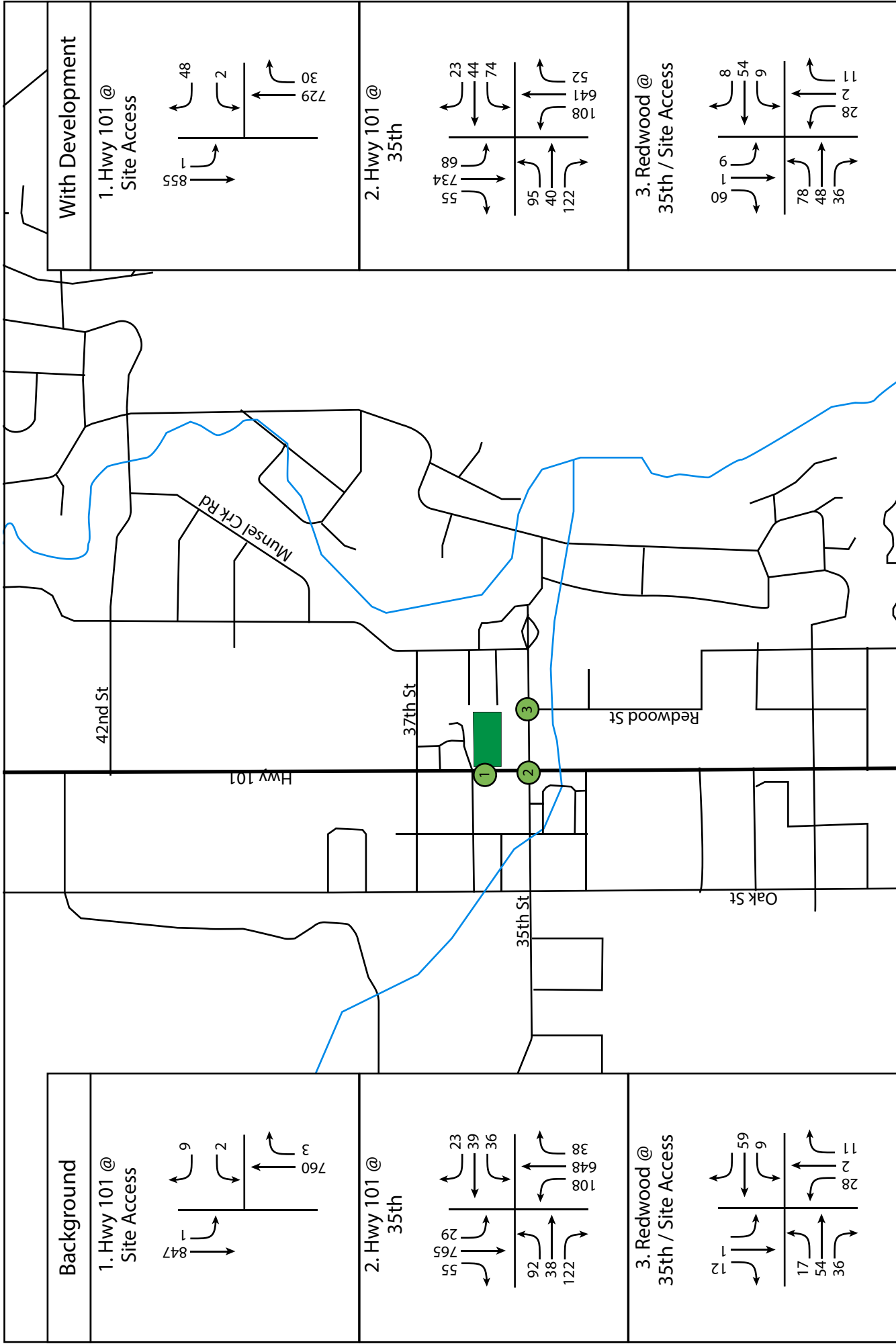


Figure 8: Year 2025 PM Traffic Volumes

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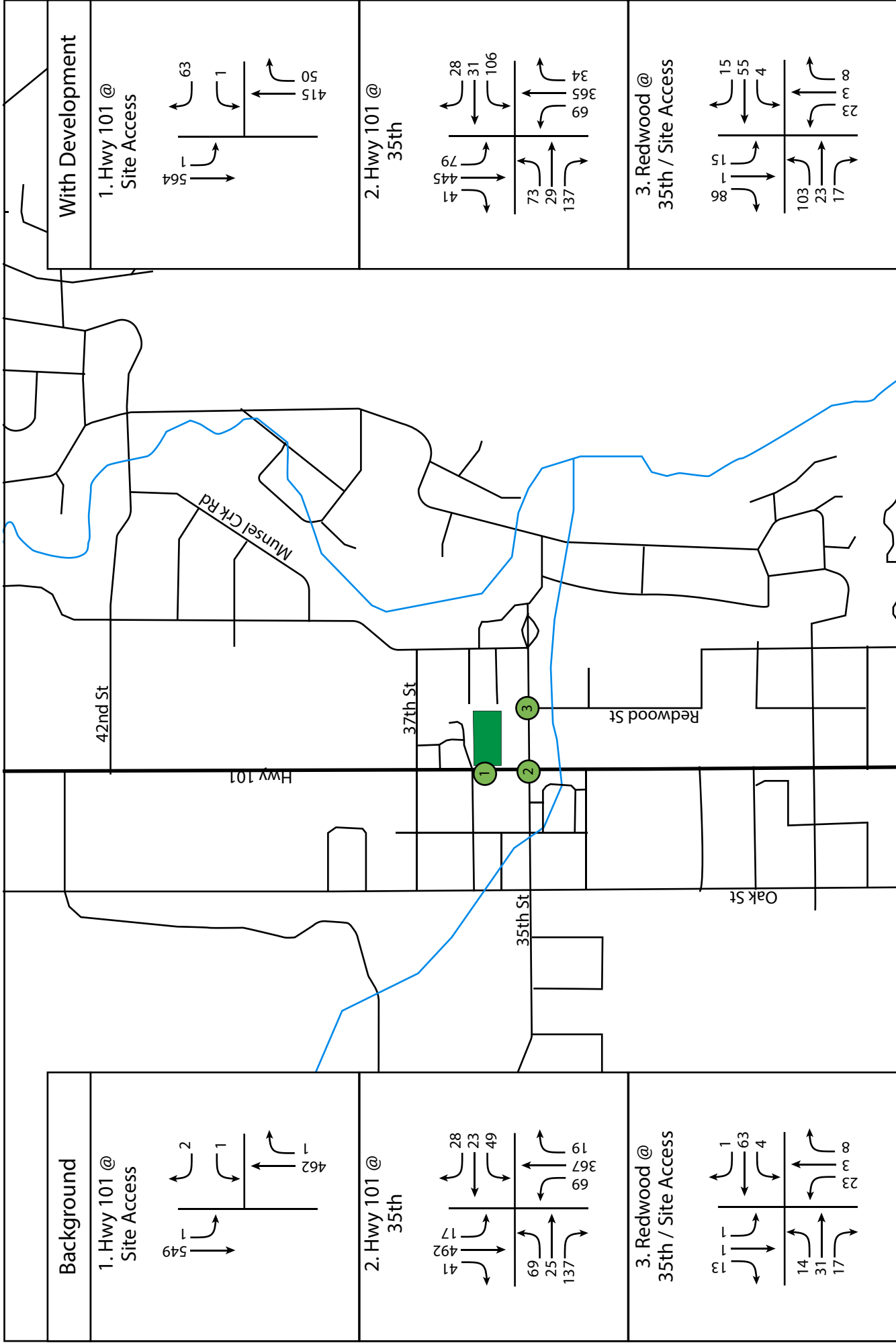


Figure 9: Year 2030 AM Traffic Volumes

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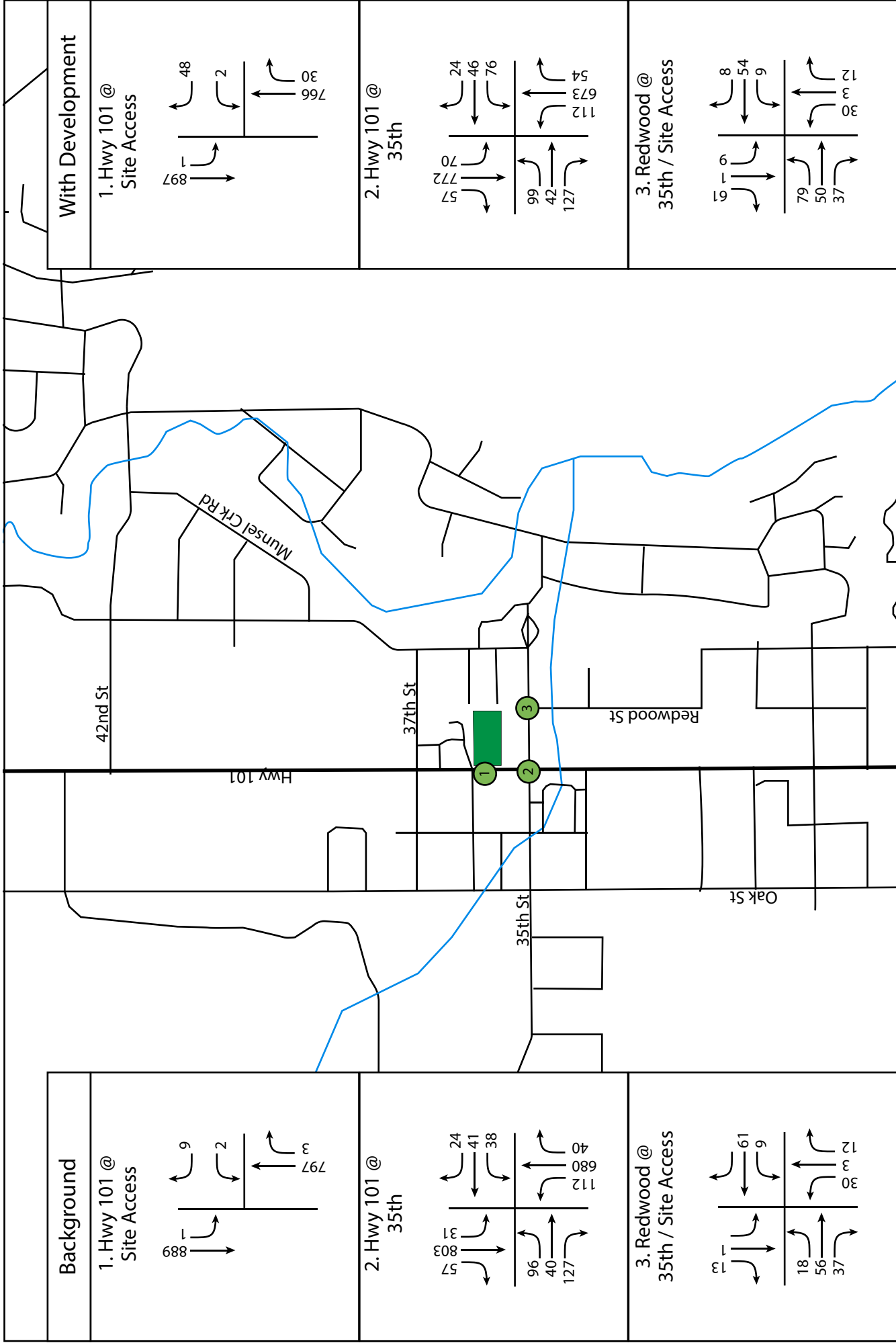


Figure 10: Year 2030 PM Traffic Volumes

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6.0 INTERSECTION ANALYSIS

6.1 PERFORMANCE MEASURES

The measure of performance for the intersections within the study area is the volume-to-capacity ratio (v/c) and Level of Service (LOS).

The volume-to-capacity ratio (v/c) describes the capability of an intersection to meet volume demand based on the maximum number of vehicles that could be served in an hour. Highway 101 is under the jurisdiction of ODOT, and ODOT uses the v/c standard. The v/c standard is based on traffic control, roadway speed, and street classification as defined in the Oregon Highway Plan. Highway 101 is a statewide highway, not a freight route, and has a posted speed of 40 mph within the study area. At stopped controlled intersections, the v/c standard is 0.85 for the Highway 101 approaches and 0.90 for the side streets. At signalized intersections, the v/c is 0.85. The City of Florence has a v/c standard for signalized intersections but not for stop-controlled intersections. Therefore, the v/c standard is not used for the studied intersections under the City of Florence’s jurisdiction.

LOS is a measure of performance for intersections in this analysis and is based on the Highway Capacity Manual (HCM). LOS is a concept developed to quantify the degree of comfort (including such elements as travel time, number of stops, total amount of stopped delay, and impediments caused by other vehicles) afforded to drivers as they travel through an intersection or along a roadway segment. It was developed to quantify the quality of service of transportation facilities.

LOS is based on average delay, defined as the average total elapsed time from when a vehicle stops at the end of a queue until the vehicle departs from the stop line. The average delay is measured in seconds per vehicle per hour and then translated into a grade or “level of service” for each intersection. LOS ranges from A to F, with A indicating the most desirable condition and F indicating the most unsatisfactory condition. The LOS criteria, as defined by the Highway Capacity Manual for intersections, are provided in Table 7. The City of Florence has a standard of LOS E for stop-controlled intersections.

TABLE 7: HCM LEVEL OF SERVICE FOR INTERSECTIONS

	Stopped Delay Per Vehicle (Seconds per Vehicle)	
	Unsignalized Intersections	Signalized Intersections
A	≤ 10.0	≤ 10
B	> 10.0 and ≤ 15.0	> 10 and ≤ 20
C	> 15.0 and ≤ 25.0	> 20 and ≤ 35
D	> 25.0 and ≤ 35.0	> 35 and ≤ 55
E	> 35.0 and ≤ 50.0	> 55 and ≤ 80
F	> 50.0	> 80

6.2 INTERSECTION ANALYSIS RESULTS

A performance analysis was conducted for the studied intersections for the Years 2024, 2025, and 2030 conditions during the AM and PM peak hours. The intersection evaluation was performed using Synchro 10 following the HCM 6 critical movement methodology outlined in ODOT’s analysis Procedures Manual. The results are shown in Table 8 for the AM peak hour and Table 9 for the PM peak hour. The SYNCHRO outputs are provided in Appendix E.

TABLE 8: INTERSECTION PERFORMANCE: WEEKDAY AM PEAK HOUR

Intersection	Mobility Standard LOS	2024	2025 Background	2025 Build	2030 Background	2030 Build
Highway 101 at 35 th St	v/c 0.85	0.45	0.45	0.45	0.49	0.47
Redwood at 35 th St*	LOS E	A	A	B	A	B
Highway 101 at Site Access*	v/c 0.85/0.90	A	A	B	B	B

*Results reported for highest movement for stop-controlled intersections

TABLE 9: INTERSECTION PERFORMANCE: WEEKDAY PM PEAK HOUR

Intersection	Mobility Standard LOS	2024	2025 Background	2025 Build	2030 Background	2030 Build
Highway 101 at 35 th St	v/c 0.85	0.58	0.60	0.58	0.60	0.59
Redwood at 35 th St*	LOS E	A	B	B	B	B
Highway 101 at Site Access*	v/c 0.85/0.90	B	B	B	B	B

*Results reported for highest movement for stop-controlled intersections

As illustrated in Tables 8 and 9, all intersections meet the mobility standards.

6.3 QUEUE ANALYSIS

A queuing analysis was conducted for the studied intersections. The analysis was performed using SimTraffic, a microsimulation software tool that uses the HCM-defined criteria to estimate the queuing of vehicles within the study area. The average and 95th percentile queuing results are illustrated in Table 10 for the AM Peak Hour and Table 11 for the PM peak hour. All results are rounded to 25 feet to represent the total number of vehicles in the queue, as one vehicle typically occupies 25 feet of space. The SimTraffic outputs are provided in Appendix F.

TABLE 10: INTERSECTION QUEUING: WEEKDAY AM PEAK HOUR

Intersection			Available Storage (Feet)	2024 Background (Feet)		2025 Background (Feet)		2025 Build (Feet)		2030 Background (Feet)		2030 Build (Feet)	
				95 th	Average	95 th	Average	95 th	Average	95 th	Average	95 th	Average
Hwy 101 @ 35th	EB	L	175	75	50	75	50	75	50	75	50	75	50
	EB	TR	250	75	50	75	50	100	50	100	50	100	50
	WB	L	190	50	25	50	25	75	50	75	25	75	50
	WB	TR	220	75	50	50	25	75	25	75	25	75	25
	NB	L	210	50	25	75	25	75	50	75	50	75	50
	NB	T	230	75	50	100	50	100	50	100	50	75	50
	NB	TR	230	50	25	75	25	75	50	75	25	75	50
	SB	L	150	50	25	50	25	75	50	50	25	75	50
	SB	T	235	100	75	125	75	100	75	125	75	125	75
	SB	TR	235	75	50	75	50	75	50	100	50	75	50
Redwood @ 35th	EB	LTR	225	25	25	25	25	25	25	25	25	25	25
	WB	LTR	275	25	25	25	0	25	0	25	0	25	0
	NB	LTR	260	50	25	50	25	50	25	75	25	75	25
	SB	LTR	100	50	25	50	25	50	50	50	25	50	50
Hwy 101 @ Site Access	WB	R	75	25	25	25	25	50	25	25	25	50	25

Any movement not included in the table has a queue of 0 feet.

TABLE 11: INTERSECTION QUEUING: WEEKDAY PM PEAK HOUR

Intersection			Available Storage (Feet)	2024 Background (Feet)		2025 Background (Feet)		2025 Build (Feet)		2030 Background (Feet)		2030 Build (Feet)	
				95 th	Average	95 th	Average	95 th	Average	95 th	Average	95 th	Average
Hwy 101 @ 35th	EB	L	175	75	50	100	50	100	50	100	50	100	50
	EB	TR	250	75	50	100	50	100	50	100	50	100	50
	WB	L	190	50	25	50	25	75	50	50	25	75	50
	WB	TR	220	75	25	75	25	75	25	75	50	75	50
	NB	L	210	75	50	75	50	75	50	75	50	75	50
	NB	T	230	100	50	100	75	125	75	125	75	125	75
	NB	TR	230	75	50	100	50	100	50	100	50	100	50
	SB	L	150	50	25	50	25	75	50	75	25	75	50
	SB	T	235	125	75	150	100	150	75	150	100	150	100
	SB	TR	235	100	50	125	75	125	75	150	75	150	75
Redwood @ 35th	EB	LTR	225	25	25	25	25	25	25	25	25	25	25
	WB	LTR	275	25	25	25	25	25	25	25	25	25	0
	NB	LTR	260	75	25	50	25	50	25	50	25	75	25
	SB	LTR	100	50	25	50	25	50	25	50	25	50	50
Hwy 101 @ Site Access	WB	R	75	50	25	50	25	50	25	50	25	50	25

Any movement not included in the table has a queue of 0 feet.

As demonstrated in Tables 10 and 11, the addition of development traffic does not substantially increase the queuing conditions at the studied intersections.

7.0 TURN POCKET EVALUATION

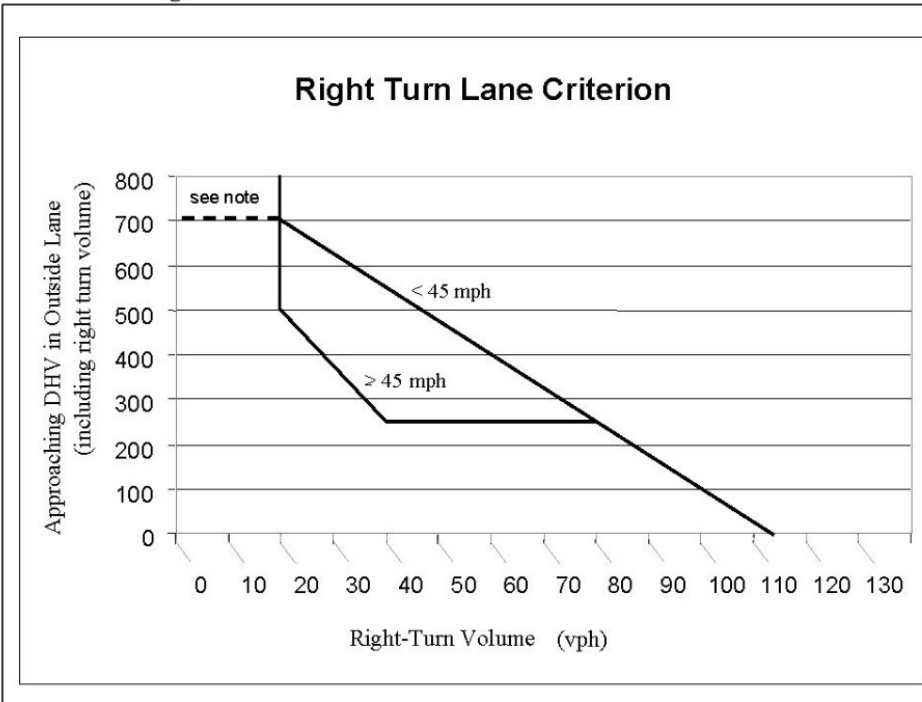
The intersections of Highway 101 at 35th St and Redwood at 35th St were evaluated for the need for turn pockets. The evaluation follows ODOT Methodology as outlined in the Analysis Procedures Manual. The evaluation considers the volume of turning trips and the volume of trips on the mainline as the starting point, and then an evaluation of feasibility and increase in safety should be considered to determine if a turn pocket is appropriate. Table 12 and the following graphs provide the values used for the evaluation and the results. As demonstrated in Table 12, no additional turn pockets are required.

TABLE 12: TURN LANE WARRANTS- YEAR 2030 WITH DEVELOPMENT

Location	Maine Line Volumes	Turning Volumes	Warrant met
AM Peak Hour			
Hwy 101 at 35th			
Northbound Right	216	34	No
Southbound Right	264	41	No
Redwood at 35th			
Eastbound Right	142	17	No
Eastbound Left	213	103	Yes
Westbound Right	75	15	No
Westbound Left	114	4	No
Hwy 101 at Site Access			
Northbound Right	285	50	No
PM Peak Hour			
Hwy 101 at 35th			
Northbound Right	391	54	No
Southbound Right	443	57	No
Redwood at 35th			
Eastbound Right	73	8	No
Eastbound Left	231	79	Yes
Westbound Right	166	37	No
Westbound Left	160	9	No
Hwy 101 at 35th			
Northbound Right	414	30	No

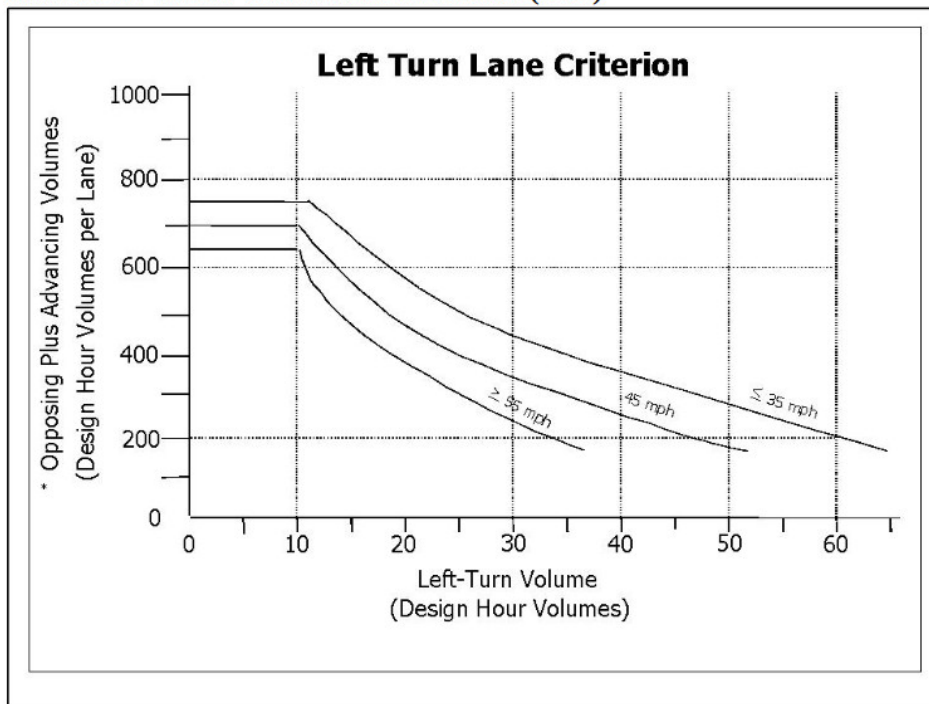
The eastbound left turn movement meets the volume criteria for the consideration of a separate turn pocket. This movement will experience an average delay of less than 8 seconds and a maximum queue of 2 vehicles through the year 2030. This is due to the low volume of opposing vehicles. The speed of 35th Street is 25 mph and there have been no reported crashes at this location. The left-turn pocket would not provide a safety benefit. Therefore, a left-turn pocket is not recommended.

Exhibit 12-2 Right Turn Lane Criterion



Note: If there is no right turn lane, a shoulder needs to be provided. If this intersection is in a rural area and is a connection to a public street, a right turn lane is needed.

Exhibit 12-1 Left Turn Lane Criterion (TTI)



*(Advancing Volume/Number of Advancing Through Lanes) + (Opposing Volume/Number of Opposing Through Lanes)
Opposing left turns are not counted as opposing volumes

8.0 CONCLUSION

The report provides a Traffic Impact Analysis and findings prepared for the proposed US Markets Convenience Store and Gas Station located in Florence, Oregon.

FINDINGS

- All intersections meet the applicable operational standards for both the AM and PM peak hours.
- The addition of development trips does not trigger intersection mitigation.
- The addition of development trips does not negatively increase queuing conditions at the study area intersections.
- The crash rates and crash patterns in the study area do not trigger mitigation.

Florence Gas Station

TECH MEMO

DATE: June 13, 2024

TO: Arielle Childress
Oregon Department of Transportation

FROM: Kelly Sandow P.E.
Sandow Engineering

RE: Scope of Work- Florence Convenience Store and Gas Station

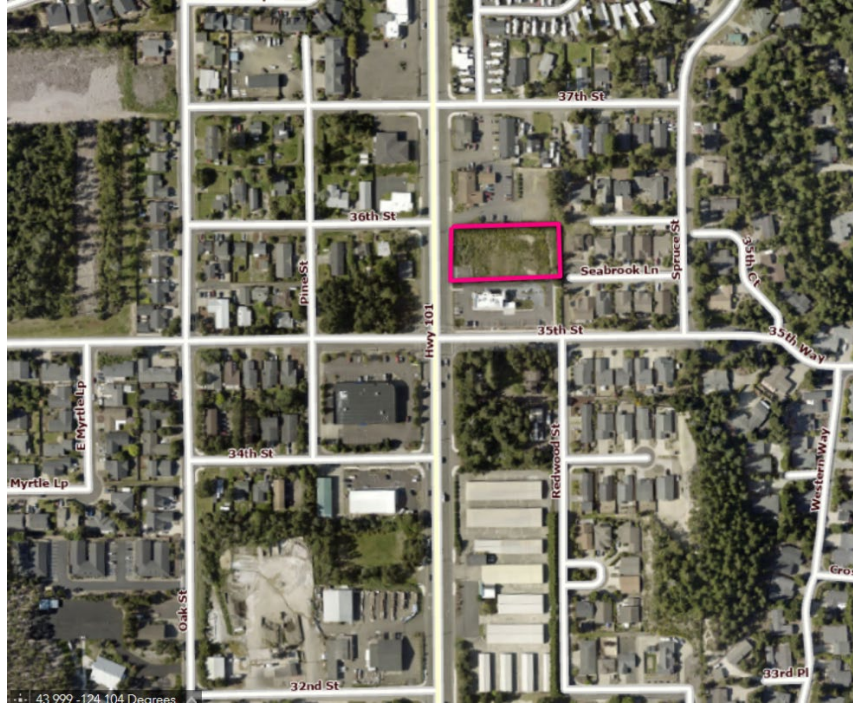
The following provides the trip generation estimate and recommended Scope of Work for the proposed convenience store and gas station located on Highway 101 between 35th Street and 36th Street in Florence, Oregon.

SITE INFORMATION

The site is located on Tax Lot 800 of Assessor's Map 18-12W-23-22 and is located on the east side of Highway 101 between 35th Street and 36th Street just north of the Burger King. The site is approximately 0.99 acres and is currently vacant.

Access to the site will be via an existing right-in right-out driveway to Highway 101 and a full-movement driveway to 35th Street. Both accesses are shared with the Burger King located to the south of the project site.

The site is currently zoned Highway Commercial. The development proposal is allowed within the zoning. No zone change is required.



Site Location

DEVELOPMENT PROPOSAL

The applicant is proposing the development of a 3,434-square-foot convenience store with an attached 2,201-square-foot coffee shop with a drive-through pickup lane and gas station with 8 vehicle fueling positions. All accesses will remain in their existing configuration. The site plan is attached.

Trip Generation

The ITE Trip Generation Manual 11th ed is used to estimate the AM and PM peak hour trip generation. Tables 1 and 2 provide the trip generation estimates. The most reasonable ITE Land Uses/rates for each use are:

- **945- Convenience Store with Gas Station:** This land use includes the convenience store and fuel pumps only. The convenience store does not include the attached coffee shop. ITE provides trip rates using a subcategory of square feet of the convenience store or vehicle fueling positions. The primary use will be the vehicle fueling stations, with the convenience store as a secondary use. Therefore, the number of vehicle fueling positions is the appropriate subcategory to use. The convenience store square footage is used as the independent variable.

- **937- Coffee/Donut Shop with Drive-Through Window and Indoor Seating:** This ITE Land Use is used for the drive-through coffee shop with indoor seating. The rate is based on the use’s square footage.
- **Internal Trips:** The site’s internal trips are calculated using NEHRP 684 and ITE Methodology. The AM peak hour is anticipated to have 9% internal trips. The PM peak hour is anticipated to have 24% internal trips. The ITE spreadsheets are attached.
- **Pass-by Trips:** The ITE Trip Generation handbook and trip generation online appendices provide the following pass-by trip rate:
 - 945 Convenience Store with Gas Station:
 - 76% AM Peak Hour
 - 75% PM Peak Hour
 - 937- Coffee/Donut Shop w/ Drive-Through and Indoor Seating:
 - 90% AM Peak Hour
 - 98% PM Peak Hour

TABLE 1: PEAK HOUR TRIP GENERATION- AM PEAK HOUR

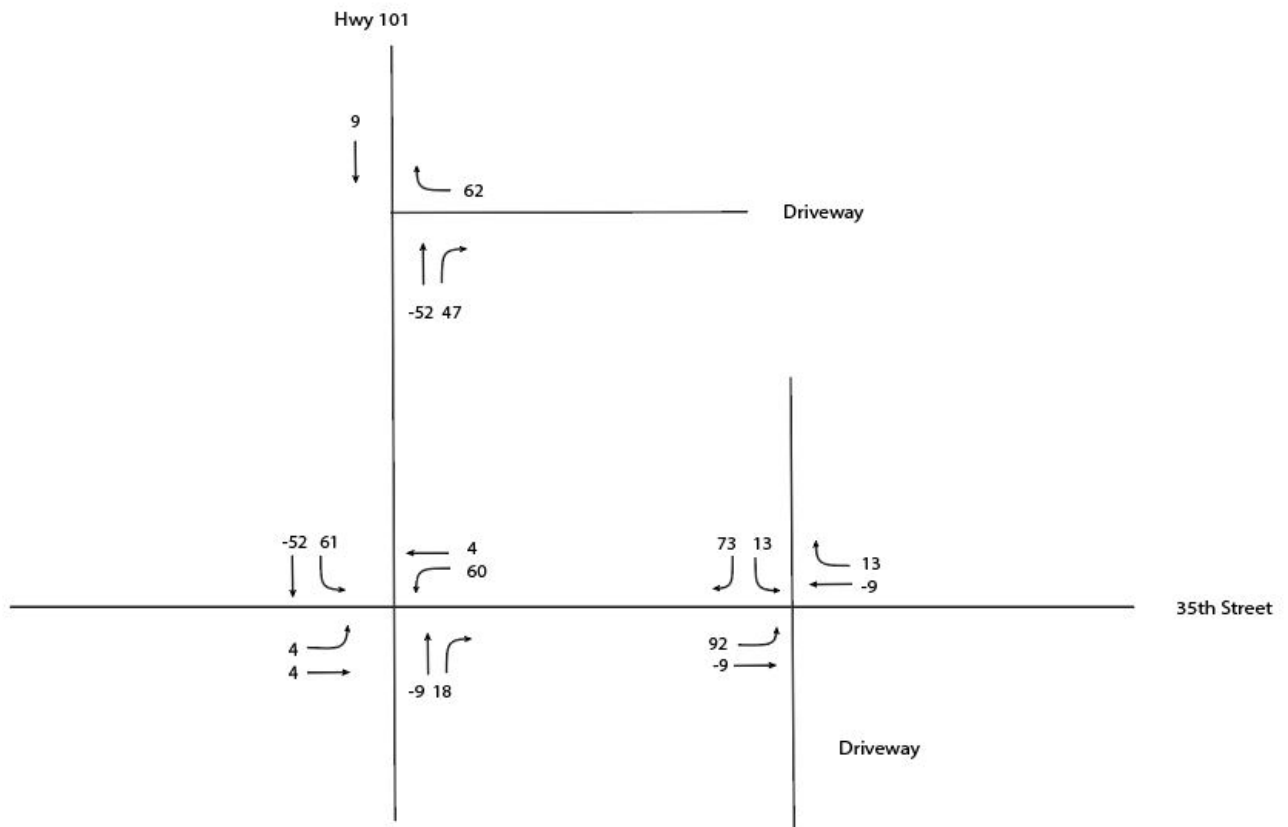
ITE Code	Units	Rate	Trips	In	Out
945- Convenience Store with Gas Station	3.43 ksf	40.59	139	70 (50%)	69 (50%)
937- Coffee Shop with Drive-Through Window	2.2 ksf	85.88	189	96 (51%)	93 (49%)
Subtotal			328	166	162
Internal Trips				-15	-15
External Trips			299	151	147
Pass-by					
	945	76%	92	46	46
	937	90%	148	75	73
Total Pass-by			240	122	119
Total New Trips			59	30	29

TABLE 2: PEAK HOUR TRIP GENERATION- PM PEAK HOUR

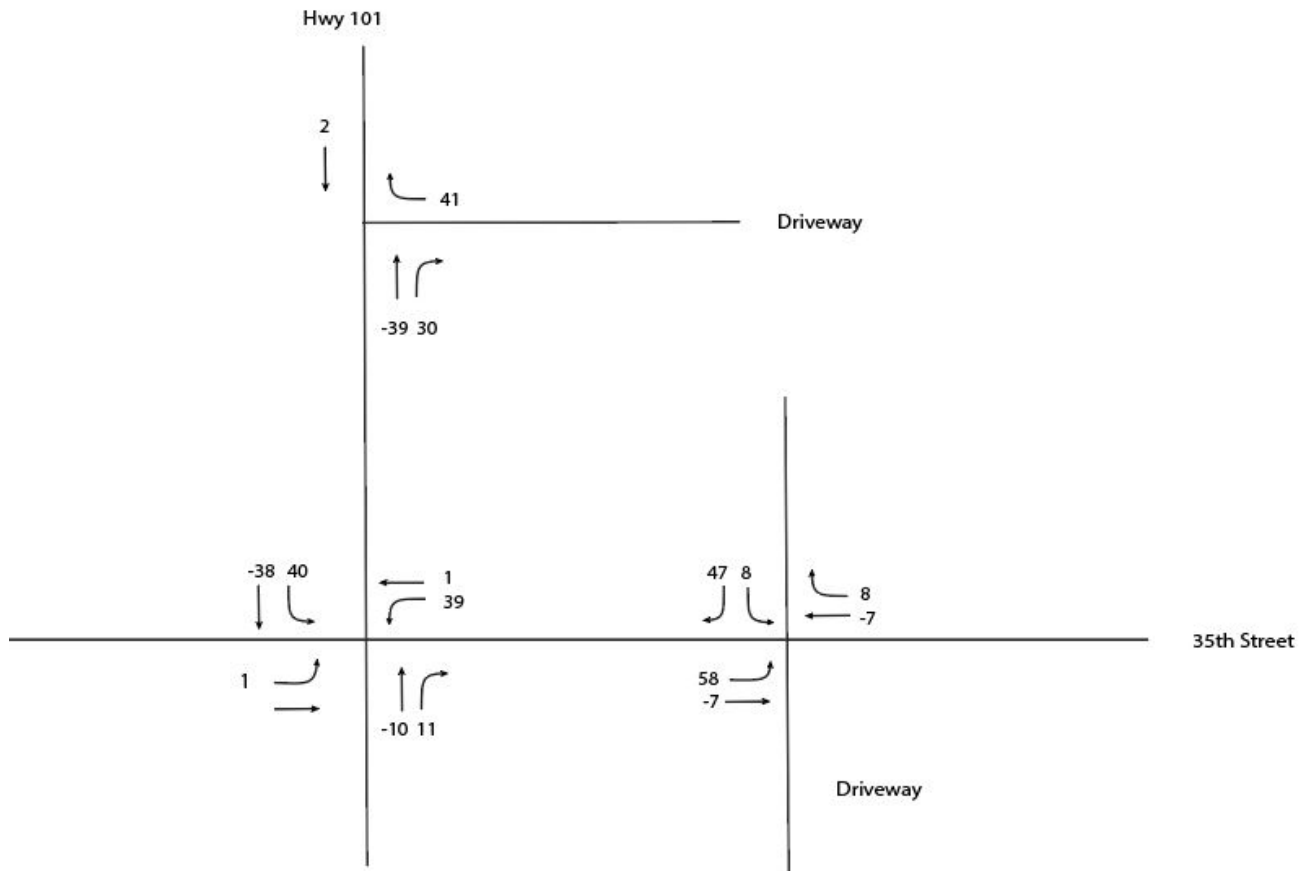
ITE Code	Units	Rate	Trips	In	Out
945- Convenience Store with Gas Station	3.43 ksf	48.48	166	83 (50%)	83 (50%)
937- Coffee Shop with Drive-Through Window	2.2 ksf	38.95	86	43 (51%)	43 (49%)
Subtotal			252	126	126
Internal Trips			24%	-60	-30
External Trips			192	96	96
Pass-by					
	945	75%	108	54	54
	937	98%	74	37	37
Total Pass-by			182	91	91
Total New Trips			10	5	5

The trip distribution follows the existing travel patterns based on recent traffic counts taken at adjacent intersections with modifications for reasonable origins/destinations.

The trip distribution is shown in the images below for AM and PM Peak Hours.



Trip Distribution AM Peak Hour



Trip Distribution PM Peak Hour

ANALYSIS PARAMETERS

The following analysis is proposed for this project.

- Years
 - 2024- Existing
 - 2026- Full Build Out
 - 2031- 5 years after buildout
- PM Peak Period 4-6 PM
- AM Peak Period 7-9 PM
- Growth Rate: As per TSP
- Analysis to include:
 - LOS
 - V/C
 - Queuing
 - Crash Analysis
 - Mitigation evaluation, including signal warrants, turn pockets, etc.
 - Change of use at Highway 101 access
 - Turn lane evaluation at all site access points
- Proposed intersections to be studied:
 - Hwy 101 at Site Access
 - Hwy 101 at 35th Street
 - 35th Street at Site Access

From: [CHILDRESS Arielle](#)
To: kellysandow@sandowengineering.com
Cc: [BAUMGARTNER Douglas G](#)
Subject: RE: Florence Gas Station Scope of Work
Date: Monday, June 24, 2024 3:42:10 PM

Kelly,

I've reviewed the scoping memo for the proposed Florence Gas Station development in Florence, OR and have the following comments:

- Trip Generation:
 - Pass-by rate for LUC 937 utilized rates for LUC 938, which doesn't have any indoor seating. Recommend lowering pass-by rate as this land use most likely has more customers traveling to it as a destination. Consider using rates from LUC 934 or average LUC 934 and 938.
 - The internal capture spreadsheet for AM peak hour has slightly incorrect base volumes input.
 - Internal capture trips should be fully removed prior to applying pass-by rates. Recommend using Tables 9-P (D) and 9-P (O) to determine external trips by land use.
- In the final TIA, please provide overall trip distribution percentages to aid in review of trip assignment.

If you have any questions please feel free to reach out.

Thanks!

Arielle Childress, P.E. (she/her/hers)

Traffic Analysis Engineer
ODOT Region 2
455 Airport Rd. SE, Bldg. B, Salem, OR 97031
(971) 208-1290

From: kellysandow@sandowengineering.com <kellysandow@sandowengineering.com>

Sent: Wednesday, June 19, 2024 3:43 PM

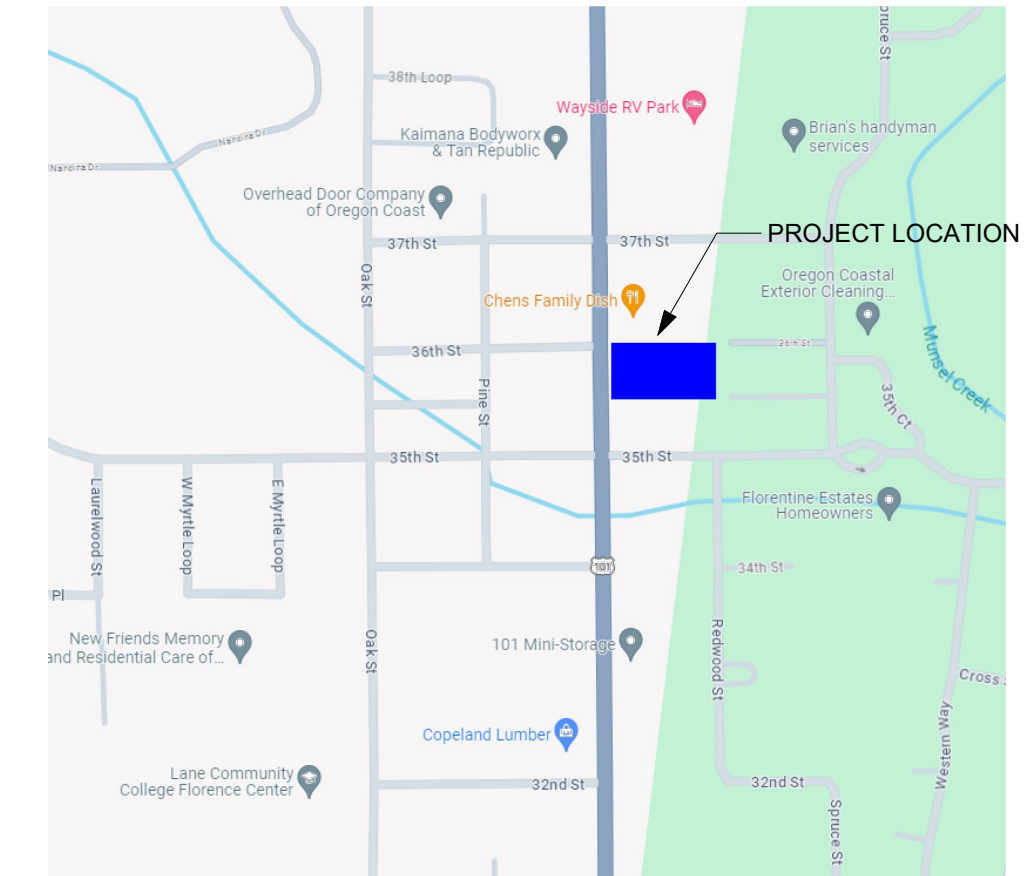
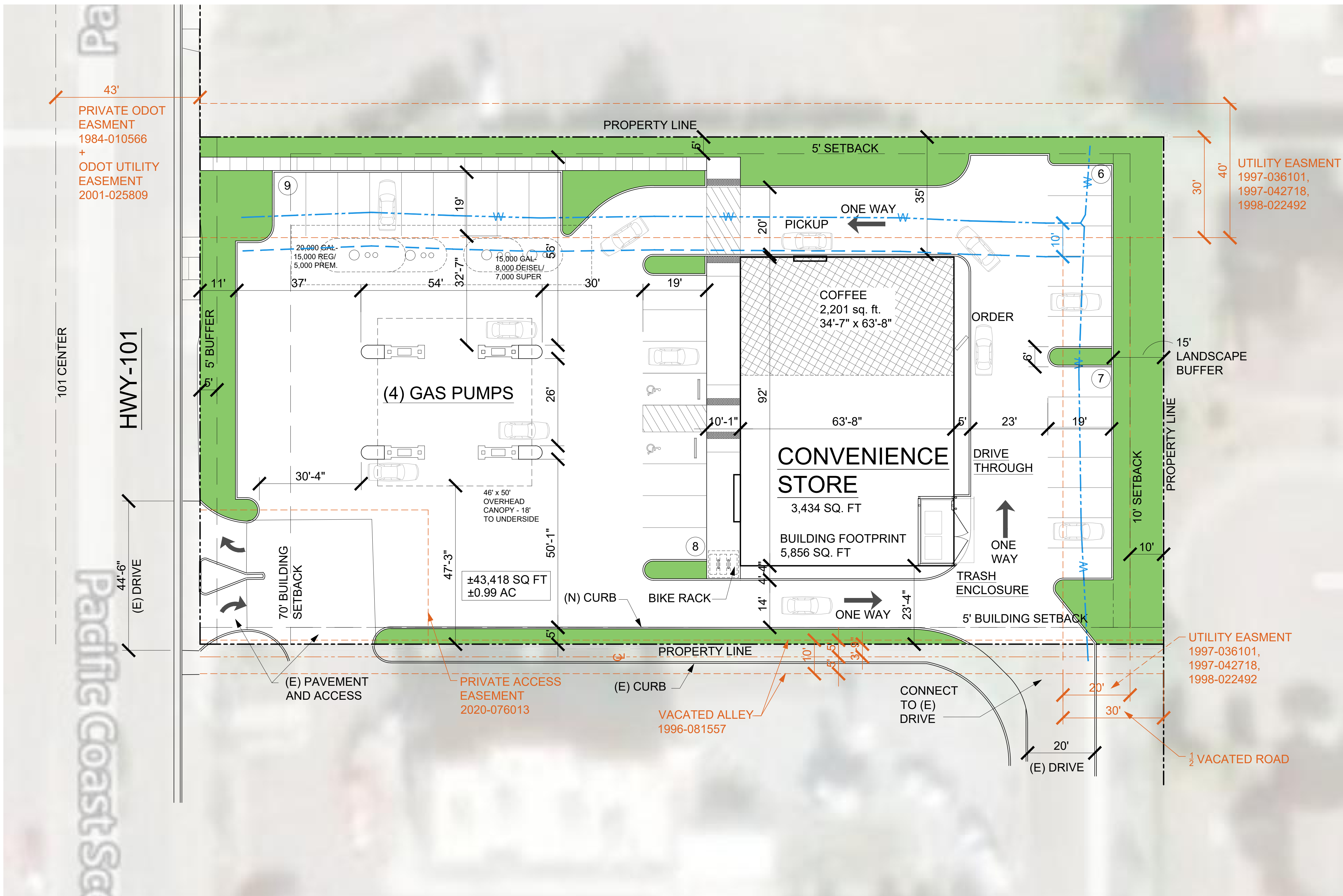
To: CHILDRESS Arielle <Arielle.CHILDRESS@odot.oregon.gov>

Subject: Florence Gas Station Scope of Work

This message was sent from outside the organization. Treat attachments, links and requests with caution. Be conscious of the information you share if you respond.

Hi Arielle, I have another Scope of Work letter for you. This time its in Florence on Highway 101 near 35th . Attached is the lette. Please let me know what comments you may have.

Florence Gas Station



Site and Project Information

Site Location:	35th STREET, FLORENCE, Oregon 97439
Parcel Number:	1812232206800
Parcel Size:	±0.099 AC
Zoning:	H (Highway)
Overlay:	-
Subdivision:	-
Existing Use:	Vacant Lot
Proposed Use:	Gas Station and Convenience Store with Drive-Thru

C-1 Zone & Downtown Overlay District

Code Section:	Required	Proposed
10-16-7 Minimum Lot Size:	50' width / 6000SF	±0.99 acres (43,124 SF)
10-16-7 Minimum Front Setbacks:	70' from C.L. Highway	70'
10-16-7 Minimum Side/Rear:	5' abutting property	5'
10-16-7 Lot Coverage:	85% Max.	Building Area: 5,856 sq. ft. = 13.5%
10-16-7 Min Landscaping:	15%	7,330 sq. ft. = 17.0%
10-34-3-6 Landscape Buffers:	5' parking islands 5' buffer at building 3' - 4' tall Screening between parking and street 30" Tall Visual Barrier Along Hwy Frontage 15' Rear at Residential	
10-16-7 Height:	Max: 35'	1 story = 35'-0" max.
10-3-1 Vehicular Parking: 9' x 19'	Service Station: Min. 2 Restaurant: Min. 1 space per 125 SF (17.6 stalls req'd) Commercial: Min. 1 space per 333 SF (10.4 stalls req'd) NO COMPACT PARKING ALLOWED	30 spaces
10-3-10 Bicycle:	1 stall (2'x6') per 10 vehicle parking (3 req'd)	3 with Bike Rack
16-30-180.C Loading Zone:	Min: 1 loading zone (20,000 SF+)	0 < 20,000 sq. ft.



US MARKETS
35th st. and 101 HWY
Florence, OR 97439

ARCHITECTURAL SITE PLAN

SITE PLAN
DATE: 02/16/2024
1/16" = 1'-0"
REVISED: 03/13/2024

DATE	xx/xx/xxxx
REVISED DATE	

SHEET
A1.1

Florence Gas Station

CRASH DATA SUMMARY

6127 Florence Gas Station

Hwy 101 @ 35th											
YEAR	PDO	INJURY	FATAL	HEAD	REAR	SIDE	TURN	OTHER	PED	BIKE	TOTAL
2018	1	3					2	2			4
2019	1							1			1
2020	1	1			1			1			2
2021	2				1	1					2
2022	1					1					1
TOTALS:	6	4	0	0	2	2	2	4	0	0	10

CHECK
OK
OK
OK
OK
OK
OK
OK

P.M. PEAK HOUR	Number of Years, n	ADT	AVG. ANNUAL MILES (MILLIONS)	AVG. YEARLY CRASHES	CRASH RATE/ MILLION MILES
1906	5	19060	6956900.000	2000000.0	0.29

REAR	S-N / S-N	N-S / N-S			
TURN	N-S / S-W / W-E	S-N / N-E			
OTHER	S-N	N-S / E-W	N-S / W-E	S-N / W-E / N-S	
SIDE	2 S-N / S-N				
PED					

		# Crashes	ADT	MEV	Crash Rate	Critical Crash Rate
1 Hwy 101 @ 35th	Signal	10	19060	34.78	0.29	0.45 under
2						
3						
4						
5						
6						
7						

Weighted Average

Signal		10		34.78	0.287484368	
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CITY OF FLORENCE, LANE COUNTY

35TH ST and OREGON COAST HY, City of Florence, Lane County, 01/01/2018 to 12/31/2022

CITY OF FLORENCE, LANE COUNTY

35TH ST and OREGON COAST HY, City of Florence, Lane County, 01/01/2018 to 12/31/2022

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF FLORENCE, LANE COUNTY

35TH ST and OREGON COAST HY, City of Florence, Lane County, 01/01/2018 to 12/31/2022

10 - 10 of 10 Crash records shown.

SER#	P	R	J	S	W	DATE	CLASS	CITY STREET	RD CHAR	INT-TYPE	SPCL USE																										
INVEST	E	A	U	I	C	O	DAY	DIST	FIRST STREET		TRLR QTY	MOVE		A	S																						
RD DPT	E	L	G	N	H	R	TIME	FROM	SECOND STREET	DIRECT	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED																			
UNLOC?	D	C	S	V	L	K	LAT	LONG	LRS	LOCTN	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE													
											02	NONE	9		STRGHT																						
												N/A			S -N																						
												PSNGR	CAR		01	DRVR	NONE	00	Unk	UNK		000															

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 FLORENCE, LANE COUNTY

35TH ST and OREGON COAST HY, City of Florence, Lane County, 01/01/2018 to 12/31/2022

06/25/2024

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

35TH ST and OREGON COAST HY, City of Florence, Lane County, 01/01/2018 to 12/31/2022

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2022														
SIDESWIPE - OVERTAKING	0	0	1	1	0	0	0	1	0	0	1	0	0	0
YEAR 2022 TOTAL	0	0	1	1	0	0	0	1	0	0	1	0	0	0
YEAR: 2021														
REAR-END	0	0	1	1	0	0	0	1	0	1	0	1	0	0
SIDESWIPE - OVERTAKING	0	0	1	1	0	0	1	1	0	1	0	0	1	0
YEAR 2021 TOTAL	0	0	2	2	0	0	1	2	0	2	0	1	1	0
YEAR: 2020														
ANGLE	0	1	0	1	0	3	0	1	0	1	0	1	0	0
REAR-END	0	0	1	1	0	0	0	1	0	0	1	1	0	0
YEAR 2020 TOTAL	0	1	1	2	0	3	0	2	0	1	1	2	0	0
YEAR: 2019														
FIXED / OTHER OBJECT	0	0	1	1	0	0	0	0	1	0	1	1	0	0
YEAR 2019 TOTAL	0	0	1	1	0	0	0	0	1	0	1	1	0	0
YEAR: 2018														
ANGLE	0	1	1	2	0	1	0	1	1	1	1	2	0	0
TURNING MOVEMENTS	0	2	0	2	0	3	0	2	0	2	0	2	0	0
YEAR 2018 TOTAL	0	3	1	4	0	4	0	3	1	3	1	4	0	0
FINAL TOTAL	0	4	6	10	0	7	1	8	2	6	4	8	1	0

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 requirements, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING
35TH ST and REDWOOD ST, City of Florence, Lane County, 01/01/2018 to 12/31/2022

CITY OF FLORENCE, LANE COUNTY

SER#	S P	D R	M J	S S	W DATE	CLASS	CITY STREET	INT-TYPE	SPCL USE																					
INVEST	E	A	U	I	C	O	DAY	DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR	QTY	MOVE	A	S										
RD DPT	E	L	G	N	H	R	TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED							
UNLOC?	D	C	S	V	L	K	LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE	

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 FLORENCE, LANE COUNTY

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

35TH ST and REDWOOD ST, City of Florence, Lane County, 01/01/2018 to 12/31/2022

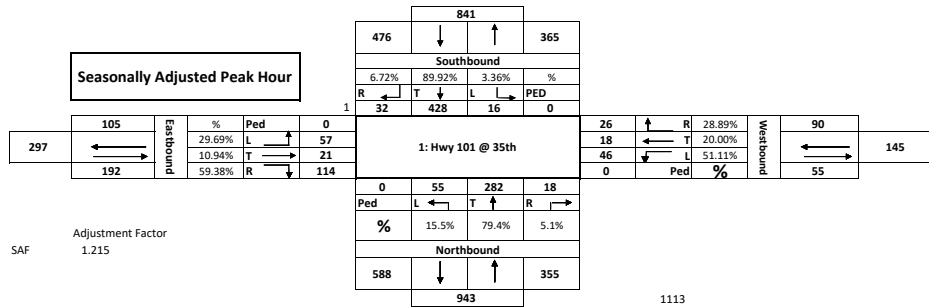
COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	SECTION RELATED	OFF- ROAD
FINAL TOTAL														

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 requirements, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

Florence Gas Station

Intersection:		1: Hwy 101 @ 35th		City:		Florence																	
Counter:		Quality Counts		Date:		Tuesday, October 10, 2023																	
Total of All Vehicles																							
Time Period	Southbound				Westbound				Northbound				Eastbound				15 Minute Volume	Hourly Volume	Pedestrians				
	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total			SB	WB	NB	EB	
7:00	7:15	4	41	1	46	1	0	2	3	1	42	4	47	8	0	5	13	109	0	0	0	0	
7:15	7:30	3	53	1	57	1	2	0	3	4	39	5	48	13	0	7	20	128	0	0	0	0	
7:30	7:45	10	75	1	86	1	5	3	9	2	59	11	72	16	1	11	28	195	0	0	0	0	
7:45	8:00	13	92	2	107	4	10	6	20	0	76	5	81	20	5	12	37	245	0	0	0	0	
8:00	8:15	10	101	1	112	6	2	10	18	7	68	7	82	26	3	19	48	260	828	0	0	0	0
8:15	8:30	4	67	7	78	1	9	8	18	2	57	20	79	21	6	7	34	209	909	0	0	0	0
8:30	8:45	4	73	4	81	8	2	7	17	4	46	11	61	22	3	12	37	196	910	0	0	0	0
8:45	9:00	8	111	1	120	6	2	13	21	2	61	7	70	25	5	9	39	250	915	0	0	0	0
9:00	9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	655	0	0	0	0
9:15	9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	446	0	0	0	0
9:30	9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	250	0	0	0	0
9:45	10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Period Total		56	613	18		28	32	49		22	448	70		151	23	82		1592	0	0	0	0	
PM Peak Hour Count Summary																							
Peak Volumes	Southbound				Westbound				Northbound				Eastbound				15 Minute Volume	Hourly Volume	Pedestrians				
	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total			SB	WB	NB	EB	
	26	352	13	391	21	15	38	74	15	232	45	292	94	17	47	158			915	0	0	0	0
PHF	0.65	0.79	0.46	0.81	0.66	0.42	0.73	0.88	0.54	0.85	0.56	0.89	0.90	0.71	0.62	0.82	0.88						
Trucks	0	0	0		0	0	0		0	0	0		0	0	0								
% Trucks	15%	5%	0%		6%	8%	0%		10%	7%	4%		2%	11%	6%								

Seasonally Adjusted Peak Hour

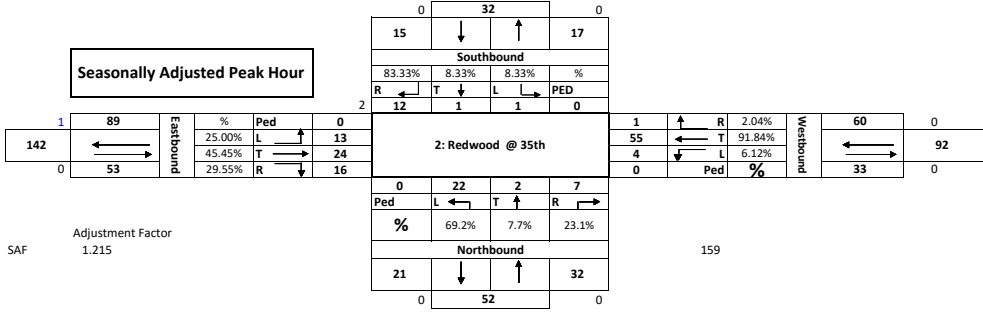


Adjustment Factor
1.215

SAF

1113

Seasonally Adjusted Peak Hour

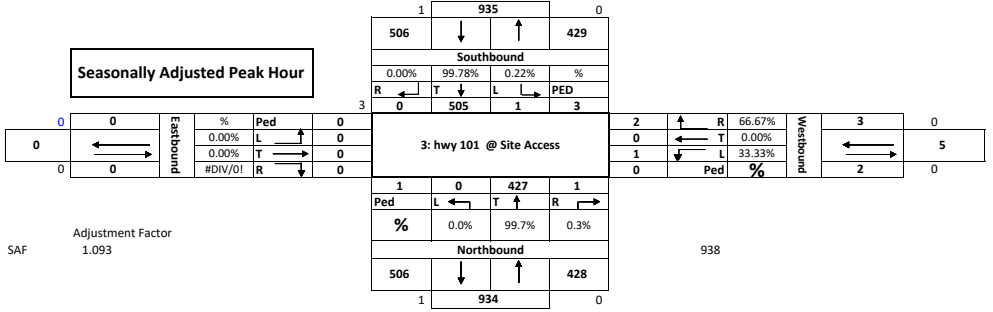


SAF Adjustment Factor 1.215

159

Intersection:		3: hwy 101 @ Site Access								City: Florence												
Counter:		Sandow Engineering								Date: Wednesday, June 19, 2024												
Total of All Vehicles																						
Time Period	Southbound				Westbound				Northbound				Eastbound				15 Minute Volume	Hourly Volume	Pedestrians			
	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total			SB	WB	NB	EB
7:00	7:15	0	50	0	50	0	0	1	1	0	37	0	37	0	0	0	0	88	1	0	0	0
7:15	7:30	0	54	0	54	1	0	0	1	0	45	0	45	0	0	0	0	100	0	0	0	0
7:30	7:45	0	92	0	92	1	0	0	1	0	64	0	64	0	0	0	0	157	1	0	0	0
7:45	8:00	0	121	0	121	0	0	0	0	0	74	0	74	0	0	0	0	195	0	0	0	0
8:00	8:15	0	89	0	89	0	0	1	1	0	74	0	74	0	0	0	0	164	0	0	1	0
8:15	8:30	0	110	0	110	1	0	0	1	0	102	0	102	0	0	0	0	213	2	0	0	0
8:30	8:45	0	124	0	124	0	0	0	0	0	93	0	93	0	0	0	0	217	1	0	1	0
8:45	9:00	0	139	1	140	1	0	0	1	1	122	0	123	0	0	0	0	264	0	0	2	0
9:00	9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	694	0	0	0	0
9:15	9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	481	0	0	0	0
9:30	9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	264	0	0	0	0
9:45	10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Period Total		0	779	1		4	0	2		1	611	0		0	0	0		1398	5	0	4	0
PM Peak Hour Count Summary																						
Peak Volumes	Southbound				Westbound				Northbound				Eastbound				Approach	Hourly Volume	Pedestrians			
	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach			SB	WB	NB	EB
0	462	1	463	2	0	1	3	1	391	0	392	0	0	0	0	0	858	3	0	1	0	
PHF	0.00	0.83	0.25	0.83	0.50	0.00	0.25	0.75	0.25	0.80	0.00	0.80	0.00	0.00	0.00	0.00	0.81					
Trucks	0	10	0		0	0	1		0	21	0		0	0	0							
% Trucks	0%	2%	0%		0%	0%	100%		0%	5%	0%		0%	0%	0%							

Seasonally Adjusted Peak Hour

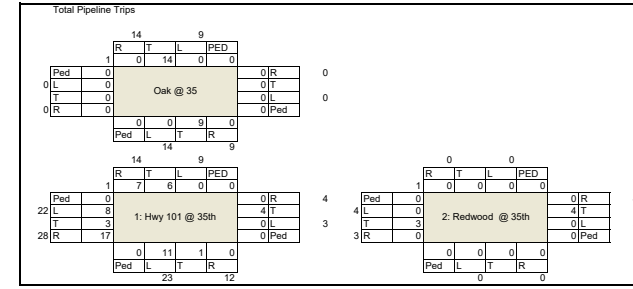
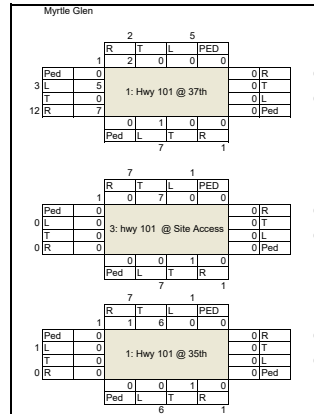
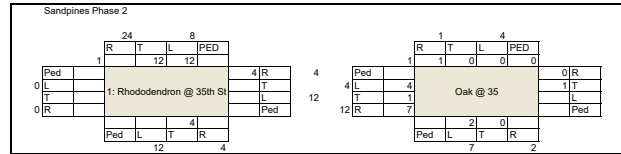
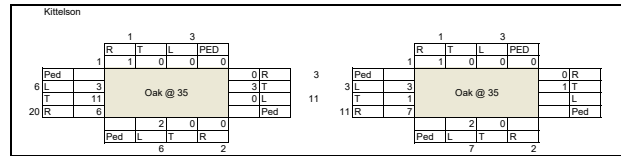
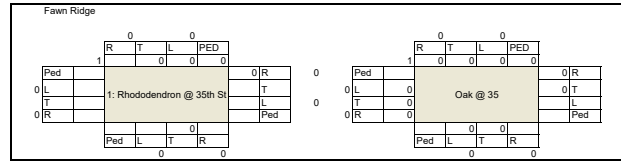
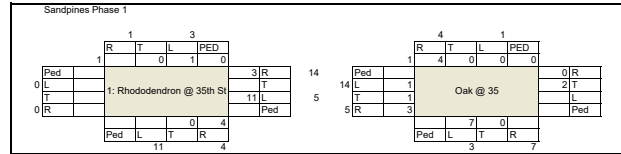


Global Peak Hour

Intersections				
Time Period	1- Hwy 101 @ 20th	2- Redwood @ 20th	3- Hwy 101 @ Site Access	Total
7:00 AM - 8:00 AM	677	65	540	1282
7:15 AM - 8:15 AM	828	90	610	1534
7:30 AM - 8:30 AM	909	114	729	1752
7:45 AM - 8:45 AM	910	131	789	1830
8:00 AM - 9:00 AM	915	131	858	1904
	915	131	858	1904

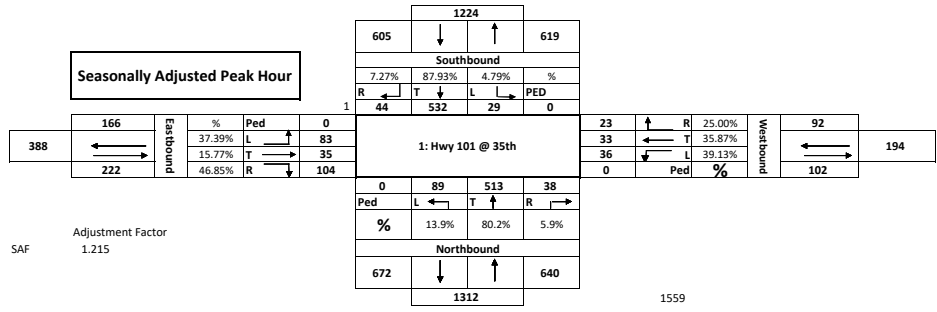
Peak Hour 8:00 AM
 8:15 AM
 8:30 AM
 8:45 AM

Pipeline Trips



Intersection: 1: Hwy 101 @ 35th		City: Florence																					
Counter: Quality Counts		Date: Tuesday, October 10, 2023																					
Total of All Vehicles																							
Time Period	Southbound				Westbound				Northbound				Eastbound				15 Minute Volume	Hourly Volume	Pedestrians				
	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total			SB	WB	NB	EB	
16:00	16:15	17	102	7	126	7	5	7	19	7	100	13	120	28	8	25	61	326	0	0	0	0	
16:15	16:30	7	131	5	143	4	8	6	18	10	133	28	171	25	10	14	49	381	0	0	0	0	
16:30	16:45	6	104	6	116	5	7	6	18	3	96	15	114	20	9	13	42	290	0	0	0	0	
16:45	17:00	6	101	6	113	3	7	11	21	11	93	17	121	13	2	16	31	286	1283	0	0	0	0
17:00	17:15	9	97	6	112	3	7	9	19	12	110	15	137	14	9	9	32	300	1257	0	0	0	0
17:15	17:30	6	98	2	106	6	4	11	21	5	104	19	128	15	7	7	29	284	1160	0	0	0	0
17:30	17:45	7	92	3	102	4	4	8	16	8	96	16	120	9	4	13	26	264	1134	0	0	0	0
17:45	18:00	6	81	4	91	7	9	4	20	6	63	17	86	12	5	13	30	227	1075	0	0	0	0
18:00	18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	775	0	0	0	0
18:15	18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	491	0	0	0	0
18:30	18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	227	0	0	0	0
18:45	19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Period Total		64	806	39		39	51	62		62	795	140		136	54	110		2358	0	0	0	0	
PM Peak Hour Count Summary																							
Peak Volumes	Southbound				Westbound				Northbound				Eastbound				15 Minute Volume	Hourly Volume	Pedestrians				
	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total			SB	WB	NB	EB	
	36	438	24	498	19	27	30	76	31	422	73	506	86	29	68	183	1283	0	0	0	0		
PHF	0.53	0.84	0.86	0.87	0.68	0.84	0.68	0.90	0.70	0.79	0.65	0.77	0.77	0.73	0.68	0.75	0.84						
Trucks	0	0	0		0	0	0		0	0	0		0	0	0								
% Trucks	6%	3%	0%		0%	0%	0%		0%	1%	1%		1%	0%	2%								

Seasonally Adjusted Peak Hour



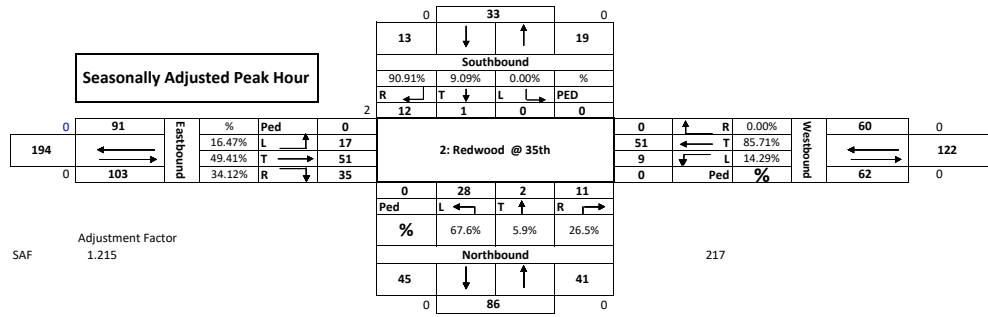
Adjustment Factor
1.215

SAF

1559

Intersection:		2: Redwood @ 35th		City:		Florence																	
Counter:		Quality Counts		Date:		Tuesday, October 10, 2023																	
Total of All Vehicles																							
Time Period	Southbound				Westbound				Northbound				Eastbound				15 Minute Volume	Hourly Volume	Pedestrians				
	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total			SB	WB	NB	EB	
16:00	16:15	2	0	0	2	0	9	1	10	2	0	8	10	6	11	5	22	44		0	0	0	0
16:15	16:30	3	0	0	3	0	11	4	15	1	1	4	6	9	12	4	25	49		0	0	0	0
16:30	16:45	4	1	0	5	0	9	1	10	6	1	4	11	9	7	2	18	44		0	0	0	0
16:45	17:00	1	0	0	1	0	13	1	14	0	0	7	7	5	12	3	20	42	179	0	0	0	0
17:00	17:15	2	0	0	2	0	7	2	9	1	0	9	10	4	18	3	25	46	181	0	0	0	0
17:15	17:30	2	1	1	4	1	10	1	12	5	0	10	15	2	7	6	15	46	178	0	0	0	0
17:30	17:45	4	1	0	5	0	6	2	8	4	1	6	11	1	11	3	15	39	173	0	0	0	0
17:45	18:00	2	1	0	3	0	8	2	10	3	0	10	13	6	9	0	15	41	172	0	0	0	0
18:00	18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	126	0	0	0	0
18:15	18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	80	0	0	0	0
18:30	18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	0	0	0	0
18:45	19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Period Total		20	4	1		1	73	14		22	3	58		42	87	26		351		0	0	0	0
PM Peak Hour Count Summary																							
Peak Volumes	Southbound				Westbound				Northbound				Eastbound				15 Minute Volume	Hourly Volume	Pedestrians				
	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach			SB	WB	NB	EB	
	10	1	0	11	0	42	7	49	9	2	23	34	29	42	14	85	179		0	0	0	0	
PHF	0.63	0.25	0.00	0.55	0.00	0.81	0.44	0.82	0.38	0.50	0.72	0.77	0.81	0.88	0.70	0.85	0.91						
Trucks	0	0	0		0	0	0		0	0	0		0	0	0								
% Trucks	0%	0%	0%		0%	3%	0%		25%	0%	0%		0%	0%	0%								

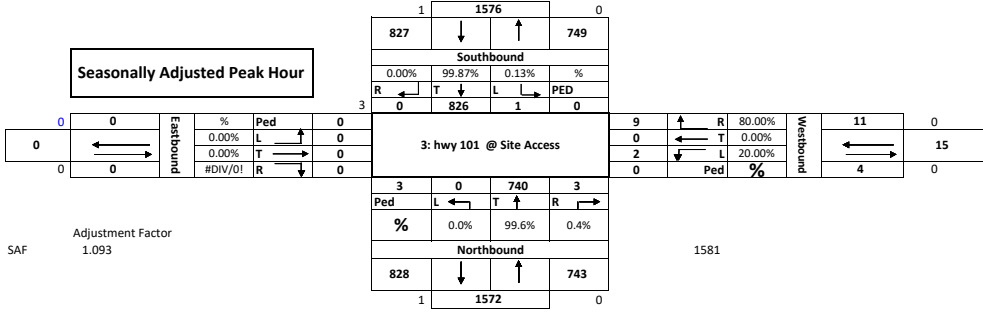
Seasonally Adjusted Peak Hour



SAF Adjustment Factor 1.215

217

Seasonally Adjusted Peak Hour



SAF Adjustment Factor 1.093

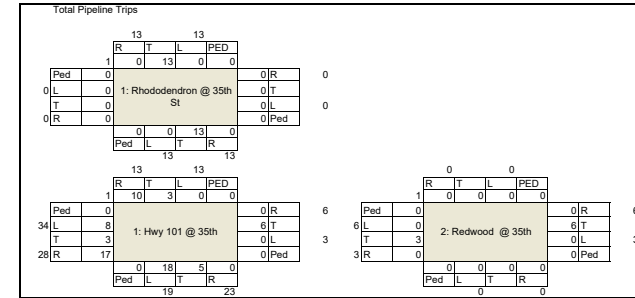
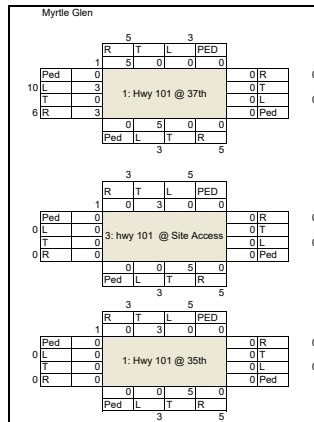
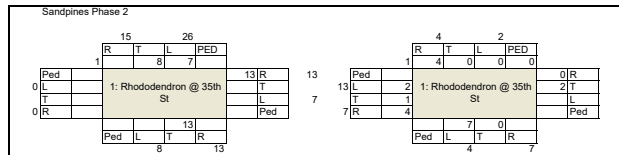
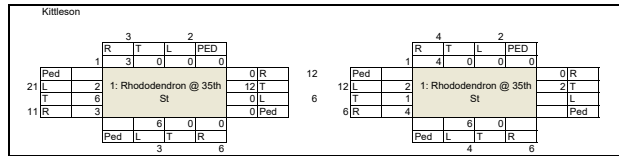
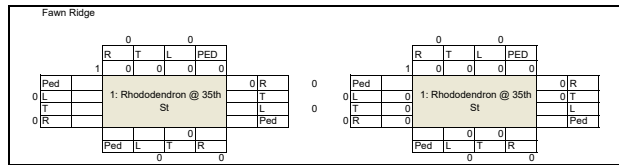
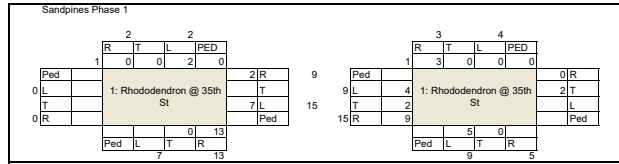
1581

Global Peak Hour

Intersections				
Time Period	1 Hwy 101 @ 20th	2 Redwood @ 20th	3 Hwy 101 @ Site Access	Total
4:00 PM - 5:00 PM	1,283	170	1,447	2,900
4:15 PM - 5:15 PM	1,257	181	1,440	2,884
4:30 PM - 5:30 PM	1,160	178	1,410	2,757
4:45 PM - 5:45 PM	1,134	173	1,383	2,690
5:00 PM - 6:00 PM	1,075	172	1,266	2,513
	1283	181	1447	2909

Peak Hour 4:00 PM
 4:15 PM
 4:30 PM
 4:45 PM

Pipeline Trips



NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Florence Gas Station	Organization:	Sandow Engineering
Project Location:	Salem , OR	Performed By:	Kelly Sandow
Scenario Description:		Date:	
Analysis Year:		Checked By:	
Analysis Period:	AM Street Peak Hour	Date:	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	945			140	70	70
Restaurant	937			189	96	93
Cinema/Entertainment				0		
Residential				0		
Hotel				0		
All Other Land Uses ²				0		
				329	166	163

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses ²						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		9	0	0	0
Restaurant	0	6		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	329	166	163
Internal Capture Percentage	9%	9%	9%
External Vehicle-Trips ⁵	299	151	148
External Transit-Trips ⁵	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	9%	13%
Restaurant	9%	6%
Cinema/Entertainment	N/A	N/A
Residential	N/A	N/A
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

³Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

⁴Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

⁵Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

⁶Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Project Name:	Florence Gas Station
Analysis Period:	AM Street Peak Hour

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	70	70	1.00	70	70
Restaurant	1.00	96	96	1.00	93	93
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	0	0	1.00	0	0
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	20		9	0	10	0
Restaurant	29	13		0	4	3
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		22	22	0	0	0
Retail	0		48	0	0	0
Restaurant	0	6		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	12	19	0		0
Hotel	0	3	6	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	6	64	70	64	0	0
Restaurant	9	87	96	87	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	9	61	70	61	0	0
Restaurant	6	87	93	87	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A
²Person-Trips
³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator
*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Florence Gas Station	Organization:	Sandow Engineering
Project Location:	Florence, Or	Performed By:	Kelly Sandow
Scenario Description:		Date:	
Analysis Year:		Checked By:	
Analysis Period:	PM Street Peak Hour	Date:	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	945			166	83	83
Restaurant	937			86	43	43
Cinema/Entertainment				0		
Residential				0		
Hotel				0		
All Other Land Uses ²				0		
				252	126	126

Table 2-P: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses ²						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		12	0	0	0
Restaurant	0	18		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	252	126	126
Internal Capture Percentage	24%	24%	24%
External Vehicle-Trips ⁵	192	96	96
External Transit-Trips ⁵	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	22%	14%
Restaurant	28%	42%
Cinema/Entertainment	N/A	N/A
Residential	N/A	N/A
Hotel	N/A	N/A

¹ Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

² Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

³ Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

⁴ Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made.

⁵ Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

⁶ Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Florence Gas Station
Analysis Period:	PM Street Peak Hour

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	83	83	1.00	83	83
Restaurant	1.00	43	43	1.00	43	43
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	0	0	1.00	0	0
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	2		24	3	22	4
Restaurant	1	18		3	8	3
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	1	0	0	0
Retail	0		12	0	0	0
Restaurant	0	42		0	0	0
Cinema/Entertainment	0	3	1		0	0
Residential	0	8	6	0		0
Hotel	0	2	2	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	18	65	83	65	0	0
Restaurant	12	31	43	31	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	12	71	83	71	0	0
Restaurant	18	25	43	25	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P
²Person-Trips
³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator
*Indicates computation that has been rounded to the nearest whole number.

SEASONAL TREND TABLE (Updated: 11/08/2023)																									Seasonal Peak
TREND	1-Jan	15-Jan	1-Feb	15-Feb	1-Mar	15-Mar	1-Apr	15-Apr	1-May	15-May	1-Jun	15-Jun	1-Jul	15-Jul	1-Aug	15-Aug	1-Sep	15-Sep	1-Oct	15-Oct	1-Nov	15-Nov	1-Dec	15-Dec	Trend
INTERSTATE URBANIZED	1.0869	1.1041	1.0688	1.0335	1.0182	1.0028	0.9995	0.9962	0.9901	0.9840	0.9641	0.9443	0.9502	0.9562	0.9510	0.9458	0.9575	0.9692	0.9791	0.9891	1.0107	1.0324	1.0532	1.0739	0.9443
INTERSTATE NONURBANIZED	1.2459	1.2915	1.2286	1.1657	1.0907	1.0158	1.0059	0.9960	0.9728	0.9496	0.9128	0.8760	0.8650	0.8540	0.8612	0.8684	0.8905	0.9126	0.9488	0.9850	1.0336	1.0822	1.1717	1.2612	0.8540
COMMUTER	1.0905	1.0986	1.0636	1.0285	1.0162	1.0038	0.9959	0.9879	0.9814	0.9749	0.9631	0.9512	0.9614	0.9717	0.9608	0.9500	0.9548	0.9595	0.9634	0.9673	1.0090	1.0507	1.0733	1.0958	0.9500
COASTAL DESTINATION	1.2064	1.1715	1.1234	1.0753	1.0545	1.0337	1.0372	1.0407	1.0216	1.0024	0.9586	0.9147	0.8760	0.8372	0.8371	0.8370	0.8678	0.8985	0.9578	1.0170	1.0730	1.1290	1.1823	1.2357	0.8370
COASTAL DESTINATION ROUTE	1.3937	1.2897	1.2245	1.1594	1.1247	1.0901	1.0911	1.0921	1.0516	1.0111	0.9493	0.8875	0.8172	0.7469	0.7455	0.7440	0.7916	0.8391	0.9274	1.0158	1.1126	1.2094	1.3193	1.4291	0.7440
AGRICULTURE	1.4537	1.4624	1.3705	1.2786	1.2139	1.1492	1.1207	1.0923	1.0075	0.9226	0.8742	0.8258	0.8348	0.8439	0.8422	0.8405	0.7976	0.7547	0.8073	0.8598	1.0041	1.1484	1.3339	1.5194	0.7547
RECREATIONAL SUMMER	1.6049	1.5814	1.4924	1.4034	1.3208	1.2382	1.2380	1.2377	1.0939	0.9500	0.8669	0.7839	0.7392	0.6945	0.7065	0.7185	0.7404	0.7624	0.8468	0.9311	1.1270	1.3230	1.5054	1.6879	0.6945
RECREATIONAL SUMMER WINTER	1.0075	0.9570	0.9184	0.8799	0.9701	1.0603	1.0675	1.0747	1.0843	1.0939	1.0045	0.9151	0.8244	0.7336	0.7795	0.8254	0.9368	1.0482	1.1794	1.3105	1.4969	1.6833	1.3470	1.0108	0.7336
RECREATIONAL WINTER**	0.8059	0.6710	0.6475	0.6240	0.7462	0.8685	0.9307	0.9928	1.1496	1.3064	1.2173	1.1282	0.9996	0.8709	0.9526	1.0342	1.1225	1.2108	1.4061	1.6013	1.9826	2.3639	1.6332	0.9026	0.6240
SUMMER	1.2374	1.2352	1.1733	1.1114	1.0786	1.0459	1.0330	1.0202	0.9851	0.9500	0.9160	0.8819	0.8660	0.8501	0.8561	0.8620	0.8891	0.9161	0.9430	0.9698	1.0525	1.1352	1.2002	1.2653	0.8501
SUMMER < 2500	1.2836	1.2576	1.1943	1.1310	1.1011	1.0712	1.0448	1.0184	0.9633	0.9082	0.8861	0.8641	0.8609	0.8578	0.8695	0.8813	0.8874	0.8936	0.9165	0.9394	1.0500	1.1607	1.2535	1.3463	0.8578

* Seasonal Trend Table factors are based on previous year ATR data. The table is updated yearly.

* Grey shading indicates months were seasonal factor is greater than or less than 30%

**Use Recreation Winter Trend with Caution! ATR site was down for most of of 2022 due to loop issues and was estimated while the site was down

COASTAL DESTINATION

15-Oct peak
1.0170 0.8370 1.21505

15-Jun
0.9147 0.8370 1.09284

Florence Gas Station

2024 Existing Conditions							los	A
Phase	Adj flow	Sat Flow						
1 SBL	6	1662	0.004 Prot	5,5	0.070			
SBL	12	893	0.013 Perm	5pr,1per	0.027			
2 NBT	202	1572	0.128	5pr,6	0.185		Cycle Length	35
				1pr, 1per	0.017		Lost Time/phase	4
4 EBLTR	130	1172	0.111	1pr,5per	0.060		# phases	3
5 NBL	22	1599	0.014 Prot	1pr, 2	0.132	0.185	Total Lost Time	12
NBL	40	714	0.056 Perm	3,4	0.111			
6 SBT	273	1598	0.171	7,8	0.050	0.111	Critical v/c	0.45
8 WBLTR	20	403	0.050	Critical Pairs	0.296			

2025 Background							los	A
Phase	Adj flow	Sat Flow						
1 SBL	5	1662	0.003 Prot	5,5	0.096			
SBL	13	889	0.015 Perm	5pr,1per	0.028			
2 NBT	204	1572	0.130	5pr,6	0.192		Cycle Length	41
				1pr, 1per	0.018		Lost Time/phase	4
4 EBLTR	150	1176	0.128	1pr,5per	0.085		# phases	3
5 NBL	22	1599	0.014 Prot	1pr, 2	0.133	0.192	Total Lost Time	12
NBL	54	656	0.082 Perm	3,4	0.128			
6 SBT	285	1598	0.178	7,8	0.037	0.128	Critical v/c	0.45
8 WBLTR	30	815	0.037	Critical Pairs	0.320			

2025 Build							los	B
Phase	Adj flow	Sat Flow						
1 SBL	33	1662	0.020 Prot	5,5	0.080			
SBL	56	876	0.064 Perm	5pr,1per	0.081			
2 NBT	213	1572	0.135	5pr,6	0.180		Cycle Length	38
				1pr, 1per	0.084		Lost Time/phase	4
4 EBLTR	32	245	0.131	1pr,5per	0.082		# phases	3
5 NBL	28	1599	0.018 Prot	1pr, 2	0.155	0.180	Total Lost Time	12
NBL	48	770	0.062 Perm	3,4	0.131			
6 SBT	259	1598	0.162	7,8	0.096	0.131	Critical v/c	0.45
8 WBLTR	117	1221	0.096	Critical Pairs	0.310			

2030 Background							los	B
Phase	Adj flow	Sat Flow						
1 SBL	7	1662	0.004 Prot	5,5	0.098			
SBL	12	870	0.014 Perm	5pr,1per	0.031			
2 NBT	215	1572	0.137	5pr,6	0.205		Cycle Length	39
				1pr, 1per	0.018		Lost Time/phase	4
4 EBLTR	28	211	0.133	1pr,5per	0.084		# phases	3
5 NBL	28	1599	0.018 Prot	1pr, 2	0.141	0.205	Total Lost Time	12
NBL	50	624	0.080 Perm	3,4	0.133			
6 SBT	299	1598	0.187	7,8	0.046	0.133	Critical v/c	0.49
8 WBLTR	56	1219	0.046	Critical Pairs	0.337			

2030 Build							los	B
Phase	Adj flow	Sat Flow						
1 SBL	32	1662	0.019 Prot	5,5	0.089			
SBL	58	858	0.068 Perm	5pr,1per	0.082			
2 NBT	224	1572	0.142	5pr,6	0.185		Cycle Length	38
				1pr, 1per	0.087		Lost Time/phase	4
4 EBLTR	33	243	0.136	1pr,5per	0.094		# phases	3
5 NBL	23	1599	0.014 Prot	1pr, 2	0.162	0.185	Total Lost Time	12
NBL	55	740	0.074 Perm	3,4	0.136			
6 SBT	273	1598	0.171	7,8	0.099	0.136	Critical v/c	0.47
8 WBLTR	120	1213	0.099	Critical Pairs	0.321			

2024 Existing Conditions										los	B
Phase	Adj flow	Sat Flow									
1 SBL	10	1662	0.006	Prot	5,5	0.203					
SBL	25	567	0.044	Perm	5pr,1per	0.064					
2 NBT	395	1650	0.239		5pr,6	0.308				Cycle Length	43
					1pr, 1per	0.050				Lost Time/phase	4
4 EBLTR	166	1534	0.108		1pr,5per	0.190				# phases	3
5 NBL	32	1646	0.019	Prot	1pr, 2	0.245	0.308			Total Lost Time	12
NBL	74	403	0.184	Perm	3,4	0.108					
6 SBT	468	1624	0.288		7,8	0.040	0.108	Critical	v/c		0.58
8 WBLTR	66	1630	0.040		Critical Pairs	0.416					
2025 Background										los	B
Phase	Adj flow	Sat Flow									
1 SBL	9	1662	0.005	Prot	5,5	0.276					
SBL	26	595	0.044	Perm	5pr,1per	0.066					
2 NBT	401	1650	0.243		5pr,6	0.318				Cycle Length	48
					1pr, 1per	0.049				Lost Time/phase	4
4 EBLTR	190	1539	0.123		1pr,5per	0.260				# phases	4
5 NBL	36	1649	0.022	Prot	1pr, 2	0.248	0.318			Total Lost Time	16
NBL	93	366	0.254	Perm	3,4	0.123					
6 SBT	481	1624	0.296		7,8	0.044	0.123	Critical	v/c		0.66
8 WBLTR	73	1641	0.044		Critical Pairs	0.441					
2025 Build										los	B
Phase	Adj flow	Sat Flow									
1 SBL	22	1662	0.013	Prot	5,5	0.256					
SBL	60	557	0.108	Perm	5pr,1per	0.130					
2 NBT	407	1650	0.247		5pr,6	0.307				Cycle Length	47
					1pr, 1per	0.121				Lost Time/phase	4
4 EBLTR	48	383	0.125		1pr,5per	0.247				# phases	3
5 NBL	36	1646	0.022	Prot	1pr, 2	0.260	0.307			Total Lost Time	12
NBL	93	397	0.234	Perm	3,4	0.125					
6 SBT	463	1624	0.285		7,8	0.078	0.125	Critical	v/c		0.58
8 WBLTR	129	1654	0.078		Critical Pairs	0.432					
2030 Background										los	B
Phase	Adj flow	Sat Flow									
1 SBL	10	1662	0.006	Prot	5,5	0.303					
SBL	27	559	0.048	Perm	5pr,1per	0.070					
2 NBT	422	1650	0.256		5pr,6	0.332				Cycle Length	52
					1pr, 1per	0.054				Lost Time/phase	4
4 EBLTR	151	1168	0.129		1pr,5per	0.288				# phases	3
5 NBL	35	1646	0.021	Prot	1pr, 2	0.262	0.332			Total Lost Time	12
NBL	98	348	0.282	Perm	3,4	0.129					
6 SBT	505	1624	0.311		7,8	0.048	0.129	Critical	v/c		0.60
8 WBLTR	29	610	0.048		Critical Pairs	0.462					
2030 Build										los	B
Phase	Adj flow	Sat Flow									
1 SBL	20	1662	0.012	Prot	5,5	0.286					
SBL	63	523	0.120	Perm	5pr,1per	0.140					
2 NBT	427	1650	0.259		5pr,6	0.320				Cycle Length	50
					1pr, 1per	0.132				Lost Time/phase	4
4 EBLTR	151	1158	0.130		1pr,5per	0.278				# phases	3
5 NBL	33	1649	0.020	Prot	1pr, 2	0.271	0.320			Total Lost Time	12
NBL	100	376	0.266	Perm	3,4	0.130					
6 SBT	487	1624	0.300		7,8	0.075	0.130	Critical	v/c		0.59
8 WBLTR	90	1200	0.075		Critical Pairs	0.450					

HCM Signalized Intersection Capacity Analysis

3: Hwy 101 & 35th St

07/18/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↗	
Traffic Volume (vph)	57	21	114	26	18	46	55	345	18	16	458	32
Future Volume (vph)	57	21	114	26	18	46	55	345	18	16	458	32
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0		3.7	4.0		3.7	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.87		1.00	0.89		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1568	1478		1662	1464		1599	3081		1662	3117	
Flt Permitted	0.98	1.00		0.98	1.00		0.42	1.00		0.51	1.00	
Satd. Flow (perm)	1611	1478		1707	1464		714	3081		893	3117	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	65	24	130	30	20	52	62	392	20	18	520	36
RTOR Reduction (vph)	0	115	0	0	46	0	0	7	0	0	10	0
Lane Group Flow (vph)	65	39	0	30	26	0	63	405	0	18	546	0
Heavy Vehicles (%)	6%	11%	2%	0%	8%	6%	4%	7%	10%	0%	5%	15%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	4.1	4.1		4.1	4.1		18.8	17.2		17.2	16.4	
Effective Green, g (s)	4.1	4.1		4.1	4.1		20.4	18.0		18.8	17.2	
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.58	0.51		0.53	0.49	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.5	4.8		4.5	4.8	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)	186	171		197	169		471	1566		509	1514	
v/s Ratio Prot		0.03			0.02		c0.01	0.13		0.00	c0.18	
v/s Ratio Perm	c0.04			0.02			0.07			0.02		
v/c Ratio	0.35	0.23		0.15	0.15		0.13	0.26		0.04	0.36	
Uniform Delay, d1	14.4	14.2		14.1	14.1		3.3	4.9		3.9	5.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	0.5		0.3	0.3		0.1	0.1		0.0	0.2	
Delay (s)	15.3	14.7		14.3	14.4		3.4	5.0		4.0	5.9	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		14.9			14.4			4.8			5.8	
Approach LOS		B			B			A			A	

Intersection Summary

HCM 2000 Control Delay	7.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	35.4	Sum of lost time (s)	11.7
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Signalized Intersection Summary
 3: Hwy 101 & 35th St

07/18/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↗	
Traffic Volume (veh/h)	57	21	114	26	18	46	55	345	18	16	458	32
Future Volume (veh/h)	57	21	114	26	18	46	55	345	18	16	458	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1668	1600	1723	1750	1641	1668	1695	1654	1614	1750	1682	1545
Adj Flow Rate, veh/h	65	24	130	30	20	52	62	392	20	18	520	36
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	6	11	2	0	8	6	4	7	10	0	5	15
Cap, veh/h	410	39	212	331	73	190	561	1197	61	613	1061	73
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.09	0.39	0.37	0.05	0.35	0.32
Sat Flow, veh/h	1286	216	1172	1252	403	1049	1615	3043	155	1667	3032	209
Grp Volume(v), veh/h	65	0	154	30	0	72	62	202	210	18	273	283
Grp Sat Flow(s),veh/h/ln	1286	0	1389	1252	0	1452	1615	1572	1627	1667	1598	1644
Q Serve(g_s), s	1.4	0.0	3.2	0.7	0.0	1.3	0.7	2.8	2.8	0.2	4.2	4.2
Cycle Q Clear(g_c), s	2.8	0.0	3.2	3.9	0.0	1.3	0.7	2.8	2.8	0.2	4.2	4.2
Prop In Lane	1.00		0.84	1.00		0.72	1.00		0.10	1.00		0.13
Lane Grp Cap(c), veh/h	410	0	251	331	0	263	561	618	640	613	559	575
V/C Ratio(X)	0.16	0.00	0.61	0.09	0.00	0.27	0.11	0.33	0.33	0.03	0.49	0.49
Avail Cap(c_a), veh/h	549	0	402	467	0	421	719	678	702	848	689	709
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.1	0.0	11.7	13.5	0.0	11.0	5.3	6.6	6.6	5.7	7.9	8.0
Incr Delay (d2), s/veh	0.1	0.0	1.8	0.1	0.0	0.4	0.1	0.4	0.4	0.0	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.9	0.2	0.0	0.4	0.1	0.5	0.5	0.0	0.9	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.3	0.0	13.5	13.6	0.0	11.4	5.4	7.0	7.0	5.7	8.9	8.9
LnGrp LOS	B	A	B	B	A	B	A	A	A	A	A	A
Approach Vol, veh/h		219			102			474			574	
Approach Delay, s/veh		13.1			12.0			6.8			8.8	
Approach LOS		B			B			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.2	16.2		9.6	6.6	14.9		9.6				
Change Period (Y+Rc), s	4.5	4.8		4.0	4.5	4.8		4.0				
Max Green Setting (Gmax), s	5.1	12.6		9.0	5.1	12.6		9.0				
Max Q Clear Time (g_c+I1), s	2.2	4.8		5.2	2.7	6.2		5.9				
Green Ext Time (p_c), s	0.0	3.5		0.3	0.0	3.9		0.1				

Intersection Summary

HCM 6th Ctrl Delay	9.0
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th TWSC
6: Redwood St & 35th St

07/18/2024

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	13	26	16	4	56	1	22	2	7	1	1	12
Future Vol, veh/h	13	26	16	4	56	1	22	2	7	1	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	5	8	0	2	0	11	0	33	0	0	0
Mvmt Flow	14	27	17	4	58	1	23	2	7	1	1	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	59	0	0	44	0	0	138	131	36	135	139	59
Stage 1	-	-	-	-	-	-	64	64	-	67	67	-
Stage 2	-	-	-	-	-	-	74	67	-	68	72	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.21	6.5	6.53	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.21	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.21	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.599	4	3.597	3.5	4	3.3
Pot Cap-1 Maneuver	1558	-	-	1577	-	-	812	763	955	841	756	1012
Stage 1	-	-	-	-	-	-	925	846	-	948	843	-
Stage 2	-	-	-	-	-	-	913	843	-	947	839	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1558	-	-	1577	-	-	794	754	955	825	747	1012
Mov Cap-2 Maneuver	-	-	-	-	-	-	794	754	-	825	747	-
Stage 1	-	-	-	-	-	-	917	838	-	939	840	-
Stage 2	-	-	-	-	-	-	898	840	-	929	831	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.7			0.5			9.6			8.8		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	822	1558	-	-	1577	-	-	972
HCM Lane V/C Ratio	0.039	0.009	-	-	0.003	-	-	0.015
HCM Control Delay (s)	9.6	7.3	0	-	7.3	0	-	8.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

HCM 6th TWSC
8: Hwy 101 & Site Access

07/18/2024

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕			↕
Traffic Vol, veh/h	0	2	427	1	0	505
Future Vol, veh/h	0	2	427	1	0	505
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	0	0	5	0	0	2
Mvmt Flow	0	2	527	1	0	623

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	264	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	741	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	-	741	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	741
HCM Lane V/C Ratio	-	-	0.003
HCM Control Delay (s)	-	-	9.9
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0

HCM Signalized Intersection Capacity Analysis

3: Hwy 101 & 35th St

07/18/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↗	
Traffic Volume (vph)	66	24	132	46	22	26	67	349	18	16	469	40
Future Volume (vph)	66	24	132	46	22	26	67	349	18	16	469	40
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0		3.7	4.0		3.7	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.87		1.00	0.92		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1568	1478		1662	1503		1599	3081		1662	3107	
Flt Permitted	0.72	1.00		0.65	1.00		0.39	1.00		0.51	1.00	
Satd. Flow (perm)	1191	1478		1130	1503		656	3081		889	3107	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	75	27	150	52	25	30	76	397	20	18	533	45
RTOR Reduction (vph)	0	126	0	0	25	0	0	6	0	0	11	0
Lane Group Flow (vph)	75	51	0	52	30	0	76	411	0	18	567	0
Heavy Vehicles (%)	6%	11%	2%	0%	8%	6%	4%	7%	10%	0%	5%	15%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	6.4	6.4		6.4	6.4		22.9	20.3		19.3	18.5	
Effective Green, g (s)	6.4	6.4		6.4	6.4		24.5	21.1		20.9	19.3	
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.60	0.52		0.51	0.47	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.5	4.8		4.5	4.8	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)	186	231		177	235		472	1593		485	1469	
v/s Ratio Prot		0.03			0.02		c0.01	0.13		0.00	c0.18	
v/s Ratio Perm	c0.06			0.05			0.08			0.02		
v/c Ratio	0.40	0.22		0.29	0.13		0.16	0.26		0.04	0.39	
Uniform Delay, d1	15.5	15.0		15.2	14.8		3.5	5.5		4.9	6.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	0.3		0.7	0.2		0.2	0.1		0.0	0.2	
Delay (s)	16.5	15.4		15.9	15.0		3.6	5.6		4.9	7.2	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		15.7			15.4			5.3			7.1	
Approach LOS		B			B			A			A	

Intersection Summary

HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	40.8	Sum of lost time (s)	11.7
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Signalized Intersection Summary
 3: Hwy 101 & 35th St

07/18/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↘		↗	↘		↗	↕		↗	↘	
Traffic Volume (veh/h)	66	24	132	46	22	26	67	349	18	16	469	40
Future Volume (veh/h)	66	24	132	46	22	26	67	349	18	16	469	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1668	1600	1723	1750	1641	1668	1695	1654	1614	1750	1682	1545
Adj Flow Rate, veh/h	75	27	150	52	25	30	76	397	20	18	533	45
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	6	11	2	0	8	6	4	7	10	0	5	15
Cap, veh/h	422	44	244	303	141	169	552	1336	67	613	1160	98
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.09	0.44	0.42	0.04	0.39	0.37
Sat Flow, veh/h	1306	212	1176	1227	679	815	1615	3046	153	1667	2983	251
Grp Volume(v), veh/h	75	0	177	52	0	55	76	204	213	18	285	293
Grp Sat Flow(s),veh/h/ln	1306	0	1388	1227	0	1494	1615	1572	1627	1667	1598	1637
Q Serve(g_s), s	1.9	0.0	4.4	1.5	0.0	1.1	1.0	3.2	3.2	0.2	5.0	5.1
Cycle Q Clear(g_c), s	3.0	0.0	4.4	5.9	0.0	1.1	1.0	3.2	3.2	0.2	5.0	5.1
Prop In Lane	1.00		0.85	1.00		0.55	1.00		0.09	1.00		0.15
Lane Grp Cap(c), veh/h	422	0	288	303	0	310	552	690	714	613	621	636
V/C Ratio(X)	0.18	0.00	0.62	0.17	0.00	0.18	0.14	0.30	0.30	0.03	0.46	0.46
Avail Cap(c_a), veh/h	566	0	441	438	0	475	648	833	862	796	846	867
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.6	0.0	13.6	16.3	0.0	12.3	5.6	6.8	6.9	6.2	8.6	8.6
Incr Delay (d2), s/veh	0.1	0.0	1.6	0.2	0.0	0.2	0.1	0.3	0.3	0.0	0.8	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.3	0.4	0.0	0.3	0.2	0.7	0.7	0.1	1.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.7	0.0	15.2	16.5	0.0	12.5	5.7	7.2	7.2	6.2	9.3	9.4
LnGrp LOS	B	A	B	B	A	B	A	A	A	A	A	A
Approach Vol, veh/h		252			107			493			596	
Approach Delay, s/veh		14.7			14.4			7.0			9.3	
Approach LOS		B			B			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.4	20.6		11.8	7.2	18.7		11.8				
Change Period (Y+Rc), s	4.5	4.8		4.0	4.5	4.8		4.0				
Max Green Setting (Gmax), s	5.0	19.2		12.0	5.0	19.2		12.0				
Max Q Clear Time (g_c+I1), s	2.2	5.2		6.4	3.0	7.1		7.9				
Green Ext Time (p_c), s	0.0	5.6		0.5	0.0	6.8		0.1				

Intersection Summary

HCM 6th Ctrl Delay	9.8
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th TWSC
6: Redwood St & 35th St

07/18/2024

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	13	29	16	4	61	1	22	2	7	1	1	12
Future Vol, veh/h	13	29	16	4	61	1	22	2	7	1	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	5	8	0	2	0	11	0	33	0	0	0
Mvmt Flow	14	30	17	4	64	1	23	2	7	1	1	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	65	0	0	47	0	0	147	140	39	144	148	65
Stage 1	-	-	-	-	-	-	67	67	-	73	73	-
Stage 2	-	-	-	-	-	-	80	73	-	71	75	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.21	6.5	6.53	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.21	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.21	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.599	4	3.597	3.5	4	3.3
Pot Cap-1 Maneuver	1550	-	-	1573	-	-	801	755	951	830	747	1005
Stage 1	-	-	-	-	-	-	921	843	-	942	838	-
Stage 2	-	-	-	-	-	-	907	838	-	944	836	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1550	-	-	1573	-	-	783	746	951	814	738	1005
Mov Cap-2 Maneuver	-	-	-	-	-	-	783	746	-	814	738	-
Stage 1	-	-	-	-	-	-	913	835	-	934	835	-
Stage 2	-	-	-	-	-	-	892	835	-	926	828	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.6			0.4			9.6			8.8		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	813	1550	-	-	1573	-	-	964
HCM Lane V/C Ratio	0.04	0.009	-	-	0.003	-	-	0.015
HCM Control Delay (s)	9.6	7.3	0	-	7.3	0	-	8.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕			↕
Traffic Vol, veh/h	0	2	441	1	0	524
Future Vol, veh/h	0	2	441	1	0	524
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	0	0	5	0	0	2
Mvmt Flow	0	2	544	1	0	647

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	273	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	731	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	-	731	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	731
HCM Lane V/C Ratio	-	-	0.003
HCM Control Delay (s)	-	-	9.9
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0

HCM Signalized Intersection Capacity Analysis

3: Hwy 101 & 35th St

07/18/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↗	
Traffic Volume (vph)	70	28	132	103	30	26	67	347	33	78	422	40
Future Volume (vph)	70	28	132	103	30	26	67	347	33	78	422	40
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0		3.7	4.0		3.7	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.88		1.00	0.93		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1568	1481		1662	1520		1599	3059		1662	3101	
Flt Permitted	0.72	1.00		0.64	1.00		0.46	1.00		0.50	1.00	
Satd. Flow (perm)	1181	1481		1125	1520		770	3059		876	3101	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	80	32	150	117	34	30	76	394	38	89	480	45
RTOR Reduction (vph)	0	123	0	0	25	0	0	15	0	0	15	0
Lane Group Flow (vph)	80	59	0	117	39	0	76	417	0	89	510	0
Heavy Vehicles (%)	6%	11%	2%	0%	8%	6%	4%	7%	10%	0%	5%	15%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	6.8	6.8		6.8	6.8		17.4	14.7		17.4	14.7	
Effective Green, g (s)	6.8	6.8		6.8	6.8		19.0	15.5		19.0	15.5	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.51	0.41		0.51	0.41	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.5	4.8		4.5	4.8	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)	214	268		204	275		467	1264		517	1281	
v/s Ratio Prot		0.04			0.03		0.02	0.14		c0.02	c0.16	
v/s Ratio Perm	0.07			c0.10			0.07			0.07		
v/c Ratio	0.37	0.22		0.57	0.14		0.16	0.33		0.17	0.40	
Uniform Delay, d1	13.5	13.1		14.0	12.9		4.8	7.5		4.8	7.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	0.3		3.2	0.2		0.2	0.2		0.2	0.3	
Delay (s)	14.3	13.4		17.2	13.1		5.0	7.7		5.0	8.0	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		13.7			15.7			7.3			7.6	
Approach LOS		B			B			A			A	

Intersection Summary

HCM 2000 Control Delay	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	37.5	Sum of lost time (s)	11.7
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Signalized Intersection Summary
 3: Hwy 101 & 35th St

07/18/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↘		↗	↘		↗	↕		↗	↘	
Traffic Volume (veh/h)	70	28	132	103	30	26	67	347	33	78	422	40
Future Volume (veh/h)	70	28	132	103	30	26	67	347	33	78	422	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1668	1600	1723	1750	1641	1668	1695	1654	1614	1750	1682	1545
Adj Flow Rate, veh/h	80	32	150	117	34	30	76	394	38	89	480	45
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	6	11	2	0	8	6	4	7	10	0	5	15
Cap, veh/h	495	63	295	382	207	182	516	887	85	569	928	87
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.10	0.31	0.28	0.11	0.31	0.29
Sat Flow, veh/h	1295	245	1148	1221	804	709	1615	2898	278	1667	2954	276
Grp Volume(v), veh/h	80	0	182	117	0	64	76	213	219	89	259	266
Grp Sat Flow(s),veh/h/ln	1295	0	1393	1221	0	1513	1615	1572	1604	1667	1598	1632
Q Serve(g_s), s	1.8	0.0	3.9	3.2	0.0	1.2	1.0	3.8	3.9	1.2	4.7	4.7
Cycle Q Clear(g_c), s	3.0	0.0	3.9	7.1	0.0	1.2	1.0	3.8	3.9	1.2	4.7	4.7
Prop In Lane	1.00		0.82	1.00		0.47	1.00		0.17	1.00		0.17
Lane Grp Cap(c), veh/h	495	0	358	382	0	389	516	481	491	569	502	513
V/C Ratio(X)	0.16	0.00	0.51	0.31	0.00	0.16	0.15	0.44	0.45	0.16	0.52	0.52
Avail Cap(c_a), veh/h	529	0	395	414	0	429	630	552	564	673	561	574
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.3	0.0	11.2	14.2	0.0	10.2	6.9	9.8	9.9	6.7	9.9	10.0
Incr Delay (d2), s/veh	0.1	0.0	0.8	0.3	0.0	0.1	0.1	0.9	0.9	0.1	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.1	0.8	0.0	0.3	0.2	1.0	1.0	0.2	1.2	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.4	0.0	12.0	14.6	0.0	10.3	7.0	10.7	10.8	6.8	11.1	11.1
LnGrp LOS	B	A	B	B	A	B	A	B	B	A	B	B
Approach Vol, veh/h		262			181			508			614	
Approach Delay, s/veh		11.8			13.1			10.2			10.5	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.4	14.8		13.1	7.1	15.1		13.1				
Change Period (Y+Rc), s	4.5	4.8		4.0	4.5	4.8		4.0				
Max Green Setting (Gmax), s	5.1	11.6		10.0	5.1	11.6		10.0				
Max Q Clear Time (g_c+I1), s	3.2	5.9		5.9	3.0	6.7		9.1				
Green Ext Time (p_c), s	0.0	2.8		0.4	0.0	2.9		0.1				

Intersection Summary

HCM 6th Ctrl Delay	10.9
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th TWSC
6: Redwood St & 35th St

07/18/2024

Intersection												
Int Delay, s/veh	6.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	102	21	16	4	53	15	22	2	7	15	1	85
Future Vol, veh/h	102	21	16	4	53	15	22	2	7	15	1	85
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	5	8	0	2	0	11	0	33	0	0	0
Mvmt Flow	106	22	17	4	55	16	23	2	7	16	1	89

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	71	0	0	39	0	0	359	322	31	318	322	63
Stage 1	-	-	-	-	-	-	243	243	-	71	71	-
Stage 2	-	-	-	-	-	-	116	79	-	247	251	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.21	6.5	6.53	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.21	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.21	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.599	4	3.597	3.5	4	3.3
Pot Cap-1 Maneuver	1542	-	-	1584	-	-	580	599	961	639	599	1007
Stage 1	-	-	-	-	-	-	741	708	-	944	840	-
Stage 2	-	-	-	-	-	-	867	833	-	761	703	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1542	-	-	1584	-	-	499	555	961	597	555	1007
Mov Cap-2 Maneuver	-	-	-	-	-	-	499	555	-	597	555	-
Stage 1	-	-	-	-	-	-	689	658	-	878	837	-
Stage 2	-	-	-	-	-	-	787	831	-	700	654	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	5.5			0.4			11.8			9.5		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	564	1542	-	-	1584	-	-	907
HCM Lane V/C Ratio	0.057	0.069	-	-	0.003	-	-	0.116
HCM Control Delay (s)	11.8	7.5	0	-	7.3	0	-	9.5
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0	-	-	0.4

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕			↕
Traffic Vol, veh/h	0	63	394	50	0	539
Future Vol, veh/h	0	63	394	50	0	539
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	0	0	5	0	0	2
Mvmt Flow	0	78	486	62	0	665

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	274	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	730	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	-	730	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	730
HCM Lane V/C Ratio	-	-	0.107
HCM Control Delay (s)	-	-	10.5
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.4

HCM Signalized Intersection Capacity Analysis

3: Hwy 101 & 35th St

07/18/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	25	137	49	23	28	69	367	19	17	492	41
Future Volume (vph)	69	25	137	49	23	28	69	367	19	17	492	41
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0		3.7	4.0		3.7	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.87		1.00	0.92		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1568	1478		1662	1502		1599	3080		1662	3107	
Flt Permitted	0.72	1.00		0.66	1.00		0.37	1.00		0.50	1.00	
Satd. Flow (perm)	1187	1478		1148	1502		624	3080		870	3107	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	78	28	156	56	26	32	78	417	22	19	559	47
RTOR Reduction (vph)	0	132	0	0	27	0	0	7	0	0	13	0
Lane Group Flow (vph)	78	52	0	56	31	0	78	432	0	19	593	0
Heavy Vehicles (%)	6%	11%	2%	0%	8%	6%	4%	7%	10%	0%	5%	15%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	6.1	6.1		6.1	6.1		21.3	18.6		17.7	16.8	
Effective Green, g (s)	6.1	6.1		6.1	6.1		22.9	19.4		19.3	17.6	
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.59	0.50		0.50	0.45	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.5	4.8		4.5	4.8	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)	186	231		180	235		455	1536		466	1405	
v/s Ratio Prot		0.04			0.02		c0.02	0.14		0.00	c0.19	
v/s Ratio Perm	c0.07			0.05			0.09			0.02		
v/c Ratio	0.42	0.23		0.31	0.13		0.17	0.28		0.04	0.42	
Uniform Delay, d1	14.8	14.3		14.5	14.1		3.5	5.7		5.0	7.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.1	0.4		0.7	0.2		0.2	0.1		0.0	0.3	
Delay (s)	15.9	14.7		15.3	14.3		3.7	5.8		5.0	7.5	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		15.1			14.8			5.5			7.4	
Approach LOS		B			B			A			A	

Intersection Summary

HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	38.9	Sum of lost time (s)	11.7
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Signalized Intersection Summary
3: Hwy 101 & 35th St

07/18/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↘		↗	↘		↗	↕		↗	↘	
Traffic Volume (veh/h)	69	25	137	49	23	28	69	367	19	17	492	41
Future Volume (veh/h)	69	25	137	49	23	28	69	367	19	17	492	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1668	1600	1723	1750	1641	1668	1695	1654	1614	1750	1682	1545
Adj Flow Rate, veh/h	78	28	156	56	26	32	78	417	22	19	559	47
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	6	11	2	0	8	6	4	7	10	0	5	15
Cap, veh/h	453	46	255	330	145	179	522	1190	63	575	1012	85
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.10	0.39	0.37	0.05	0.34	0.32
Sat Flow, veh/h	1302	211	1177	1219	669	823	1615	3038	160	1667	2984	250
Grp Volume(v), veh/h	78	0	184	56	0	58	78	215	224	19	299	307
Grp Sat Flow(s),veh/h/ln	1302	0	1388	1219	0	1493	1615	1572	1626	1667	1598	1637
Q Serve(g_s), s	1.8	0.0	4.1	1.5	0.0	1.1	1.0	3.3	3.3	0.2	5.2	5.2
Cycle Q Clear(g_c), s	2.8	0.0	4.1	5.6	0.0	1.1	1.0	3.3	3.3	0.2	5.2	5.2
Prop In Lane	1.00		0.85	1.00		0.55	1.00		0.10	1.00		0.15
Lane Grp Cap(c), veh/h	453	0	301	330	0	324	522	616	637	575	542	555
V/C Ratio(X)	0.17	0.00	0.61	0.17	0.00	0.18	0.15	0.35	0.35	0.03	0.55	0.55
Avail Cap(c_a), veh/h	515	0	367	388	0	395	640	619	640	784	629	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.0	0.0	12.0	14.5	0.0	10.9	6.0	7.3	7.3	6.5	9.1	9.2
Incr Delay (d2), s/veh	0.1	0.0	1.5	0.2	0.0	0.2	0.1	0.5	0.5	0.0	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.1	0.4	0.0	0.3	0.2	0.7	0.7	0.1	1.3	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.2	0.0	13.5	14.7	0.0	11.1	6.2	7.8	7.8	6.5	10.4	10.4
LnGrp LOS	B	A	B	B	A	B	A	A	A	A	B	B
Approach Vol, veh/h		262			114			517			625	
Approach Delay, s/veh		13.1			12.9			7.5			10.3	
Approach LOS		B			B			A			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.3	17.3		11.4	7.1	15.6		11.4				
Change Period (Y+Rc), s	4.5	4.8		4.0	4.5	4.8		4.0				
Max Green Setting (Gmax), s	5.1	12.6		9.0	5.1	12.6		9.0				
Max Q Clear Time (g_c+I1), s	2.2	5.3		6.1	3.0	7.2		7.6				
Green Ext Time (p_c), s	0.0	3.5		0.3	0.0	3.5		0.1				

Intersection Summary

HCM 6th Ctrl Delay	10.0
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th TWSC
6: Redwood St & 35th St

07/18/2024

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	14	31	17	4	63	1	23	3	8	1	1	13
Future Vol, veh/h	14	31	17	4	63	1	23	3	8	1	1	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	5	8	0	2	0	11	0	33	0	0	0
Mvmt Flow	15	32	18	4	66	1	24	3	8	1	1	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	67	0	0	50	0	0	153	146	41	152	155	67
Stage 1	-	-	-	-	-	-	71	71	-	75	75	-
Stage 2	-	-	-	-	-	-	82	75	-	77	80	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.21	6.5	6.53	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.21	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.21	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.599	4	3.597	3.5	4	3.3
Pot Cap-1 Maneuver	1547	-	-	1570	-	-	794	749	948	820	741	1002
Stage 1	-	-	-	-	-	-	917	840	-	939	836	-
Stage 2	-	-	-	-	-	-	904	836	-	937	832	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1547	-	-	1570	-	-	775	739	948	802	731	1002
Mov Cap-2 Maneuver	-	-	-	-	-	-	775	739	-	802	731	-
Stage 1	-	-	-	-	-	-	908	832	-	930	833	-
Stage 2	-	-	-	-	-	-	888	833	-	916	824	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.7			0.4			9.7			8.8		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	806	1547	-	-	1570	-	-	962
HCM Lane V/C Ratio	0.044	0.009	-	-	0.003	-	-	0.016
HCM Control Delay (s)	9.7	7.3	0	-	7.3	0	-	8.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕			↕
Traffic Vol, veh/h	0	3	462	1	0	549
Future Vol, veh/h	0	3	462	1	0	549
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	0	0	5	0	0	2
Mvmt Flow	0	4	570	1	0	678

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	286	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	717	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	-	717	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	717
HCM Lane V/C Ratio	-	-	0.005
HCM Control Delay (s)	-	-	10
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0

HCM Signalized Intersection Capacity Analysis

3: Hwy 101 & 35th St

07/18/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↗	
Traffic Volume (vph)	73	29	137	106	31	28	69	365	34	79	445	41
Future Volume (vph)	73	29	137	106	31	28	69	365	34	79	445	41
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0		3.7	4.0		3.7	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.88		1.00	0.93		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1568	1480		1662	1518		1599	3060		1662	3101	
Flt Permitted	0.71	1.00		0.64	1.00		0.44	1.00		0.49	1.00	
Satd. Flow (perm)	1178	1480		1117	1518		740	3060		858	3101	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	83	33	156	120	35	32	78	415	39	90	506	47
RTOR Reduction (vph)	0	129	0	0	26	0	0	15	0	0	15	0
Lane Group Flow (vph)	83	60	0	120	41	0	78	439	0	90	538	0
Heavy Vehicles (%)	6%	11%	2%	0%	8%	6%	4%	7%	10%	0%	5%	15%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	6.5	6.5		6.5	6.5		17.8	15.1		17.8	15.1	
Effective Green, g (s)	6.5	6.5		6.5	6.5		19.4	15.9		19.4	15.9	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.52	0.42		0.52	0.42	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.5	4.8		4.5	4.8	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)	203	255		193	262		461	1293		517	1311	
v/s Ratio Prot		0.04			0.03		0.02	0.14		c0.02	c0.17	
v/s Ratio Perm	0.07			c0.11			0.07			0.07		
v/c Ratio	0.41	0.24		0.62	0.15		0.17	0.34		0.17	0.41	
Uniform Delay, d1	13.8	13.4		14.4	13.2		4.6	7.3		4.7	7.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	0.3		5.3	0.2		0.2	0.2		0.2	0.3	
Delay (s)	14.8	13.8		19.7	13.4		4.8	7.5		4.8	7.9	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		14.1			17.5			7.1			7.4	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	37.6	Sum of lost time (s)	11.7
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Signalized Intersection Summary
3: Hwy 101 & 35th St

07/18/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	29	137	106	31	28	69	365	34	79	445	41
Future Volume (veh/h)	73	29	137	106	31	28	69	365	34	79	445	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1668	1600	1723	1750	1641	1668	1695	1654	1614	1750	1682	1545
Adj Flow Rate, veh/h	83	33	156	120	35	32	78	415	39	90	506	47
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	6	11	2	0	8	6	4	7	10	0	5	15
Cap, veh/h	487	62	292	370	201	183	509	900	84	564	938	87
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.10	0.31	0.29	0.11	0.32	0.29
Sat Flow, veh/h	1292	243	1150	1213	789	722	1615	2905	272	1667	2956	274
Grp Volume(v), veh/h	83	0	189	120	0	67	78	224	230	90	273	280
Grp Sat Flow(s),veh/h/ln	1292	0	1393	1213	0	1511	1615	1572	1606	1667	1598	1632
Q Serve(g_s), s	1.9	0.0	4.1	3.4	0.0	1.2	1.1	4.1	4.1	1.2	5.0	5.0
Cycle Q Clear(g_c), s	3.1	0.0	4.1	7.5	0.0	1.2	1.1	4.1	4.1	1.2	5.0	5.0
Prop In Lane	1.00		0.83	1.00		0.48	1.00		0.17	1.00		0.17
Lane Grp Cap(c), veh/h	487	0	354	370	0	384	509	487	498	564	507	518
V/C Ratio(X)	0.17	0.00	0.53	0.32	0.00	0.17	0.15	0.46	0.46	0.16	0.54	0.54
Avail Cap(c_a), veh/h	487	0	354	370	0	384	620	595	608	666	605	618
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.5	0.0	11.4	14.6	0.0	10.3	6.9	9.8	9.9	6.7	10.0	10.0
Incr Delay (d2), s/veh	0.1	0.0	1.3	0.4	0.0	0.2	0.1	1.0	1.0	0.1	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.1	0.8	0.0	0.3	0.2	1.0	1.1	0.2	1.3	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.6	0.0	12.7	15.0	0.0	10.5	7.0	10.8	10.9	6.8	11.2	11.3
LnGrp LOS	B	A	B	B	A	B	A	B	B	A	B	B
Approach Vol, veh/h		272			187			532			643	
Approach Delay, s/veh		12.3			13.4			10.3			10.6	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.4	15.0		13.0	7.2	15.2		13.0				
Change Period (Y+Rc), s	4.5	4.8		4.0	4.5	4.8		4.0				
Max Green Setting (Gmax), s	5.1	12.6		9.0	5.1	12.6		9.0				
Max Q Clear Time (g_c+I1), s	3.2	6.1		6.1	3.1	7.0		9.5				
Green Ext Time (p_c), s	0.0	3.3		0.3	0.0	3.4		0.0				

Intersection Summary

HCM 6th Ctrl Delay	11.1
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th TWSC
6: Redwood St & 35th St

07/18/2024

Intersection												
Int Delay, s/veh	6.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	103	23	17	4	55	15	23	3	8	15	1	86
Future Vol, veh/h	103	23	17	4	55	15	23	3	8	15	1	86
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	5	8	0	2	0	11	0	33	0	0	0
Mvmt Flow	107	24	18	4	57	16	24	3	8	16	1	90

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	73	0	0	42	0	0	366	328	33	326	329	65
Stage 1	-	-	-	-	-	-	247	247	-	73	73	-
Stage 2	-	-	-	-	-	-	119	81	-	253	256	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.21	6.5	6.53	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.21	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.21	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.599	4	3.597	3.5	4	3.3
Pot Cap-1 Maneuver	1540	-	-	1580	-	-	574	594	958	631	593	1005
Stage 1	-	-	-	-	-	-	737	706	-	942	838	-
Stage 2	-	-	-	-	-	-	864	832	-	756	699	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1540	-	-	1580	-	-	492	550	958	587	549	1005
Mov Cap-2 Maneuver	-	-	-	-	-	-	492	550	-	587	549	-
Stage 1	-	-	-	-	-	-	685	656	-	875	835	-
Stage 2	-	-	-	-	-	-	784	830	-	693	649	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	5.4			0.4			11.8			9.5		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	561	1540	-	-	1580	-	-	903
HCM Lane V/C Ratio	0.063	0.07	-	-	0.003	-	-	0.118
HCM Control Delay (s)	11.8	7.5	0	-	7.3	0	-	9.5
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0	-	-	0.4

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕			↕
Traffic Vol, veh/h	0	63	415	50	1	564
Future Vol, veh/h	0	63	415	50	1	564
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	0	0	5	0	0	2
Mvmt Flow	0	78	512	62	1	696

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	287	0	0	574
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	4.1
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	2.2
Pot Cap-1 Maneuver	0	716	-	-	1009
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	-	716	-	-	1009
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	716	1009
HCM Lane V/C Ratio	-	-	0.109	0.001
HCM Control Delay (s)	-	-	10.6	8.6
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0

HCM Signalized Intersection Capacity Analysis

3: Hwy 101 & 35th St

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	35	104	36	33	23	89	637	38	29	755	44
Future Volume (vph)	83	35	104	36	33	23	89	637	38	29	755	44
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0		3.7	4.0		3.7	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.89		1.00	0.94		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	1542		1662	1643		1646	3266		1662	3197	
Flt Permitted	0.71	1.00		0.65	1.00		0.23	1.00		0.32	1.00	
Satd. Flow (perm)	1225	1542		1141	1643		403	3266		567	3197	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	99	42	124	43	39	27	106	758	45	35	899	52
RTOR Reduction (vph)	0	106	0	0	23	0	0	8	0	0	8	0
Lane Group Flow (vph)	99	60	0	43	43	0	106	795	0	35	943	0
Heavy Vehicles (%)	2%	0%	1%	0%	0%	0%	1%	1%	0%	0%	3%	6%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	6.2	6.2		6.2	6.2		23.8	21.2		22.2	20.4	
Effective Green, g (s)	6.2	6.2		6.2	6.2		25.4	22.0		23.8	21.2	
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.60	0.52		0.56	0.50	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.5	4.8		4.5	4.8	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)	178	224		166	239		340	1690		384	1594	
v/s Ratio Prot		0.04			0.03		c0.02	0.24		0.01	c0.29	
v/s Ratio Perm	c0.08			0.04			0.16			0.05		
v/c Ratio	0.56	0.27		0.26	0.18		0.31	0.47		0.09	0.59	
Uniform Delay, d1	16.9	16.1		16.1	15.9		4.0	6.5		4.2	7.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.0	0.5		0.6	0.3		0.5	0.3		0.1	0.7	
Delay (s)	19.9	16.6		16.7	16.2		4.6	6.8		4.3	8.3	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		17.8			16.4			6.6			8.1	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	42.5	Sum of lost time (s)	11.7
Intersection Capacity Utilization	56.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Signalized Intersection Summary

3: Hwy 101 & 35th St

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↗	
Traffic Volume (veh/h)	83	35	104	36	33	23	89	637	38	29	755	44
Future Volume (veh/h)	83	35	104	36	33	23	89	637	38	29	755	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1750	1736	1750	1750	1750	1736	1736	1750	1750	1709	1668
Adj Flow Rate, veh/h	99	42	124	43	39	27	106	758	45	35	899	52
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	0	1	0	0	0	1	1	0	0	3	6
Cap, veh/h	370	70	207	276	173	120	467	1499	89	488	1336	77
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.11	0.47	0.45	0.06	0.43	0.41
Sat Flow, veh/h	1335	390	1152	1239	963	667	1654	3164	188	1667	3120	180
Grp Volume(v), veh/h	99	0	166	43	0	66	106	395	408	35	468	483
Grp Sat Flow(s),veh/h/ln	1335	0	1543	1239	0	1630	1654	1650	1703	1667	1624	1677
Q Serve(g_s), s	2.8	0.0	4.0	1.3	0.0	1.4	1.3	6.8	6.8	0.4	9.4	9.5
Cycle Q Clear(g_c), s	4.2	0.0	4.0	5.4	0.0	1.4	1.3	6.8	6.8	0.4	9.4	9.5
Prop In Lane	1.00		0.75	1.00		0.41	1.00		0.11	1.00		0.11
Lane Grp Cap(c), veh/h	370	0	277	276	0	293	467	782	807	488	695	718
V/C Ratio(X)	0.27	0.00	0.60	0.16	0.00	0.23	0.23	0.51	0.51	0.07	0.67	0.67
Avail Cap(c_a), veh/h	425	0	340	327	0	360	532	782	807	629	732	756
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.1	0.0	15.4	17.9	0.0	14.3	6.0	7.4	7.5	5.8	9.4	9.4
Incr Delay (d2), s/veh	0.3	0.0	1.5	0.2	0.0	0.3	0.2	0.7	0.7	0.1	2.6	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	1.3	0.4	0.0	0.5	0.2	1.5	1.6	0.1	2.6	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.4	0.0	16.9	18.0	0.0	14.6	6.3	8.2	8.2	5.8	12.0	11.9
LnGrp LOS	B	A	B	B	A	B	A	A	A	A	B	B
Approach Vol, veh/h		265			109			909			986	
Approach Delay, s/veh		16.7			16.0			8.0			11.7	
Approach LOS		B			B			A			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	23.3		11.3	8.0	21.5		11.3				
Change Period (Y+Rc), s	4.5	4.8		4.0	4.5	4.8		4.0				
Max Green Setting (Gmax), s	5.1	17.6		9.0	5.1	17.6		9.0				
Max Q Clear Time (g_c+I1), s	2.4	8.8		6.2	3.3	11.5		7.4				
Green Ext Time (p_c), s	0.0	6.6		0.3	0.1	5.2		0.1				

Intersection Summary

HCM 6th Ctrl Delay	11.0
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	50	35	9	52	0	28	2	11	0	1	12
Future Vol, veh/h	17	50	35	9	52	0	28	2	11	0	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	3	0	0	0	25	0	0	0
Mvmt Flow	19	55	38	10	57	0	31	2	12	0	1	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	57	0	0	93	0	0	196	189	74	196	208	57
Stage 1	-	-	-	-	-	-	112	112	-	77	77	-
Stage 2	-	-	-	-	-	-	84	77	-	119	131	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.45	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.525	3.5	4	3.3
Pot Cap-1 Maneuver	1560	-	-	1514	-	-	767	709	927	767	692	1015
Stage 1	-	-	-	-	-	-	898	807	-	937	835	-
Stage 2	-	-	-	-	-	-	929	835	-	890	792	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1560	-	-	1514	-	-	745	695	927	744	678	1015
Mov Cap-2 Maneuver	-	-	-	-	-	-	745	695	-	744	678	-
Stage 1	-	-	-	-	-	-	886	797	-	925	829	-
Stage 2	-	-	-	-	-	-	909	829	-	865	782	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.2			1.1			9.9			8.7		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	784	1560	-	-	1514	-	-	978
HCM Lane V/C Ratio	0.057	0.012	-	-	0.007	-	-	0.015
HCM Control Delay (s)	9.9	7.3	0	-	7.4	0	-	8.7
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕			↕
Traffic Vol, veh/h	0	9	740	3	0	826
Future Vol, veh/h	0	9	740	3	0	826
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	3	0	0	2
Mvmt Flow	0	10	796	3	0	888

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	400	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	605	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	-	605	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	605
HCM Lane V/C Ratio	-	-	0.016
HCM Control Delay (s)	-	-	11
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0

HCM Signalized Intersection Capacity Analysis

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↗	
Traffic Volume (vph)	92	38	122	36	39	23	108	648	38	29	765	55
Future Volume (vph)	92	38	122	36	39	23	108	648	38	29	765	55
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0		3.7	4.0		3.7	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.89		1.00	0.94		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	1538		1662	1653		1646	3267		1662	3190	
Flt Permitted	0.71	1.00		0.60	1.00		0.21	1.00		0.34	1.00	
Satd. Flow (perm)	1217	1538		1045	1653		366	3267		595	3190	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	110	45	145	43	46	27	129	771	45	35	911	65
RTOR Reduction (vph)	0	125	0	0	23	0	0	7	0	0	9	0
Lane Group Flow (vph)	110	65	0	43	50	0	129	809	0	35	967	0
Heavy Vehicles (%)	2%	0%	1%	0%	0%	0%	1%	1%	0%	0%	3%	6%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	6.7	6.7		6.7	6.7		30.4	26.3		25.8	24.0	
Effective Green, g (s)	6.7	6.7		6.7	6.7		32.0	27.1		27.4	24.8	
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.67	0.56		0.57	0.52	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.5	4.8		4.5	4.8	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)	169	214		145	230		373	1840		396	1644	
v/s Ratio Prot		0.04			0.03		c0.04	0.25		0.00	c0.30	
v/s Ratio Perm	c0.09			0.04			0.19			0.05		
v/c Ratio	0.65	0.30		0.30	0.22		0.35	0.44		0.09	0.59	
Uniform Delay, d1	19.6	18.6		18.6	18.4		3.7	6.1		4.6	8.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.8	0.6		0.8	0.3		0.6	0.2		0.1	0.6	
Delay (s)	27.4	19.2		19.4	18.7		4.3	6.3		4.6	8.7	
Level of Service	C	B		B	B		A	A		A	A	
Approach Delay (s)		22.2			19.0			6.0			8.6	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	48.1	Sum of lost time (s)	11.7
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Signalized Intersection Summary
 3: Hwy 101 & 35th St

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↗	
Traffic Volume (veh/h)	92	38	122	36	39	23	108	648	38	29	765	55
Future Volume (veh/h)	92	38	122	36	39	23	108	648	38	29	765	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1750	1736	1750	1750	1750	1736	1736	1750	1750	1709	1668
Adj Flow Rate, veh/h	110	45	145	43	46	27	129	771	45	35	911	65
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	0	1	0	0	0	1	1	0	0	3	6
Cap, veh/h	361	70	225	250	198	116	456	1576	92	479	1380	98
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.11	0.50	0.48	0.06	0.45	0.43
Sat Flow, veh/h	1327	364	1174	1212	1034	607	1654	3168	185	1667	3074	219
Grp Volume(v), veh/h	110	0	190	43	0	73	129	401	415	35	481	495
Grp Sat Flow(s),veh/h/ln	1327	0	1539	1212	0	1641	1654	1650	1703	1667	1624	1670
Q Serve(g_s), s	3.5	0.0	5.2	1.6	0.0	1.7	1.7	7.4	7.5	0.5	10.7	10.7
Cycle Q Clear(g_c), s	5.2	0.0	5.2	6.8	0.0	1.7	1.7	7.4	7.5	0.5	10.7	10.7
Prop In Lane	1.00		0.76	1.00		0.37	1.00		0.11	1.00		0.13
Lane Grp Cap(c), veh/h	361	0	294	250	0	314	456	821	847	479	729	750
V/C Ratio(X)	0.31	0.00	0.65	0.17	0.00	0.23	0.28	0.49	0.49	0.07	0.66	0.66
Avail Cap(c_a), veh/h	395	0	335	282	0	357	509	821	847	599	777	799
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.0	0.0	17.2	20.3	0.0	15.7	6.5	7.7	7.7	6.1	9.9	10.0
Incr Delay (d2), s/veh	0.4	0.0	3.0	0.2	0.0	0.3	0.3	0.6	0.6	0.1	2.2	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	1.9	0.4	0.0	0.6	0.3	1.8	1.8	0.1	3.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.3	0.0	20.1	20.5	0.0	16.0	6.8	8.3	8.3	6.1	12.2	12.1
LnGrp LOS	B	A	C	C	A	B	A	A	A	A	B	B
Approach Vol, veh/h		300			116			945			1011	
Approach Delay, s/veh		19.5			17.7			8.1			11.9	
Approach LOS		B			B			A			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.3	26.9		12.8	8.5	24.6		12.8				
Change Period (Y+Rc), s	4.5	4.8		4.0	4.5	4.8		4.0				
Max Green Setting (Gmax), s	5.1	21.6		10.0	5.5	21.2		10.0				
Max Q Clear Time (g_c+I1), s	2.5	9.5		7.2	3.7	12.7		8.8				
Green Ext Time (p_c), s	0.0	8.9		0.4	0.1	7.2		0.0				

Intersection Summary

HCM 6th Ctrl Delay	11.6
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th TWSC
6: Redwood St & 35th St

07/18/2024

Intersection												
Int Delay, s/veh	3.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	54	36	9	59	0	28	2	11	0	1	12
Future Vol, veh/h	17	54	36	9	59	0	28	2	11	0	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	3	0	0	0	25	0	0	0
Mvmt Flow	19	59	40	10	65	0	31	2	12	0	1	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	65	0	0	99	0	0	209	202	79	209	222	65
Stage 1	-	-	-	-	-	-	117	117	-	85	85	-
Stage 2	-	-	-	-	-	-	92	85	-	124	137	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.45	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.525	3.5	4	3.3
Pot Cap-1 Maneuver	1550	-	-	1507	-	-	753	698	921	753	680	1005
Stage 1	-	-	-	-	-	-	892	803	-	928	828	-
Stage 2	-	-	-	-	-	-	920	828	-	885	787	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1550	-	-	1507	-	-	731	684	921	730	666	1005
Mov Cap-2 Maneuver	-	-	-	-	-	-	731	684	-	730	666	-
Stage 1	-	-	-	-	-	-	880	793	-	916	822	-
Stage 2	-	-	-	-	-	-	900	822	-	860	777	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	1	10	8.8
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	771	1550	-	-	1507	-	-	967
HCM Lane V/C Ratio	0.058	0.012	-	-	0.007	-	-	0.015
HCM Control Delay (s)	10	7.4	0	-	7.4	0	-	8.8
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕			↕
Traffic Vol, veh/h	0	9	760	3	0	847
Future Vol, veh/h	0	9	760	3	0	847
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	3	0	0	2
Mvmt Flow	0	10	817	3	0	911

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	410	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	596	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	-	596	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	596
HCM Lane V/C Ratio	-	-	0.016
HCM Control Delay (s)	-	-	11.1
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0

HCM Signalized Intersection Capacity Analysis

3: Hwy 101 & 35th St

07/18/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↗	
Traffic Volume (vph)	95	40	122	74	44	23	108	641	52	69	734	55
Future Volume (vph)	95	40	122	74	44	23	108	641	52	69	734	55
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0		3.7	4.0		3.7	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.89		1.00	0.95		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	1541		1662	1660		1646	3257		1662	3188	
Flt Permitted	0.71	1.00		0.60	1.00		0.23	1.00		0.32	1.00	
Satd. Flow (perm)	1211	1541		1045	1660		397	3257		557	3188	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	113	48	145	88	52	27	129	763	62	82	874	65
RTOR Reduction (vph)	0	124	0	0	23	0	0	10	0	0	9	0
Lane Group Flow (vph)	113	69	0	88	56	0	129	815	0	82	930	0
Heavy Vehicles (%)	2%	0%	1%	0%	0%	0%	1%	1%	0%	0%	3%	6%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	6.7	6.7		6.7	6.7		28.4	24.3		25.6	22.9	
Effective Green, g (s)	6.7	6.7		6.7	6.7		30.0	25.1		27.2	23.7	
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.64	0.53		0.58	0.50	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.5	4.8		4.5	4.8	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)	172	219		148	236		383	1739		404	1607	
v/s Ratio Prot		0.04			0.03		c0.04	0.25		0.02	c0.29	
v/s Ratio Perm	c0.09			0.08			0.18			0.10		
v/c Ratio	0.66	0.31		0.59	0.24		0.34	0.47		0.20	0.58	
Uniform Delay, d1	19.1	18.1		18.9	17.9		3.9	6.8		4.4	8.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.8	0.6		5.3	0.4		0.5	0.3		0.2	0.6	
Delay (s)	26.9	18.7		24.1	18.3		4.4	7.1		4.7	8.8	
Level of Service	C	B		C	B		A	A		A	A	
Approach Delay (s)		21.7			21.4			6.7			8.4	
Approach LOS		C			C			A			A	

Intersection Summary		
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.56	B
Actuated Cycle Length (s)	47.0	Sum of lost time (s)
Intersection Capacity Utilization	59.2%	11.7
Analysis Period (min)	15	ICU Level of Service
		B
c Critical Lane Group		

HCM 6th Signalized Intersection Summary

3: Hwy 101 & 35th St

07/18/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↗	
Traffic Volume (veh/h)	95	40	122	74	44	23	108	641	52	69	734	55
Future Volume (veh/h)	95	40	122	74	44	23	108	641	52	69	734	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1750	1736	1750	1750	1750	1736	1736	1750	1750	1709	1668
Adj Flow Rate, veh/h	113	48	145	88	52	27	129	763	62	82	874	65
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	0	1	0	0	0	1	1	0	0	3	6
Cap, veh/h	381	81	246	274	231	120	450	1397	113	481	1334	99
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.10	0.45	0.44	0.09	0.44	0.42
Sat Flow, veh/h	1320	383	1158	1209	1085	563	1654	3090	251	1667	3064	228
Grp Volume(v), veh/h	113	0	193	88	0	79	129	407	418	82	463	476
Grp Sat Flow(s),veh/h/ln	1320	0	1542	1209	0	1649	1654	1650	1691	1667	1624	1668
Q Serve(g_s), s	3.6	0.0	5.3	3.3	0.0	1.9	1.8	8.5	8.5	1.2	10.6	10.6
Cycle Q Clear(g_c), s	5.5	0.0	5.3	8.6	0.0	1.9	1.8	8.5	8.5	1.2	10.6	10.6
Prop In Lane	1.00		0.75	1.00		0.34	1.00		0.15	1.00		0.14
Lane Grp Cap(c), veh/h	381	0	328	274	0	350	450	746	765	481	707	726
V/C Ratio(X)	0.30	0.00	0.59	0.32	0.00	0.23	0.29	0.55	0.55	0.17	0.66	0.66
Avail Cap(c_a), veh/h	381	0	328	274	0	350	500	785	805	545	759	780
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.6	0.0	16.7	20.6	0.0	15.3	7.0	9.4	9.4	6.4	10.5	10.5
Incr Delay (d2), s/veh	0.3	0.0	2.4	0.5	0.0	0.2	0.3	1.0	0.9	0.2	2.2	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	1.9	0.9	0.0	0.7	0.4	2.3	2.3	0.3	3.1	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.9	0.0	19.1	21.1	0.0	15.6	7.3	10.3	10.4	6.5	12.7	12.7
LnGrp LOS	B	A	B	C	A	B	A	B	B	A	B	B
Approach Vol, veh/h		306			167			954			1021	
Approach Delay, s/veh		18.7			18.5			9.9			12.2	
Approach LOS		B			B			A			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.8	25.3		14.0	8.6	24.5		14.0				
Change Period (Y+Rc), s	4.5	4.8		4.0	4.5	4.8		4.0				
Max Green Setting (Gmax), s	5.1	21.6		10.0	5.5	21.2		10.0				
Max Q Clear Time (g_c+I1), s	3.2	10.5		7.5	3.8	12.6		10.6				
Green Ext Time (p_c), s	0.0	8.3		0.3	0.1	7.1		0.0				

Intersection Summary

HCM 6th Ctrl Delay	12.6
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Intersection												
Int Delay, s/veh	5.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	78	48	36	9	54	8	28	2	11	9	1	60
Future Vol, veh/h	78	48	36	9	54	8	28	2	11	9	1	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	3	0	0	0	25	0	0	0
Mvmt Flow	86	53	40	10	59	9	31	2	12	10	1	66

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	68	0	0	93	0	0	362	333	73	336	349	64
Stage 1	-	-	-	-	-	-	245	245	-	84	84	-
Stage 2	-	-	-	-	-	-	117	88	-	252	265	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.45	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.525	3.5	4	3.3
Pot Cap-1 Maneuver	1546	-	-	1514	-	-	598	590	928	622	578	1006
Stage 1	-	-	-	-	-	-	763	707	-	929	829	-
Stage 2	-	-	-	-	-	-	892	826	-	757	693	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1546	-	-	1514	-	-	530	551	928	582	540	1006
Mov Cap-2 Maneuver	-	-	-	-	-	-	530	551	-	582	540	-
Stage 1	-	-	-	-	-	-	718	665	-	874	823	-
Stage 2	-	-	-	-	-	-	827	820	-	701	652	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.6			0.9			11.5			9.3		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	600	1546	-	-	1514	-	-	910
HCM Lane V/C Ratio	0.075	0.055	-	-	0.007	-	-	0.085
HCM Control Delay (s)	11.5	7.5	0	-	7.4	0	-	9.3
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0	-	-	0.3

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕			↕
Traffic Vol, veh/h	0	48	729	3	1	855
Future Vol, veh/h	0	48	729	3	1	855
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	3	0	0	2
Mvmt Flow	0	52	784	3	1	919

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	394	0	0	787
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	4.1
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	2.2
Pot Cap-1 Maneuver	0	611	-	-	841
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	-	611	-	-	841
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	611	841
HCM Lane V/C Ratio	-	-	0.084	0.001
HCM Control Delay (s)	-	-	11.4	9.3
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0

HCM Signalized Intersection Capacity Analysis

3: Hwy 101 & 35th St

07/18/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↗	
Traffic Volume (vph)	96	40	127	38	41	24	112	680	40	31	803	57
Future Volume (vph)	96	40	127	38	41	24	112	680	40	31	803	57
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0		3.7	4.0		3.7	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.89		1.00	0.94		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	1539		1662	1652		1646	3266		1662	3190	
Flt Permitted	0.71	1.00		0.56	1.00		0.20	1.00		0.32	1.00	
Satd. Flow (perm)	1212	1539		972	1652		348	3266		559	3190	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	114	48	151	45	49	29	133	810	48	37	956	68
RTOR Reduction (vph)	0	130	0	0	25	0	0	6	0	0	8	0
Lane Group Flow (vph)	114	69	0	45	53	0	133	852	0	37	1016	0
Heavy Vehicles (%)	2%	0%	1%	0%	0%	0%	1%	1%	0%	0%	3%	6%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	7.2	7.2		7.2	7.2		33.4	29.3		28.8	27.0	
Effective Green, g (s)	7.2	7.2		7.2	7.2		35.0	30.1		30.4	27.8	
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.68	0.58		0.59	0.54	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.5	4.8		4.5	4.8	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)	169	214		135	230		359	1905		384	1718	
v/s Ratio Prot		0.04			0.03		c0.04	0.26		0.00	c0.32	
v/s Ratio Perm	c0.09			0.05			0.22			0.05		
v/c Ratio	0.67	0.32		0.33	0.23		0.37	0.45		0.10	0.59	
Uniform Delay, d1	21.1	20.0		20.0	19.7		3.9	6.1		4.5	8.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.3	0.6		1.1	0.4		0.6	0.2		0.1	0.6	
Delay (s)	30.3	20.6		21.1	20.1		4.5	6.3		4.6	8.7	
Level of Service	C	C		C	C		A	A		A	A	
Approach Delay (s)		24.2			20.5			6.1			8.6	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	51.6	Sum of lost time (s)	11.7
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Signalized Intersection Summary
 3: Hwy 101 & 35th St

07/18/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↗	
Traffic Volume (veh/h)	96	40	127	38	41	24	112	680	40	31	803	57
Future Volume (veh/h)	96	40	127	38	41	24	112	680	40	31	803	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1750	1736	1750	1750	1750	1736	1736	1750	1750	1709	1668
Adj Flow Rate, veh/h	114	48	151	45	49	29	133	810	48	37	956	68
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	0	1	0	0	0	1	1	0	0	3	6
Cap, veh/h	346	72	228	232	201	119	438	1644	97	466	1464	104
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.10	0.52	0.50	0.06	0.48	0.46
Sat Flow, veh/h	1321	371	1168	1202	1030	610	1654	3165	188	1667	3075	219
Grp Volume(v), veh/h	114	0	199	45	0	78	133	422	436	37	505	519
Grp Sat Flow(s),veh/h/ln	1321	0	1540	1202	0	1640	1654	1650	1703	1667	1624	1670
Q Serve(g_s), s	4.1	0.0	6.1	1.8	0.0	2.0	1.8	8.4	8.4	0.5	12.0	12.1
Cycle Q Clear(g_c), s	6.1	0.0	6.1	7.9	0.0	2.0	1.8	8.4	8.4	0.5	12.0	12.1
Prop In Lane	1.00		0.76	1.00		0.37	1.00		0.11	1.00		0.13
Lane Grp Cap(c), veh/h	346	0	300	232	0	320	438	857	884	466	773	795
V/C Ratio(X)	0.33	0.00	0.66	0.19	0.00	0.24	0.30	0.49	0.49	0.08	0.65	0.65
Avail Cap(c_a), veh/h	374	0	333	258	0	354	479	857	884	566	829	853
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.9	0.0	18.9	22.6	0.0	17.3	6.8	7.9	7.9	6.1	10.1	10.2
Incr Delay (d2), s/veh	0.4	0.0	3.7	0.3	0.0	0.3	0.4	0.6	0.6	0.1	2.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	2.3	0.5	0.0	0.7	0.4	2.1	2.2	0.1	3.4	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.3	0.0	22.7	22.9	0.0	17.6	7.2	8.5	8.5	6.2	12.1	12.1
LnGrp LOS	C	A	C	C	A	B	A	A	A	A	B	B
Approach Vol, veh/h		313			123			991			1061	
Approach Delay, s/veh		21.8			19.5			8.4			11.9	
Approach LOS		C			B			A			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	30.4		13.9	8.7	28.2		13.9				
Change Period (Y+Rc), s	4.5	4.8		4.0	4.5	4.8		4.0				
Max Green Setting (Gmax), s	5.1	25.6		11.0	5.5	25.2		11.0				
Max Q Clear Time (g_c+I1), s	2.5	10.4		8.1	3.8	14.1		9.9				
Green Ext Time (p_c), s	0.0	11.1		0.4	0.1	9.4		0.0				

Intersection Summary

HCM 6th Ctrl Delay	12.1
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th TWSC
6: Redwood St & 35th St

07/18/2024

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	18	56	37	9	61	0	30	3	12	0	1	13
Future Vol, veh/h	18	56	37	9	61	0	30	3	12	0	1	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	3	0	0	0	25	0	0	0
Mvmt Flow	20	62	41	10	67	0	33	3	13	0	1	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	67	0	0	103	0	0	218	210	83	218	230	67
Stage 1	-	-	-	-	-	-	123	123	-	87	87	-
Stage 2	-	-	-	-	-	-	95	87	-	131	143	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.45	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.525	3.5	4	3.3
Pot Cap-1 Maneuver	1547	-	-	1502	-	-	743	691	916	743	673	1002
Stage 1	-	-	-	-	-	-	886	798	-	926	827	-
Stage 2	-	-	-	-	-	-	917	827	-	877	782	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1547	-	-	1502	-	-	720	676	916	718	659	1002
Mov Cap-2 Maneuver	-	-	-	-	-	-	720	676	-	718	659	-
Stage 1	-	-	-	-	-	-	874	787	-	913	821	-
Stage 2	-	-	-	-	-	-	896	821	-	849	771	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	1	10.1	8.8
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	760	1547	-	-	1502	-	-	966
HCM Lane V/C Ratio	0.065	0.013	-	-	0.007	-	-	0.016
HCM Control Delay (s)	10.1	7.4	0	-	7.4	0	-	8.8
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕			↕
Traffic Vol, veh/h	0	9	797	3	0	889
Future Vol, veh/h	0	9	797	3	0	889
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	3	0	0	2
Mvmt Flow	0	10	857	3	0	956

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	430	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	579	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	-	579	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	579
HCM Lane V/C Ratio	-	-	0.017
HCM Control Delay (s)	-	-	11.3
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.1

HCM Signalized Intersection Capacity Analysis

3: Hwy 101 & 35th St

07/18/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↗	
Traffic Volume (vph)	99	42	127	76	46	24	112	673	54	70	772	57
Future Volume (vph)	99	42	127	76	46	24	112	673	54	70	772	57
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0		3.7	4.0		3.7	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.89		1.00	0.95		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	1541		1662	1659		1646	3258		1662	3188	
Flt Permitted	0.70	1.00		0.56	1.00		0.22	1.00		0.30	1.00	
Satd. Flow (perm)	1205	1541		972	1659		376	3258		523	3188	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	118	50	151	90	55	29	133	801	64	83	919	68
RTOR Reduction (vph)	0	129	0	0	25	0	0	9	0	0	9	0
Lane Group Flow (vph)	118	72	0	90	59	0	133	856	0	83	978	0
Heavy Vehicles (%)	2%	0%	1%	0%	0%	0%	1%	1%	0%	0%	3%	6%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	7.2	7.2		7.2	7.2		30.8	26.7		28.2	25.4	
Effective Green, g (s)	7.2	7.2		7.2	7.2		32.4	27.5		29.8	26.2	
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.65	0.55		0.60	0.52	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.5	4.8		4.5	4.8	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)	173	221		139	238		368	1791		393	1670	
v/s Ratio Prot		0.05			0.04		c0.04	0.26		0.02	c0.31	
v/s Ratio Perm	c0.10			0.09			0.20			0.11		
v/c Ratio	0.68	0.32		0.65	0.25		0.36	0.48		0.21	0.59	
Uniform Delay, d1	20.3	19.2		20.2	19.0		4.0	6.9		4.4	8.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.7	0.6		8.8	0.4		0.6	0.3		0.3	0.6	
Delay (s)	30.0	19.8		29.0	19.4		4.6	7.1		4.6	8.8	
Level of Service	C	B		C	B		A	A		A	A	
Approach Delay (s)		23.6			24.4			6.8			8.5	
Approach LOS		C			C			A			A	

Intersection Summary		
HCM 2000 Control Delay	10.8	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.57	B
Actuated Cycle Length (s)	50.0	Sum of lost time (s)
Intersection Capacity Utilization	61.1%	11.7
Analysis Period (min)	15	ICU Level of Service
		B
c Critical Lane Group		

HCM 6th Signalized Intersection Summary
 3: Hwy 101 & 35th St

07/18/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↗	
Traffic Volume (veh/h)	99	42	127	76	46	24	112	673	54	70	772	57
Future Volume (veh/h)	99	42	127	76	46	24	112	673	54	70	772	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1750	1736	1750	1750	1750	1736	1736	1750	1750	1709	1668
Adj Flow Rate, veh/h	118	50	151	90	55	29	133	801	64	83	919	68
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	0	1	0	0	0	1	1	0	0	3	6
Cap, veh/h	362	81	246	252	229	121	435	1482	118	470	1422	105
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.10	0.48	0.46	0.08	0.46	0.45
Sat Flow, veh/h	1314	383	1158	1200	1079	569	1654	3094	247	1667	3065	227
Grp Volume(v), veh/h	118	0	201	90	0	84	133	427	438	83	487	500
Grp Sat Flow(s),veh/h/ln	1314	0	1542	1200	0	1648	1654	1650	1692	1667	1624	1668
Q Serve(g_s), s	4.2	0.0	6.1	3.8	0.0	2.2	2.0	9.4	9.5	1.2	11.9	11.9
Cycle Q Clear(g_c), s	6.4	0.0	6.1	9.9	0.0	2.2	2.0	9.4	9.5	1.2	11.9	11.9
Prop In Lane	1.00		0.75	1.00		0.35	1.00		0.15	1.00		0.14
Lane Grp Cap(c), veh/h	362	0	327	252	0	350	435	790	810	470	753	774
V/C Ratio(X)	0.33	0.00	0.61	0.36	0.00	0.24	0.31	0.54	0.54	0.18	0.65	0.65
Avail Cap(c_a), veh/h	362	0	327	252	0	350	475	834	856	528	815	837
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.6	0.0	18.5	23.0	0.0	16.9	7.2	9.5	9.5	6.4	10.6	10.7
Incr Delay (d2), s/veh	0.4	0.0	3.0	0.6	0.0	0.3	0.4	0.9	0.8	0.2	1.9	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	2.3	1.1	0.0	0.8	0.5	2.6	2.7	0.3	3.4	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.0	0.0	21.5	23.6	0.0	17.2	7.6	10.3	10.4	6.6	12.5	12.5
LnGrp LOS	B	A	C	C	A	B	A	B	B	A	B	B
Approach Vol, veh/h		319			174			998			1070	
Approach Delay, s/veh		20.9			20.5			10.0			12.1	
Approach LOS		C			C			A			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	28.8		15.0	8.8	28.0		15.0				
Change Period (Y+Rc), s	4.5	4.8		4.0	4.5	4.8		4.0				
Max Green Setting (Gmax), s	5.3	25.4		11.0	5.5	25.2		11.0				
Max Q Clear Time (g_c+I1), s	3.2	11.5		8.4	4.0	13.9		11.9				
Green Ext Time (p_c), s	0.0	10.4		0.4	0.1	9.3		0.0				

Intersection Summary

HCM 6th Ctrl Delay	12.9
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Intersection												
Int Delay, s/veh	5.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	79	50	37	9	56	8	30	3	12	9	1	61
Future Vol, veh/h	79	50	37	9	56	8	30	3	12	9	1	61
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	3	0	0	0	25	0	0	0
Mvmt Flow	87	55	41	10	62	9	33	3	13	10	1	67

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	71	0	0	96	0	0	371	341	76	345	357	67
Stage 1	-	-	-	-	-	-	250	250	-	87	87	-
Stage 2	-	-	-	-	-	-	121	91	-	258	270	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.45	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.525	3.5	4	3.3
Pot Cap-1 Maneuver	1542	-	-	1510	-	-	589	584	925	613	572	1002
Stage 1	-	-	-	-	-	-	759	704	-	926	827	-
Stage 2	-	-	-	-	-	-	888	823	-	751	690	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1542	-	-	1510	-	-	521	545	925	571	534	1002
Mov Cap-2 Maneuver	-	-	-	-	-	-	521	545	-	571	534	-
Stage 1	-	-	-	-	-	-	713	662	-	870	821	-
Stage 2	-	-	-	-	-	-	822	817	-	692	649	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.6			0.9			11.6			9.4		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	592	1542	-	-	1510	-	-	904
HCM Lane V/C Ratio	0.084	0.056	-	-	0.007	-	-	0.086
HCM Control Delay (s)	11.6	7.5	0	-	7.4	0	-	9.4
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0.2	-	-	0	-	-	0.3

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕			↕
Traffic Vol, veh/h	0	48	766	30	1	897
Future Vol, veh/h	0	48	766	30	1	897
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	3	0	0	2
Mvmt Flow	0	52	824	32	1	965

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	428	0	0	856
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	4.1
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	2.2
Pot Cap-1 Maneuver	0	581	-	-	793
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	-	581	-	-	793
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	581	793
HCM Lane V/C Ratio	-	-	0.089	0.001
HCM Control Delay (s)	-	-	11.8	9.5
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0

Florence Gas Station

Intersection: 3: Hwy 101 & 35th St , Interval #1

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	57	86	38	58	44	78	45	26	101	86
Average Queue (ft)	32	50	19	32	25	47	18	11	61	42
95th Queue (ft)	66	88	44	60	48	83	49	34	109	83
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)									0	
Queuing Penalty (veh)									0	

Intersection: 3: Hwy 101 & 35th St , Interval #2

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	70	78	52	63	58	90	58	30	112	88
Average Queue (ft)	32	39	19	25	23	38	18	9	56	29
95th Queue (ft)	67	67	47	56	52	74	48	31	97	68
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)									0	
Queuing Penalty (veh)									0	

Intersection: 3: Hwy 101 & 35th St , All Intervals

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	72	94	52	66	58	94	63	31	119	98
Average Queue (ft)	32	42	19	27	24	41	18	9	57	33
95th Queue (ft)	66	73	46	57	51	77	48	31	100	73
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)									0	
Queuing Penalty (veh)									0	

Intersection: 6: Redwood St & 35th St , Interval #1

Movement	NB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	50	31
Average Queue (ft)	23	12
95th Queue (ft)	55	37
Link Distance (ft)	151	183
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Redwood St & 35th St , Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	14	4	65	35
Average Queue (ft)	1	0	22	10
95th Queue (ft)	7	4	53	34
Link Distance (ft)	241	328	151	183
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Redwood St & 35th St , All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	14	4	67	35
Average Queue (ft)	0	0	23	10
95th Queue (ft)	6	4	54	35
Link Distance (ft)	241	328	151	183
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Hwy 101 & Site Access , Interval #1

Movement	WB
Directions Served	R
Maximum Queue (ft)	10
Average Queue (ft)	3
95th Queue (ft)	17
Link Distance (ft)	216
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 8: Hwy 101 & Site Access , Interval #2

Movement	WB
Directions Served	R
Maximum Queue (ft)	30
Average Queue (ft)	2
95th Queue (ft)	14
Link Distance (ft)	216
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 8: Hwy 101 & Site Access , All Intervals

Movement	WB
Directions Served	R
Maximum Queue (ft)	30
Average Queue (ft)	2
95th Queue (ft)	14
Link Distance (ft)	216
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty, Interval #1: 0
Network wide Queuing Penalty, Interval #2: 0
Network wide Queuing Penalty, All Intervals: 0

Intersection: 3: Hwy 101 & 35th St , Interval #1

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	49	65	52	48	44	90	60	34	105	64
Average Queue (ft)	34	44	31	23	25	51	25	12	67	33
95th Queue (ft)	58	69	54	52	47	92	69	37	110	74
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)									0	
Queuing Penalty (veh)									0	

Intersection: 3: Hwy 101 & 35th St , Interval #2

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	75	103	59	54	68	88	64	30	119	95
Average Queue (ft)	31	44	23	23	29	42	18	7	59	33
95th Queue (ft)	65	79	52	52	58	80	52	27	104	78
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)		0							0	
Queuing Penalty (veh)		0							0	

Intersection: 3: Hwy 101 & 35th St , All Intervals

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	75	103	60	60	70	102	82	34	122	97
Average Queue (ft)	32	44	25	23	28	44	20	8	61	33
95th Queue (ft)	64	77	53	52	56	84	56	30	106	77
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)		0							0	
Queuing Penalty (veh)		0							0	

Intersection: 6: Redwood St & 35th St , Interval #1

Movement	NB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	55	30
Average Queue (ft)	27	7
95th Queue (ft)	59	29
Link Distance (ft)	151	183
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Redwood St & 35th St , Interval #2

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	14	48	31
Average Queue (ft)	1	20	11
95th Queue (ft)	11	49	34
Link Distance (ft)	241	151	183
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Redwood St & 35th St , All Intervals

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	14	56	31
Average Queue (ft)	1	22	10
95th Queue (ft)	9	52	33
Link Distance (ft)	241	151	183
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Hwy 101 & Site Access , Interval #1

Movement	WB
Directions Served	R
Maximum Queue (ft)	15
Average Queue (ft)	1
95th Queue (ft)	12
Link Distance (ft)	216
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 8: Hwy 101 & Site Access , Interval #2

Movement	WB
Directions Served	R
Maximum Queue (ft)	20
Average Queue (ft)	2
95th Queue (ft)	16
Link Distance (ft)	216
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 8: Hwy 101 & Site Access , All Intervals

Movement	WB
Directions Served	R
Maximum Queue (ft)	25
Average Queue (ft)	2
95th Queue (ft)	15
Link Distance (ft)	216
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty, Interval #1: 0
Network wide Queuing Penalty, Interval #2: 0
Network wide Queuing Penalty, All Intervals: 0

Intersection: 3: Hwy 101 & 35th St , Interval #1

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	72	89	74	48	60	109	84	60	109	60
Average Queue (ft)	38	52	50	32	34	55	41	31	66	34
95th Queue (ft)	76	91	80	54	65	109	85	64	117	61
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)									0	
Queuing Penalty (veh)									0	
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)									0	
Queuing Penalty (veh)									0	

Intersection: 3: Hwy 101 & 35th St , Interval #2

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	81	105	78	84	58	97	76	69	112	77
Average Queue (ft)	37	47	42	26	29	47	30	32	57	32
95th Queue (ft)	72	86	72	65	55	84	64	58	97	67
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)		0							0	
Queuing Penalty (veh)		0							0	

Intersection: 3: Hwy 101 & 35th St , All Intervals

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	85	116	82	84	61	119	88	76	130	77
Average Queue (ft)	37	48	44	27	30	49	33	32	59	32
95th Queue (ft)	73	87	74	63	58	91	70	60	102	65
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)									0	
Queuing Penalty (veh)									0	
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)		0							0	
Queuing Penalty (veh)		0							0	

Intersection: 6: Redwood St & 35th St , Interval #1

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	24	54	52
Average Queue (ft)	7	22	34
95th Queue (ft)	28	56	51
Link Distance (ft)	241	151	183
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Redwood St & 35th St , Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	40	13	40	62
Average Queue (ft)	5	1	20	33
95th Queue (ft)	26	7	46	53
Link Distance (ft)	241	328	151	183
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Redwood St & 35th St , All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	40	13	55	63
Average Queue (ft)	6	0	21	33
95th Queue (ft)	26	6	49	53
Link Distance (ft)	241	328	151	183
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Hwy 101 & Site Access , Interval #1

Movement	WB
Directions Served	R
Maximum Queue (ft)	54
Average Queue (ft)	32
95th Queue (ft)	54
Link Distance (ft)	216
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 8: Hwy 101 & Site Access , Interval #2

Movement	WB
Directions Served	R
Maximum Queue (ft)	49
Average Queue (ft)	27
95th Queue (ft)	48
Link Distance (ft)	216
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 8: Hwy 101 & Site Access , All Intervals

Movement	WB
Directions Served	R
Maximum Queue (ft)	58
Average Queue (ft)	28
95th Queue (ft)	50
Link Distance (ft)	216
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty, Interval #1: 0
Network wide Queuing Penalty, Interval #2: 0
Network wide Queuing Penalty, All Intervals: 0

Intersection: 3: Hwy 101 & 35th St , Interval #1

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	70	84	45	52	62	96	57	30	118	95
Average Queue (ft)	37	51	23	18	34	58	30	11	74	47
95th Queue (ft)	75	88	55	50	60	104	66	35	123	96
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)									0	
Queuing Penalty (veh)									0	

Intersection: 3: Hwy 101 & 35th St , Interval #2

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	83	86	58	78	67	88	66	35	122	91
Average Queue (ft)	34	45	23	26	28	42	21	9	63	36
95th Queue (ft)	69	77	54	61	56	79	53	31	108	80
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)									0	
Queuing Penalty (veh)									0	

Intersection: 3: Hwy 101 & 35th St , All Intervals

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	93	94	60	78	70	105	74	35	125	103
Average Queue (ft)	35	47	23	24	30	46	23	9	66	39
95th Queue (ft)	71	80	55	59	57	87	57	32	112	84
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)									0	
Queuing Penalty (veh)									0	

Intersection: 6: Redwood St & 35th St , Interval #1

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	4	56	31
Average Queue (ft)	1	23	14
95th Queue (ft)	7	59	38
Link Distance (ft)	241	151	183
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Redwood St & 35th St , Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	28	5	70	39
Average Queue (ft)	2	0	25	12
95th Queue (ft)	15	4	60	37
Link Distance (ft)	241	328	151	183
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Redwood St & 35th St , All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	28	5	70	39
Average Queue (ft)	2	0	25	12
95th Queue (ft)	13	4	60	37
Link Distance (ft)	241	328	151	183
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Hwy 101 & Site Access , Interval #1

Movement	WB
Directions Served	R
Maximum Queue (ft)	15
Average Queue (ft)	5
95th Queue (ft)	23
Link Distance (ft)	216
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 8: Hwy 101 & Site Access , Interval #2

Movement	WB
Directions Served	R
Maximum Queue (ft)	34
Average Queue (ft)	5
95th Queue (ft)	23
Link Distance (ft)	216
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 8: Hwy 101 & Site Access , All Intervals

Movement	WB
Directions Served	R
Maximum Queue (ft)	34
Average Queue (ft)	5
95th Queue (ft)	23
Link Distance (ft)	216
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty, Interval #1: 0
Network wide Queuing Penalty, Interval #2: 0
Network wide Queuing Penalty, All Intervals: 0

Intersection: 3: Hwy 101 & 35th St , Interval #1

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	94	108	86	56	45	98	73	76	122	89
Average Queue (ft)	46	54	50	30	30	56	38	40	66	40
95th Queue (ft)	97	113	85	59	55	103	80	83	118	82
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)									0	
Queuing Penalty (veh)									0	
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)		1							0	
Queuing Penalty (veh)		0							0	

Intersection: 3: Hwy 101 & 35th St , Interval #2

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	87	114	84	66	68	105	66	57	120	85
Average Queue (ft)	33	51	40	27	30	49	30	32	61	32
95th Queue (ft)	69	93	74	56	57	87	60	54	108	68
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)		0							0	
Queuing Penalty (veh)		0							0	

Intersection: 3: Hwy 101 & 35th St , All Intervals

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	106	130	93	71	68	112	79	77	137	99
Average Queue (ft)	36	52	42	28	30	50	32	34	62	34
95th Queue (ft)	78	98	77	57	57	92	66	63	111	72
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)									0	
Queuing Penalty (veh)									0	
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)		0							0	
Queuing Penalty (veh)		0							0	

Intersection: 6: Redwood St & 35th St , Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	13	5	46	54
Average Queue (ft)	4	1	24	37
95th Queue (ft)	21	8	50	57
Link Distance (ft)	241	328	151	183
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Redwood St & 35th St , Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	45	5	65	56
Average Queue (ft)	8	0	25	33
95th Queue (ft)	31	4	57	51
Link Distance (ft)	241	328	151	183
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Redwood St & 35th St , All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	45	10	65	59
Average Queue (ft)	7	0	25	34
95th Queue (ft)	29	5	56	53
Link Distance (ft)	241	328	151	183
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Hwy 101 & Site Access , Interval #1

Movement	WB	SB
Directions Served	R	LT
Maximum Queue (ft)	57	14
Average Queue (ft)	34	2
95th Queue (ft)	57	18
Link Distance (ft)	216	281
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Hwy 101 & Site Access , Interval #2

Movement	WB	SB
Directions Served	R	LT
Maximum Queue (ft)	42	5
Average Queue (ft)	28	0
95th Queue (ft)	46	5
Link Distance (ft)	216	281
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Hwy 101 & Site Access , All Intervals

Movement	WB	SB
Directions Served	R	LT
Maximum Queue (ft)	57	14
Average Queue (ft)	30	1
95th Queue (ft)	49	9
Link Distance (ft)	216	281
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty, Interval #1: 1
Network wide Queuing Penalty, Interval #2: 0
Network wide Queuing Penalty, All Intervals: 0

Intersection: 3: Hwy 101 & 35th St , Interval #1

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	74	85	45	55	59	104	96	62	176	126
Average Queue (ft)	43	52	27	35	38	64	48	22	109	74
95th Queue (ft)	78	90	53	59	63	104	90	48	173	133
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)									0	
Queuing Penalty (veh)									1	
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)									2	
Queuing Penalty (veh)									1	

Intersection: 3: Hwy 101 & 35th St , Interval #2

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	97	86	46	56	68	103	73	37	131	115
Average Queue (ft)	39	44	18	24	31	50	32	16	71	45
95th Queue (ft)	76	78	47	55	59	86	63	41	116	89
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)	0	0							0	
Queuing Penalty (veh)	0	0							0	

Intersection: 3: Hwy 101 & 35th St , All Intervals

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	97	100	49	60	75	113	96	66	176	129
Average Queue (ft)	40	46	20	27	33	54	36	17	80	52
95th Queue (ft)	77	81	49	57	60	91	72	43	137	104
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)									0	
Queuing Penalty (veh)									0	
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)	0	0							1	
Queuing Penalty (veh)	0	0							0	

Intersection: 6: Redwood St & 35th St , Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	5	9	48	31
Average Queue (ft)	1	2	27	14
95th Queue (ft)	8	14	54	38
Link Distance (ft)	241	328	151	183
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Redwood St & 35th St , Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	9	19	66	31
Average Queue (ft)	1	1	26	12
95th Queue (ft)	7	11	56	36
Link Distance (ft)	241	328	151	183
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Redwood St & 35th St , All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	14	19	70	31
Average Queue (ft)	1	1	26	12
95th Queue (ft)	7	12	56	36
Link Distance (ft)	241	328	151	183
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Hwy 101 & Site Access , Interval #1

Movement	WB	SB
Directions Served	R	T
Maximum Queue (ft)	31	9
Average Queue (ft)	8	1
95th Queue (ft)	30	15
Link Distance (ft)	216	281
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Hwy 101 & Site Access , Interval #2

Movement	WB
Directions Served	R
Maximum Queue (ft)	31
Average Queue (ft)	9
95th Queue (ft)	31
Link Distance (ft)	216
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 8: Hwy 101 & Site Access , All Intervals

Movement	WB	SB
Directions Served	R	T
Maximum Queue (ft)	31	9
Average Queue (ft)	8	0
95th Queue (ft)	31	7
Link Distance (ft)	216	281
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty, Interval #1: 2
Network wide Queuing Penalty, Interval #2: 0
Network wide Queuing Penalty, All Intervals: 1

Intersection: 3: Hwy 101 & 35th St , Interval #1

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	91	121	52	60	81	119	72	62	172	150
Average Queue (ft)	53	63	27	31	48	66	44	18	115	85
95th Queue (ft)	96	116	56	61	75	115	75	50	175	157
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)									0	0
Queuing Penalty (veh)									1	0
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)		0							2	
Queuing Penalty (veh)		0							1	

Intersection: 3: Hwy 101 & 35th St , Interval #2

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	93	104	66	67	74	123	89	41	160	129
Average Queue (ft)	40	49	22	29	37	57	39	16	87	54
95th Queue (ft)	77	83	54	59	67	101	83	42	141	105
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)									0	0
Queuing Penalty (veh)									0	0
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)		0							0	
Queuing Penalty (veh)		0							0	

Intersection: 3: Hwy 101 & 35th St , All Intervals

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	105	133	70	67	82	134	96	72	181	154
Average Queue (ft)	43	52	24	30	40	59	40	16	94	62
95th Queue (ft)	83	93	54	59	70	105	82	44	153	123
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)									0	0
Queuing Penalty (veh)									0	0
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)		0							1	
Queuing Penalty (veh)		0							0	

Intersection: 6: Redwood St & 35th St , Interval #1

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	9	45	30
Average Queue (ft)	2	29	11
95th Queue (ft)	14	53	35
Link Distance (ft)	241	151	183
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Redwood St & 35th St , Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	19	24	62	31
Average Queue (ft)	1	1	27	9
95th Queue (ft)	11	11	54	31
Link Distance (ft)	241	328	151	183
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Redwood St & 35th St , All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	28	24	67	31
Average Queue (ft)	1	1	28	9
95th Queue (ft)	12	9	54	32
Link Distance (ft)	241	328	151	183
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Hwy 101 & Site Access , Interval #1

Movement	WB	SB
Directions Served	R	T
Maximum Queue (ft)	31	9
Average Queue (ft)	8	0
95th Queue (ft)	30	0
Link Distance (ft)	216	281
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Hwy 101 & Site Access , Interval #2

Movement	WB
Directions Served	R
Maximum Queue (ft)	31
Average Queue (ft)	8
95th Queue (ft)	30
Link Distance (ft)	216
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 8: Hwy 101 & Site Access , All Intervals

Movement	WB	SB
Directions Served	R	T
Maximum Queue (ft)	31	9
Average Queue (ft)	8	0
95th Queue (ft)	30	0
Link Distance (ft)	216	281
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty, Interval #1: 2
Network wide Queuing Penalty, Interval #2: 0
Network wide Queuing Penalty, All Intervals: 1

Intersection: 3: Hwy 101 & 35th St , Interval #1

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	96	84	77	53	80	127	95	53	169	132
Average Queue (ft)	61	58	45	31	47	80	55	31	111	79
95th Queue (ft)	115	90	79	57	81	128	102	65	176	140
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)									0	
Queuing Penalty (veh)									1	
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)	1								2	
Queuing Penalty (veh)	1								2	

Intersection: 3: Hwy 101 & 35th St , Interval #2

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	94	110	76	60	78	131	110	94	152	124
Average Queue (ft)	46	52	35	27	39	61	41	30	80	54
95th Queue (ft)	81	91	68	57	67	109	83	69	139	109
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)									0	
Queuing Penalty (veh)									0	
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)		0							0	
Queuing Penalty (veh)		0							0	

Intersection: 3: Hwy 101 & 35th St , All Intervals

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	109	112	83	60	92	142	117	98	178	146
Average Queue (ft)	50	53	38	28	41	66	44	31	88	60
95th Queue (ft)	91	91	71	57	71	115	89	68	152	119
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)									0	
Queuing Penalty (veh)									0	
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)	0	0							1	
Queuing Penalty (veh)	0	0							1	

Intersection: 6: Redwood St & 35th St , Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	23	10	49	39
Average Queue (ft)	5	1	26	31
95th Queue (ft)	22	12	54	44
Link Distance (ft)	241	328	151	183
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Redwood St & 35th St , Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	36	10	60	54
Average Queue (ft)	6	0	24	28
95th Queue (ft)	27	6	50	48
Link Distance (ft)	241	328	151	183
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Redwood St & 35th St , All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	36	19	61	54
Average Queue (ft)	6	1	24	29
95th Queue (ft)	26	8	51	47
Link Distance (ft)	241	328	151	183
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Hwy 101 & Site Access , Interval #1

Movement	WB	SB
Directions Served	R	LT
Maximum Queue (ft)	46	21
Average Queue (ft)	30	2
95th Queue (ft)	52	17
Link Distance (ft)	216	281
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Hwy 101 & Site Access , Interval #2

Movement	WB	SB
Directions Served	R	LT
Maximum Queue (ft)	46	5
Average Queue (ft)	25	0
95th Queue (ft)	47	5
Link Distance (ft)	216	281
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Hwy 101 & Site Access , All Intervals

Movement	WB	SB
Directions Served	R	LT
Maximum Queue (ft)	50	26
Average Queue (ft)	26	1
95th Queue (ft)	48	9
Link Distance (ft)	216	281
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty, Interval #1: 4
Network wide Queuing Penalty, Interval #2: 0
Network wide Queuing Penalty, All Intervals: 1

Intersection: 3: Hwy 101 & 35th St , Interval #1

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	91	90	56	60	64	122	99	110	171	146
Average Queue (ft)	57	58	31	38	45	82	61	36	117	96
95th Queue (ft)	98	95	65	68	69	126	107	107	179	167
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)									0	0
Queuing Penalty (veh)									1	1
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)	0								2	
Queuing Penalty (veh)	0								1	

Intersection: 3: Hwy 101 & 35th St , Interval #2

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	108	95	52	57	69	117	88	64	164	137
Average Queue (ft)	45	50	22	26	36	56	37	18	89	57
95th Queue (ft)	86	83	52	56	61	96	77	51	141	112
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)									0	
Queuing Penalty (veh)									0	
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)	0								0	
Queuing Penalty (veh)	0								0	

Intersection: 3: Hwy 101 & 35th St , All Intervals

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	111	100	60	61	73	134	99	132	179	162
Average Queue (ft)	48	52	24	29	39	62	43	22	96	67
95th Queue (ft)	90	87	56	60	64	107	88	69	154	132
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)									0	0
Queuing Penalty (veh)									0	0
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)	0								1	
Queuing Penalty (veh)	0								0	

Intersection: 6: Redwood St & 35th St , Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	9	5	47	31
Average Queue (ft)	3	1	30	16
95th Queue (ft)	16	8	54	41
Link Distance (ft)	241	328	151	183
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Redwood St & 35th St , Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	9	14	58	38
Average Queue (ft)	1	1	24	13
95th Queue (ft)	6	8	53	39
Link Distance (ft)	241	328	151	183
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Redwood St & 35th St , All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	18	14	61	38
Average Queue (ft)	1	1	25	14
95th Queue (ft)	9	8	54	39
Link Distance (ft)	241	328	151	183
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Hwy 101 & Site Access , Interval #1

Movement	WB	SB	SB
Directions Served	R	T	T
Maximum Queue (ft)	30	20	5
Average Queue (ft)	8	4	1
95th Queue (ft)	29	27	10
Link Distance (ft)	216	281	281
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Hwy 101 & Site Access , Interval #2

Movement	WB	NB	SB
Directions Served	R	TR	T
Maximum Queue (ft)	31	9	9
Average Queue (ft)	9	0	0
95th Queue (ft)	32	8	8
Link Distance (ft)	216	196	281
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Hwy 101 & Site Access , All Intervals

Movement	WB	NB	SB	SB
Directions Served	R	TR	T	T
Maximum Queue (ft)	31	9	20	5
Average Queue (ft)	9	0	1	0
95th Queue (ft)	31	7	15	5
Link Distance (ft)	216	196	281	281
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty, Interval #1: 3
Network wide Queuing Penalty, Interval #2: 0
Network wide Queuing Penalty, All Intervals: 1

Intersection: 3: Hwy 101 & 35th St , Interval #1

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	101	107	83	60	70	147	126	55	181	153
Average Queue (ft)	64	68	50	36	47	88	68	38	119	95
95th Queue (ft)	104	121	94	64	72	154	134	56	186	167
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)									0	0
Queuing Penalty (veh)									1	0
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)		0							2	
Queuing Penalty (veh)		0							1	

Intersection: 3: Hwy 101 & 35th St , Interval #2

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	94	108	85	73	78	134	87	79	176	148
Average Queue (ft)	46	50	38	32	40	63	45	29	89	61
95th Queue (ft)	87	88	71	62	68	117	83	63	143	117
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)									0	0
Queuing Penalty (veh)									0	0
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)									0	
Queuing Penalty (veh)									0	

Intersection: 3: Hwy 101 & 35th St , All Intervals

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	110	121	98	74	85	158	130	79	193	165
Average Queue (ft)	51	54	41	33	42	69	50	31	96	69
95th Queue (ft)	93	98	78	62	69	129	100	63	157	134
Link Distance (ft)		407		241		381	381		196	196
Upstream Blk Time (%)									0	0
Queuing Penalty (veh)									0	0
Storage Bay Dist (ft)	152		185		208			150		
Storage Blk Time (%)		0							1	
Queuing Penalty (veh)		0							1	

Intersection: 6: Redwood St & 35th St , Interval #1

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	27	52	49
Average Queue (ft)	7	28	32
95th Queue (ft)	29	59	53
Link Distance (ft)	241	151	183
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Redwood St & 35th St , Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	32	9	62	47
Average Queue (ft)	4	0	25	31
95th Queue (ft)	22	6	54	45
Link Distance (ft)	241	328	151	183
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Redwood St & 35th St , All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	35	9	68	57
Average Queue (ft)	5	0	26	31
95th Queue (ft)	24	5	55	47
Link Distance (ft)	241	328	151	183
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Hwy 101 & Site Access , Interval #1

Movement	WB	NB	SB	SB
Directions Served	R	TR	LT	T
Maximum Queue (ft)	39	3	14	13
Average Queue (ft)	29	0	3	2
95th Queue (ft)	48	5	20	22
Link Distance (ft)	216	196	281	281
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Hwy 101 & Site Access , Interval #2

Movement	WB	NB	SB
Directions Served	R	T	LT
Maximum Queue (ft)	39	9	37
Average Queue (ft)	24	0	2
95th Queue (ft)	46	8	20
Link Distance (ft)	216	196	281
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Hwy 101 & Site Access , All Intervals

Movement	WB	NB	NB	SB	SB
Directions Served	R	T	TR	LT	T
Maximum Queue (ft)	39	9	3	46	13
Average Queue (ft)	26	0	0	2	0
95th Queue (ft)	46	7	2	20	10
Link Distance (ft)	216	196	196	281	281
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty, Interval #1: 3
Network wide Queuing Penalty, Interval #2: 1
Network wide Queuing Penalty, All Intervals: 1

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