MEMORANDUM

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DANA M. BECKWITH
EXPIRES: DEC. 31, 2023

GLOBAL Transportation Engineering

DATE: September 2, 2022

TO: Jon Holland, PE, Brown and Caldwell

FROM: Dana Beckwith, PE, PTOE
Richard Martin, EI

SUBJECT: Portland Water Bureau Bull Run Filtration Project Traffic Impact Analysis P18-035-000

This memorandum summarizes the traffic impact analysis for the proposed Portland Water Bureau (PWB) Bull Run Filtration Project (Project) located within Multnomah County and Clackamas County, Oregon. The purpose of this analysis is to evaluate the existing transportation facilities and to identify potential off-site improvements needed to adequately serve the proposed Project, which includes the main filtration facility as well as the pipelines, appurtenances, and the intertie. This evaluation is of the post-construction ongoing operation of the Project. This evaluation is based on the standards established by Multnomah and Clackamas County for each jurisdiction's roadways.

The following study intersections were evaluated (see Figure 1):

1. SE Oxbow Drive / SE Altman Road (Multnomah County)
2. SE Oxbow Drive / SE Hosner Road (Multnomah County)
3. SE Lusted Road / SE Altman Road (Multnomah County)
4. SE Lusted Road / SE Cottrell Road (Multnomah County)
5. SE Dodge Park Boulevard / SE Altman Road (Multnomah County)
6. SE Dodge Park Boulevard / SE Cottrell Road (Multnomah County)
7. SE Carpenter Lane / SE Altman Road (Multnomah County)
8. SE Carpenter Lane / SE Cottrell Road (Multnomah County)
9. SE Bluff Road / SE Altman Road (Clackamas County)
10. SE Bluff Road / SE Cottrell Road (Clackamas County)
11. SE Bluff Road / SE Proctor Road (Clackamas County)
12. SE Dodge Park Boulevard / SE Lusted Road (Clackamas County)
13. SE Hudson Road / SE Lusted Road (Clackamas County)

This comprehensive list of intersections was developed to include the transportation facilities that allow traffic to access the Project. The list is based on (1) engineering judgement, (2) Multnomah and Clackamas County Comprehensive Plan research to identify intersections of operational significance along arterials connecting neighboring urban centers and cities that are sources for Project staffing and materials, (3) identification of collector roadways that provide those connections between arterial level facilities and local roadways, and (4) identification of lower functional classification roadways, such as Carpenter Lane, that provide direct access and that will experience daily traffic associated with the Project. This traffic impact analysis includes the following elements:

- Project Description
- Inventory and Existing Conditions Analysis
- Traffic Safety Analysis
  - Collision Analysis
  - Sight Distance Evaluation
  - Site Access Evaluation
- Traffic Data Analysis

- 2022 Existing Traffic Volumes
- Background Growth Rate
- Site-Generated Trips
- 2040 Background Traffic Volumes (No-Build)
- 2040 Total Traffic Volumes (Buildout)

- Traffic Impact Analysis
- Warrant Analysis
- Parking and Circulation Study
- Results

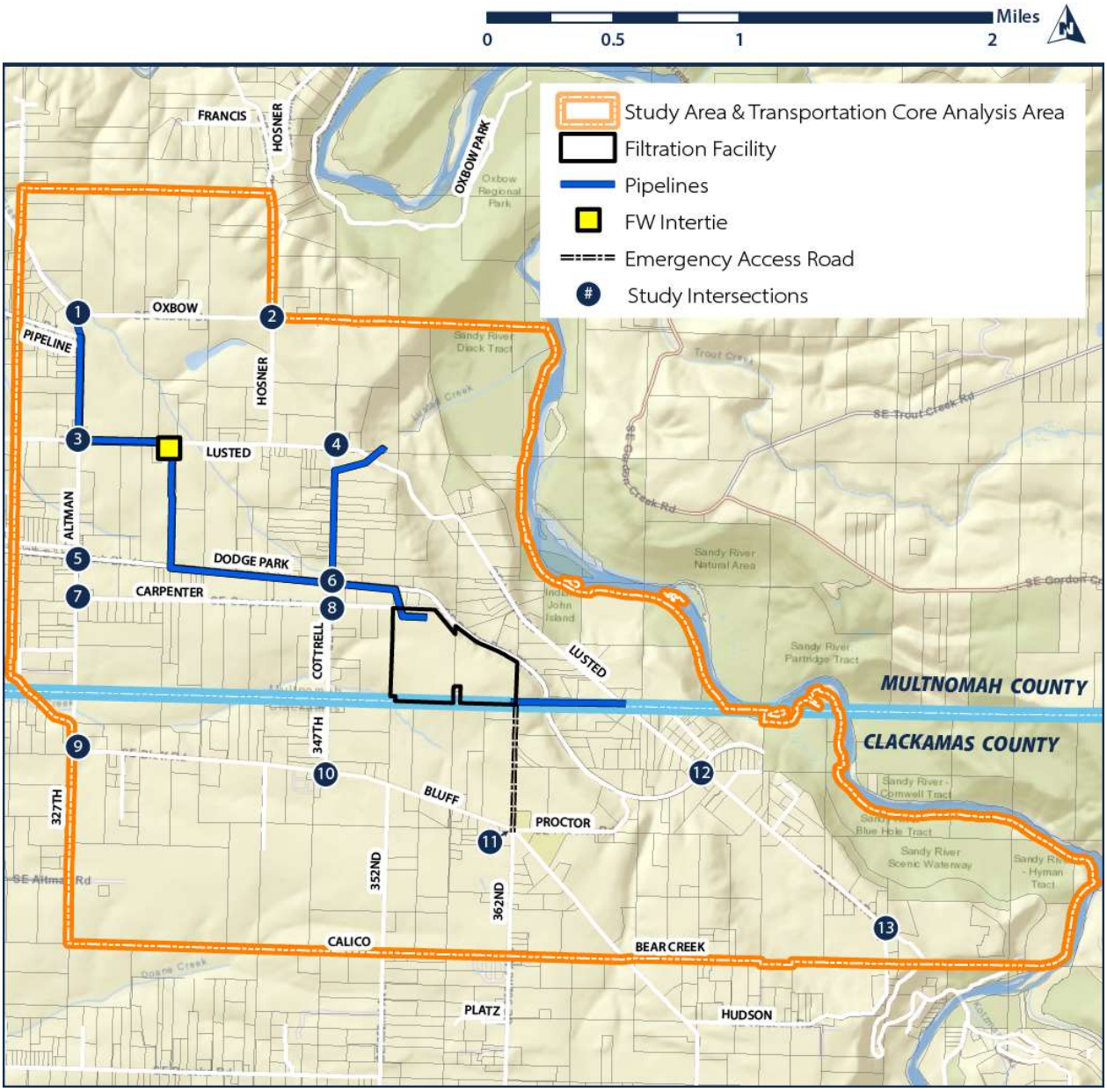

Figure 1: Project Study Area and Vicinity Map

PROJECT DESCRIPTION

The filtration facility site is located on the property bounded by SE Carpenter Lane to the north, SE Dodge Park Boulevard to the northeast, and private property in Clackamas County to the east, south, and west. The site is located in Multnomah County. This Project was approved by the Portland City Council to meet state and federal treatment requirements for *Cryptosporidium*. The filtration facility is anticipated to be operational by September 30, 2027. Figure 1 shows the Project vicinity map, study area, filtration facility site, proposed pipeline routes, proposed finished water intertie location, and proposed emergency access road.

INVENTORY AND EXISTING CONDITIONS ANALYSIS

Roadway functional classification and existing transportation facilities were reviewed along SE Oxbow Drive, SE Hosmer Road, SE Lusted Road, SE Carpenter Lane, SE Dodge Park Boulevard, SE Altman Road, SE Cottrell Road, SE Bluff Road, and SE Proctor Road within the study area. All modes of travel including pedestrians, bicycles, transit, and motor vehicles were evaluated. This includes the modes of travel identified by local businesses and residents as important. The inventory and existing conditions collected are summarized in Table 1. Table 1 shows that no available sidewalks, bike lanes, on-street parking, or transit routes are identified on roadways within the study area. SE Dodge Park Boulevard, Cottrell Road, Bluff Road, and Altman Road have been designated as freight routes with no restrictions on size of trucks in the Multnomah County Transportation System Plan. No roadway within the study area (defined in Figure 1) has been designated as a freight route in the Clackamas County Transportation System Plan.

Table 1: Existing Conditions Within Study Area

Roadway	Functional Classification	Posted Speed Limit	Average Annual Daily Traffic[d]	Sidewalks	Bike Lanes	Lane Geometry	On-Street Parking	Transit Route
SE Oxbow Drive	Collector[a]	55 mph[c]	2,160	None	None	One 11-13 ft. travel lane in each direction.	None	None
SE Hosner Road	Local[a]	55 mph[c]	1,320	None	None	One 11-13 ft. travel lane in each direction.	None	None
SE Lusted Road	Collector[a]	45 mph	1,250	None	None	One 11-13 ft. travel lane in each direction.	None	None
SE Carpenter Lane	Local[a]	25 mph	180	None	None	16-20 ft. cross-section.	None	None
SE Dodge Park Boulevard	Collector[a]	55 mph[c]	1,340	None	None	One 11-13 ft. travel lane in each direction.	None	None
SE Altman Road	Local[a]	55 mph[c]	1,280	None	None	~ 18 ft. cross-section on north of SE Bluff Rd; one 11 ft. travel lane in each direction on south of SE Bluff Rd.	None	None
SE Cottrell Road	Local[a]	55 mph[c]	590	None	None	~ 24 ft. cross-section.	None	None
SE Bluff Road	Collector[a] / Minor Arterial[b]	45 mph	2.700	None	None	One 11 ft. travel lane in each direction	None	None
SE Proctor Road	Minor Arterial[b]	55 mph[c]	920	None	None	~ 20 ft. cross-section with one travel lane in each direction.	None	None
SE Hudson Road	Collector[b]	55 mph[c]	410	None	None	~ 20 ft. cross-section with one travel lane in each direction.	None	None

[a] Based on Multnomah County Transportation System Plan
[b] Based on Clackamas County Road Functional Classification Map
[c] No posted speed limit along the roadway. 55 mph is assumed based on statutory speed limits established by ODOT for open rural highways. However, roadway is subject to the "Basic Speed Rule". https://www.oregon.gov/ODOT/Engineering/Pages/Speed-Zones.aspx.
[d] Based on traffic count data collected in 2022.

TRAFFIC SAFETY ANALYSIS

Crash Analysis

Crash data for a five-year period from January 2016 through December 2020 was obtained from the Oregon State Department of Transportation Crash Data System.[1] This data was reviewed to identify traffic safety concerns at each study intersection. A copy of the crash data is included in Appendix A.

The crash rates presented in Table 2 are based on the number of crashes per million entering vehicles (CMEV). Typically, an intersection requires further investigation to determine if there are mitigable crash patterns if the crash rate exceeds the threshold of 1.0 CMEV.

Table 2: Crash Data Analysis Summary

Location	Crash History (Years)	Number of Crashes	Crashes per year	Annual Traffic Entering (veh/yr)	CMEV
1. SE Oxbow Drive / SE Altman Road	5	2	0.4	788,400	0.507
2. SE Oxbow Dr / SE Hosner Rd / SE Homan Rd		0	0	492,750	0
3. SE Lusted Road / SE Altman Road		6	1.2	755,550	**1.588**
4. SE Lusted Road / SE Cottrell Road		0	0	368,650	0
5. SE Dodge Park Boulevard / SE Altman Road		1	0.2	740,950	0.270
6. SE Dodge Park Boulevard / SE Cottrell Road		0	0	339,450	0
7. SE Carpenter Lane / SE Altman Road		0	0	354,050	0
8. SE Carpenter Lane / SE Cottrell Road		0	0	197,100	0
9. SE Bluff Road / SE Altman Road		0	0	107,310	0
10. SE Bluff Road / SE Cottrell Road		0	0	985,500	0
11. SE Bluff Road / SE Proctor Road		8	1.6	919,800	**1.740**
12. SE Dodge Park Boulevard / SE Lusted Road		0	0	302,950	0
13. SE Lusted Road / SE Hudson Road		0	0	313,900	0

Table 2 shows that the study intersections of SE Lusted Road / SE Altman Road and SE Bluff Road / SE Proctor Road already exceed the 1.0 CMEV safety threshold. A detailed investigation into the crash data at both intersections was conducted to determine if there are any patterns in the crash data that may support possible changes in traffic control, geometric design, or site characteristics to mitigate the reported collisions.

At SE Lusted Road / SE Altman Road, five of the six crashes were angle-type collisions, and the other crash was a turning movement collision. No directional patterns were found among the angle-type collisions. No crashes resulted in reports of fatalities. One crash resulted in a report of serious injuries where one vehicle failed to yield the right of way at the intersection and struck another vehicle. For all crashes, the errors and causes listed in the crash results included failure to yield the right-of-way and disregarded traffic control. No time of day or weather conditions patterns were found for any of the crashes. Therefore, no mitigable crash patterns were found, and as such no mitigation is recommended at SE Lusted Road / SE Altman Road.

At SE Proctor Road / SE Bluff Road, three of the eight crashes were fixed-object collisions, three were rear-end collisions, one was a turning movement collision, and one was an angle-type collision. No crashes resulted in reports of serious injuries or fatalities. No time-of-day or weather condition patterns

[1] https://zigzag.odot.state.or.us/uniquesig08615cf883bed667d26bcec3a7dc5c6b/uniquesig0/SecurezigzagPortalHomePage/

were found. The three rear-end collisions occurred between vehicles moving east to west. The crash causes are listed as inattention and failure to avoid the vehicle in front. The low number of crashes does not suggest a mitigable crash pattern. The other crash types were evaluated and found to be caused by vehicles exceeding the speed limit, driving too fast for conditions, and failure to yield the right of way. No directional patterns were found for these crash types and as such no mitigation is recommended. Furthermore, the intersection was reconfigured in mid to late 2019 to remove the Oregon Trail Academy access that connected into the north side of the intersection. The Oregon Trail Academy access is now restricted onto SE Proctor Road east of the intersection. This improvement has changed geometric conditions and crash potential at the intersection. Further evaluation of this intersection based on crash data is not recommended as part of this study as crash history data with the current geometric configuration is not available.

Sight Distance Evaluation

Filtration Facility

Intersection sight distance (ISD) for the north and south proposed access points for the filtration facility site were evaluated based on the American Association of State Highway and Transportation Official's (AASHTO) standards. The sight distance measurement assumes stop control operations at the proposed site accesses when leaving the site. The two proposed accesses and their locations, shown in Figure 2, include:

- North Access Point (primary) – Carpenter Lane
- South Access Point (emergency[2]) – Bluff Road

Sight distance was compared with AASHTO Intersection Sight Distance for the following cases:

- Case B1 - Left Turn from the proposed access[3]
- Case B2 - Right Turn from the proposed access[4]

Stopping sight distance (SSD) for each proposed access was compared to the AASHTO Design Standards[5] for the following directions:

- SSD Eastbound Direction - Traffic approaching along SE Carpenter Lane and Bluff Road
- SSD Westbound Direction - Traffic approaching along SE Carpenter Lane and Bluff Road

The following speed limits were used in the analysis: 25-mph and 50-mph posted speed were assumed for the accesses at Carpenter Lane and Bluff Road, respectively. Although the posted speed along Bluff Road is 45 mph, Clackamas County utilizes the posted speed plus 5 mph for sight distance evaluations.[6]

Sight distance was evaluated in the field for all study intersections. At the proposed access points, there are no existing roadside features that are anticipated to impact sight distance at the intersections

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[2] The southern emergency access point will be used for emergency vehicles and maintenance when the primary access is not reasonably available.
[3] AASHTO, Case B1 – Intersections with stop control on the minor road (AASHTO, Case B1, Table 9-6).
[4] AASHTO, Case B2 – Intersections with stop control on the minor road (AASHTO, Case B2, Table 9-8).
[5] AASHTO Stopping Sight Distance, Table 3-1.
[6] Clackamas County Roadway Standard, Section 250.1.2.c.2

and there is currently no known intersection or stopping sight distance deficiencies within the study area. The sight distance evaluation is summarized in Table 3.

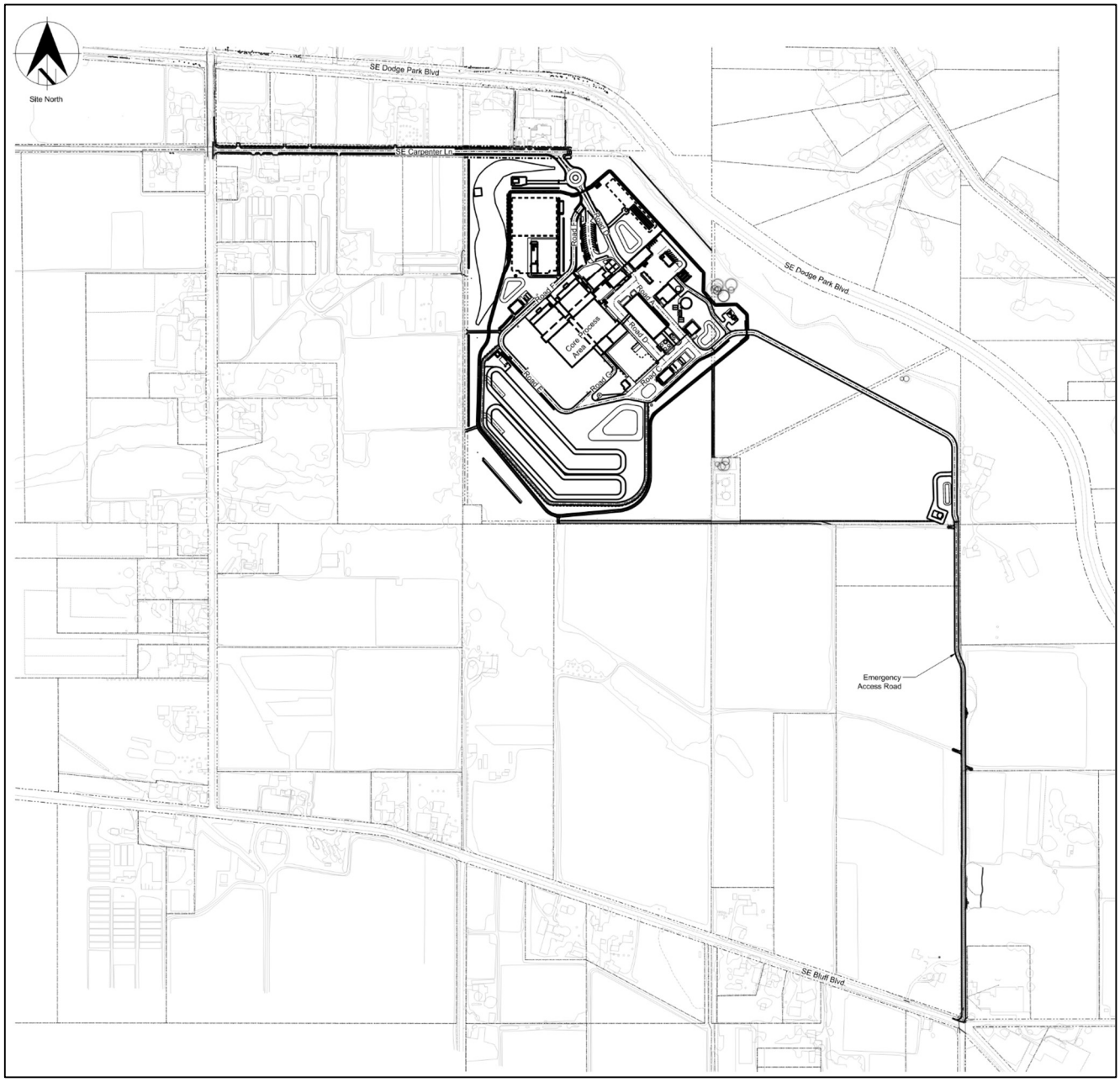

Figure 2: Site Plan

Table 3: Sight Distance Evaluation Results

Location	Posted Speed Limit	Sight Distance Evaluated	Estimated Available Sightline (ft)		Sight Distance Standards (ft)	Meets Standard?
SE Carpenter Lane	25 mph	Case B1: Left-turn	To the left	>280	280	Yes
			To the right	>280	280	Yes
		Case B2: Right-turn	>240		240	Yes
		SSD EB Direction	>155		155	Yes
		SSD WB Direction	>155		155	Yes
SE Bluff Road	50 mph	Case B1: Left-turn	To the left	>555	555	Yes
			To the right	>555	555	Yes
		Case B2: Right-turn	>480		480	Yes
		SSD EB Direction	>425		425	Yes
		SSD WB Direction	>425		425	Yes

Intertie Access

Intersection sight distance (ISD) for the access to the finished water intertie facility on SE Lusted Road (see Figure 1 for location) was evaluated based on the same AASHTO standards as the filtration facility site accesses. The sight distance measurement assumes stop control operations at the proposed site access when leaving the intertie site. Details of the proposed finished water intertie access are shown in the Pipeline Drawings provided in Appendix A.2 of PWB's land use application. Sight distance was compared with AASHTO Intersection Sight Distance for the following cases:

- Case B1 - Left Turn from the proposed access[7]
- Case B2 - Right Turn from the proposed access[8]

Stopping sight distance (SSD) for the proposed access was compared to the AASHTO Design Standards[9] for the following directions:

- SSD Eastbound Direction - Traffic approaching along SE Lusted Road
- SSD Westbound Direction - Traffic approaching along SE Lusted Road

The proposed access point intersects a segment of SE Lusted Road on a grade between 4% and 6%. For a conservative analysis, a 6% grade was used in the stopping sight distance analysis. The posted speed limit on SE Lusted Road of 45 mph was used for the evaluation. Based on these factors, a SSD standard of 400 feet for eastbound vehicles and 331 feet for westbound vehicles was used in the analysis per AASHTO calculations for SSD on grades. AASHTO standards and calculations for ISD are not impacted by grades. At the proposed access point, there are no existing roadside features that are anticipated to impact sight distance in either direction and there are no known intersection or stopping sight distance deficiencies. The sight distance evaluation is summarized in Table 4.

[7] AASHTO, Case B1 – Intersections with stop control on the minor road (AASHTO, Case B1, Table 9-6).
[8] AASHTO, Case B2 – Intersections with stop control on the minor road (AASHTO, Case B2, Table 9-8).
[9] AASHTO Stopping Sight Distance, Table 3-1.

Table 4: Intertie Access Sight Distance Evaluation Results

Location	Posted Speed Limit	Sight Distance Evaluated	Estimated Available Sightline (ft)		Sight Distance Standards (ft)	Meets Standard?
SE Lusted Road	45 mph	Case B1: Left-turn	To the left	690	500	Yes
			To the right	>1,000	500	Yes
		Case B2: Right-turn	690		430	Yes
		SSD EB Direction	620		400	Yes
		SSD WB Direction	>1,000		331	Yes

Site Access Evaluation

A field evaluation was conducted at both proposed filtration facility site accesses to determine the existing roadway characteristics and to identify improvements for operations and safety. The Project has incorporated and will include all of the resulting recommended improvements for operations and safety, namely:

- Access on SE Carpenter Lane (primary)
  - Under existing conditions, this roadway has a low speed limit with residences present. Suggest Multnomah County post the speed limit to encourage retention of slower speeds.
  - Minimal pavement markings are present. Pavement marking improvements should be applied at the proposed access point and the intersections of SE Carpenter Lane / Cottrell Road and SE Dodge Park Boulevard / Cottrell Road to better define intersection geometry.
  - Structural upgrades are necessary to both SE Carpenter Lane and SE Cottrell Road to accommodate an increase in truck trips associated with the ongoing filtration facility operations.
  - Turn radii have been evaluated and intersection improvements included at the site access, SE Carpenter Lane / SE Cottrell Road, and SE Dodge Park Boulevard / SE Cottrell Road, to ensure trucks can be safely accommodated.[10]
- Access on SE Bluff Road (emergency)
  - SE Bluff Road would support site traffic for emergencies and maintenance when the primary access from Carpenter Lane is not reasonably available. Other than at the access point, no improvements are required to the roadway.
  - This will require a new access and an easement from the filtration facility site to SE Bluff Road. The access will be designed to meet current Clackamas County Design Standards and meet fire code requirements for the filtration facility site.

No further roadway geometric concerns were found that require mitigation in the study area.

TRAFFIC DATA ANALYSIS

2022 Existing Traffic Volumes

Manual turn movement counts were collected at study intersections during a typical weekday for the AM peak period of 7:00 AM to 9:00 AM and the PM peak period of 4:00 PM to 6:00 PM on February

[10] Bull Run Filtration Facility drawings

23rd, 2022.[11] Figure 3 shows the existing traffic volumes, traffic operations, and lane configurations at the identified intersections within the study area.

Historic count data from 2019 was available for 7 of the 13 study intersections. The count data collected in 2022 was compared to this historic data to determine if the COVID-19 pandemic had significantly changed traffic patterns in the area, and whether the 2022 count data should be adjusted to reflect the impacts of the pandemic on traffic patterns. Some of the intersections showed a drop of up to 10% in the total number of vehicles moving through the intersection between 2019 and 2022. The count comparison, however, showed that many of the main arterial and collector level roadway commuter route volumes remained relatively consistent for both count periods, and some intersection volumes increased between 2019 and 2022. Because the data did not indicate that the COVID-19 pandemic had either a consistent or significant effect on traffic patterns in the area, changes in volumes between the two count periods would present negligible differences in the capacity analysis and for the sake of a consistent time frame across the study intersections, the 2022 volumes were used in the existing conditions analysis, unaltered. Historical and 2022 traffic count data are included in Appendix B.

Background Growth Rate

A 2% annual background traffic growth rate was assumed in this analysis.[12] This growth rate was used to forecast future 2040 background and 2040 total traffic conditions at study intersections.

Site-Generated Trips

The Project will add new vehicle traffic to the local transportation network. Trips that may be generated by the filtration facility site during the AM and PM peak periods include PWB staff (operators and maintenance crew), chemical deliveries, and solids off-hauling.

Additional infrequent trips generated by the filtration facility site include tours and fleet vehicles. Additional infrequent trips generate by the pipelines include maintenance staff visits to pipeline appurtenances and the finished water intertie. Tour trips are anticipated to be infrequent and not add daily traffic to the transportation network. Tours are expected to occur outside of the peak commute hours and use higher occupancy vehicles such as a van or bus[13]. PWB staff trips to check on pipeline appurtenances are estimated at once per month. Staff visits to the intertie as part of their routine duties are anticipated to be once per week. To account for these infrequent trips, a conservative assumption of one site-generated trip (entering and exiting the site) was added to each peak hour for the analysis.

Table 5 summarizes an estimate of site-generated trips. Entering and exiting percentages were based on *ITE Trip Generation Manual, 10th Edition* - Utility (Code 170) using the number of employees in the calculations. The filtration facility will be staffed by an estimated 26 full-time employees, with a maximum of 10 employees working any individual shift. For a conservative estimate, all 26 employees were accounted for in the trip generation calculations.

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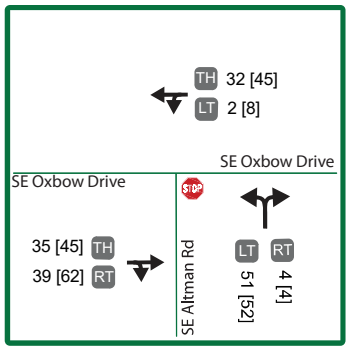
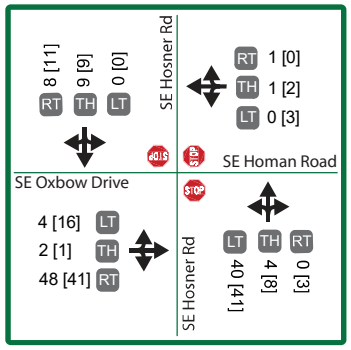
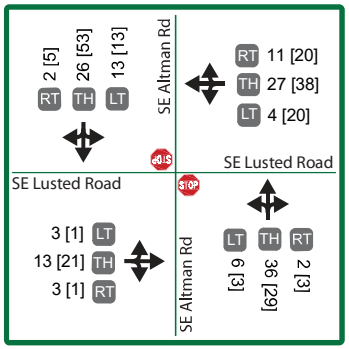
[11] Intersection turn movement counts were conducted by Quality Counts on Wednesday, February 23, 2022.
[12] This was based on Clackamas County Roadway Standards Chapter 295.12 and confirmed by Clackamas County Staff. To provide a consistent growth for all study intersections this standard was applied to both the Multnomah and Clackamas County intersections.
[13] Actual tour times will vary. It is anticipated these will typically be scheduled for time periods after day-shift staff have arrived and are ready to work.



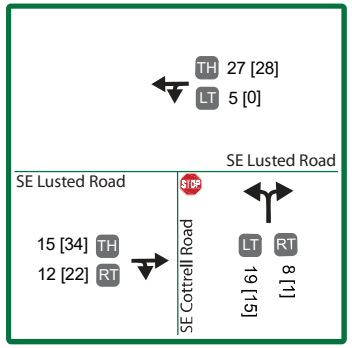
① SE Altman Road at SE Oxbow Drive



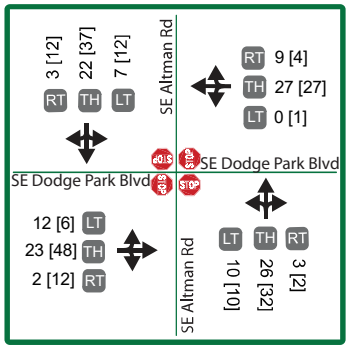
② SE Hosner Road at SE Oxbow Dr / SE Homan Rd



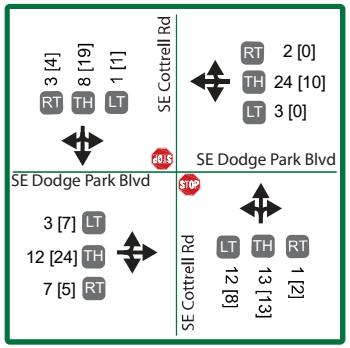
③ SE Altman Road at SE Lusted Road



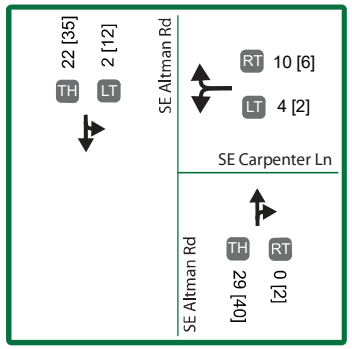
④ SE Cottrell Road at SE Lusted Road



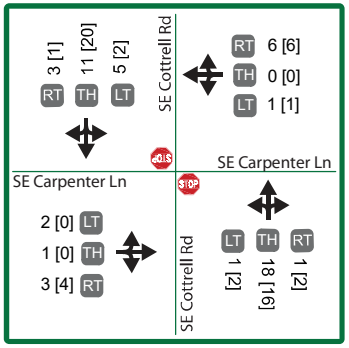
⑤ SE Altman Road at SE Dodge Park Boulevard



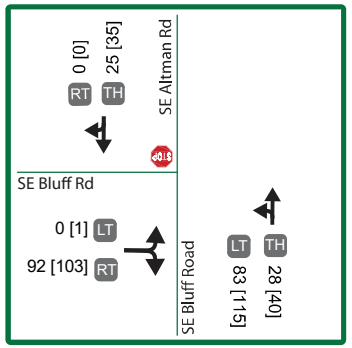
⑥ SE Cottrell Road at SE Dodge Park Boulevard



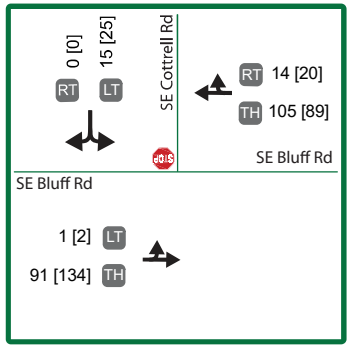
⑦ SE Altman Road at SE Carpenter Lane



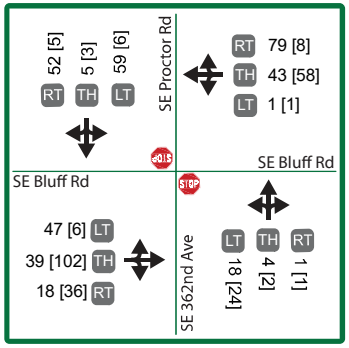
⑧ SE Cottrell Road at SE Carpenter Lane



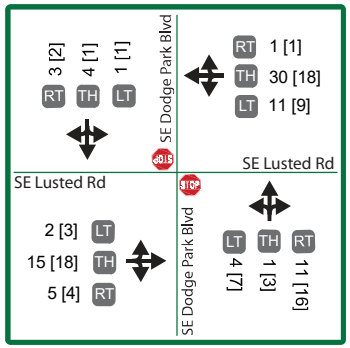
⑨ SE Altman Road at SE Bluff Road



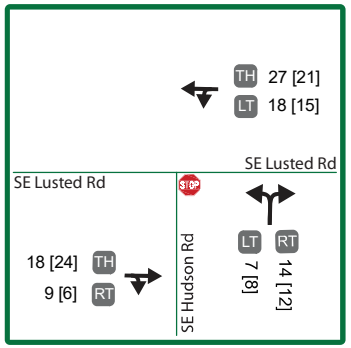
⑩ SE Cottrell Road at SE Bluff Road



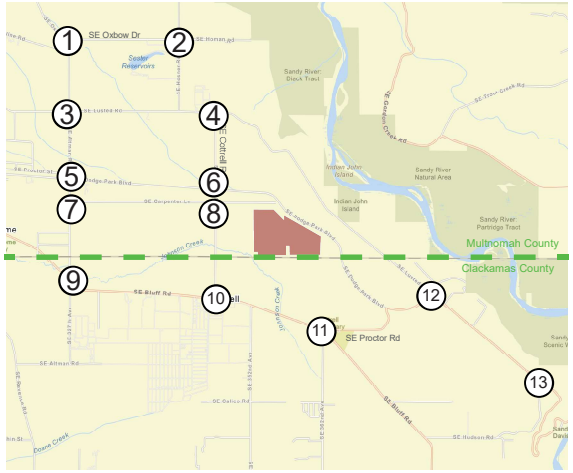
⑪ SE Bluff Road at SE Proctor Road



⑫ SE Dodge Park Boulevard at SE Lusted Road



⑬ SE Hudson Road at SE Lusted Road



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Ⓧ = Study Intersection ↰ = Lane Configuration STOP Stop Sign

LT TH RT = Left / Through / Right Turn

AM [PM] = Peak Hour Traffic Volumes

Figure 3: Traffic Volumes
2022 Existing Conditions

The filtration facility will see a maximum of 16 chemical delivery trucks entering and exiting the site during a 5-day work week[14] and a maximum of 9 solids haul-off trucks entering and exiting the site during a 5-day work week[15]. Combined, this amounts to 25 trips per week. As chemical delivery and solids haul-off schedules may vary, it is estimated that these 25 trips will distribute evenly across the week, which would equate to five truck trips per day entering and exiting the site. For a conservative analysis, these five trips were modeled as entering and exiting the site during each of the peak hours.

Details of chemical delivery and solids off-hauling truckload estimates are included in Appendix C.

Table 5: Trip Generation Summary

Description	Anticipated Daily Site-generated Trips on Weekday						
	AM Peak Hour			PM Peak Hour			Daily
	Enter	Exit	Total	Enter	Exit	Total	Total
PWB Staff [a]	16	4	20	4	16	20	100
Tours/Pipeline & Intertie Maintenance	1	1	2	1	1	2	4
Chemical Delivery & Solids Off-hauling	5	5	10	5	5	10	20
Total	32			32			124

[a] 80% of trips will enter the site and 20% of trips will exit the site during the AM peak hours. 20% of trips will enter the site and 80% of trips will exit the site during the PM peak hours.

As summarized in Table 5, it is conservatively estimated that 32 AM peak hour trips and 32 PM peak hour trips will be added to the local transportation network. These peak hour trips were included in the future traffic volumes for the future conditions analysis. All peak hour site trips were modeled as entering and exiting the site from the primary access point on SE Carpenter Lane.

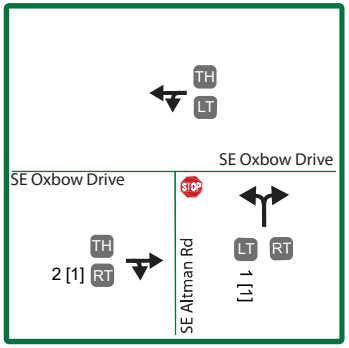
Site-generated trips are expected to use SE Dodge Park Boulevard and SE Bluff Road since these roadways have wider lane widths, are classified as collectors, provide connections to US 26, and are County-designated truck routes. Bluff Road provides direct access into the City of Sandy. The site trip distribution was developed based on historical traffic count data and turn movement ratios. Approximately 70% of trips are modeled to travel to and from the west toward the Portland metro area and approximately 30% of trips are modeled to travel to and from the east toward the City of Sandy. The trip assignments are presented in Figure 4. The distribution of trips is higher towards the larger Portland metropolitan area because it has a higher employment base and is the base for many of the Project's chemical suppliers.

This analysis determined that no site-generated trips will distribute through the following intersections:

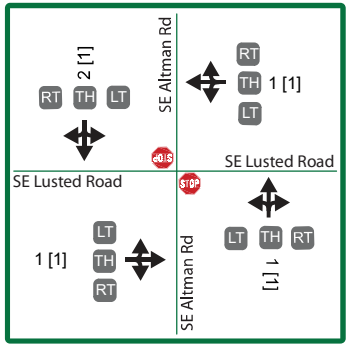
- SE Hosner Road / SE Oxbow Drive
- SE Altman Road / SE Carpenter Lane
- SE Altman Road / SE Bluff Road
- SE Dodge Park Boulevard / SE Lusted Road
- SE Hudson Road / SE Lusted Road

However, intersection performance evaluations were nevertheless conducted in this analysis for those intersections.

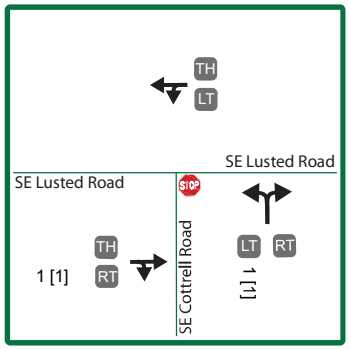
[14] Delivery estimates provided by designer on October 13, 2021, excerpt provided in Appendix C.
[15] Bull Run Treatment Projects, Filtration, *Final Basis of Design Report*, May 2021, Stantec, excerpt provided in Appendix C.



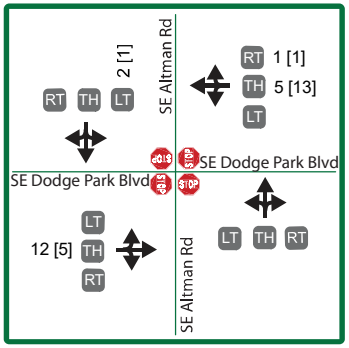
① SE Altman Road at SE Oxbow Drive



③ SE Altman Road at SE Lusted Road



④ SE Cottrell Road at SE Lusted Road



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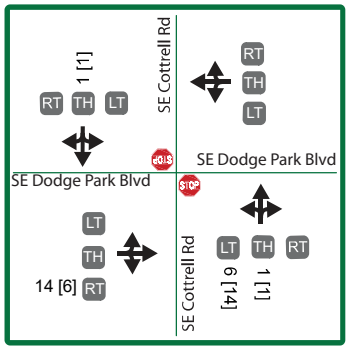
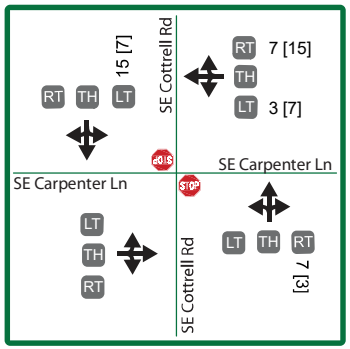
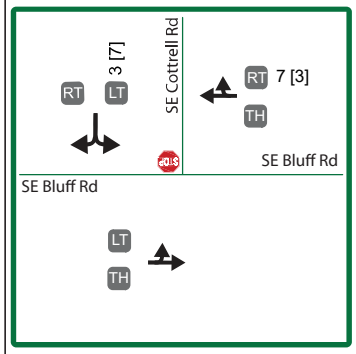


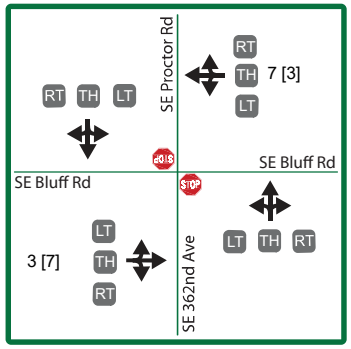
⑥ SE Cottrell Road at SE Dodge Park Boulevard



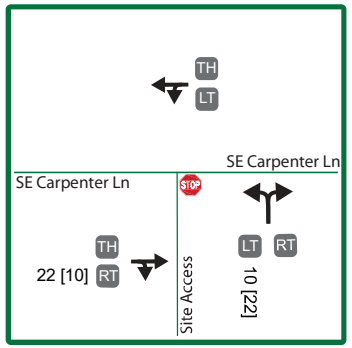
⑧ SE Cottrell Road at SE Carpenter Lane



⑩ SE Cottrell Road at SE Bluff Road



⑪ SE Bluff Road at SE Proctor Road



Ⓐ SE Carpenter Lane at Site Access

*Based on the turning movement count data at the study intersections, site generated trips are not anticipated to distribute through intersections 2, 7, 9, 12, and 13.

GLOBAL Transportation Engineering

Ⓧ = Study Intersection ↰ = Lane Configuration STOP Stop Sign

LT TH RT = Left / Through / Right Turn

AM [PM] = Peak Hour Traffic Volumes

Figure 4: Traffic Volumes Site Trip Distribution

2040 Background Traffic Volumes (No-build)

To develop a future base scenario, 2040 background traffic volumes were developed. The 2040 background traffic volumes are the summation of the existing volumes plus background traffic growth. The background traffic growth was estimated by applying a 2% annual growth rate to existing volumes for the study area. The 2040 background traffic volumes are presented in Figure 5.

2040 Total Traffic Volumes (Buildout)

To evaluate future 2040 traffic operations, 2040 total traffic volumes were developed. The 2040 total traffic volumes are the summation of the existing volumes, plus annual background traffic growth at the same 2% annual growth rate, plus the site-generated traffic. The 2040 total traffic volumes are presented in Figure 6.

TRAFFIC IMPACT ANALYSIS

Intersection Performance

An intersection performance analysis was conducted for study intersections to determine the expected traffic operating conditions once the Project is operational. The AM peak (7:00 PM to 9:00 AM) and PM peak (4:00 PM to 6:00 PM) periods were analyzed for the study intersections. The intersection Level of Service (LOS)[16] was analyzed based on procedures described in the Highway Capacity Manual 2000 (HCM).

The Multnomah County Design Standards specify that facilities shall be designed to accommodate LOS C or better during the design hour in rural areas.[17] Both the AM and PM peak hours were evaluated as design hours for the Project. The Clackamas County Comprehensive Plan utilizes LOS E or better for unsignalized intersections in rural areas (which describes all of the study intersections in Clackamas County) during AM and PM peak hours.

The study area intersections were evaluated for the following scenarios:

- 2022 Existing Conditions
- 2040 Background Traffic Conditions (No-build)
- 2040 Total Traffic Conditions (Buildout)

Synchro software (Version 9.0) was used to determine the stop delay for vehicles, LOS, and volume to capacity (v/c) ratio for each scenario considered. The v/c ratio is a conventional level-of-service measure for roadways, comparing vehicle volumes on a roadway with the roadway's carrying capacity. Since the SE Proctor Road / Bluff Road intersection is a five-leg intersection, Synchro is unable to process this atypical geometry design. As the fifth leg serves only to provide emergency access, there will only be an occasional vehicle there that will not impact intersection operations. Therefore, the Synchro model was developed as a four-leg intersection which will reflect how the intersection operates on a normal basis.

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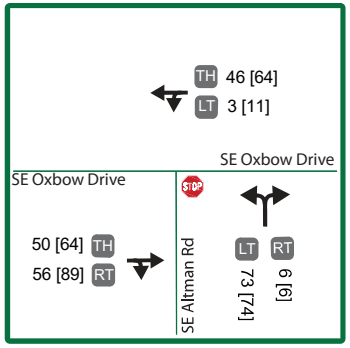
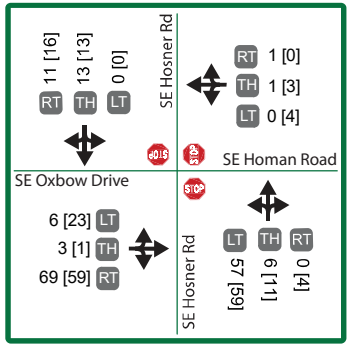
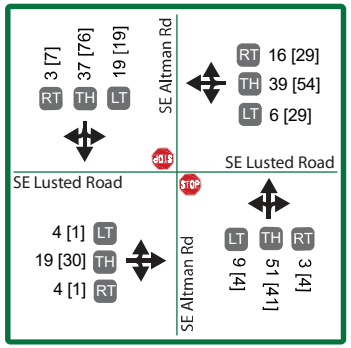
[16] Level of Service definitions are provided in Appendix D.
[17] Multnomah County Design Standards, Section 1.1.5



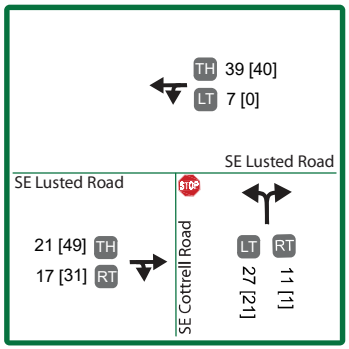
① SE Altman Road at SE Oxbow Drive



② SE Hosner Road at SE Oxbow Dr / SE Homan Rd



③ SE Altman Road at SE Lusted Road



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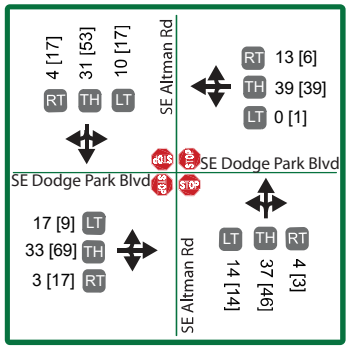
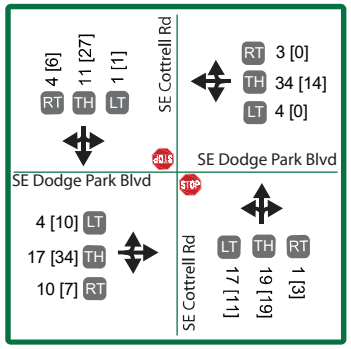


⑤ SE Altman Road at SE Dodge Park Boulevard



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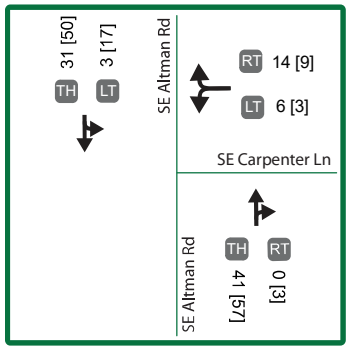
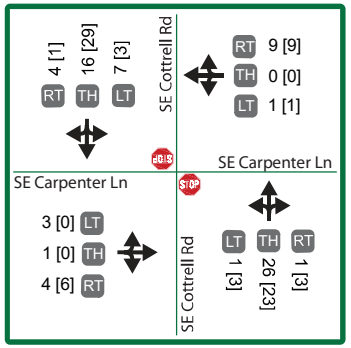
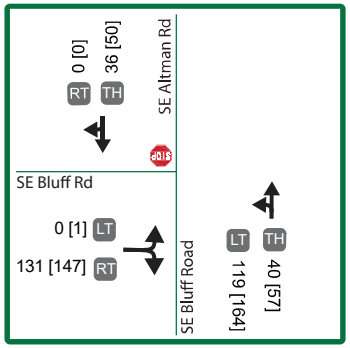


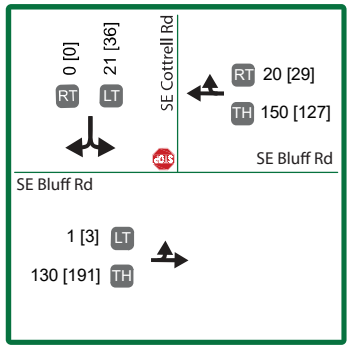
⑦ SE Altman Road at SE Carpenter Lane



⑧ SE Cottrell Road at SE Carpenter Lane



⑨ SE Altman Road at SE Bluff Road



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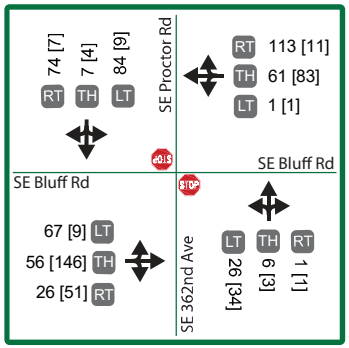
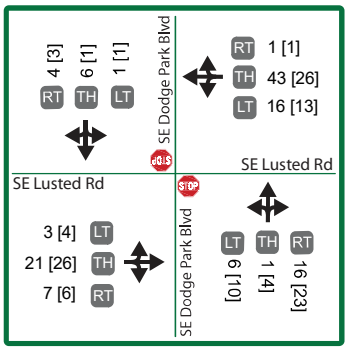
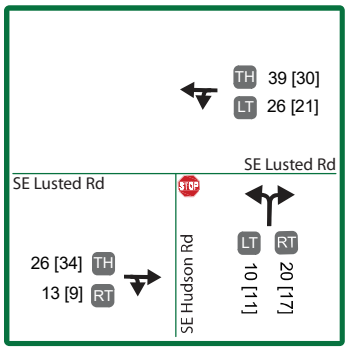


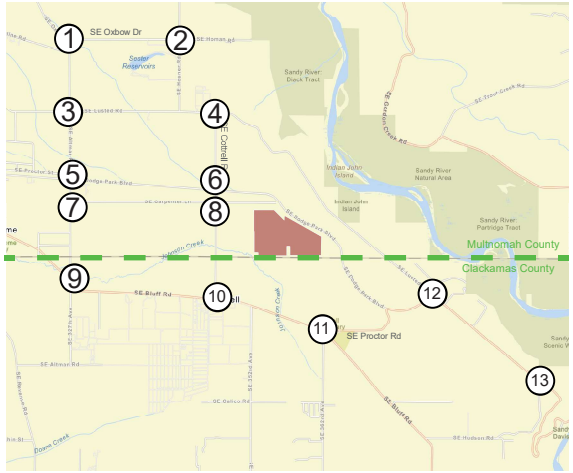
⑪ SE Bluff Road at SE Proctor Road



⑫ SE Dodge Park Boulevard at SE Lusted Road



⑬ SE Hudson Road at SE Lusted Road



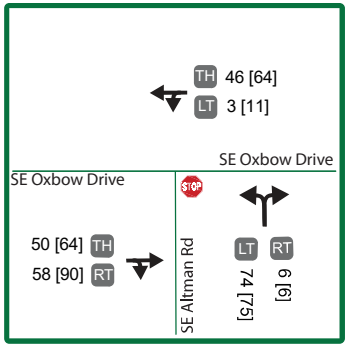
GLOBAL Transportation Engineering

Ⓧ = Study Intersection ↰ = Lane Configuration STOP Stop Sign

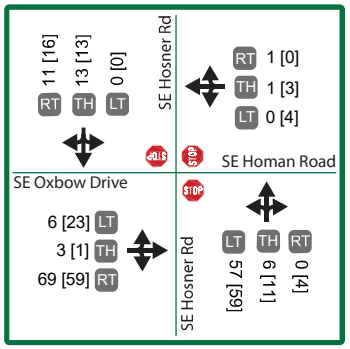
LT TH RT = Left / Through / Right Turn

AM [PM] = Peak Hour Traffic Volumes

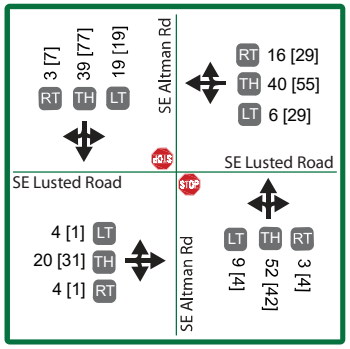
Figure 5: Traffic Volumes
2040 No-Build Conditions



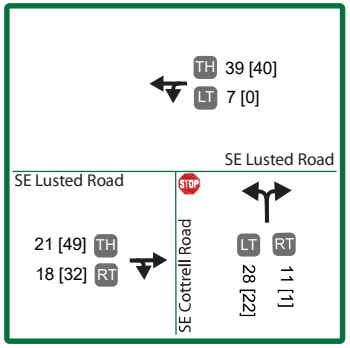
① SE Altman Road at SE Oxbow Drive



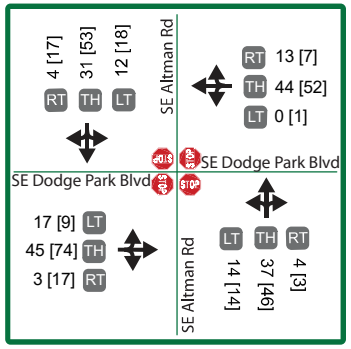
② SE Hosner Road at SE Oxbow Dr / SE Homan Rd



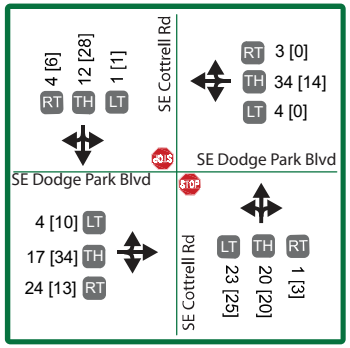
③ SE Altman Road at SE Lusted Road



④ SE Cottrell Road at SE Lusted Road



⑤ SE Altman Road at SE Dodge Park Boulevard



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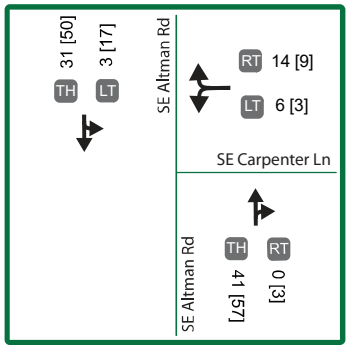
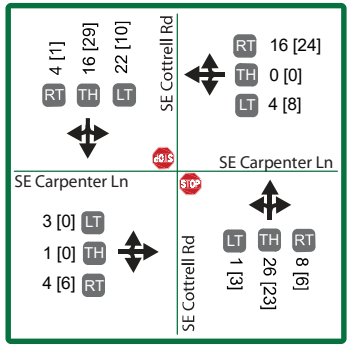


⑦ SE Altman Road at SE Carpenter Lane



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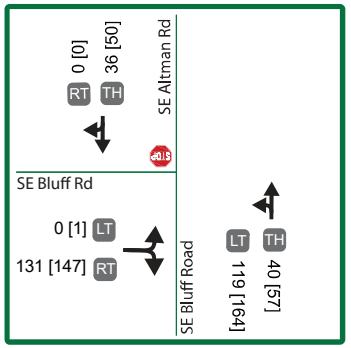

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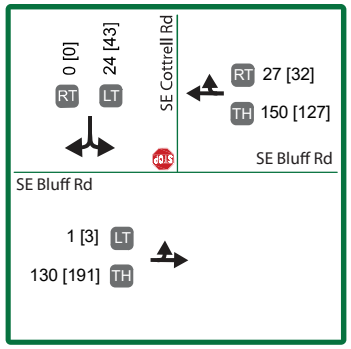
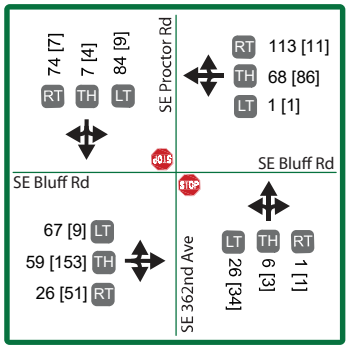
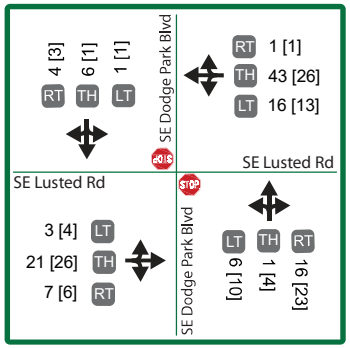


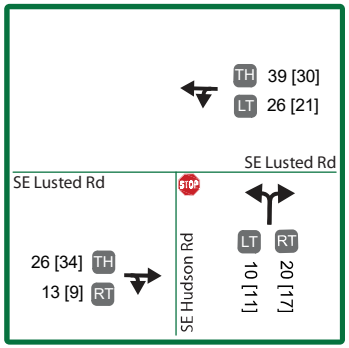
⑩ SE Cottrell Road at SE Bluff Road



⑪ SE Bluff Road at SE Proctor Road



⑫ SE Dodge Park Boulevard at SE Lusted Road



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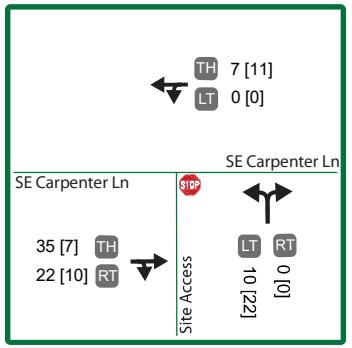
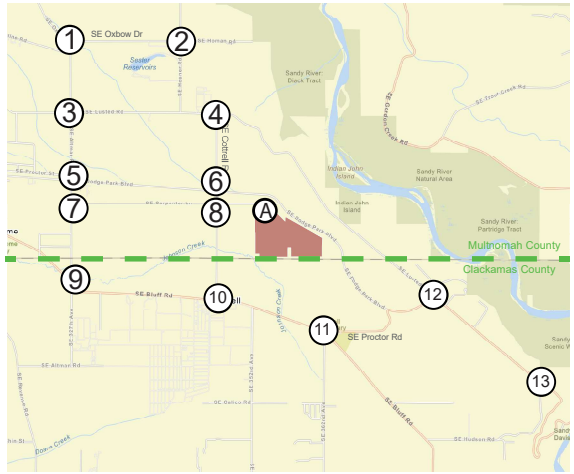


Ⓐ SE Carpenter Lane at Site Access



GLOBAL Transportation Engineering

Ⓧ = Study Intersection ↰ = Lane Configuration STOP Stop Sign

LT TH RT = Left / Through / Right Turn

AM [PM] = Peak Hour Traffic Volumes

Figure 6: Traffic Volumes
2040 Buildout Conditions

Table 6 summarizes the 2022 existing traffic conditions and 2040 background traffic conditions. All intersections under both scenarios operate well within standards at a Level of Service B or better. Detailed analysis results are included in Appendix D.

Table 6: Intersection Performance Summary - 2022 Existing and 2040 Background Conditions

Intersection	Peak Hour	2022 Existing Conditions			2040 Background Traffic Conditions (No-build)		
		Delay (sec)	LOS	V/C	Delay (sec)	LOS	V/C
SE Oxbow Drive / SE Altman Road	AM	9.5	A	0.08	10.0	A	0.13
	PM	9.5	A	0.07	10.1	B	0.11
SE Oxbow Drive / SE Hosner Road	AM	8.2	A	0.08	8.5	A	0.12
	PM	7.9	A	0.07	8.2	A	0.10
SE Lusted Road / SE Altman Road	AM	9.7	A	0.06	10.1	B	0.09
	PM	10.4	B	0.12	11.4	B	0.18
SE Lusted Road / SE Cottrell Road	AM	9.1	A	0.04	9.3	A	0.05
	PM	9.1	A	0.02	9.3	A	0.03
SE Dodge Park Boulevard / SE Altman Road	AM	7.5	A	0.05	7.6	A	0.07
	PM	7.6	A	0.09	8.1	A	0.14
SE Dodge Park Boulevard / SE Cottrell Road	AM	9.4	A	0.04	9.6	A	0.05
	PM	9.3	A	0.03	9.6	A	0.05
SE Carpenter Lane / SE Altman Road	AM	8.6	A	0.01	8.8	A	0.02
	PM	8.9	A	0.01	9.2	A	0.02
SE Carpenter Lane / SE Cottrell Road	AM	9.2	A	0.01	9.3	A	0.02
	PM	8.5	A	0.01	8.5	A	0.01
SE Bluff Road / SE Altman Road	AM	9.9	A	0.04	10.7	B	0.06
	PM	10.5	B	0.06	11.2	B	0.09
SE Bluff Road / SE Cottrell Road	AM	10.0	A	0.03	10.8	B	0.04
	PM	10.2	B	0.04	11.3	B	0.07
SE Bluff Road / SE Proctor Road	AM	11.3	B	0.16	13.2	B	0.26
	PM	10.3	B	0.04	11.3	B	0.07
SE Dodge Park Boulevard / SE Lusted Road	AM	9.4	A	0.01	9.5	A	0.03
	PM	8.9	A	0.04	9.5	A	0.02
SE Lusted Road / SE Hudson Road	AM	9.0	A	0.03	9.2	A	0.05
	PM	8.8	A	0.03	9.2	A	0.05

Note: Delay, LOS, and V/C reported for the worst minor approach.

Table 7 summarizes intersection performance for the study intersections for the 2040 Total Traffic (Buildout) Scenario. As summarized in the table, all study intersections continue to operate at a Level of Service B or better, well exceeding the standards established by their corresponding jurisdictions under the 2040 Total Traffic (Buildout) conditions.

Table 7: 2040 Total Traffic (Buildout) Scenario Intersection Performance Summary

Intersection	Peak Hour	2040 Total Conditions		
		Delay (sec)	LOS	V/C
SE Oxbow Drive / SE Altman Road	AM	10.0	B	0.13
	PM	10.1	B	0.11
SE Oxbow Drive / SE Hosner Road	AM	8.5	A	0.11
	PM	8.2	A	0.10
SE Lusted Road / SE Altman Road	AM	10.1	B	0.09
	PM	11.4	B	0.19
SE Lusted Road / SE Cottrell Road	AM	9.3	A	0.06
	PM	9.3	A	0.03
SE Dodge Park Boulevard / SE Altman Road	AM	7.8	A	0.09
	PM	8.2	A	0.15
SE Dodge Park Boulevard / SE Cottrell Road	AM	9.7	A	0.06
	PM	9.7	A	0.07
SE Carpenter Lane / SE Altman Road	AM	8.8	A	0.02
	PM	9.2	A	0.02
SE Carpenter Lane / SE Cottrell Road	AM	9.5	A	0.03
	PM	8.8	A	0.05
SE Bluff Road / SE Altman Road	AM	10.7	B	0.06
	PM	11.2	B	0.09
SE Bluff Road / SE Cottrell Road	AM	10.9	B	0.05
	PM	11.4	B	0.08
SE Bluff Road / SE Proctor Road	AM	13.4	B	0.27
	PM	11.5	B	0.07
SE Dodge Park Boulevard / SE Lusted Road	AM	9.5	A	0.03
	PM	9.1	A	0.06
SE Lusted Road / SE Hudson Road	AM	9.2	A	0.05
	PM	9.0	A	0.04
SE Carpenter Lane / Site Access A	AM	8.9	A	0.01
	PM	8.8	A	0.03

WARRANT ANALYSIS

Turn lane warrant analyses were conducted to determine if any turn lanes not currently present at study intersections are warranted based on changes to traffic patterns anticipated with operation of the Project.

Left and Right Turn Lane Warrants

Warrants were evaluated for the unsignalized study intersections and main site access to determine the need for left and right turn lanes. Left turn warrants were analyzed using the Highway Research Board Report 211 and the National Cooperative Highway Research Program Report 279 was utilized for right turn lanes warrants. The warrant analysis was conducted for each access described above. Based on the analysis, turn lane warrants are not met for any of the study intersections or the site access during the 2040 AM or PM peak period. Therefore, no turn lane improvements are recommended for the proposed Project. Detailed turn lane warrant analysis results are included in Appendix E.

Signal Warrants

Traffic signal warrants were not reviewed for any of the unsignalized study intersections, as all intersections operate at LOS B or higher for all analysis scenarios under the existing stop-control conditions. Traffic signal warrants are analyzed when higher traffic volumes and known operational deficiencies are present, neither of which is the case here.

PARKING AND CIRCULATION STUDY

Parking and on-site circulation needs for the filtration facility have been evaluated and meet Multnomah County requirements with the proposed strategies. During normal operation of the filtration facility, traffic will enter and exit the site from the SE Carpenter Lane access, which will be built to accommodate all traffic. The SE Bluff Road access will be built as an auxiliary access for emergency vehicles and maintenance when the primary access is not reasonably available. The SE Bluff Road access will be rarely used and is required for fire code compliance.

Parking and Loading Area Need

In the County's pre-application conference notes (PA 2022 -15566, page 19), County staff confirmed that the use type is not specifically listed and recommended PWB conduct a parking study:

> *"The County recommends a Parking Study be completed and submitted as part of the application to support the number of parking spaces ultimately proposed. The Parking Study should also discuss the loading spaces required for Unspecified Uses [MCC 39.6595(G)].*

Parking Need

Parking counts were developed through collaboration with PWB staff including operators. Staff shift counts, overlaps between shifts, the typical number of visitors expected, operator fleet requirements, LEED (Leadership in Energy and Environmental Design) and Portland Green Building Policy criteria were considered. Based on these considerations, the number, type, and location of parking stalls was determined.

It was determined that a total of 32 parking spaces will meet all the filtration facility's on-site parking needs, including for staff, visitors, and fleet vehicles.

- *Staff Parking (20 spaces)*. Based on the above analysis, 20 staff parking spaces are recommended, two of which are ADA accessible parking spaces, in the main parking area north of the administration building. Note that there will be a maximum of 10 employees per shift. Twenty spaces are enough to account for overlapping parking needs between shifts.
- *Visitor Parking (five spaces).* Based on the limited number of visitors expected to arrive in personal cars, five parking spaces are provided in the main parking area north of the administration building, in the same area as staff parking. ADA spaces will be available for use by visitors as well as by staff.
- *Fleet Vehicle Parking (six spaces).* Based on discussions with PWB, fleet vehicles will be pickup trucks and similarly sized vehicles. Parking for six fleet vehicles is provided within the secure facility perimeter near the maintenance building, behind the equipment storage building. Future electric vehicle charging outlets will be provided.

- *Visitor Bus Parking (one space).* Group educational tours will be conducted in a manner similar to tours of other PWB facilities. Based on current and anticipated practice, group tours will arrive and leave using a tour van or bus. One bus-sized parking space is provided in a pull-out area along Road A, east of the main parking area.
- Electric Golf Cart Parking (seven small spaces). To reduce fossil fuel use, electric golf carts are expected to be used by staff to access on-site facilities. Parking and charging stations for seven carts are provided near the chemical building. These spaces are not included in the parking count.

This parking study projects that 32 parking spaces will more than meet all the filtration facility's on-site parking needs. In addition, electric vehicle charging stations are proposed in the main parking area to meet LEED and Portland Green Building Policy requirements. Stall signage designations for carpooling, etc. will be provided per LEED requirements.

For comparative purposes, the ITE Parking Generation Manual (5th Edition) was also considered in the evaluation of the number of spaces needed to accommodate filtration facility employees. Based on land use code 170 – Utility, the average parking rate for a utility-oriented land use is 0.72 spaces per employee.

- This amounts to an average parking demand of 8 spaces for the largest shift of 10 employees or 16 spaces if an equal number of turnover spaces are provided.
- Alternatively, if all 26 employees are considered, 19 parking spaces would be required.

It is recommended that the filtration facility include 20 staff parking spaces, which is more than sufficient to meet employee parking needs. The Project should include additional parking spaces for visitors and fleet vehicles, for a total of 32 spaces. As shown in Figure 7, the 32 total spaces provided (1) meet the parking need identified in this study and (2) exceed the number of spaces indicated by the ITE Parking Generation Manual.

Loading Space Need

Loading space needs were developed through collaboration with PWB staff including operators and were based on anticipated truck deliveries and solids removal, and visitors arriving by van or bus. Based on this analysis, six loading spaces are needed, all of which must meet the minimum loading area dimensions of 12 feet wide and 25 feet long. These loading spaces are provided in the following areas:

- The bus drop-off area in front of the administration building (which can also function as a delivery area for the administration building)
- A delivery area near the maintenance building
- A delivery area behind the administration building
- Two delivery areas next to the chemical building
- A solids removal area next to the dewatering building.

Parking and Loading Diagram

Figure 7 shows the recommended on-site parking and loading plan. Six spaces are provided behind the security fence for fleet vehicles, and 26 spaces are provided in the parking area in front of the

administration building, for employees, visitors, and the bus. Note that two additional parking spaces are proposed adjacent to the communications tower.

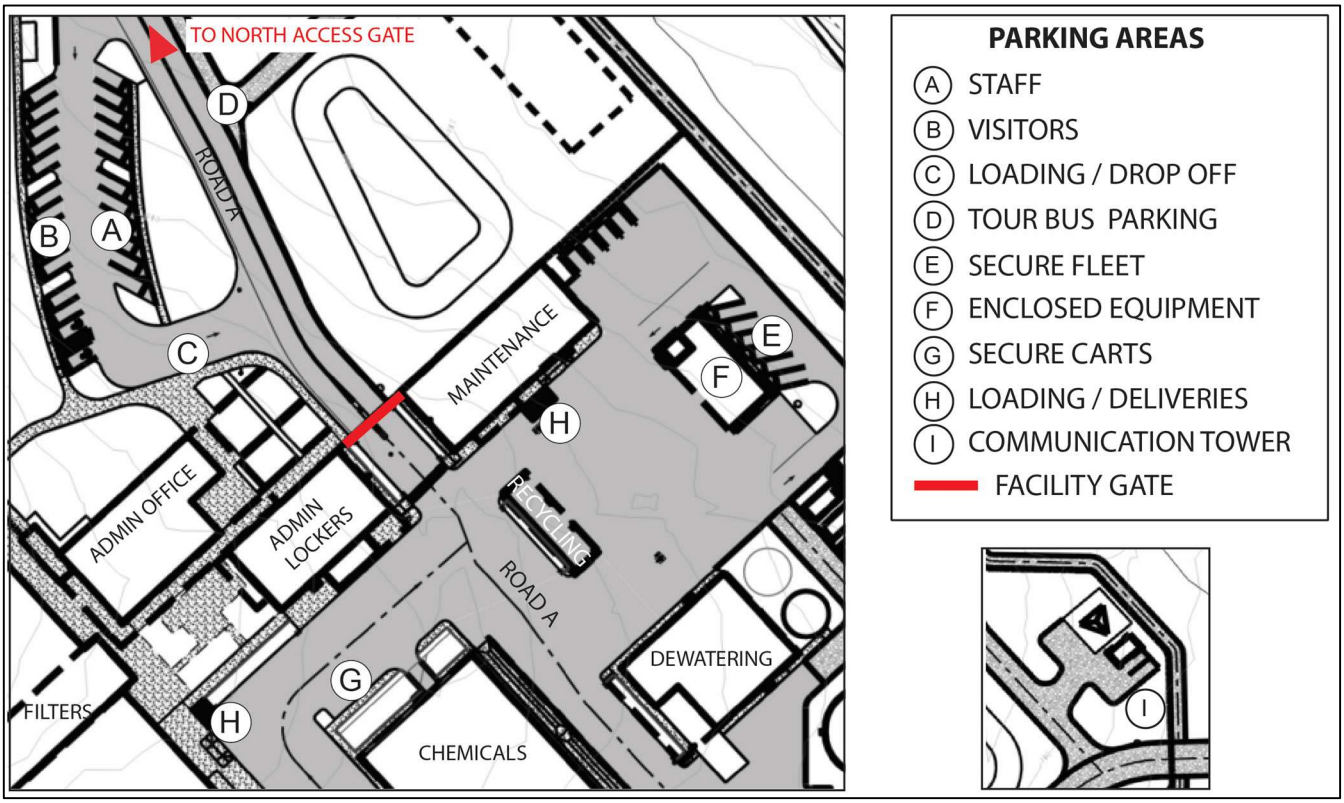


Figure 7: Recommended Parking and Loading Plan

Table 8 provides a summary of the recommended parking and loading area counts.

Table 8: Recommended Parking and Loading Area Counts

Need	Count	Strategy
Visitors – General	5	Near Administration, Main lot
Staff – Personal Vehicles	20	Near Administration, Main lot
Bus Parking Space	1	Road A Pullout-Area
Fleet – Vehicles	6	Near Maintenance, Secure
Subtotal Parking Spaces	**32**	Centrally located
Fleet – Electric Carts w/ charging	5	Near Admin/Maintenance, Secure
Bus and Truck Loading Areas	3	North lot, near Administration Building (Bus Pull Out), Maintenance Building (parts deliveries), South of Administration Building for Lab deliveries
Communications Tower	2	Tower location, secure

Circulation

Circulation plans have been developed to accommodate all types of vehicles expected to visit the filtration facility. These vehicles include the following:

- 60-foot cranes
- 30-foot solids handling trucks
- 44-foot fire trucks
- 35-foot PWB buses
- 51-foot chemical and fuel delivery trucks
- 16-foot fleet pickup trucks
- 8-foot electric carts

The 44-foot ladder fire trucks will be accommodated on all internal roadways. All on-site roads will be built to a 26-foot minimum width in order to accommodate these fire trucks. By doing so, all chemical delivery and solids removal vehicles will also be accommodated.

The SE Carpenter Lane access will be built to accommodate two-way travel and will allow access for all these anticipated vehicles. The SE Bluff Road access will be built to a 20-foot cross section standard to accommodate emergency vehicles.

All driving access on the site will be designed for forward movement except for the dewatering building, which will have a loading access that requires back-in movement. Ample space will be provided to accommodate this back-in movement.

Circulation diagrams for the different types of vehicles have been developed and are included in the Facility Drawings provided in Appendix A.1 of PWB's land use application.

RESULTS

The traffic impact study conducted for the Project has identified that no capacity or crash safety improvements are required to adequately serve the proposed development based on the standards established by Multnomah County and Clackamas County. Roadway geometry improvements at SE Carpenter Lane/SE Cottrell Road and SE Dodge Park Boulevard/SE Cottrell Road were identified and included in the Project to increase turning radii to accommodate site truck trips, as described below and included in the Facility Drawings provided in Appendix A.1 of PWB's land use application. Thirteen existing intersections were identified for evaluation under this analysis. These are identified in Figure 1. Two site accesses were also identified for evaluation: one primary access and one emergency access. Only the primary site access to SE Carpenter Lane was included in the capacity analysis, as all site trips during normal operations will use that access.

Traffic safety in the study area was evaluated. The analysis indicates the following:

- There are no existing roadside features that are anticipated to impact intersection or stopping sight distance at the SE Carpenter Lane and SE Bluff Road accesses per the AASHTO standards and the requirements of Multnomah and Clackamas Counties.
- A sight distance analysis was conducted at the proposed driveway location for the Finished Water Intertie proposed for 33304 SE Lusted Road. The analysis found that sight distance standards are met for the location.

- Crash data for a five-year period indicates that the study intersections do not exceed the safety threshold except for the intersections of SE Bluff Road at SE Proctor Road and SE Lusted Road at SE Altman Road. A detailed investigation was conducted to determine if there are any mitigable crash patterns at those intersections. No patterns were found and therefore no mitigation is recommended.

The potential for impacts to the local transportation system from the Project was evaluated. The Project is expected to generate 32 new AM and 32 new PM peak hour trips, predominantly distributed towards US 26 and the City of Sandy. Existing and future conditions at study intersections were analyzed including:

- 2022 Existing Conditions
- 2040 Background Traffic Conditions (No-Build)
- 2040 Total Traffic Conditions (Buildout)

The intersection LOS were analyzed based on procedures described on the Highway Capacity Manual 2000 (HCM). Multnomah County Design Standards specifies that facilities shall be designed to accommodate LOS C or better during the design hour in rural areas. For this evaluation, the AM and PM peak hours were evaluated as design hours. Clackamas County Comprehensive Plan utilizes LOS E or better for unsignalized intersections in rural areas during AM and PM peak hours.

The result of the analysis indicates that all study intersections as well as the SE Carpenter Lane site access will operate within the performance standards established by Multnomah County and Clackamas County under 2040 total traffic conditions during both AM and PM peak periods.

Left turn lane and right turn lane warrants for the proposed Carpenter Lane site access and 13 study intersections were evaluated during the AM and PM peak period under 2040 total traffic conditions. No turn lane warrants are met. Therefore, no turn lane improvements are needed to mitigate impacts due to Project-generated traffic.

Based on a site access evaluation, the following improvements were identified for study roadways, intersections, and the potential site accesses. Each of these improvements will be provided as part of the Project:

- Access on SE Carpenter Lane (primary)
    - Under existing conditions, this roadway has a low speed limit with residences present. Suggest Multnomah County post the speed limit to encourage retention of slower speeds.
    - Minimal pavement markings are present. Pavement marking improvements should be applied at the proposed access point and the intersections of SE Carpenter Lane / Cottrell Road and SE Dodge Park Boulevard / Cottrell Road to better define intersection geometry.
    - Structural upgrades are necessary to both SE Carpenter Lane and SE Cottrell Road to accommodate an increase in truck trips associated with the ongoing filtration facility operations.
    - Turn radii have been evaluated and intersection improvements included at the site access, SE Carpenter Lane / SE Cottrell Road, and SE Dodge Park Boulevard / SE Cottrell Road, to ensure trucks can be safely accommodated.

- Access on SE Bluff Road (emergency)
    - SE Bluff Road would support site truck traffic for emergencies and maintenance when the primary access from Carpenter Lane is not reasonably available. Other than at the access point, no improvements are required to the roadway.
    - This will require a new access and an easement from the filtration facility site to SE Bluff Road. The access will be designed to meet current Clackamas County Design Standards and meet fire code requirements for the filtration facility site.

The roadway and intersection geometric improvements listed above are shown in the Facility Drawings provided in Appendix A.1 of PWB's land use application.

Appendix

Appendix A: Crash Data

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

CITY OF SANDY, CLACKAMAS COUNTY

BLUFF RD at PROCTOR BLVD, City of Sandy, Clackamas County, 01/01/2016 to 12/31/2020

1 - 5 of 8 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R U G S	M J I N V	S C H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / INJ / SVRTY	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
03364	Y	N	N		N	N	09/22/2018	14	BLUFF RD	INTER	5-LEG	N	N	CLR	ANGL-STP	01	NONE 0	TURN-R										01,08,11
CITY							SA		PROCTOR BLVD	N		TRF SIGNAL	N	DRY	TURN		PRVTE	SE-N								000		11
N							4P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR NONE	27	M	OR-Y		047,001	000		01,08
N							45 23 50.95	-122 16 13.54	002600200S00														OR<25					
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05357	N	N	N				12/15/2017	14	BLUFF RD	INTER	5-LEG	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										29
NONE							FR		PROCTOR BLVD	E		TRF SIGNAL	N	WET	REAR		PRVTE	E -W								000		00
N							7A			06	0		N	DAWN	INJ		PSNGR CAR		01	DRVR NONE	19	M	OR-Y		026	000		29
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02989	N	N	N				11/05/2020	14	BLUFF RD	INTER	5-LEG	N	N	RAIN	S-1STOP	01	NONE 9	STRGHT										29
NONE							TH		PROCTOR BLVD	E		TRF SIGNAL	N	WET	REAR		N/A	E -W								000		00
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05103	N	N	N		N	N	11/04/2016	14	BLUFF RD	INTER	CROSS	N	N	CLR	PED	01	NONE 0	STRGHT										02
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03128	N	N	N				10/25/2020	14	BLUFF RD	INTER	5-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
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																	PSNGR CAR		01	DRVR INJC	71	M	OR-Y		000	000		00
																							OR>25					

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

CITY OF SANDY, CLACKAMAS COUNTY

BLUFF RD at PROCTOR BLVD, City of Sandy, Clackamas County, 01/01/2016 to 12/31/2020

6 - 8 of 8 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R U G S	M J N V	S I H L	C N	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / INJ / SVRTY	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
05252	N	N	N		N	N		11/12/2016	14	BLUFF RD	INTER	5-LEG	N	N	CLR	O-1 L-TURN	01	NONE 0	TURN-L										02,04,08
CITY								SA		PROCTOR BLVD	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	E -S								000		00
N								9P			03	0		N	DLIT	INJ		PSNGR CAR		01	DRVR INJB	17	F	OR-Y		028,020,004	000		02,04,08
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03759	N	N	N					10/17/2018	14	BLUFF RD	INTER	5-LEG	N	N	CLR	ANGL-OTH	01	NONE 9	STRGHT										04
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01167	Y	N	N		N	N		04/09/2019	14	BLUFF RD	INTER	5-LEG	N	N	RAIN	ANGL-OTH	01	NONE 0	STRGHT										04,01
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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.

MULTNOMAH COUNTY

LUSTED RD at ALTMAN RD, City of Outside City Limits, Multnomah County, 01/01/2016 to 12/31/2020

1 - 4 of 6 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R U G S	M J I N V	S C H L	W O R K	DATE / DAY / TIME / LAT	MILEPNT / DIST FROM / INTERSECT / LONG	COUNTY ROADS / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / INJ / SVRTY	A G E	S E X	LICNS / RES	PED / LOC	ERROR	ACT	EVENT	CAUSE
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07054	N	N	N				06/17/2016		SE ALTMAN RD	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 9	STRGHT										02
NO RPT							FR	0	SE LUSTED RD	CN		STOP SIGN	N	DRY	ANGL		N/A	W -E								000		00
N							UNK			04	0		N	DAY	PDO		UNKNOWN		01	DRVR NONE	00	Unk	UNK		000	000		00
N							45 28 33.5	-122 19 35.6															UNK					
																02	NONE 9	STRGHT										
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06166	N	N	N				06/12/2017		SE ALTMAN RD	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										03,02
COUNTY							MO	0	SE LUSTED RD	CN		STOP SIGN	N	DRY	ANGL		PRVTE	E -W								000		00
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09156	N	N	N				08/21/2017		SE ALTMAN RD	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 9	STRGHT										03
NONE							MO	0	SE LUSTED RD	CN		STOP SIGN	N	DRY	ANGL		N/A	N -S								000		00
N							2P			01	0		N	DAY	PDO		PSNGR CAR		01	DRVR NONE	00	Unk	UNK		000	000		00
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05172	N	N	N	N	N		06/12/2019		SE ALTMAN RD	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										02,40
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N							4P			04	0		N	DAY	INJ		PSNGR CAR		01	DRVR INJC	38	M	OR-Y		000	000		00
N							45 28 33.5	-122 19 35.6															OR<25					

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

MULTNOMAH COUNTY

LUSTED RD at ALTMAN RD, City of Outside City Limits, Multnomah County, 01/01/2016 to 12/31/2020

5 - 6 of 6 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R U G S	M J I N V	S C H L	W O R K	DATE / DAY / TIME / LAT	MILEPNT / DIST FROM / INTERSECT / LONG	COUNTY ROADS / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	TYPE	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																02	NONE	0	STRGHT											
																	PRVTE		S -N								015		00
																	PSNGR CAR			01	DRVR	NONE	22	M	OR-Y		028	000		02,40
																									OR<25					
02815	N	N	N				05/17/2020		SE ALTMAN RD	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE	0	STRGHT									087		02
COUNTY							SU	0	SE LUSTED RD	CN		STOP SIGN	N	DRY	TURN		PRVTE		E -W								000	087		00
N							3P			01	0		N	DAY	INJ		PSNGR CAR			01	DRVR	INJA	22	F	OR-Y		000	000		00
N							45 28 33.5	-122 19 35.6																	OR<25					
																01	NONE	0	STRGHT											
																	PRVTE		E -W								000	087		00
																	PSNGR CAR			02	PSNG	INJB	23	F			000	000		00
																01	NONE	0	STRGHT											
																	PRVTE		E -W								000	087		00
																	PSNGR CAR			03	PSNG	INJA	26	M			000	000		00
																02	NONE	0	TURN-L											
																	UNKN		N -E								000	087		00
																	PSNGR CAR			01	DRVR	NONE	27	M	OR-Y		028	000		02
																									UNK					

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

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT
COUNTY ROAD CRASH LISTING

MULTNOMAH COUNTY

OXBOW DR at ALTMAN RD, City of Outside City Limits, Multnomah County, 01/01/2016 to 12/31/2020

1 - 2 of 2 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R U G S	M J N V	S I L	C H	W O R K	DATE / DAY / TIME / LAT	MILEPNT / DIST FROM / INTERSECT / LONG	COUNTY ROADS / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES	PED / LOC	ERROR	ACT	EVENT	CAUSE
10289	N	N	N					09/20/2017		SE ALTMAN RD	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 9	STRGHT											29
NONE								WE	0	SE OXBOW DR	S		STOP SIGN	N	WET	REAR		N/A	S -N									000		00
N								7A			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N								45 29 1.29	-122 19 40																UNK					
																	02	NONE 9	STOP											
																		N/A	S -N									011		00
																		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																									UNK					
06196	Y	Y	N		N	N		11/15/2020		SE ALTMAN RD	INTER	3-LEG	N	Y	RAIN	FIX OBJ	01	NONE 0	STRGHT										079	33,01
CITY								SU	0	SE OXBOW DR	W		UNKNOWN	N	WET	FIX		PRVTE	W -E									000	079	00
N								4A			06	0		N	DARK	INJ		PSNGR CAR		01	DRVR	INJC	50	M	SUSP		051,047,081	000		33,01
N								45 29 1.27	-122 19 39.96																OR<25					

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

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT
COUNTY ROAD CRASH LISTING

MULTNOMAH COUNTY

DODGE PARK BLVD at ALTMAN RD, City of Outside City Limits, Multnomah County, 01/01/2016 to 12/31/2020

1 - 1 of 1 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R U G S	M J I N V	S C H L	W O R K	DATE / DAY / TIME / LAT	MILEPNT / DIST FROM / INTERSECT / LONG	COUNTY ROADS / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE		MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES	PED / LOC	ERROR	ACT	EVENT	CAUSE
81929	N	N	N				06/05/2018		SE ALTMAN RD	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE	0	STRGHT											02
NONE							TU	0	SE DODGE PARK BLVD	CN		STOP SIGN	N	DRY	ANGL		PRVTE		E -W									015		00
N							12P			02	0		N	DAY	INJ		PSNGR CAR			01	DRVR	NONE	70	F	OR-Y		000	000		00
N							45 28 9.33	-122 19 35.43																	OR<25					
																02	NONE	0	STRGHT											
																	PRVTE		S -N									015		00
																	PSNGR CAR			01	DRVR	INJC	64	F	OR-Y		028	000		02
																									OR<25					

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

Appendix B: Traffic Count Data

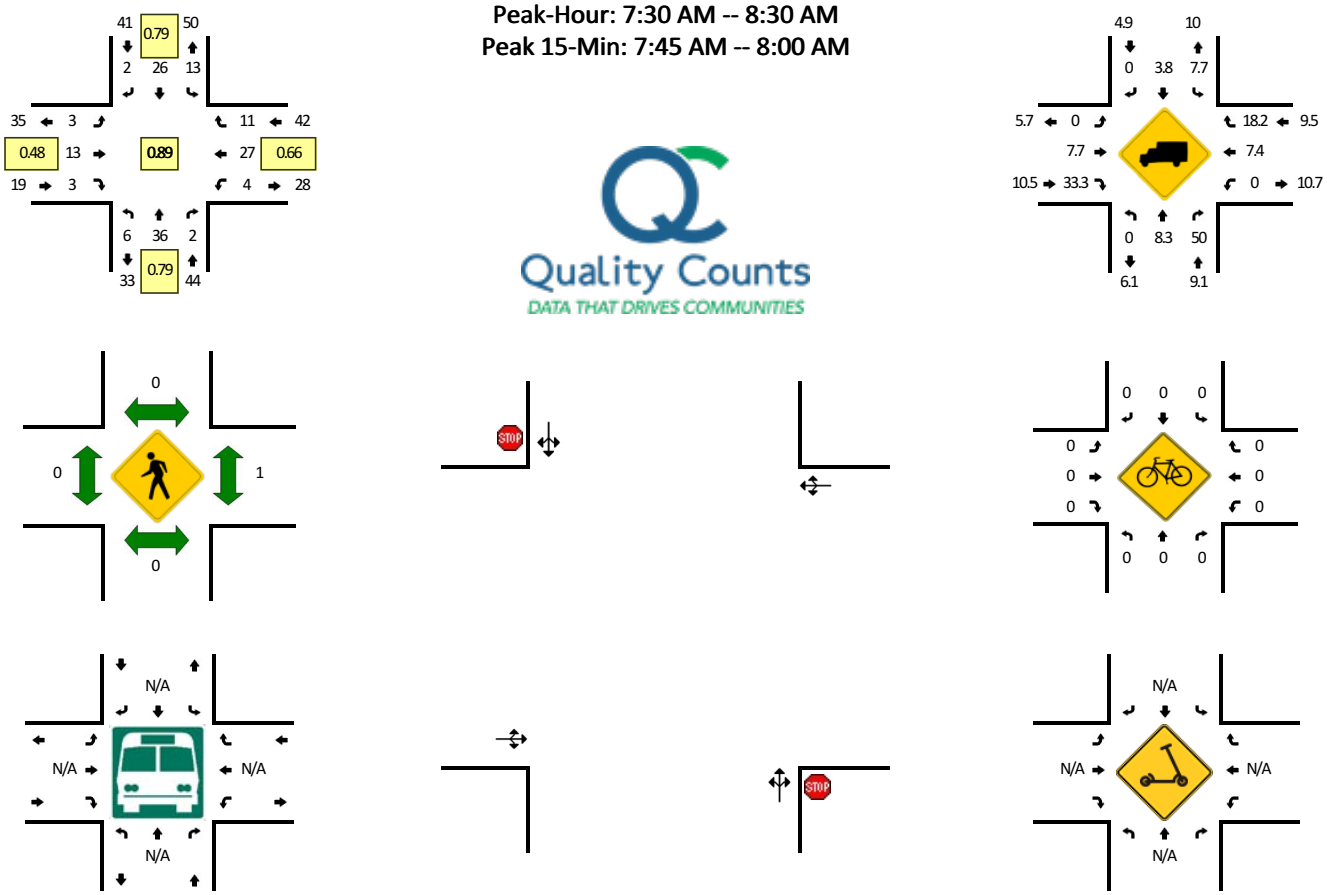
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Altman Road -- Lusted Road
CITY/STATE: Multnomah, OR

QC JOB #: 15711501
DATE: Wed, Feb 23 2022

Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM



5-Min Count Period Beginning At	Altman Road (Northbound)				Altman Road (Southbound)				Lusted Road (Eastbound)				Lusted Road (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	4	0	0	0	1	0	0	0	3	0	0	0	1	1	0	10	
7:05 AM	0	2	1	0	1	1	0	0	0	1	0	0	0	0	0	0	6	
7:10 AM	0	2	0	0	2	3	0	0	0	1	0	0	0	0	1	0	9	
7:15 AM	1	5	2	0	0	3	0	0	1	2	0	0	0	3	0	0	17	
7:20 AM	0	3	1	0	1	0	0	0	0	0	0	0	0	0	2	0	7	
7:25 AM	0	3	0	0	1	6	0	0	1	0	0	0	0	2	0	0	13	
7:30 AM	0	2	0	0	2	5	0	0	0	1	0	0	0	2	0	0	12	
7:35 AM	0	3	0	0	1	1	0	0	0	1	0	0	0	3	1	0	10	
7:40 AM	0	5	0	0	1	2	0	0	0	0	0	0	1	2	0	0	11	
7:45 AM	0	3	0	0	1	4	0	0	0	0	0	0	0	3	0	0	11	
7:50 AM	1	3	0	0	0	2	1	0	0	2	0	0	0	2	1	0	12	
7:55 AM	1	5	1	0	2	3	0	0	0	1	1	0	0	2	2	0	18	136
8:00 AM	0	2	0	0	0	1	0	0	0	0	0	0	1	1	2	0	7	133
8:05 AM	1	1	0	0	1	1	0	0	1	0	1	0	0	5	3	0	14	141
8:10 AM	0	6	1	0	0	1	0	0	0	1	0	0	0	2	0	0	11	143
8:15 AM	2	3	0	0	1	3	0	0	2	0	0	0	0	1	0	0	12	138
8:20 AM	0	1	0	0	1	2	1	0	0	2	1	0	1	3	1	0	13	144
8:25 AM	1	2	0	0	3	1	0	0	0	5	0	0	1	1	1	0	15	146
8:30 AM	0	0	1	0	0	3	1	0	0	0	1	0	1	0	2	0	9	143
8:35 AM	0	2	0	0	1	3	0	0	1	2	1	0	0	1	1	0	12	145
8:40 AM	0	1	0	0	0	0	0	0	0	2	0	0	2	0	0	0	5	139
8:45 AM	1	1	0	0	0	2	0	0	0	1	0	0	2	1	0	0	8	136
8:50 AM	1	2	0	0	1	3	0	0	0	2	0	0	0	0	0	0	9	133
8:55 AM	0	1	1	0	1	2	0	0	0	4	0	0	1	3	3	0	16	131

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	44	4	0	12	36	4	0	0	12	4	0	0	28	12	0	164
Heavy Trucks	0	4	4		4	4	0		0	0	4		0	4	0		24
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

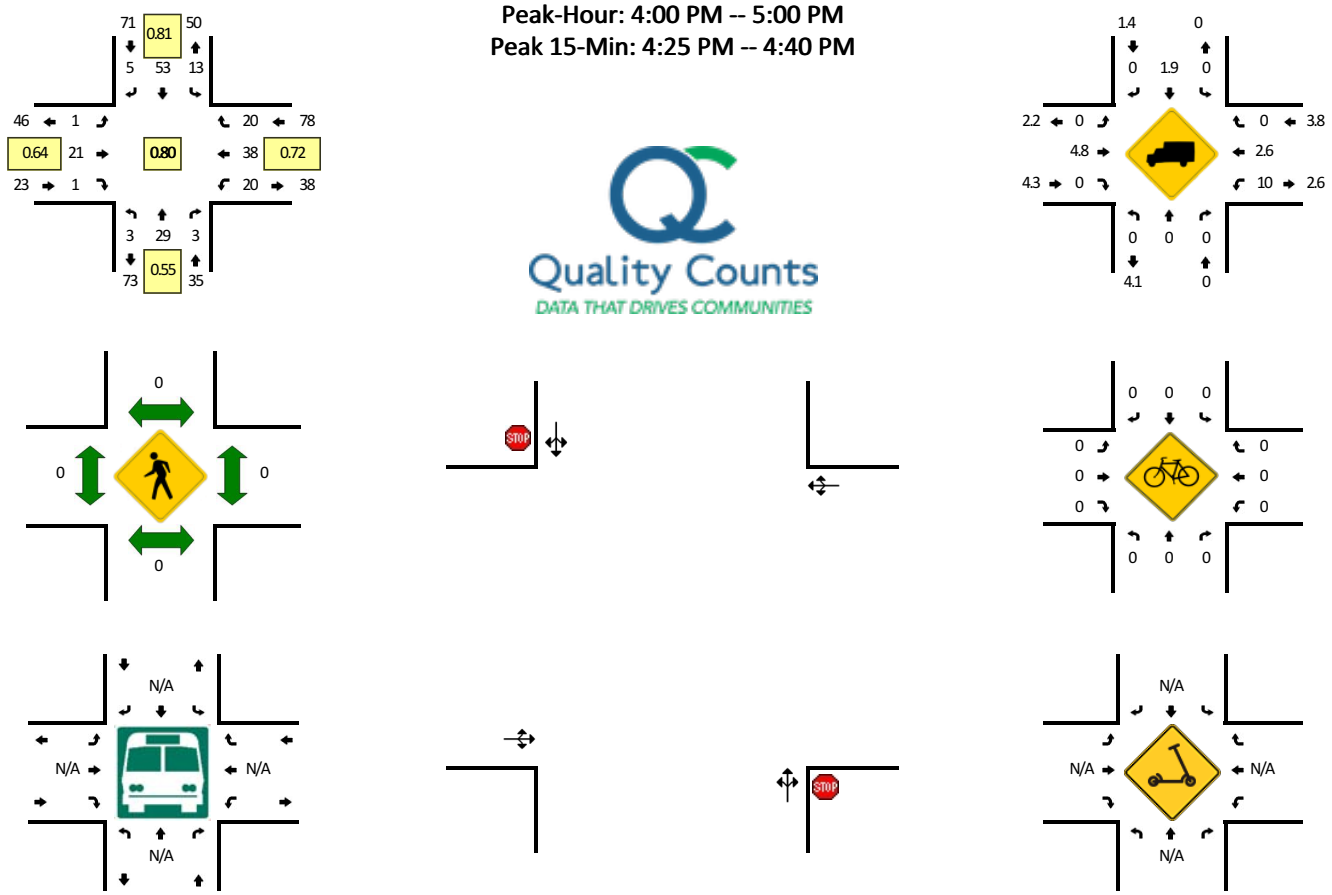
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Altman Road -- Lusted Road
CITY/STATE: Multnomah, OR

QC JOB #: 15711502
DATE: Wed, Feb 23 2022

Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:25 PM -- 4:40 PM



5-Min Count Period Beginning At	Altman Road (Northbound)				Altman Road (Southbound)				Lusted Road (Eastbound)				Lusted Road (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	2	0	0	2	3	0	0	0	2	0	0	0	1	1	0	11	
4:05 PM	0	1	1	0	1	7	0	0	0	4	0	0	1	7	4	0	26	
4:10 PM	0	2	0	0	2	4	0	0	0	2	0	0	2	2	1	0	15	
4:15 PM	0	1	0	0	0	3	0	0	0	3	0	0	3	5	1	0	16	
4:20 PM	0	1	0	0	1	7	0	0	0	1	0	0	0	2	3	1	16	
4:25 PM	0	4	1	0	0	6	1	0	0	2	1	0	0	3	1	0	19	
4:30 PM	1	5	0	0	0	2	3	0	0	0	0	0	2	2	1	0	16	
4:35 PM	1	3	1	0	0	5	0	0	0	2	0	0	5	10	3	0	30	
4:40 PM	1	3	0	0	1	1	0	0	1	2	0	0	1	1	1	0	12	
4:45 PM	0	3	0	0	1	7	0	0	0	2	0	0	1	3	0	0	17	
4:50 PM	0	2	0	0	1	4	0	0	0	0	0	0	2	1	1	0	11	
4:55 PM	0	2	0	0	4	4	1	0	0	1	0	0	2	1	3	0	18	207
5:00 PM	0	4	2	0	0	2	0	0	0	0	0	0	0	1	1	0	10	206
5:05 PM	0	0	0	0	0	5	1	0	0	3	0	0	1	0	0	0	10	190
5:10 PM	1	1	1	0	0	0	0	0	0	3	0	0	0	2	3	0	11	186
5:15 PM	0	1	0	0	1	8	0	0	0	2	0	0	1	2	1	0	16	186
5:20 PM	0	3	0	0	0	3	0	0	0	2	1	0	0	1	1	0	11	181
5:25 PM	0	1	0	0	1	2	0	0	0	0	0	0	0	2	0	0	6	168
5:30 PM	0	5	0	0	0	4	1	0	0	3	0	0	1	1	1	0	16	168
5:35 PM	0	2	0	0	1	4	0	0	0	0	0	0	1	2	0	0	10	148
5:40 PM	1	3	0	0	3	1	1	0	0	1	0	0	0	2	2	0	14	150
5:45 PM	1	3	2	0	0	2	0	0	1	0	1	0	1	1	3	0	15	148
5:50 PM	0	1	1	0	0	5	0	0	0	2	1	0	2	2	1	0	15	152
5:55 PM	1	0	1	0	1	1	0	0	1	0	0	0	0	4	0	0	9	143

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	48	8	0	0	52	16	0	0	16	4	0	28	60	20	0	260
Heavy Trucks	0	0	0		0	4	0		0	0	0		0	0	0		4
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

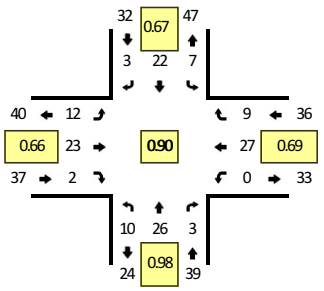
Type of peak hour being reported: Intersection Peak

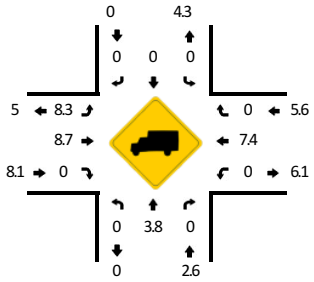
Method for determining peak hour: Total Entering Volume

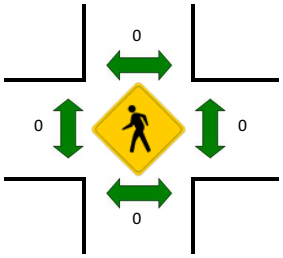
LOCATION: Altman Road -- Dodge Park Blvd
CITY/STATE: Multnomah, OR

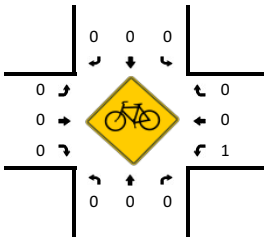
QC JOB #: 15711503
DATE: Wed, Feb 23 2022

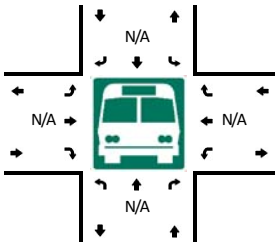
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:35 AM -- 7:50 AM

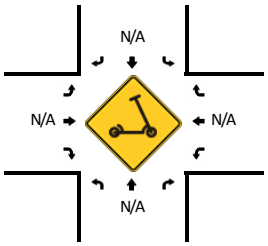












5-Min Count Period Beginning At	Altman Road (Northbound)				Altman Road (Southbound)				Dodge Park Blvd (Eastbound)				Dodge Park Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	2	0	0	1	1	0	0	2	1	0	0	0	1	0	0	9	
7:05 AM	2	3	1	0	1	0	0	0	2	4	1	0	0	2	0	0	16	
7:10 AM	0	0	0	0	0	3	0	0	1	1	0	0	0	2	1	0	8	
7:15 AM	0	3	0	0	0	3	0	0	2	2	1	0	0	0	1	0	12	
7:20 AM	1	2	0	0	0	0	0	0	1	1	0	0	0	5	1	0	11	
7:25 AM	0	2	2	0	1	3	1	0	0	3	0	0	0	0	1	0	13	
7:30 AM	2	0	0	0	0	3	1	0	0	1	0	0	0	3	2	0	12	
7:35 AM	1	2	0	0	1	1	1	0	1	1	0	0	0	0	1	0	9	
7:40 AM	2	3	0	0	0	3	0	0	0	2	0	0	0	5	0	0	15	
7:45 AM	0	2	0	0	2	2	0	0	2	4	0	0	0	3	1	0	16	
7:50 AM	1	1	0	0	1	1	0	0	0	1	0	0	0	3	1	0	9	
7:55 AM	0	6	0	0	0	2	0	0	1	2	0	0	0	3	0	0	14	144
8:00 AM	1	1	0	0	0	2	0	0	0	2	0	0	0	1	0	0	7	142
8:05 AM	0	0	0	0	0	1	1	0	0	1	0	0	0	3	2	0	8	134
8:10 AM	0	2	0	0	0	0	1	0	2	2	0	0	0	3	1	0	11	137
8:15 AM	1	2	0	0	0	1	0	0	1	1	0	0	0	2	1	0	9	134
8:20 AM	0	1	0	0	0	2	1	0	2	2	0	0	0	3	0	0	11	134
8:25 AM	1	2	0	0	1	2	1	0	0	1	0	0	0	1	0	0	9	130
8:30 AM	0	0	0	0	0	3	1	0	1	0	1	0	1	1	0	0	8	126
8:35 AM	1	1	0	0	2	2	0	0	0	2	0	0	0	1	0	0	9	126
8:40 AM	1	3	1	0	0	1	2	0	1	0	0	0	0	3	0	0	12	123
8:45 AM	2	1	0	0	0	2	1	0	0	3	0	0	0	0	0	0	9	116
8:50 AM	1	1	0	0	0	3	1	0	1	2	0	0	0	2	1	0	12	119
8:55 AM	1	2	0	0	0	2	1	0	0	2	1	0	0	2	0	0	11	116

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	28	0	0	12	24	4	0	12	28	0	0	0	32	8	0	160
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	8	0		12
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

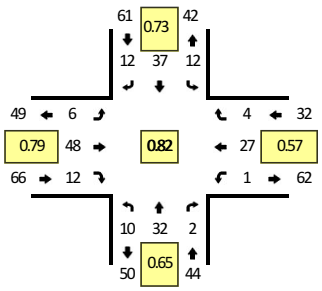
Type of peak hour being reported: Intersection Peak

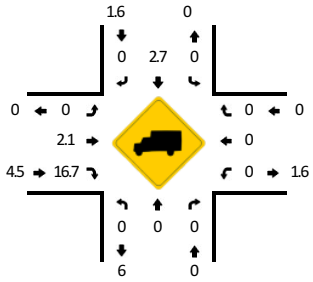
Method for determining peak hour: Total Entering Volume

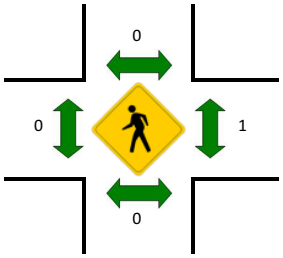
LOCATION: Altman Road -- Dodge Park Blvd
CITY/STATE: Multnomah, OR

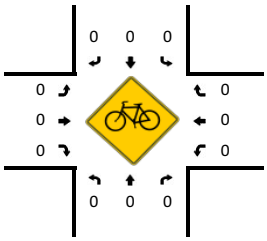
QC JOB #: 15711504
DATE: Wed, Feb 23 2022

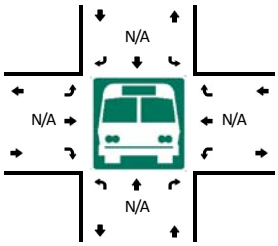
Peak-Hour: 4:25 PM -- 5:25 PM
Peak 15-Min: 4:25 PM -- 4:40 PM

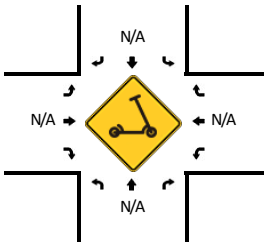












5-Min Count Period Beginning At	Altman Road (Northbound)				Altman Road (Southbound)				Dodge Park Blvd (Eastbound)				Dodge Park Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	2	0	0	0	3	1	0	0	0	0	0	0	5	0	0	12	
4:05 PM	0	2	0	0	1	2	1	0	0	0	0	0	0	2	0	0	8	
4:10 PM	1	1	0	0	1	5	2	0	1	3	1	0	0	2	0	0	17	
4:15 PM	0	1	0	0	1	1	4	0	0	4	1	0	0	2	1	0	15	
4:20 PM	0	2	0	0	0	5	4	0	0	1	2	0	0	0	0	0	14	
4:25 PM	1	6	0	0	2	4	0	0	0	4	0	0	0	3	1	0	21	
4:30 PM	1	2	1	0	0	3	2	0	0	4	1	0	0	1	1	0	16	
4:35 PM	1	4	1	0	3	4	3	0	1	3	2	0	0	3	0	0	25	
4:40 PM	2	4	0	0	0	1	2	0	0	6	1	0	0	0	1	0	17	
4:45 PM	0	3	0	0	1	4	1	0	2	0	3	0	0	2	0	0	16	
4:50 PM	0	1	0	0	1	3	1	0	0	5	0	0	0	3	0	0	14	
4:55 PM	0	2	0	0	0	1	2	0	2	7	2	0	0	2	0	0	18	193
5:00 PM	1	5	0	0	2	4	0	0	0	3	0	0	0	0	0	0	15	196
5:05 PM	1	1	0	0	1	3	0	0	0	1	1	0	0	1	0	0	9	197
5:10 PM	2	1	0	0	0	1	0	0	1	6	1	0	0	2	0	0	14	194
5:15 PM	0	1	0	0	0	5	0	0	0	4	1	0	0	4	0	0	15	194
5:20 PM	1	2	0	0	2	4	1	0	0	5	0	0	1	6	1	0	23	203
5:25 PM	0	0	0	0	1	2	0	0	0	7	0	0	0	9	1	0	20	202
5:30 PM	0	4	1	0	0	4	0	0	0	4	0	0	1	2	1	0	17	203
5:35 PM	2	2	0	0	1	2	2	0	1	2	0	0	0	1	0	0	13	191
5:40 PM	0	3	0	0	1	1	0	0	1	2	0	0	0	0	1	0	9	183
5:45 PM	0	2	0	0	2	0	0	0	1	4	1	0	0	1	0	0	11	178
5:50 PM	1	1	0	0	3	6	1	0	2	4	0	0	0	1	0	0	19	183
5:55 PM	1	2	0	0	0	0	1	0	1	2	4	0	0	0	0	0	11	176

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	48	8	0	20	44	20	0	4	44	12	0	0	28	8	0	248
Heavy Trucks	0	0	0		0	4	0		0	0	0		0	0	0		4
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

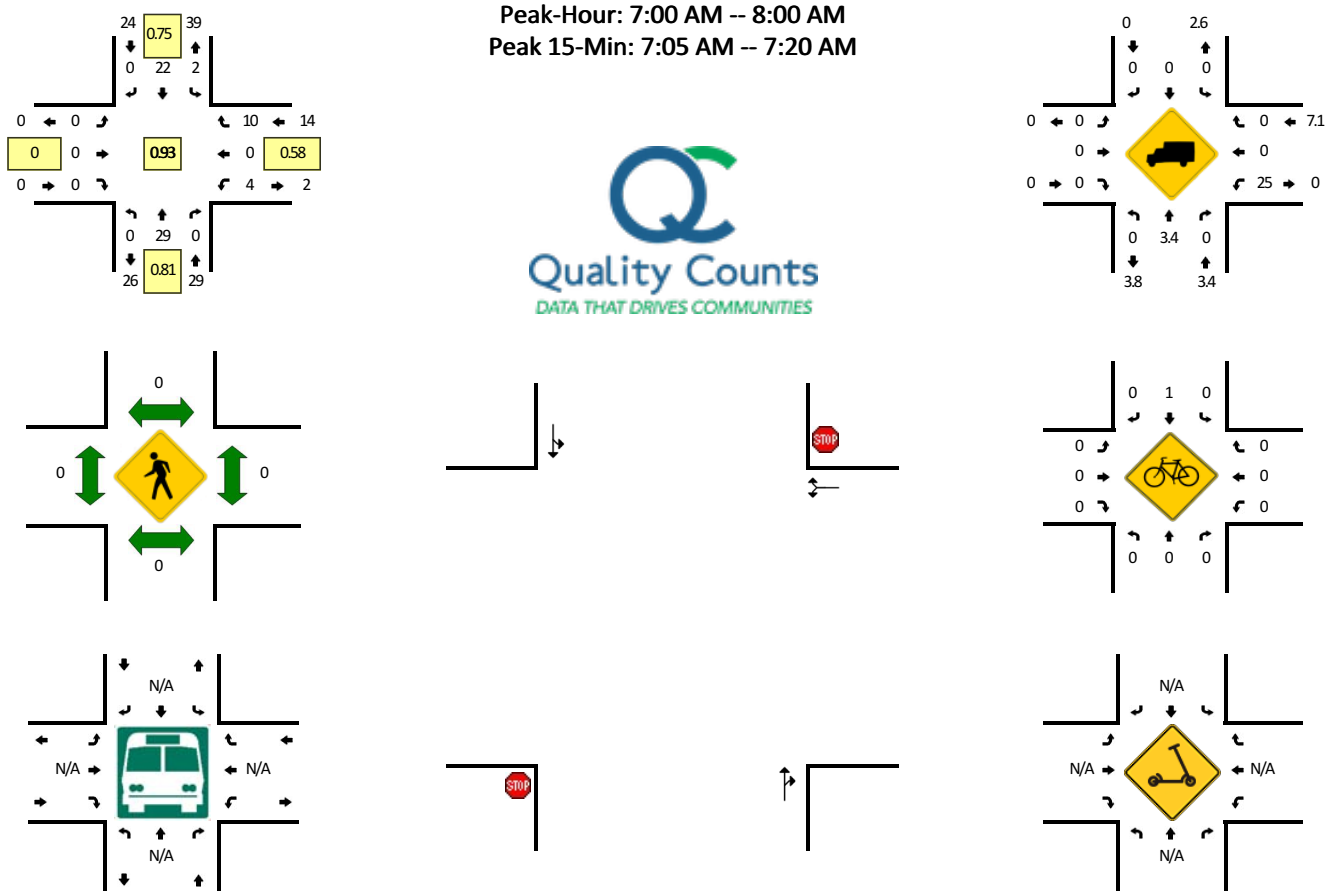
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Altman Road -- Carpenter Lane
CITY/STATE: Multnomah, OR

QC JOB #: 15711505
DATE: Wed, Feb 23 2022

Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:05 AM -- 7:20 AM



5-Min Count Period Beginning At	Altman Road (Northbound)				Altman Road (Southbound)				Carpenter Lane (Eastbound)				Carpenter Lane (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	3	0	0	0	1	0	0	0	0	0	0	1	0	1	0	6	
7:05 AM	0	3	0	0	1	0	0	0	0	0	0	0	1	0	2	0	7	
7:10 AM	0	0	0	0	0	3	0	0	0	0	0	0	1	0	0	0	4	
7:15 AM	0	2	0	0	1	3	0	0	0	0	0	0	0	0	1	0	7	
7:20 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
7:25 AM	0	3	0	0	0	2	0	0	0	0	0	0	0	0	2	0	7	
7:30 AM	0	0	0	0	0	3	0	0	0	0	0	0	0	0	1	0	4	
7:35 AM	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5	
7:40 AM	0	3	0	0	0	3	0	0	0	0	0	0	0	0	2	0	8	
7:45 AM	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4	
7:50 AM	0	2	0	0	0	1	0	0	0	0	0	0	1	0	1	0	5	
7:55 AM	0	5	0	0	0	2	0	0	0	0	0	0	0	0	0	0	7	67
8:00 AM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	1	0	4	65
8:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58
8:10 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4	58
8:15 AM	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3	54
8:20 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	3	54
8:25 AM	0	2	0	0	0	1	0	0	0	0	0	0	0	0	1	0	4	51
8:30 AM	0	0	1	0	2	3	0	0	0	0	0	0	0	0	0	0	6	53
8:35 AM	0	2	0	0	1	2	0	0	0	0	0	0	0	0	1	0	6	54
8:40 AM	0	3	0	0	0	1	0	0	0	0	0	0	0	0	1	0	5	51
8:45 AM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	2	0	5	52
8:50 AM	0	1	0	0	2	1	0	0	0	0	0	0	0	0	1	0	5	52
8:55 AM	0	2	0	0	1	2	0	0	0	0	0	0	0	0	1	0	6	51

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	20	0	0	8	24	0	0	0	0	0	0	8	0	12	0	72
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	4	0		0	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

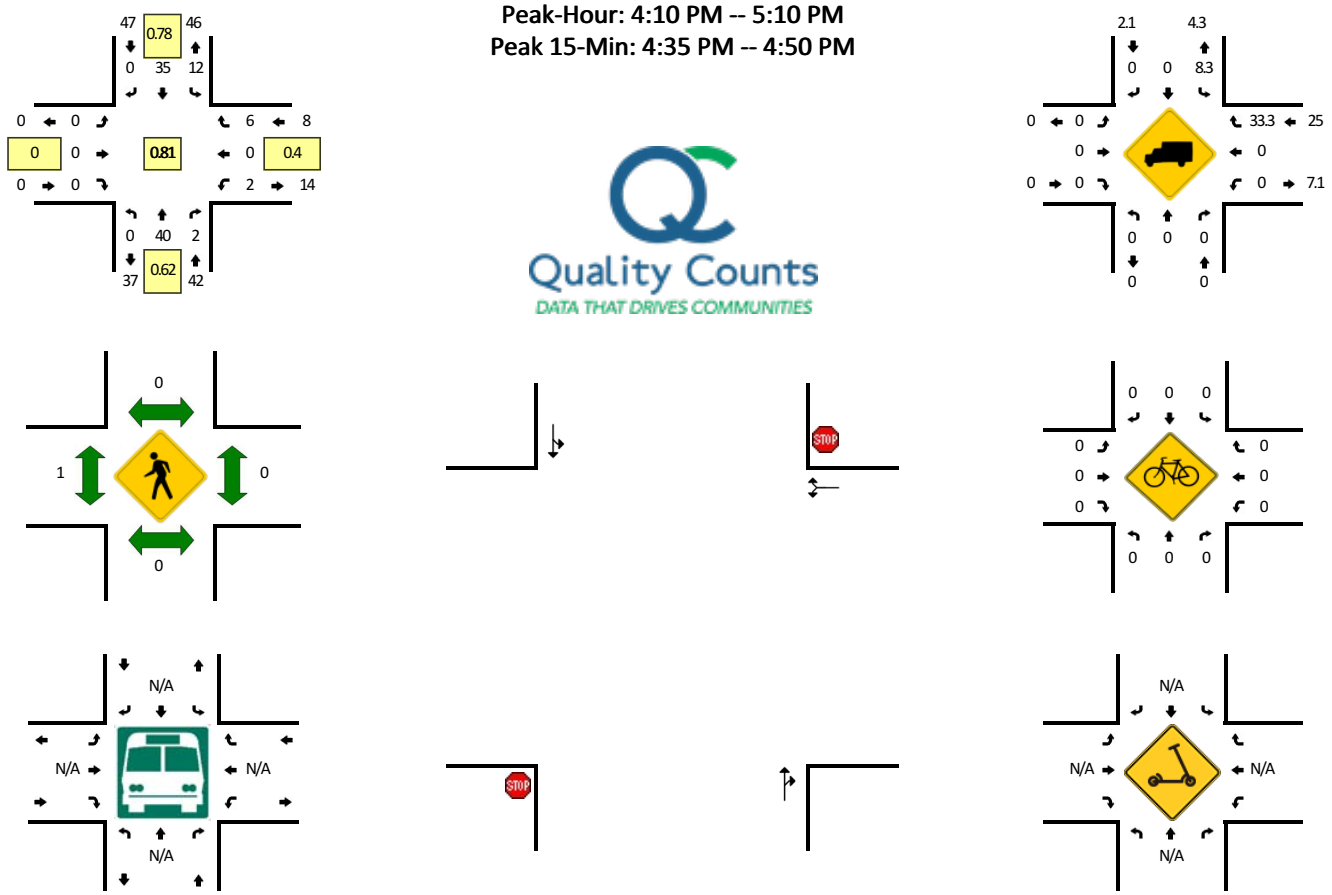
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Altman Road -- Carpenter Lane
CITY/STATE: Multnomah, OR

QC JOB #: 15711506
DATE: Wed, Feb 23 2022

Peak-Hour: 4:10 PM -- 5:10 PM
Peak 15-Min: 4:35 PM -- 4:50 PM



5-Min Count Period Beginning At	Altman Road (Northbound)				Altman Road (Southbound)				Carpenter Lane (Eastbound)				Carpenter Lane (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	2	0	0	0	2	0	0	0	0	0	0	2	0	1	0	7	
4:05 PM	0	2	0	0	0	3	0	0	0	0	0	0	1	0	0	0	6	
4:10 PM	0	1	0	0	0	6	0	0	0	0	0	0	1	0	1	0	9	
4:15 PM	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	3	
4:20 PM	0	3	0	0	3	3	0	0	0	0	0	0	1	0	0	0	10	
4:25 PM	0	6	0	0	0	3	0	0	0	0	0	0	0	0	0	0	9	
4:30 PM	0	4	0	0	2	2	0	0	0	0	0	0	0	0	0	0	8	
4:35 PM	0	7	0	0	0	4	0	0	0	0	0	0	0	0	0	0	11	
4:40 PM	0	6	0	0	2	1	0	0	0	0	0	0	0	0	0	0	9	
4:45 PM	0	2	0	0	4	4	0	0	0	0	0	0	0	0	0	0	10	
4:50 PM	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4	
4:55 PM	0	5	2	0	0	1	0	0	0	0	0	0	0	0	0	0	8	94
5:00 PM	0	2	0	0	0	3	0	0	0	0	0	0	0	0	2	0	7	94
5:05 PM	0	2	0	0	0	4	0	0	0	0	0	0	0	0	3	0	9	97
5:10 PM	0	0	0	0	2	1	0	0	0	0	0	0	1	0	1	0	5	93
5:15 PM	0	1	0	0	0	6	0	0	0	0	0	0	0	0	0	0	7	97
5:20 PM	0	3	0	0	0	4	0	0	0	0	0	0	1	0	0	0	8	95
5:25 PM	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	4	90
5:30 PM	0	2	0	0	0	5	0	0	0	0	0	0	0	0	2	0	9	91
5:35 PM	0	4	1	0	0	2	0	0	0	0	0	0	1	0	0	0	8	88
5:40 PM	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4	83
5:45 PM	0	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	4	77
5:50 PM	0	1	1	0	0	6	0	0	0	0	0	0	0	0	1	0	9	82
5:55 PM	0	1	0	0	2	2	0	0	0	0	0	0	0	0	2	0	7	81

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	60	0	0	24	36	0	0	0	0	0	0	0	0	0	0	120
Heavy Trucks	0	0	0		4	0	0		0	0	0		0	0	0		4
Buses																	
Pedestrians		0				0				4				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

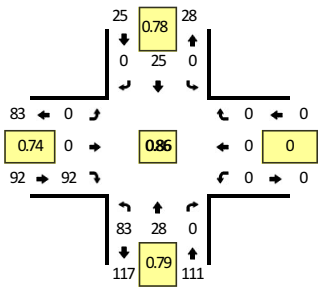
Type of peak hour being reported: Intersection Peak

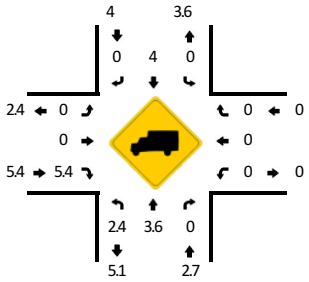
Method for determining peak hour: Total Entering Volume

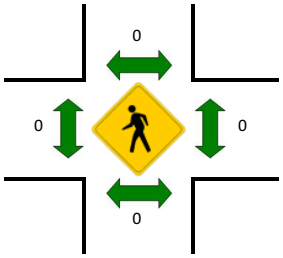
LOCATION: Altman Road -- Bluff Road (north)
CITY/STATE: Clackamas, OR

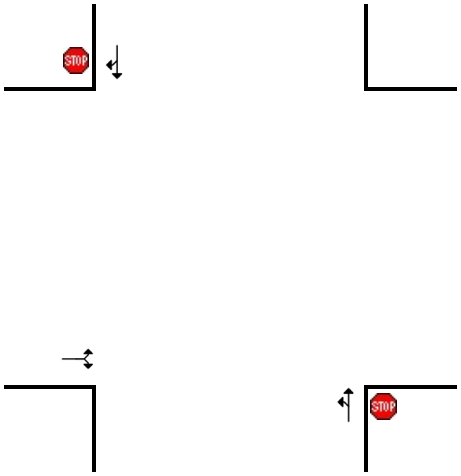
QC JOB #: 15711507
DATE: Wed, Feb 23 2022

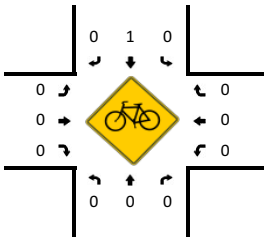
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:20 AM -- 7:35 AM

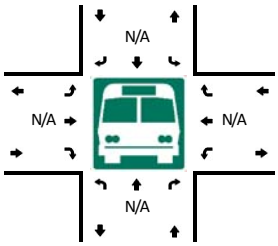


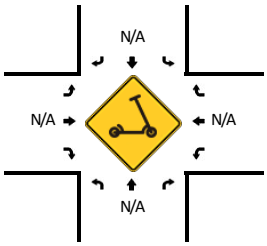












5-Min Count Period Beginning At	Altman Road (Northbound)				Altman Road (Southbound)				Bluff Road (north) (Eastbound)				Bluff Road (north) (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	4	0	0	0	2	0	0	0	0	10	0	0	0	0	0	19	
7:05 AM	5	2	0	0	0	0	0	0	0	0	4	0	0	0	0	0	11	
7:10 AM	7	1	0	0	0	4	0	0	0	0	9	0	0	0	0	0	21	
7:15 AM	9	1	0	0	0	2	0	0	0	0	7	0	0	0	0	0	19	
7:20 AM	6	3	0	0	0	1	0	0	0	0	12	0	0	0	0	0	22	
7:25 AM	10	3	0	0	0	2	0	0	0	0	7	0	0	0	0	0	22	
7:30 AM	6	1	0	0	0	3	0	0	0	0	12	0	0	0	0	0	22	
7:35 AM	8	1	0	0	0	2	0	0	0	0	9	0	0	0	0	0	20	
7:40 AM	4	2	0	0	0	2	0	0	0	0	7	0	0	0	0	0	15	
7:45 AM	12	2	0	0	0	4	0	0	0	0	5	0	0	0	0	0	23	
7:50 AM	11	3	0	0	0	1	0	0	0	0	5	0	0	0	0	0	20	
7:55 AM	2	5	0	0	0	2	0	0	0	0	5	0	0	0	0	0	14	228
8:00 AM	7	1	0	0	0	3	0	0	0	0	4	0	0	0	0	0	15	224
8:05 AM	2	2	0	0	0	0	0	0	0	0	4	0	0	0	0	0	8	221
8:10 AM	1	3	0	0	0	0	0	0	0	0	3	0	0	0	0	0	7	207
8:15 AM	1	2	0	0	0	1	0	0	0	0	5	0	0	0	0	0	9	197
8:20 AM	4	2	0	0	0	1	0	0	0	0	2	0	0	0	0	0	9	184
8:25 AM	2	1	0	0	0	1	0	0	0	0	6	0	0	0	0	0	10	172
8:30 AM	3	1	0	0	0	3	0	0	0	0	3	0	0	0	0	0	10	160
8:35 AM	4	2	0	0	0	2	0	0	0	0	4	0	0	0	0	0	12	152
8:40 AM	8	3	0	0	0	1	0	0	0	0	2	0	0	0	0	0	14	151
8:45 AM	4	1	0	0	0	1	0	0	0	0	4	0	0	0	0	0	10	138
8:50 AM	4	1	0	0	0	2	0	0	0	0	4	0	0	0	0	0	11	129
8:55 AM	4	2	0	0	0	2	0	0	0	0	4	0	0	0	0	0	12	127

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	88	28	0	0	0	24	0	0	0	0	124	0	0	0	0	0	264
Heavy Trucks	4	0	0		0	0	0		0	0	8		0	0	0		12
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

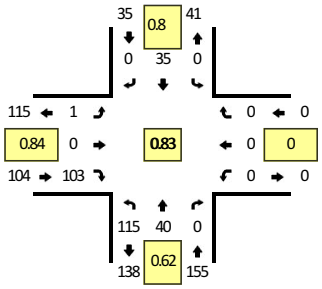
Type of peak hour being reported: Intersection Peak

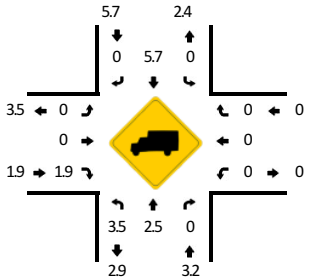
Method for determining peak hour: Total Entering Volume

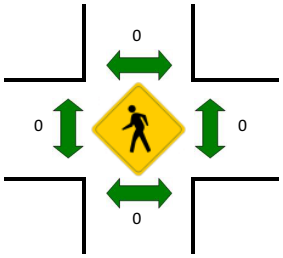
LOCATION: Altman Road -- Bluff Road (north)
CITY/STATE: Clackamas, OR

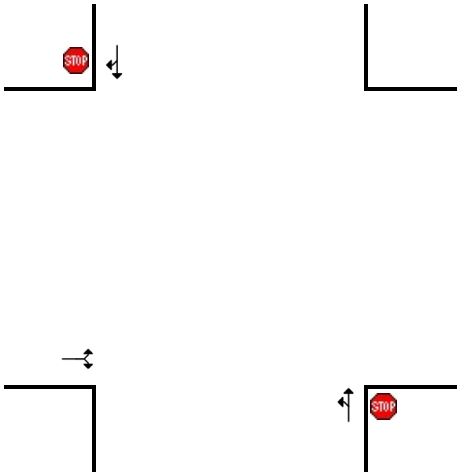
QC JOB #: 15711508
DATE: Wed, Feb 23 2022

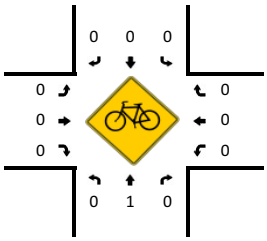
Peak-Hour: 4:10 PM -- 5:10 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

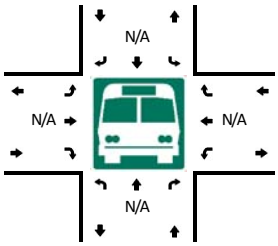


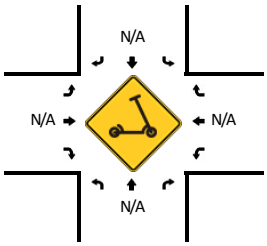












5-Min Count Period Beginning At	Altman Road (Northbound)				Altman Road (Southbound)				Bluff Road (north) (Eastbound)				Bluff Road (north) (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	3	2	0	0	0	2	1	0	0	0	3	0	0	0	0	0	11	
4:05 PM	7	1	0	0	0	4	0	0	0	0	7	0	0	0	0	0	19	
4:10 PM	13	1	0	0	0	8	0	0	0	0	15	0	0	0	0	0	37	
4:15 PM	7	1	0	0	0	1	0	0	0	0	7	0	0	0	0	0	16	
4:20 PM	5	5	0	0	0	2	0	0	0	0	9	0	0	0	0	0	21	
4:25 PM	9	3	0	0	0	4	0	0	0	0	7	0	0	0	0	0	23	
4:30 PM	10	7	0	0	0	2	0	0	0	0	6	0	0	0	0	0	25	
4:35 PM	21	6	0	0	0	2	0	0	0	0	2	0	0	0	0	0	31	
4:40 PM	14	5	0	0	0	2	0	0	0	0	12	0	0	0	0	0	33	
4:45 PM	10	2	0	0	0	2	0	0	0	0	9	0	0	0	0	0	23	
4:50 PM	5	1	0	0	0	5	0	0	0	0	10	0	0	0	0	0	21	
4:55 PM	6	6	0	0	0	1	0	0	0	0	8	0	0	0	0	0	21	281
5:00 PM	4	1	0	0	0	4	0	0	1	0	7	0	0	0	0	0	17	287
5:05 PM	11	2	0	0	0	2	0	0	0	0	11	0	0	0	0	0	26	294
5:10 PM	6	0	0	0	0	4	0	0	0	0	7	0	0	0	0	0	17	274
5:15 PM	6	2	0	0	0	5	0	0	0	0	10	0	0	0	0	0	23	281
5:20 PM	4	2	0	0	0	5	0	0	0	0	9	0	0	0	0	0	20	280
5:25 PM	3	1	0	0	0	1	0	0	0	0	2	0	0	0	0	0	7	264
5:30 PM	5	3	0	0	0	5	0	0	0	0	13	0	0	0	0	0	26	265
5:35 PM	12	5	0	0	0	3	0	0	0	0	8	0	0	0	0	0	28	262
5:40 PM	2	2	0	0	0	2	0	0	0	0	6	0	0	0	0	0	12	241
5:45 PM	5	4	0	0	0	0	0	0	0	0	8	0	0	0	0	0	17	235
5:50 PM	4	2	0	0	0	5	0	0	0	0	8	0	0	0	0	0	19	233
5:55 PM	5	1	0	0	0	2	1	0	0	0	6	0	0	0	0	0	15	227

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	180	72	0	0	0	24	0	0	0	0	80	0	0	0	0	0	356
Heavy Trucks	0	4	0		0	0	0		0	0	4		0	0	0		8
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	4	0		0	0	0		0	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

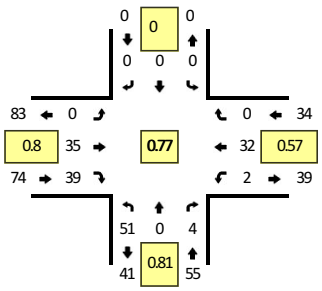
Type of peak hour being reported: Intersection Peak

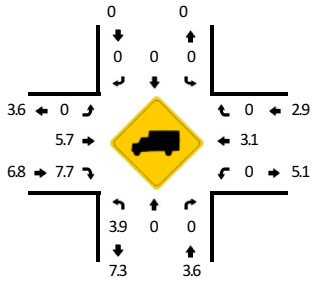
Method for determining peak hour: Total Entering Volume

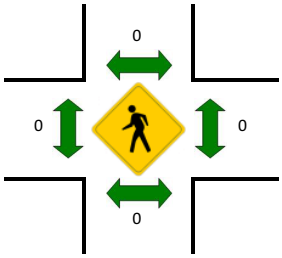
LOCATION: Altman Road -- Oxbow Drive
CITY/STATE: Multnomah, OR

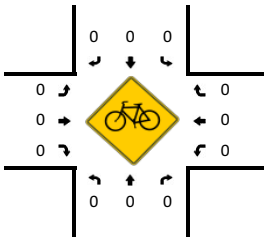
QC JOB #: 15711511
DATE: Wed, Feb 23 2022

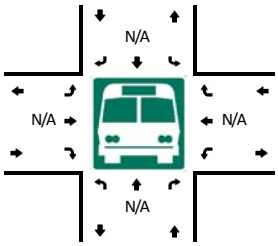
Peak-Hour: 7:05 AM -- 8:05 AM
Peak 15-Min: 7:15 AM -- 7:30 AM

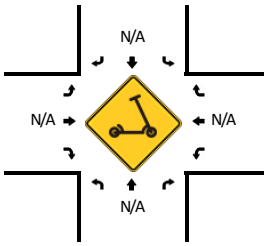












5-Min Count Period Beginning At	Altman Road (Northbound)				Altman Road (Southbound)				Oxbow Drive (Eastbound)				Oxbow Drive (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	0	2	0	0	0	0	0	0	3	1	0	0	0	0	0	9	
7:05 AM	4	0	1	0	0	0	0	0	0	2	2	0	0	0	0	0	9	
7:10 AM	4	0	0	0	0	0	0	0	0	3	4	0	0	2	0	0	13	
7:15 AM	5	0	0	0	0	0	0	0	0	5	3	0	0	5	0	0	18	
7:20 AM	6	0	0	0	0	0	0	0	0	4	1	0	0	5	0	0	16	
7:25 AM	4	0	0	0	0	0	0	0	0	3	7	0	1	4	0	0	19	
7:30 AM	2	0	0	0	0	0	0	0	0	1	6	0	0	3	0	0	12	
7:35 AM	3	0	1	0	0	0	0	0	0	5	1	0	1	2	0	0	13	
7:40 AM	5	0	0	0	0	0	0	0	0	0	3	0	0	1	0	0	9	
7:45 AM	2	0	1	0	0	0	0	0	0	3	3	0	0	2	0	0	11	
7:50 AM	4	0	1	0	0	0	0	0	0	1	3	0	0	6	0	0	15	
7:55 AM	7	0	0	0	0	0	0	0	0	5	5	0	0	0	0	0	17	161
8:00 AM	5	0	0	0	0	0	0	0	0	3	1	0	0	2	0	0	11	163
8:05 AM	5	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	8	162
8:10 AM	6	0	0	0	0	0	0	0	0	1	3	0	0	3	0	0	13	162
8:15 AM	3	0	1	0	0	0	0	0	0	1	2	0	0	5	0	0	12	156
8:20 AM	1	0	0	0	0	0	0	0	0	3	4	0	2	3	0	0	13	153
8:25 AM	3	0	0	0	0	0	0	0	0	1	3	0	0	1	0	0	8	142
8:30 AM	2	0	0	0	0	0	0	0	0	1	4	0	0	3	0	0	10	140
8:35 AM	1	0	1	0	0	0	0	0	0	1	3	0	0	0	0	0	6	133
8:40 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	4	128
8:45 AM	2	0	2	0	0	0	0	0	0	2	2	0	0	3	0	0	11	128
8:50 AM	2	0	0	0	0	0	0	0	0	1	4	0	0	2	0	0	9	122
8:55 AM	3	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	9	114

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	60	0	0	0	0	0	0	0	0	48	44	0	4	56	0	0	212
Heavy Trucks	0	0	0		0	0	0		0	8	0		0	0	0		8
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

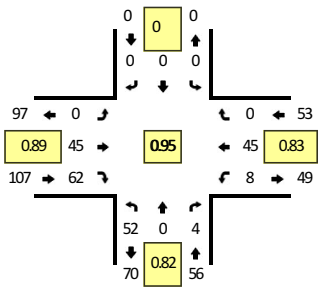
Type of peak hour being reported: Intersection Peak

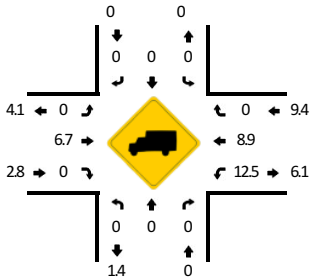
Method for determining peak hour: Total Entering Volume

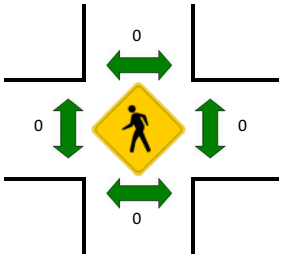
LOCATION: Altman Road -- Oxbow Drive
CITY/STATE: Multnomah, OR

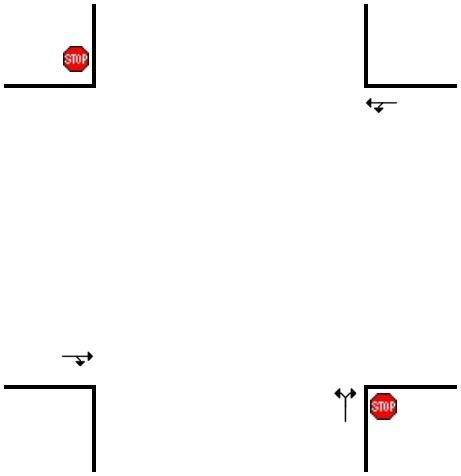
QC JOB #: 15711512
DATE: Wed, Feb 23 2022

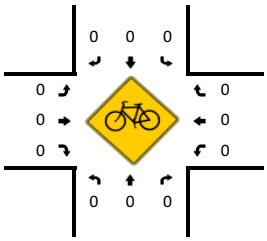
Peak-Hour: 4:05 PM -- 5:05 PM
Peak 15-Min: 4:20 PM -- 4:35 PM

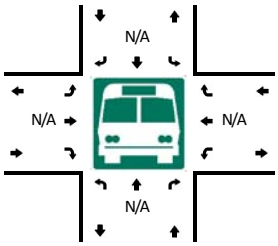


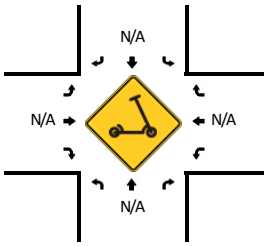












5-Min Count Period Beginning At	Altman Road (Northbound)				Altman Road (Southbound)				Oxbow Drive (Eastbound)				Oxbow Drive (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	0	0	0	0	0	0	0	0	0	6	0	1	2	0	0	11	
4:05 PM	5	0	0	0	0	0	0	0	0	8	8	0	0	2	0	0	23	
4:10 PM	2	0	1	0	0	0	0	0	0	4	4	0	2	2	0	0	15	
4:15 PM	3	0	1	0	0	0	0	0	0	1	2	0	1	4	0	0	12	
4:20 PM	3	0	0	0	0	0	0	0	0	6	7	0	2	5	0	0	23	
4:25 PM	4	0	0	0	0	0	0	0	0	2	6	0	1	3	0	0	16	
4:30 PM	7	0	0	0	0	0	0	0	0	3	6	0	1	1	0	0	18	
4:35 PM	4	0	1	0	0	0	0	0	0	6	4	0	0	5	0	0	20	
4:40 PM	4	0	1	0	0	0	0	0	0	5	4	0	0	4	0	0	18	
4:45 PM	5	0	0	0	0	0	0	0	0	2	6	0	1	3	0	0	17	
4:50 PM	3	0	0	0	0	0	0	0	0	1	4	0	0	4	0	0	12	
4:55 PM	6	0	0	0	0	0	0	0	0	3	9	0	0	6	0	0	24	209
5:00 PM	6	0	0	0	0	0	0	0	0	4	2	0	0	6	0	0	18	216
5:05 PM	0	0	0	0	0	0	0	0	0	2	5	0	1	5	0	0	13	206
5:10 PM	4	0	1	0	0	0	0	0	0	2	1	0	0	1	0	0	9	200
5:15 PM	2	0	1	0	0	0	0	0	0	4	10	0	0	2	0	0	19	207
5:20 PM	2	0	0	0	0	0	0	0	0	1	3	0	1	5	0	0	12	196
5:25 PM	4	0	0	0	0	0	0	0	0	2	3	0	0	2	0	0	11	191
5:30 PM	5	0	0	0	0	0	0	0	0	5	3	0	1	2	0	0	16	189
5:35 PM	3	0	0	0	0	0	0	0	0	4	5	0	0	3	0	0	15	184
5:40 PM	5	0	0	0	0	0	0	0	0	5	5	0	0	1	0	0	16	182
5:45 PM	7	0	0	0	0	0	0	0	0	4	6	0	0	2	0	0	19	184
5:50 PM	2	0	0	0	0	0	0	0	0	5	1	0	0	2	0	0	10	182
5:55 PM	2	0	0	0	0	0	0	0	0	5	4	0	0	0	0	0	11	169

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	56	0	0	0	0	0	0	0	0	44	76	0	16	36	0	0	228
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	4	0		8
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

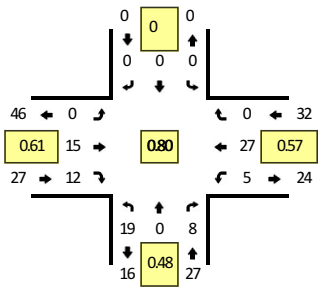
Type of peak hour being reported: Intersection Peak

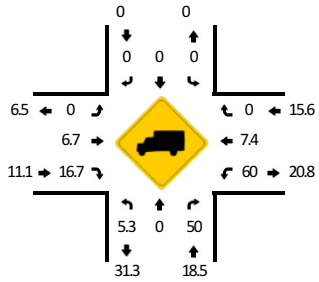
Method for determining peak hour: Total Entering Volume

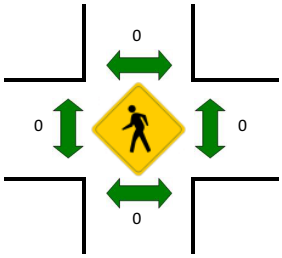
LOCATION: Cottrell Road -- Lusted Road
CITY/STATE: Multnomah, OR

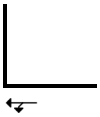
QC JOB #: 15711513
DATE: Wed, Feb 23 2022

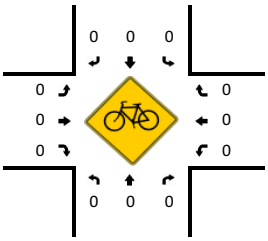
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:55 AM -- 8:10 AM

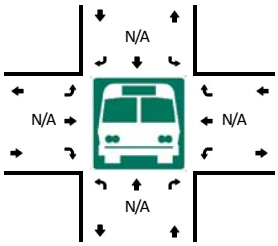


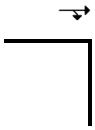


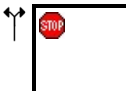


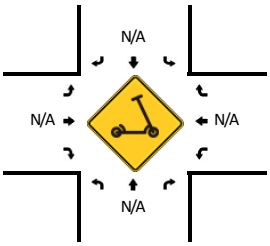












5-Min Count Period Beginning At	Cottrell Road (Northbound)				Cottrell Road (Southbound)				Lusted Road (Eastbound)				Lusted Road (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	
7:05 AM	1	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	4	
7:10 AM	0	0	0	0	0	0	0	0	0	4	0	0	2	1	0	0	7	
7:15 AM	4	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	7	
7:20 AM	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	4	
7:25 AM	1	0	0	0	0	0	0	0	0	1	1	0	0	3	0	0	6	
7:30 AM	3	0	1	0	0	0	0	0	0	1	1	0	0	1	0	0	7	
7:35 AM	1	0	0	0	0	0	0	0	0	1	2	0	0	2	0	0	6	
7:40 AM	2	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	5	
7:45 AM	0	0	0	0	0	0	0	0	0	1	2	0	0	2	0	0	5	
7:50 AM	2	0	0	0	0	0	0	0	0	3	1	0	1	1	0	0	8	
7:55 AM	1	0	0	0	0	0	0	0	0	2	2	0	0	5	0	0	10	72
8:00 AM	1	0	0	0	0	0	0	0	0	1	0	0	1	4	0	0	7	76
8:05 AM	4	0	0	0	0	0	0	0	0	0	2	0	1	2	0	1	10	82
8:10 AM	3	0	5	0	0	0	0	0	0	0	0	0	0	1	0	0	9	84
8:15 AM	1	0	1	0	0	0	0	0	0	1	0	0	0	3	0	0	6	83
8:20 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	2	0	0	4	83
8:25 AM	1	0	1	0	0	0	0	0	0	3	2	0	0	2	0	0	9	86
8:30 AM	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	3	82
8:35 AM	1	0	0	0	0	0	0	0	0	2	0	0	1	4	0	0	8	84
8:40 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	3	82
8:45 AM	0	0	1	0	0	0	0	0	0	2	2	0	2	1	0	0	8	85
8:50 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	4	81
8:55 AM	2	0	1	0	0	0	0	0	0	5	0	0	1	1	0	0	10	81

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	0	0	0	0	0	0	0	0	12	16	0	8	44	0	4	108
Heavy Trucks	0	0	0		0	0	0		0	0	0		4	4	0		8
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

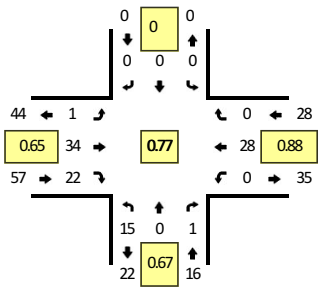
Type of peak hour being reported: Intersection Peak

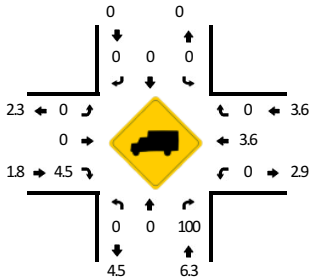
Method for determining peak hour: Total Entering Volume

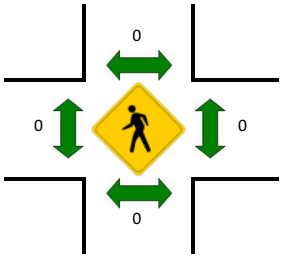
LOCATION: Cottrell Road -- Lusted Road
CITY/STATE: Multnomah, OR

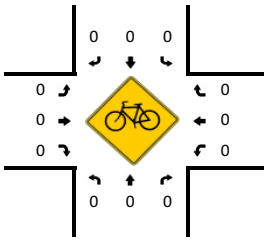
QC JOB #: 15711514
DATE: Wed, Feb 23 2022

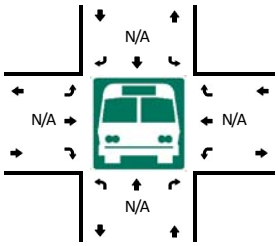
Peak-Hour: 4:05 PM -- 5:05 PM
Peak 15-Min: 4:05 PM -- 4:20 PM

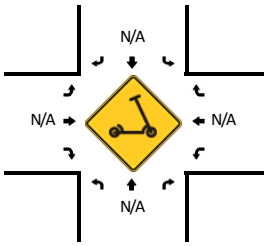












5-Min Count Period Beginning At	Cottrell Road (Northbound)				Cottrell Road (Southbound)				Lusted Road (Eastbound)				Lusted Road (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	3	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	6	
4:05 PM	1	0	0	0	0	0	0	0	0	8	2	0	0	4	0	0	15	
4:10 PM	2	0	0	0	0	0	0	0	0	7	2	0	0	1	0	0	12	
4:15 PM	1	0	0	0	0	0	0	0	0	2	1	0	0	2	0	0	6	
4:20 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	4	
4:25 PM	0	0	1	0	0	0	0	0	0	3	2	0	0	1	0	0	7	
4:30 PM	1	0	0	0	0	0	0	0	0	2	2	0	0	4	0	0	9	
4:35 PM	1	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	4	
4:40 PM	1	0	0	0	0	0	0	0	0	3	3	1	0	3	0	0	11	
4:45 PM	4	0	0	0	0	0	0	0	0	2	2	0	0	1	0	0	9	
4:50 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2	
4:55 PM	1	0	0	0	0	0	0	0	0	4	3	0	0	6	0	0	14	99
5:00 PM	3	0	0	0	0	0	0	0	0	1	3	0	0	1	0	0	8	101
5:05 PM	1	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	5	91
5:10 PM	3	0	0	0	0	0	0	0	0	2	1	0	1	3	0	0	10	89
5:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	85
5:20 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	84
5:25 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	3	80
5:30 PM	0	0	0	0	0	0	0	0	0	2	2	0	0	1	0	0	5	76
5:35 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	2	0	0	5	77
5:40 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3	69
5:45 PM	2	0	1	0	0	0	0	0	0	4	1	0	0	3	0	0	11	71
5:50 PM	0	0	0	0	0	0	0	0	0	0	5	0	1	4	0	0	10	79
5:55 PM	2	0	0	0	0	0	0	0	0	4	1	0	0	1	0	0	8	73

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	16	0	0	0	0	0	0	0	0	68	20	0	0	28	0	0	132
Heavy Trucks	0	0	0		0	0	0		0	0	4		0	4	0		8
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

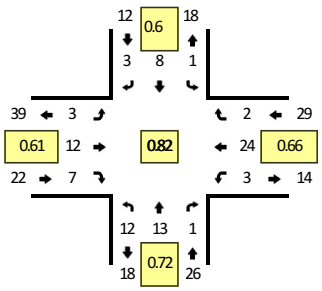
Type of peak hour being reported: Intersection Peak

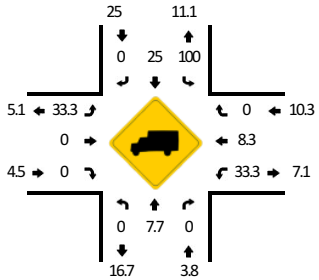
Method for determining peak hour: Total Entering Volume

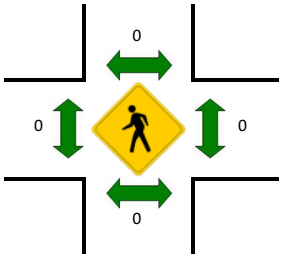
LOCATION: Cottrell Road -- Dodge Park Blvd
CITY/STATE: Multnomah, OR

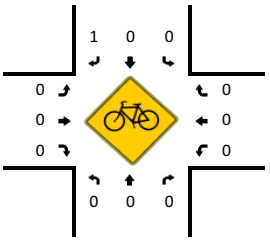
QC JOB #: 15711515
DATE: Wed, Feb 23 2022

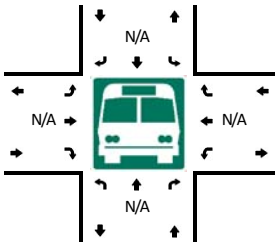
Peak-Hour: 7:10 AM -- 8:10 AM
Peak 15-Min: 7:35 AM -- 7:50 AM

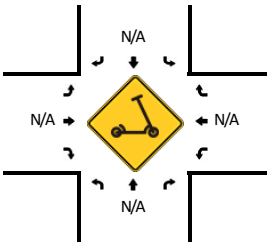












5-Min Count Period Beginning At	Cottrell Road (Northbound)				Cottrell Road (Southbound)				Dodge Park Blvd (Eastbound)				Dodge Park Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	2	1	0	0	0	3	0	0	0	0	0	6	
7:05 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	3	
7:10 AM	1	0	0	0	0	0	0	0	1	2	0	0	0	2	0	0	6	
7:15 AM	3	2	0	0	0	0	0	0	0	1	0	0	0	2	0	0	8	
7:20 AM	1	1	0	0	0	0	0	0	0	0	1	0	0	2	1	0	6	
7:25 AM	0	2	0	0	0	0	0	0	0	3	1	0	0	1	0	0	7	
7:30 AM	2	1	0	0	0	1	1	0	1	0	2	0	0	2	0	0	10	
7:35 AM	1	0	1	0	0	1	0	0	0	1	1	0	1	1	1	0	8	
7:40 AM	1	2	0	0	0	1	0	0	0	1	0	0	0	2	0	0	7	
7:45 AM	1	0	0	0	0	3	0	0	1	1	0	0	0	6	0	0	12	
7:50 AM	1	1	0	0	1	0	0	0	0	1	1	0	1	1	0	0	7	
7:55 AM	0	1	0	0	0	1	0	0	0	0	1	0	0	2	0	0	5	85
8:00 AM	1	0	0	0	0	1	0	0	0	2	0	0	0	1	0	0	5	84
8:05 AM	0	3	0	0	0	0	2	0	0	0	0	0	1	2	0	0	8	89
8:10 AM	0	1	0	0	0	0	1	0	1	0	0	0	0	1	0	0	4	87
8:15 AM	2	0	0	0	0	0	1	0	2	1	0	0	0	1	0	0	7	86
8:20 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	3	83
8:25 AM	1	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	4	80
8:30 AM	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	73
8:35 AM	0	0	0	0	0	0	1	0	0	4	0	0	0	1	0	0	6	71
8:40 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	3	67
8:45 AM	0	0	0	0	0	4	1	0	1	2	0	0	0	0	0	0	8	63
8:50 AM	1	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	4	60
8:55 AM	0	2	0	0	0	0	1	0	0	0	0	0	0	2	1	0	6	61

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	8	4	0	0	20	0	0	4	12	4	0	4	36	4	0	108
Heavy Trucks	0	0	0		0	4	0		4	0	0		0	8	0		16
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

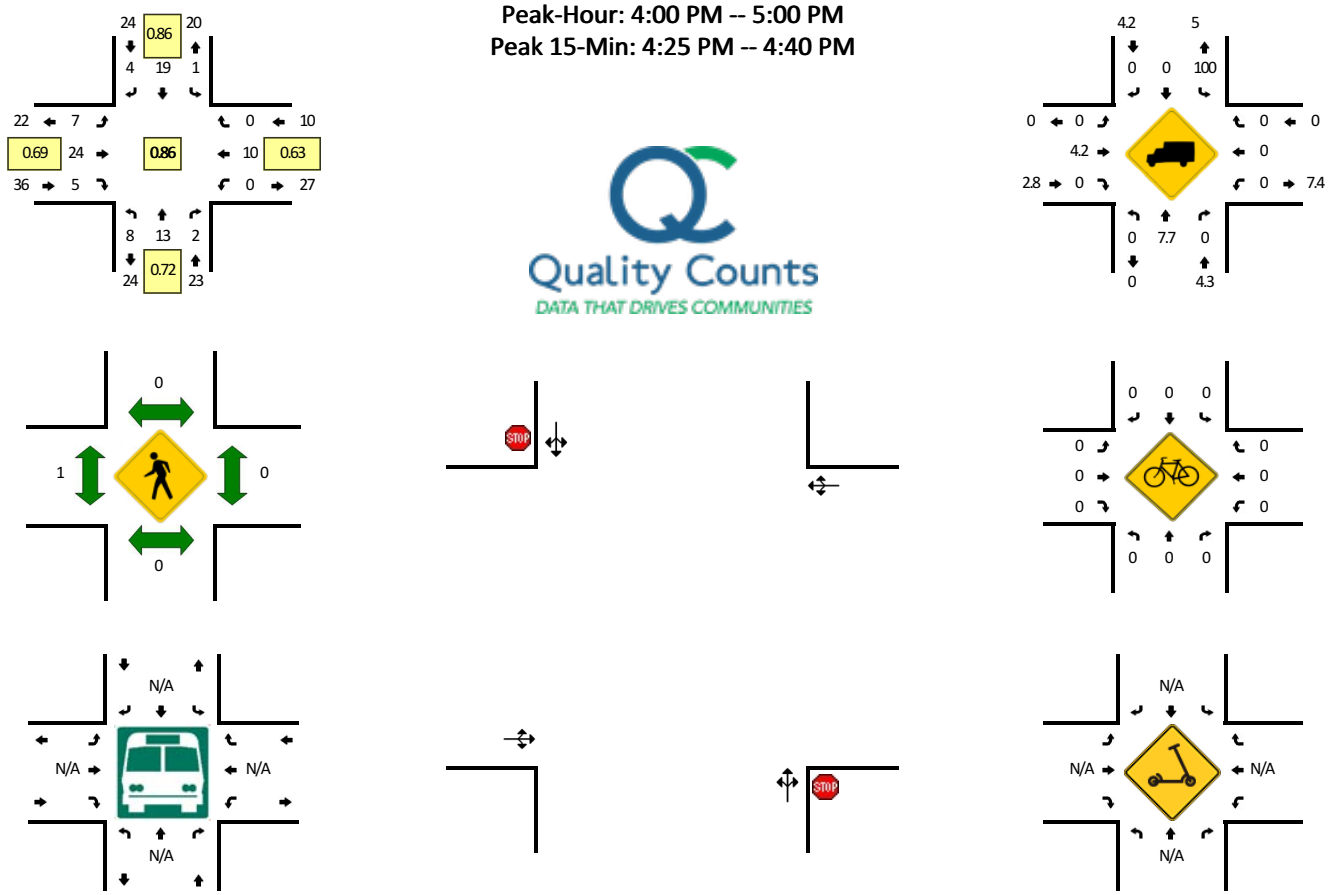
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Cottrell Road -- Dodge Park Blvd
CITY/STATE: Multnomah, OR

QC JOB #: 15711516
DATE: Wed, Feb 23 2022

Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:25 PM -- 4:40 PM



5-Min Count Period Beginning At	Cottrell Road (Northbound)				Cottrell Road (Southbound)				Dodge Park Blvd (Eastbound)				Dodge Park Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	2	0	0	0	2	1	0	0	1	0	0	0	1	0	0	9	
4:05 PM	0	0	0	0	1	1	0	0	0	0	1	0	0	1	0	0	4	
4:10 PM	1	3	0	0	0	1	0	0	0	1	0	0	0	1	0	0	7	
4:15 PM	1	0	0	0	0	2	0	0	1	5	0	0	0	2	0	0	11	
4:20 PM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	
4:25 PM	1	1	0	0	0	2	1	0	0	2	0	0	0	0	0	0	7	
4:30 PM	1	1	0	0	0	1	1	0	0	4	2	0	0	1	0	0	11	
4:35 PM	1	1	1	0	0	2	0	0	1	2	1	0	0	0	0	0	9	
4:40 PM	0	0	1	0	0	3	0	0	1	2	0	0	0	0	0	0	7	
4:45 PM	0	3	0	0	0	2	0	0	1	1	0	0	0	1	0	0	8	
4:50 PM	1	0	0	0	0	1	0	0	0	4	0	0	0	2	0	0	8	
4:55 PM	0	2	0	0	0	2	1	0	1	2	1	0	0	1	0	0	10	93
5:00 PM	1	1	0	0	0	3	0	0	1	0	1	0	0	0	0	0	7	91
5:05 PM	0	1	0	0	0	1	0	0	0	0	2	0	0	0	0	0	4	91
5:10 PM	1	2	0	0	1	0	0	0	0	1	1	0	0	1	0	0	7	91
5:15 PM	0	0	0	0	1	0	0	0	0	2	0	0	1	2	0	0	6	86
5:20 PM	1	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	5	89
5:25 PM	1	0	0	0	0	1	0	0	1	2	2	0	0	1	0	0	8	90
5:30 PM	0	0	0	0	0	1	1	0	0	4	2	0	0	0	0	0	8	87
5:35 PM	0	0	0	0	1	2	0	0	0	2	0	0	0	1	0	0	6	84
5:40 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	3	80
5:45 PM	1	0	0	0	0	1	0	0	2	1	1	0	0	0	0	0	6	78
5:50 PM	0	0	0	0	0	3	0	0	0	2	7	0	0	0	0	0	12	82
5:55 PM	0	2	0	0	0	1	0	0	1	1	2	0	0	0	0	0	7	79

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	12	4	0	0	20	8	0	4	32	12	0	0	4	0	0	108
Heavy Trucks	0	4	0		0	0	0		0	0	0		0	0	0		4
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

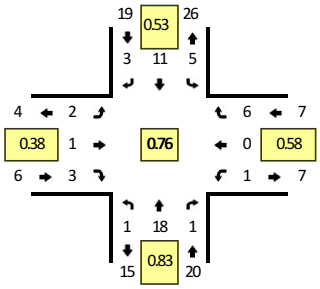
Type of peak hour being reported: Intersection Peak

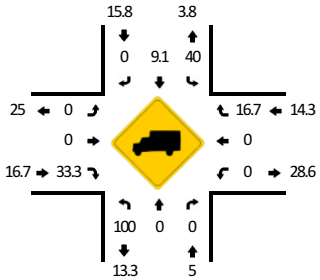
Method for determining peak hour: Total Entering Volume

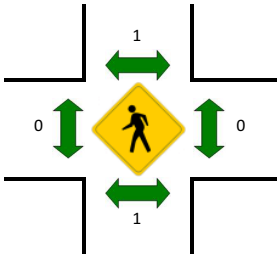
LOCATION: Cottrell Road -- Carpenter Lane
CITY/STATE: Multnomah, OR

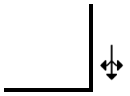
QC JOB #: 15711517
DATE: Wed, Feb 23 2022

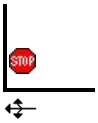
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

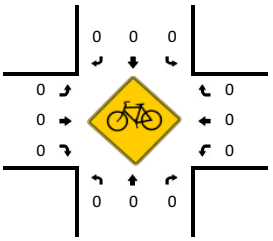


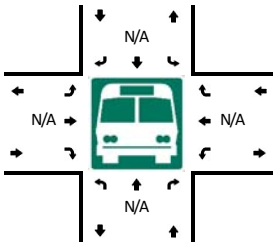


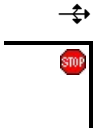


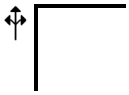


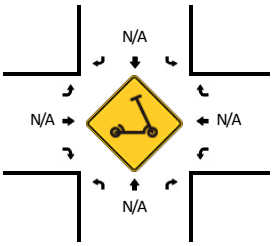












5-Min Count Period Beginning At	Cottrell Road (Northbound)				Cottrell Road (Southbound)				Carpenter Lane (Eastbound)				Carpenter Lane (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	4	
7:05 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
7:10 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
7:15 AM	0	3	0	0	0	0	0	0	1	0	1	0	0	0	1	0	6	
7:20 AM	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	3	
7:25 AM	0	2	0	0	0	1	0	0	0	1	0	0	0	0	0	0	4	
7:30 AM	0	3	0	0	1	1	1	0	0	0	0	0	0	0	0	0	6	
7:35 AM	0	1	0	0	0	3	0	0	1	0	0	0	0	0	0	0	5	
7:40 AM	0	2	0	0	0	2	1	0	0	0	0	0	0	0	1	0	6	
7:45 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	3	
7:50 AM	0	2	0	0	0	2	1	0	0	0	0	0	0	0	0	0	5	
7:55 AM	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	3	48
8:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	46
8:05 AM	0	1	1	0	0	1	0	0	0	0	0	0	1	0	2	0	6	51
8:10 AM	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	52
8:15 AM	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	48
8:20 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	46
8:25 AM	0	3	0	0	1	1	0	0	0	0	0	0	0	0	1	0	6	48
8:30 AM	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	3	45
8:35 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	41
8:40 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	37
8:45 AM	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	4	38
8:50 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	35
8:55 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	33

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	24	0	0	4	24	8	0	4	0	0	0	0	0	4	0	68
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

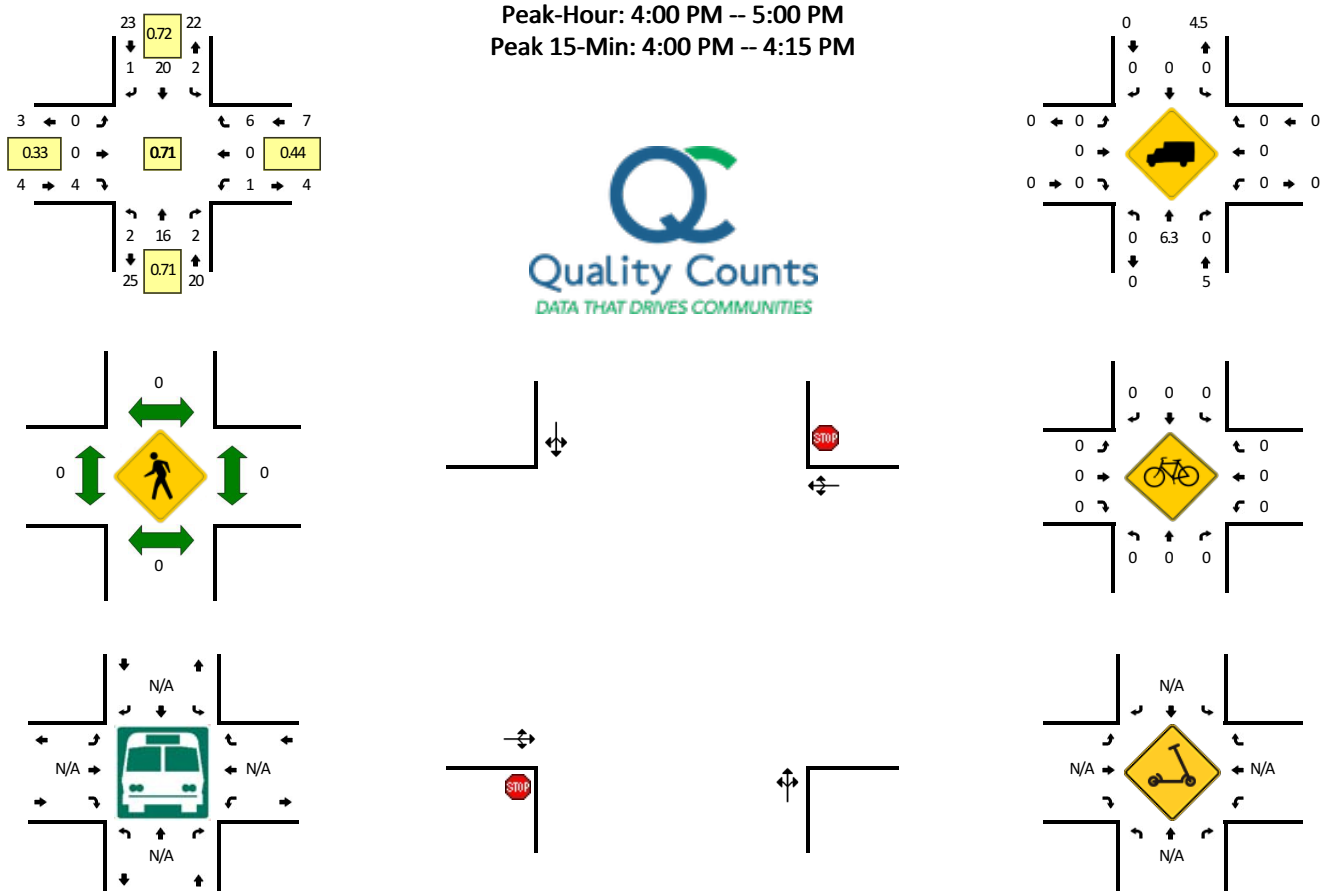
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Cottrell Road -- Carpenter Lane
CITY/STATE: Multnomah, OR

QC JOB #: 15711518
DATE: Wed, Feb 23 2022

Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:00 PM -- 4:15 PM



5-Min Count Period Beginning At	Cottrell Road (Northbound)				Cottrell Road (Southbound)				Carpenter Lane (Eastbound)				Carpenter Lane (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	2	0	0	0	2	0	0	0	0	2	0	0	0	2	0	8	
4:05 PM	0	0	0	0	1	1	0	0	0	0	1	0	1	0	0	0	4	
4:10 PM	2	3	0	0	0	1	0	0	0	0	0	0	0	0	1	0	7	
4:15 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	3	
4:20 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
4:25 PM	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5	
4:30 PM	0	1	1	0	1	2	0	0	0	0	0	0	0	0	1	0	6	
4:35 PM	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	5	
4:40 PM	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	4	
4:45 PM	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4	
4:50 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	2	
4:55 PM	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	5	54
5:00 PM	0	2	0	0	1	3	0	0	0	0	0	0	0	0	0	0	6	52
5:05 PM	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	4	52
5:10 PM	0	1	0	0	0	1	0	0	2	0	1	0	0	0	0	0	5	50
5:15 PM	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	3	50
5:20 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	51
5:25 PM	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	4	50
5:30 PM	0	0	0	0	1	2	0	0	0	0	1	0	0	0	0	0	4	48
5:35 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	45
5:40 PM	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	43
5:45 PM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3	42
5:50 PM	0	0	0	0	2	7	0	0	0	0	0	0	0	0	1	0	10	50
5:55 PM	0	1	0	0	1	3	0	0	0	0	0	0	0	0	0	0	5	50

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	20	0	0	4	16	0	0	0	0	12	0	4	0	12	0	76
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

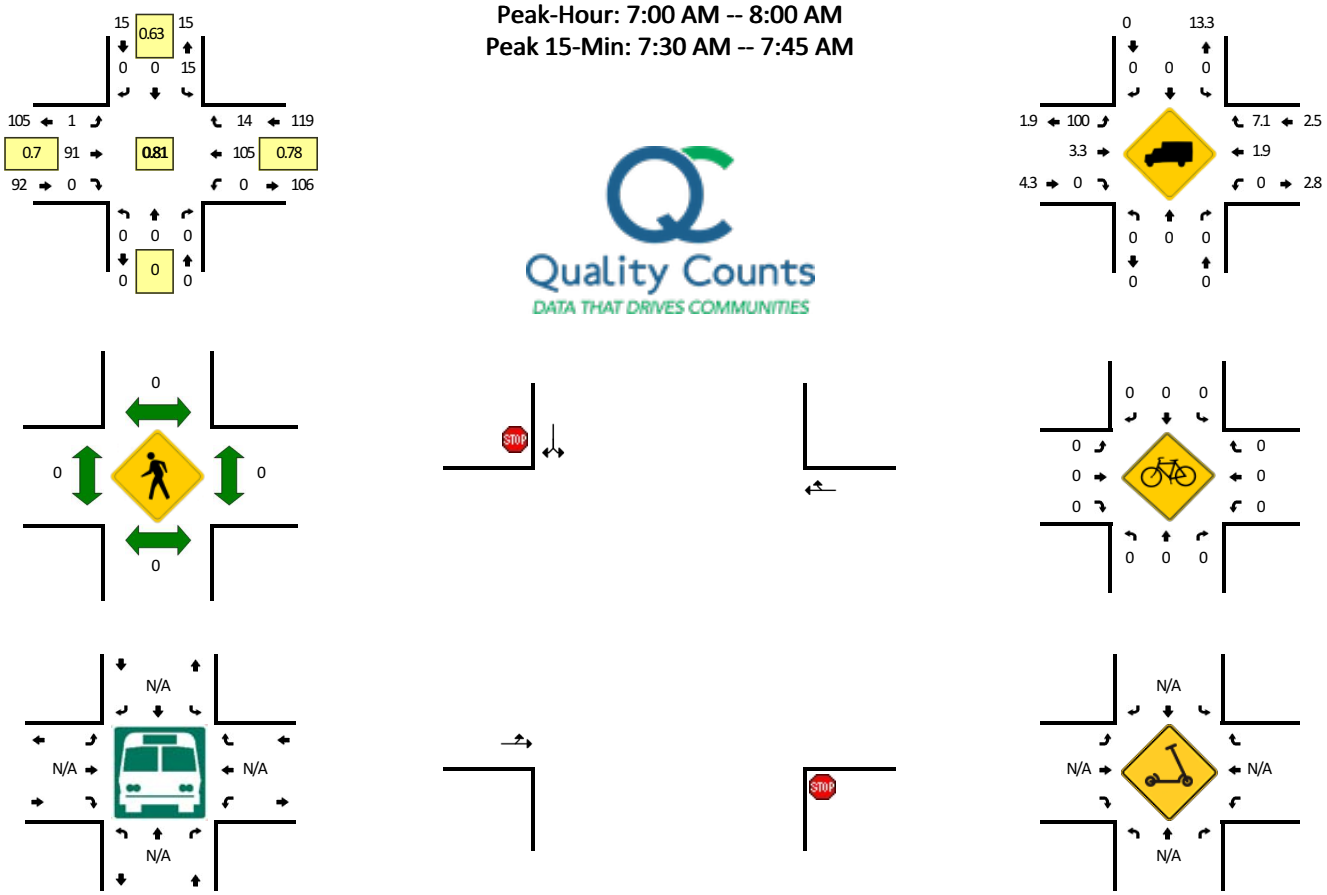
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Cottrell Road -- Bluff Road
CITY/STATE: Clackamas, OR

QC JOB #: 15711519
DATE: Wed, Feb 23 2022

Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



5-Min Count Period Beginning At	Cottrell Road (Northbound)				Cottrell Road (Southbound)				Bluff Road (Eastbound)				Bluff Road (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	6	0	0	10	
7:05 AM	0	0	0	0	3	0	0	0	0	4	0	0	0	7	0	0	14	
7:10 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	6	3	0	12	
7:15 AM	0	0	0	0	0	0	0	0	0	13	0	0	0	9	1	0	23	
7:20 AM	0	0	0	0	1	0	0	0	0	8	0	0	0	12	0	0	21	
7:25 AM	0	0	0	0	0	0	0	0	0	8	0	0	0	10	3	0	21	
7:30 AM	0	0	0	0	1	0	0	0	0	15	0	0	0	10	1	0	27	
7:35 AM	0	0	0	0	3	0	0	0	0	10	0	0	0	7	1	0	21	
7:40 AM	0	0	0	0	2	0	0	0	0	8	0	0	0	10	2	0	22	
7:45 AM	0	0	0	0	0	0	0	0	1	6	0	0	0	16	1	0	24	
7:50 AM	0	0	0	0	2	0	0	0	0	5	0	0	0	8	1	0	16	
7:55 AM	0	0	0	0	3	0	0	0	0	7	0	0	0	4	1	0	15	226
8:00 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	4	1	0	9	225
8:05 AM	0	0	0	0	2	0	0	0	0	7	0	0	0	4	2	0	15	226
8:10 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	3	3	0	8	222
8:15 AM	0	0	0	0	2	0	0	0	0	7	0	0	0	3	0	0	12	211
8:20 AM	0	0	0	0	1	0	0	0	0	2	0	0	0	3	1	0	7	197
8:25 AM	0	0	0	0	1	0	0	0	0	7	0	0	0	4	2	0	14	190
8:30 AM	0	0	0	0	0	0	0	0	0	5	0	0	0	4	0	0	9	172
8:35 AM	0	0	0	0	0	0	0	0	0	5	0	0	0	2	1	0	8	159
8:40 AM	0	0	0	0	0	0	1	0	0	2	0	0	0	9	2	0	14	151
8:45 AM	0	0	0	0	0	0	0	0	0	6	0	0	0	4	0	0	10	137
8:50 AM	0	0	0	0	2	0	0	0	0	5	0	0	0	6	1	0	14	135
8:55 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	4	1	0	6	126

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	24	0	0	0	0	132	0	0	0	108	16	0	280
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	0	4		8
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

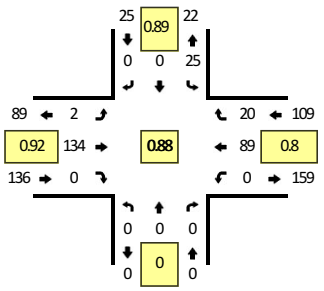
Type of peak hour being reported: Intersection Peak

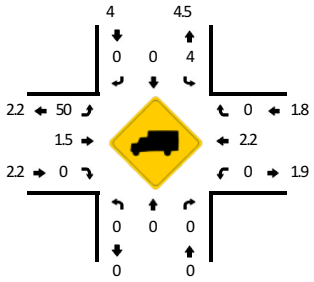
Method for determining peak hour: Total Entering Volume

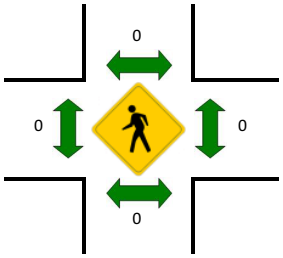
LOCATION: Cottrell Road -- Bluff Road
CITY/STATE: Clackamas, OR

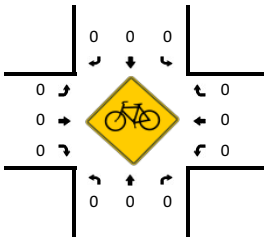
QC JOB #: 15711520
DATE: Wed, Feb 23 2022

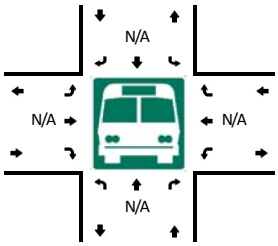
Peak-Hour: 4:10 PM -- 5:10 PM
Peak 15-Min: 4:10 PM -- 4:25 PM

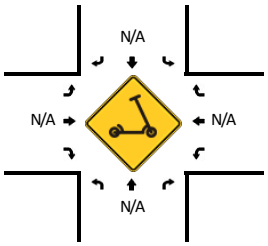












5-Min Count Period Beginning At	Cottrell Road (Northbound)				Cottrell Road (Southbound)				Bluff Road (Eastbound)				Bluff Road (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	7	0	0	0	0	7	0	0	0	5	1	0	20	
4:05 PM	0	0	0	0	1	0	0	0	0	14	0	0	0	5	1	0	21	
4:10 PM	0	0	0	0	3	0	0	0	0	17	0	0	0	11	4	0	35	
4:15 PM	0	0	0	0	2	0	0	0	0	10	0	0	0	11	0	0	23	
4:20 PM	0	0	0	0	2	0	0	0	1	8	0	0	0	8	0	0	19	
4:25 PM	0	0	0	0	1	0	0	0	1	10	0	0	0	10	1	0	23	
4:30 PM	0	0	0	0	3	0	0	0	0	14	0	0	0	4	2	0	23	
4:35 PM	0	0	0	0	2	0	0	0	0	12	0	0	0	6	2	0	22	
4:40 PM	0	0	0	0	2	0	0	0	0	9	0	0	0	7	4	0	22	
4:45 PM	0	0	0	0	3	0	0	0	0	12	0	0	0	4	1	0	20	
4:50 PM	0	0	0	0	1	0	0	0	0	11	0	0	0	4	1	0	17	
4:55 PM	0	0	0	0	2	0	0	0	0	7	0	0	0	11	3	0	23	268
5:00 PM	0	0	0	0	2	0	0	0	0	14	0	0	0	4	0	0	20	268
5:05 PM	0	0	0	0	2	0	0	0	0	10	0	0	0	9	2	0	23	270
5:10 PM	0	0	0	0	0	0	0	0	0	11	0	0	0	6	0	0	17	252
5:15 PM	0	0	0	0	2	0	0	0	0	12	0	0	0	6	1	0	21	250
5:20 PM	0	0	0	0	1	0	0	0	0	11	0	0	0	4	1	0	17	248
5:25 PM	0	0	0	0	0	0	0	0	0	8	0	0	0	5	0	0	13	238
5:30 PM	0	0	0	0	4	0	0	0	0	9	0	0	0	3	0	0	16	231
5:35 PM	0	0	0	0	2	0	1	0	0	12	0	0	0	14	0	0	29	238
5:40 PM	0	0	0	0	2	0	0	0	0	11	0	0	0	5	1	0	19	235
5:45 PM	0	0	0	0	1	0	1	0	0	6	0	0	0	7	0	0	15	230
5:50 PM	0	0	0	0	4	0	0	0	0	12	0	0	0	2	0	0	18	231
5:55 PM	0	0	0	0	4	0	0	0	0	9	0	0	0	10	1	0	24	232

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	28	0	0	0	4	140	0	0	0	120	16	0	308
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	8	0		8
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

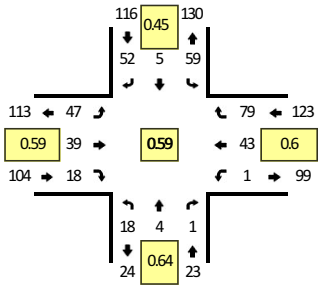
Type of peak hour being reported: Intersection Peak

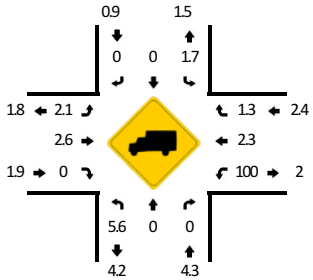
Method for determining peak hour: Total Entering Volume

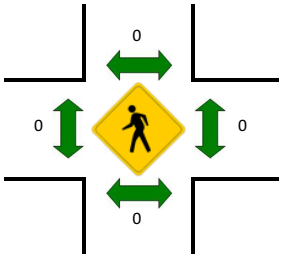
LOCATION: Proctor Road -- Bluff Road
CITY/STATE: Clackamas, OR

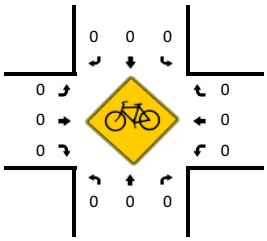
QC JOB #: 15711521
DATE: Wed, Feb 23 2022

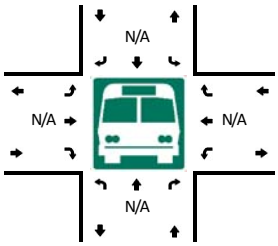
Peak-Hour: 7:10 AM -- 8:10 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

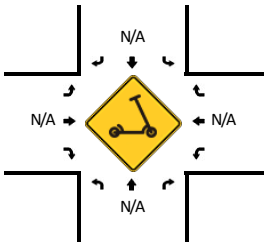












5-Min Count Period Beginning At	Proctor Road (Northbound)				Proctor Road (Southbound)				Bluff Road (Eastbound)				Bluff Road (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	4	0	0	0	0	0	1	0	0	2	0	0	0	3	1	0	11	
7:05 AM	3	0	0	0	0	0	0	0	1	2	2	0	0	1	0	0	9	
7:10 AM	2	0	0	0	1	0	0	0	3	1	0	0	0	8	3	0	18	
7:15 AM	3	0	1	0	1	0	1	0	2	3	1	0	0	6	2	0	20	
7:20 AM	3	0	0	0	1	0	0	0	3	5	1	0	0	5	7	0	25	
7:25 AM	1	1	0	0	7	1	10	0	5	1	1	0	0	3	9	0	39	
7:30 AM	1	0	0	0	8	0	6	0	9	4	2	0	0	3	14	0	47	
7:35 AM	0	0	0	0	7	2	6	0	8	5	1	0	0	2	16	0	47	
7:40 AM	0	2	0	0	17	0	12	0	8	5	2	0	0	2	14	0	62	
7:45 AM	2	0	0	0	9	0	11	0	6	0	1	0	0	4	9	0	42	
7:50 AM	3	0	0	0	5	0	4	0	1	3	1	0	0	2	3	0	22	
7:55 AM	0	0	0	0	3	0	1	0	1	4	3	0	0	2	0	0	14	356
8:00 AM	1	0	0	0	0	1	1	0	1	6	1	0	1	2	1	0	15	360
8:05 AM	2	1	0	0	0	1	0	0	0	2	4	0	0	4	1	0	15	366
8:10 AM	3	0	0	0	2	0	0	0	0	3	1	0	1	2	0	0	12	360
8:15 AM	1	0	0	0	0	0	1	0	0	7	5	0	0	2	0	0	16	356
8:20 AM	3	0	0	0	1	2	0	0	2	1	1	0	0	2	1	0	13	344
8:25 AM	2	0	0	0	1	0	1	0	1	1	5	0	0	1	0	0	12	317
8:30 AM	2	0	0	0	0	0	0	0	0	3	2	0	0	3	0	0	10	280
8:35 AM	0	0	0	0	0	1	0	0	0	2	3	0	0	1	1	0	8	241
8:40 AM	3	0	0	0	0	0	0	0	0	1	1	0	0	6	0	0	11	190
8:45 AM	1	0	0	0	0	0	0	0	1	0	2	0	0	2	0	0	6	154
8:50 AM	1	0	0	0	2	0	3	0	0	6	0	0	1	3	0	0	16	148
8:55 AM	0	0	0	0	1	0	0	0	0	0	2	0	1	3	0	0	7	141

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	8	0	0	128	8	96	0	100	56	20	0	0	28	176	0	624
Heavy Trucks	0	0	0		4	0	0		0	0	0		0	4	4		12
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

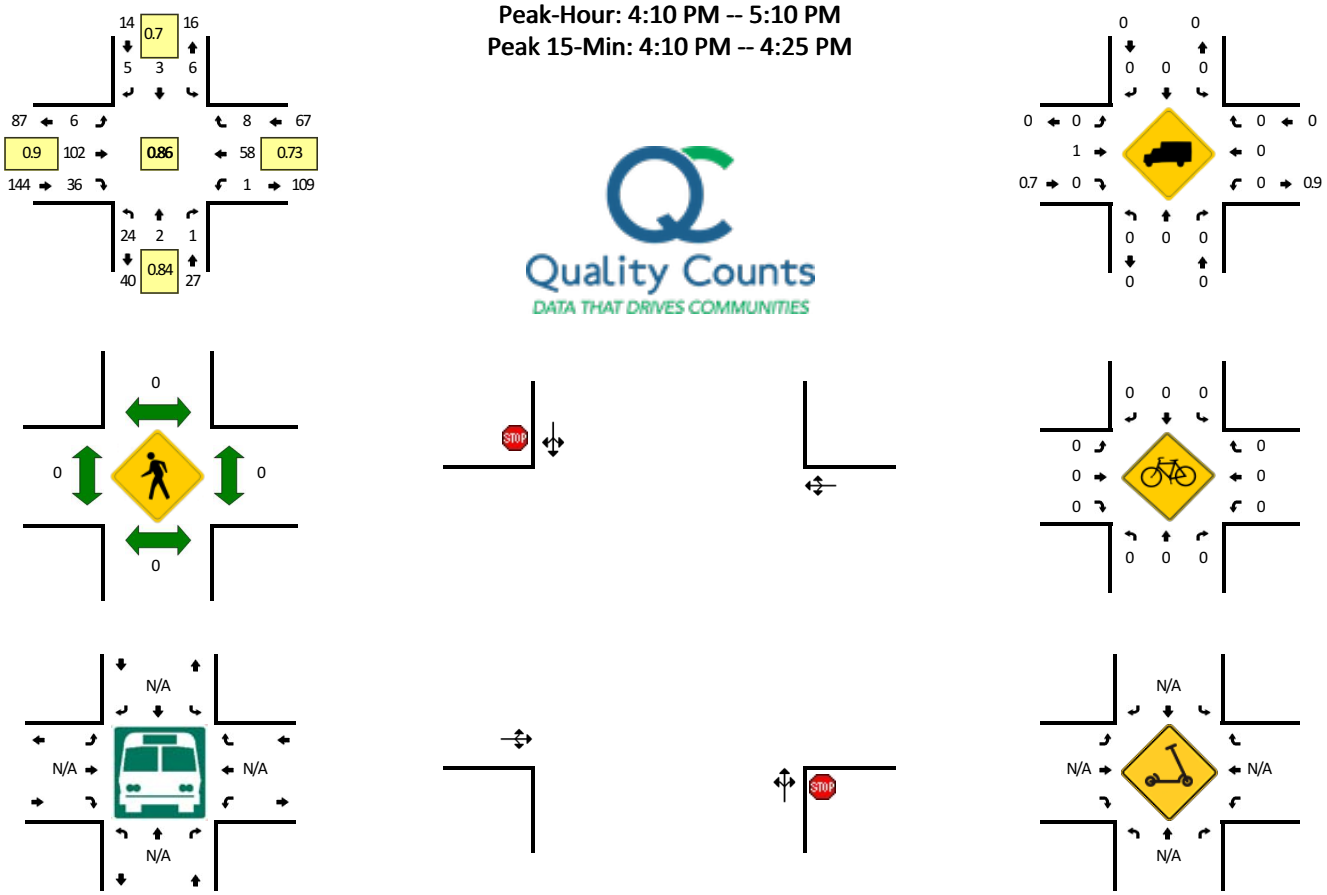
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Proctor Road -- Bluff Road
CITY/STATE: Clackamas, OR

QC JOB #: 15711522
DATE: Wed, Feb 23 2022

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



5-Min Count Period Beginning At	Proctor Road (Northbound)				Proctor Road (Southbound)				Bluff Road (Eastbound)				Bluff Road (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	0	0	0	2	0	1	0	3	8	0	0	0	5	0	0	21	
4:05 PM	0	0	2	0	1	1	0	0	0	8	2	0	1	2	0	0	17	
4:10 PM	1	0	0	0	0	0	0	0	1	10	7	0	1	7	1	0	28	
4:15 PM	2	0	0	0	0	0	2	0	0	6	4	0	0	8	0	0	22	
4:20 PM	4	1	0	0	0	0	0	0	0	11	1	0	0	6	0	0	23	
4:25 PM	0	0	1	0	1	1	0	0	0	6	3	0	0	5	2	0	19	
4:30 PM	1	0	0	0	2	1	0	0	0	10	4	0	0	4	3	0	25	
4:35 PM	3	1	0	0	0	0	0	0	0	8	2	0	0	5	0	0	19	
4:40 PM	2	0	0	0	1	1	0	0	0	9	4	0	0	6	1	0	24	
4:45 PM	1	0	0	0	0	0	1	0	0	8	2	0	0	2	0	0	14	
4:50 PM	2	0	0	0	0	0	0	0	1	9	2	0	0	2	0	0	16	
4:55 PM	2	0	0	0	2	0	0	0	1	9	2	0	0	7	0	0	23	251
5:00 PM	2	0	0	0	0	0	0	0	0	8	2	0	0	3	0	0	15	245
5:05 PM	4	0	0	0	0	0	2	0	3	8	3	0	0	3	1	0	24	252
5:10 PM	3	0	0	0	0	0	0	0	2	4	3	0	0	5	1	0	18	242
5:15 PM	1	1	0	0	0	0	0	0	1	8	5	0	1	3	1	0	21	241
5:20 PM	2	0	1	0	0	0	2	0	0	7	0	0	0	2	0	0	14	232
5:25 PM	3	1	1	0	1	0	1	0	1	10	0	0	0	1	1	0	20	233
5:30 PM	2	0	0	0	0	1	1	0	1	5	4	0	0	2	1	0	17	225
5:35 PM	5	0	0	0	0	0	0	0	2	12	1	0	0	4	2	0	26	232
5:40 PM	1	1	0	0	1	1	0	0	1	8	2	0	0	5	0	0	20	228
5:45 PM	3	0	0	0	1	0	0	0	0	7	1	0	0	1	0	0	13	227
5:50 PM	0	1	0	0	1	0	0	0	1	3	4	0	0	1	1	0	12	223
5:55 PM	5	0	0	0	0	0	1	0	0	10	2	0	0	4	1	0	23	223

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	28	4	0	0	0	0	8	0	4	108	48	0	4	84	4	0	292
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

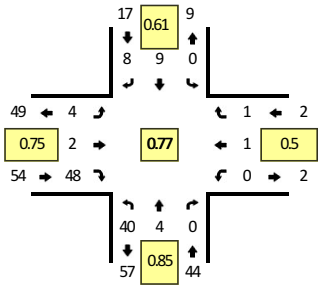
Type of peak hour being reported: Intersection Peak

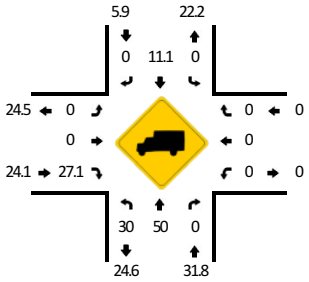
Method for determining peak hour: Total Entering Volume

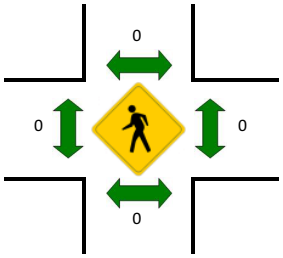
LOCATION: SE Hosner Rd -- Homan Road/Oxbow Drive
CITY/STATE: Multnomah, OR

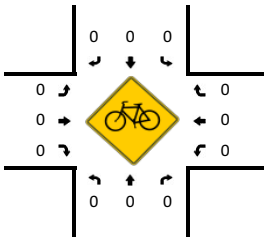
QC JOB #: 15711523
DATE: Wed, Feb 23 2022

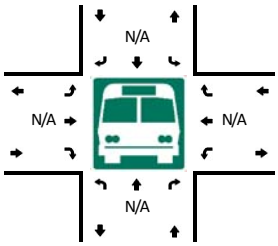
Peak-Hour: 7:05 AM -- 8:05 AM
Peak 15-Min: 7:10 AM -- 7:25 AM

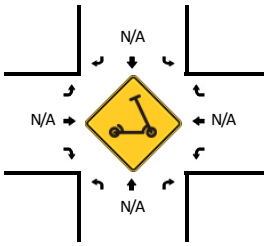












5-Min Count Period Beginning At	SE Hosner Rd (Northbound)				SE Hosner Rd (Southbound)				Homan Road/Oxbow Drive (Eastbound)				Homan Road/Oxbow Drive (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	1	0	0	0	1	0	0	0	0	2	0	0	0	0	0	7	
7:05 AM	4	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	7	
7:10 AM	3	1	0	0	0	2	1	0	0	1	5	0	0	0	0	0	13	
7:15 AM	4	1	0	0	0	1	2	0	0	0	7	0	0	0	1	0	16	
7:20 AM	3	0	0	0	0	1	0	0	0	0	5	0	0	0	0	0	9	
7:25 AM	5	0	0	0	0	1	0	0	0	1	3	0	0	0	0	0	10	
7:30 AM	2	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	5	
7:35 AM	5	0	0	0	0	1	1	0	1	0	7	0	0	1	0	0	16	
7:40 AM	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
7:45 AM	1	0	0	0	0	2	1	0	0	0	3	0	0	0	0	0	7	
7:50 AM	3	1	0	0	0	0	2	0	1	0	3	0	0	0	0	0	10	
7:55 AM	2	0	0	0	0	1	0	0	0	0	6	0	0	0	0	0	9	112
8:00 AM	5	1	0	0	0	0	0	0	1	0	5	0	0	0	0	0	12	117
8:05 AM	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2	112
8:10 AM	4	1	0	0	0	1	0	0	1	0	1	0	0	1	0	0	9	108
8:15 AM	4	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	6	98
8:20 AM	1	0	0	0	0	1	4	0	0	0	2	0	0	1	0	0	9	98
8:25 AM	1	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	5	93
8:30 AM	1	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	4	92
8:35 AM	1	1	0	0	0	0	0	0	0	0	3	0	0	0	0	0	5	81
8:40 AM	3	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	4	82
8:45 AM	4	1	0	0	0	1	0	0	0	1	1	0	0	0	0	0	8	83
8:50 AM	2	1	0	0	0	1	1	0	1	1	2	0	0	0	0	0	9	82
8:55 AM	0	0	0	0	0	1	1	0	2	0	1	0	0	0	0	0	5	78

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	40	8	0	0	0	16	12	0	0	4	68	0	0	0	4	0	152
Heavy Trucks	8	0	0		0	0	0		0	0	32		0	0	0		40
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

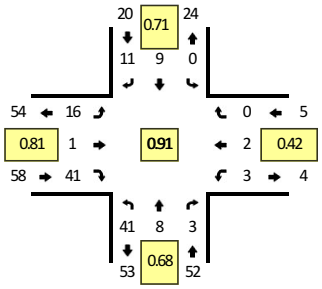
Type of peak hour being reported: Intersection Peak

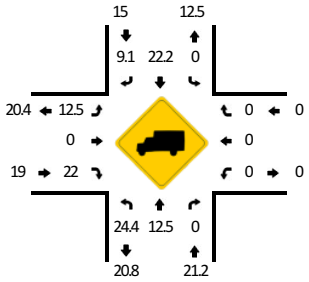
Method for determining peak hour: Total Entering Volume

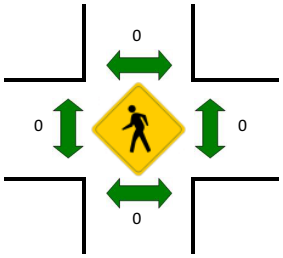
LOCATION: SE Hosner Rd -- Homan Road/Oxbow Drive
CITY/STATE: Multnomah, OR

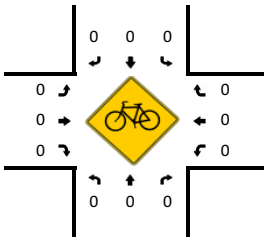
QC JOB #: 15711524
DATE: Wed, Feb 23 2022

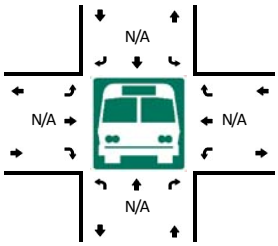
Peak-Hour: 4:05 PM -- 5:05 PM
Peak 15-Min: 4:50 PM -- 5:05 PM

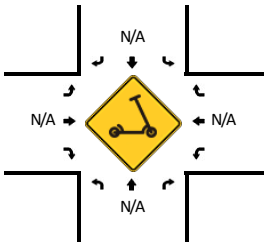












5-Min Count Period Beginning At	SE Hosner Rd (Northbound)				SE Hosner Rd (Southbound)				Homan Road/Oxbow Drive (Eastbound)				Homan Road/Oxbow Drive (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	4	
4:05 PM	3	1	0	0	0	1	1	0	3	0	8	0	0	0	0	0	17	
4:10 PM	1	1	0	0	0	0	1	0	0	0	4	0	0	1	0	0	8	
4:15 PM	2	0	0	0	0	2	2	0	0	0	3	0	0	0	0	0	9	
4:20 PM	4	1	0	0	0	0	1	0	3	0	4	0	2	0	0	0	15	
4:25 PM	1	0	1	0	0	0	1	0	0	0	3	0	0	0	0	0	6	
4:30 PM	4	1	0	0	0	0	0	0	1	0	2	0	0	1	0	0	9	
4:35 PM	1	1	0	0	0	0	2	0	4	0	2	0	1	0	0	0	11	
4:40 PM	7	0	0	0	0	2	0	0	1	1	4	0	0	0	0	0	15	
4:45 PM	2	2	0	0	0	1	1	0	0	0	2	0	0	0	0	0	8	
4:50 PM	3	0	0	0	0	2	1	0	1	0	3	0	0	0	0	0	10	
4:55 PM	4	1	0	0	0	1	0	0	1	0	3	0	0	0	0	0	10	122
5:00 PM	9	0	2	0	0	0	1	0	2	0	3	0	0	0	0	0	17	135
5:05 PM	0	0	0	0	0	0	1	0	1	0	4	0	0	0	0	0	6	124
5:10 PM	3	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	6	122
5:15 PM	2	1	0	0	0	1	0	0	3	0	3	0	0	0	0	0	10	123
5:20 PM	1	0	0	0	0	0	3	0	0	0	2	0	0	0	0	0	6	114
5:25 PM	0	0	0	0	0	2	2	0	0	1	2	0	0	3	0	0	10	118
5:30 PM	0	0	0	0	0	1	0	0	0	0	3	0	0	0	0	0	4	113
5:35 PM	1	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	4	106
5:40 PM	0	0	0	0	0	1	0	0	2	0	3	0	0	0	0	0	6	97
5:45 PM	1	0	0	0	0	0	1	0	2	0	1	0	0	0	0	0	5	94
5:50 PM	2	0	0	0	0	0	0	0	2	0	5	0	0	0	0	0	9	93
5:55 PM	0	0	0	0	0	1	0	0	1	0	6	0	0	0	0	0	8	91

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	64	4	8	0	0	12	8	0	16	0	36	0	0	0	0	0	148
Heavy Trucks	12	0	0		0	0	0		0	0	8		0	0	0		20
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

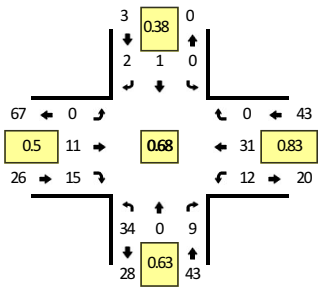
Type of peak hour being reported: Intersection Peak

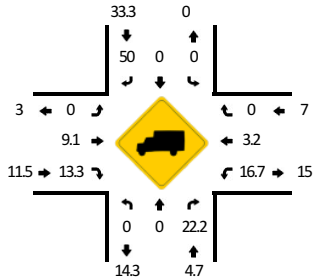
Method for determining peak hour: Total Entering Volume

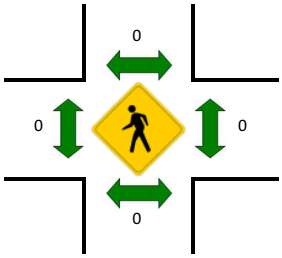
LOCATION: Pleasant Home Road -- Lusted Road
CITY/STATE: Multnomah, OR

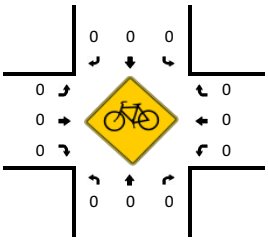
QC JOB #: 15711525
DATE: Wed, Feb 23 2022

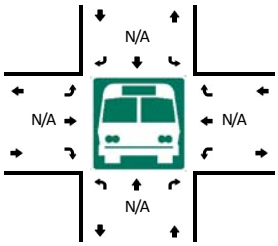
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 8:15 AM -- 8:30 AM

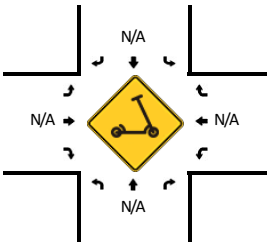












5-Min Count Period Beginning At	Pleasant Home Road (Northbound)				Pleasant Home Road (Southbound)				Lusted Road (Eastbound)				Lusted Road (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	2	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	4	
7:05 AM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
7:10 AM	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3	
7:15 AM	0	0	1	0	0	0	0	0	0	2	1	0	3	2	0	0	9	
7:20 AM	2	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	4	
7:25 AM	3	0	1	0	0	0	0	0	0	0	1	0	1	2	0	0	8	
7:30 AM	3	0	1	0	0	0	0	0	0	1	0	0	0	2	0	0	7	
7:35 AM	2	0	0	0	0	0	1	0	0	1	1	0	1	3	0	0	9	
7:40 AM	1	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	4	
7:45 AM	2	0	0	0	0	0	0	0	0	0	1	0	2	2	0	0	7	
7:50 AM	2	0	0	0	0	0	0	0	0	3	0	0	1	4	0	0	10	
7:55 AM	1	0	1	0	0	0	0	0	0	0	0	0	2	2	0	0	6	73
8:00 AM	5	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	8	77
8:05 AM	2	0	1	0	0	0	0	0	0	1	2	0	3	2	0	0	11	86
8:10 AM	3	0	2	0	0	1	0	0	0	0	2	0	1	2	0	0	11	94
8:15 AM	7	0	1	0	0	0	0	0	0	1	3	0	0	3	0	0	15	100
8:20 AM	2	0	1	0	0	0	0	0	0	2	2	0	0	5	0	0	12	108
8:25 AM	4	0	2	0	0	0	0	0	0	2	3	0	2	2	0	0	15	115
8:30 AM	1	0	0	0	0	0	0	0	0	2	2	0	0	1	0	0	6	114
8:35 AM	0	0	1	0	0	0	0	0	0	3	2	0	0	1	0	0	7	112
8:40 AM	2	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	4	112
8:45 AM	2	0	1	0	0	0	0	0	0	1	3	0	0	2	0	0	9	114
8:50 AM	2	0	1	0	0	0	0	0	0	4	1	0	0	1	0	0	9	113
8:55 AM	0	0	1	0	0	0	0	0	0	1	0	0	0	3	0	0	5	112

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	52	0	16	0	0	0	0	0	0	20	32	0	8	40	0	0	168
Heavy Trucks	0	0	0		0	0	0		0	0	8		0	0	0		8
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

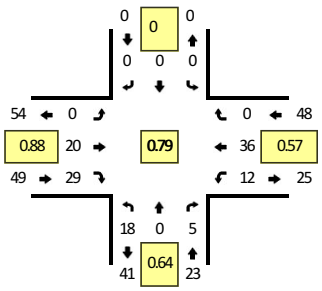
Type of peak hour being reported: Intersection Peak

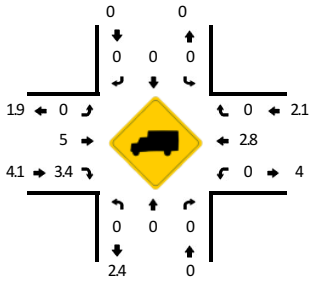
Method for determining peak hour: Total Entering Volume

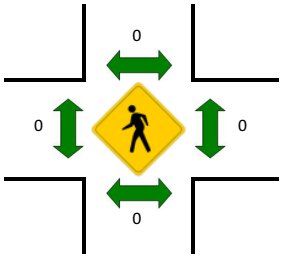
LOCATION: Pleasant Home Road -- Lusted Road
CITY/STATE: Multnomah, OR

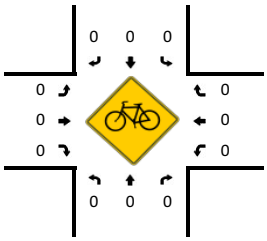
QC JOB #: 15711526
DATE: Wed, Feb 23 2022

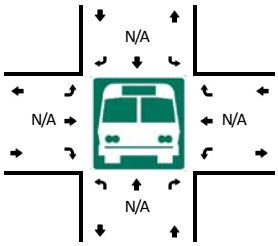
Peak-Hour: 4:05 PM -- 5:05 PM
Peak 15-Min: 4:35 PM -- 4:50 PM

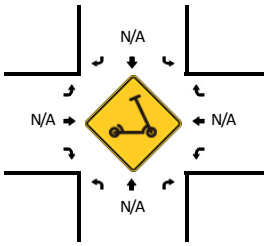












5-Min Count Period Beginning At	Pleasant Home Road (Northbound)				Pleasant Home Road (Southbound)				Lusted Road (Eastbound)				Lusted Road (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	3	0	0	0	0	0	0	0	0	2	1	0	0	1	0	0	7	
4:05 PM	2	0	1	0	0	0	0	0	0	3	1	0	1	6	0	0	14	
4:10 PM	2	0	0	0	0	0	0	0	0	3	3	0	0	3	0	0	11	
4:15 PM	0	0	1	0	0	0	0	0	0	2	2	0	0	6	0	0	11	
4:20 PM	1	0	1	0	0	0	0	0	0	1	3	0	0	2	0	0	8	
4:25 PM	0	0	0	0	0	0	0	0	0	3	1	0	1	3	0	0	8	
4:30 PM	1	0	0	0	0	0	0	0	0	1	1	0	2	1	0	0	6	
4:35 PM	1	0	0	0	0	0	0	0	0	1	3	0	5	9	0	0	19	
4:40 PM	3	0	1	0	0	0	0	0	0	2	3	0	0	2	0	0	11	
4:45 PM	2	0	1	0	0	0	0	0	0	2	1	0	1	1	0	0	8	
4:50 PM	2	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	5	
4:55 PM	2	0	0	0	0	0	0	0	0	1	5	0	0	2	0	0	10	118
5:00 PM	2	0	0	0	0	0	0	0	0	1	5	0	1	0	0	0	9	120
5:05 PM	2	0	0	0	0	0	0	0	0	4	1	0	1	0	0	0	8	114
5:10 PM	4	0	1	0	0	0	0	0	0	1	3	0	1	2	0	0	12	115
5:15 PM	1	0	1	0	0	0	0	0	0	3	1	0	2	0	0	0	8	112
5:20 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	106
5:25 PM	4	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	8	106
5:30 PM	0	0	1	0	0	0	0	0	0	2	3	0	0	4	0	0	10	110
5:35 PM	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	3	94
5:40 PM	2	0	1	0	0	0	0	0	0	1	1	0	0	5	0	0	10	93
5:45 PM	2	0	0	0	0	0	0	0	0	6	2	0	0	2	0	0	12	97
5:50 PM	0	0	1	0	0	0	0	0	0	1	2	0	0	3	0	0	7	99
5:55 PM	3	0	1	0	0	1	0	0	1	1	4	0	0	4	0	0	15	104

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	0	8	0	0	0	0	0	0	20	28	0	24	48	0	0	152
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

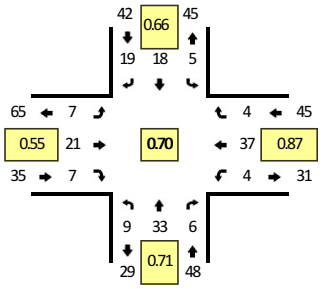
Type of peak hour being reported: Intersection Peak

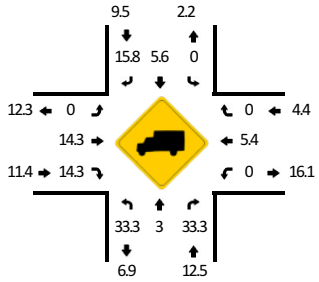
Method for determining peak hour: Total Entering Volume

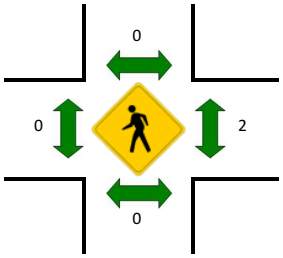
LOCATION: Pleasant Home Road -- Dodge Park Blvd
CITY/STATE: Multnomah, OR

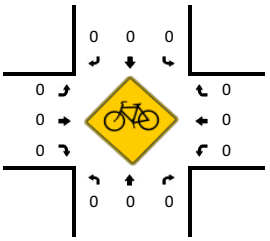
QC JOB #: 15711527
DATE: Wed, Feb 23 2022

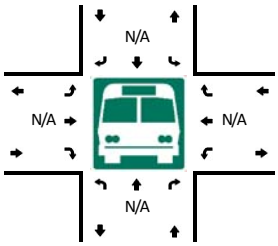
Peak-Hour: 7:20 AM -- 8:20 AM
Peak 15-Min: 8:05 AM -- 8:20 AM

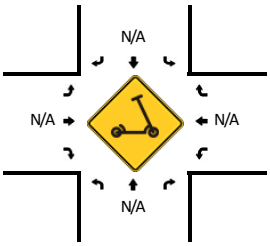












5-Min Count Period Beginning At	Pleasant Home Road (Northbound)				Pleasant Home Road (Southbound)				Dodge Park Blvd (Eastbound)				Dodge Park Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	2	0	0	0	0	0	0	1	1	0	0	1	1	0	0	6	
7:05 AM	1	0	0	0	0	1	0	0	0	6	1	0	0	4	0	0	13	
7:10 AM	3	1	0	0	0	0	1	0	2	2	2	0	0	1	0	0	12	
7:15 AM	1	0	0	0	0	1	3	0	1	5	0	0	0	1	0	0	12	
7:20 AM	1	4	0	0	0	2	1	0	1	2	0	0	0	5	0	0	16	
7:25 AM	1	5	1	0	0	2	1	0	0	3	0	0	0	1	0	0	14	
7:30 AM	1	0	0	0	0	0	2	0	1	2	0	0	0	6	0	0	12	
7:35 AM	0	1	1	0	0	2	0	0	0	1	0	0	0	1	0	0	6	
7:40 AM	0	1	0	0	0	1	4	0	1	1	0	0	2	3	0	0	13	
7:45 AM	0	2	2	0	2	1	2	0	0	0	1	0	0	1	2	0	13	
7:50 AM	0	2	0	0	0	1	2	0	0	1	0	0	0	5	0	0	11	
7:55 AM	3	2	0	0	0	1	0	0	0	4	1	0	0	3	0	0	14	142
8:00 AM	2	2	0	0	0	0	2	0	0	0	0	0	0	2	2	0	10	146
8:05 AM	1	3	1	0	1	3	1	0	2	0	0	0	0	3	0	0	15	148
8:10 AM	0	5	1	0	1	3	3	1	2	4	1	0	1	3	0	0	25	161
8:15 AM	0	6	0	0	0	2	1	0	0	3	4	0	1	4	0	0	21	170
8:20 AM	0	2	0	0	1	2	1	0	0	2	2	0	0	5	0	0	15	169
8:25 AM	1	1	1	0	0	2	1	0	1	0	0	0	0	4	0	0	11	166
8:30 AM	0	1	0	0	2	0	1	0	0	2	0	0	0	1	0	0	7	161
8:35 AM	1	0	0	0	0	2	0	0	2	0	0	0	1	2	0	0	8	163
8:40 AM	0	0	0	0	0	0	0	0	2	2	0	0	0	6	1	0	11	161
8:45 AM	2	2	0	0	0	2	1	0	0	2	0	0	0	1	0	0	10	158
8:50 AM	0	3	0	0	2	2	0	0	2	2	1	0	2	1	0	0	15	162
8:55 AM	0	0	0	0	0	0	2	0	0	3	1	0	1	6	0	0	13	161

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	56	8	0	8	32	20	4	16	28	20	0	8	40	0	0	244
Heavy Trucks	0	4	0		0	0	0		0	8	4		0	0	0		16
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

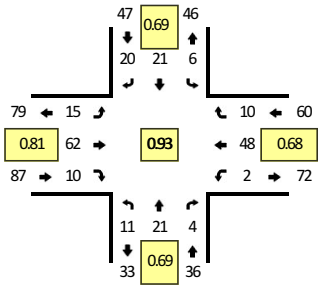
Type of peak hour being reported: Intersection Peak

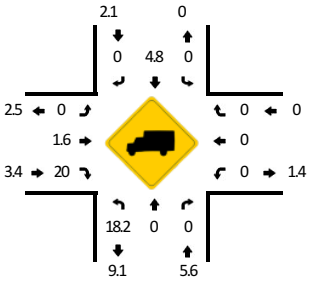
Method for determining peak hour: Total Entering Volume

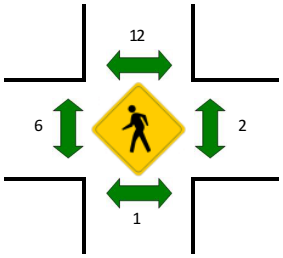
LOCATION: Pleasant Home Road -- Dodge Park Blvd
CITY/STATE: Multnomah, OR

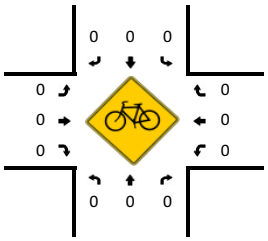
QC JOB #: 15711528
DATE: Wed, Feb 23 2022

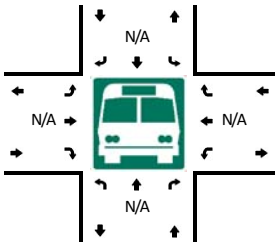
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:50 PM -- 5:05 PM

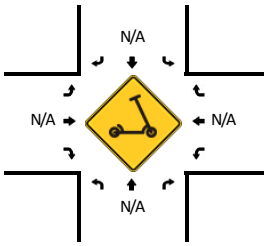












5-Min Count Period Beginning At	Pleasant Home Road (Northbound)				Pleasant Home Road (Southbound)				Dodge Park Blvd (Eastbound)				Dodge Park Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	2	0	0	0	0	1	0	0	0	0	0	0	6	0	0	10	
4:05 PM	0	4	0	0	1	0	0	0	0	2	0	0	1	2	2	0	12	
4:10 PM	0	3	1	0	0	4	1	0	0	4	1	0	1	5	0	0	20	
4:15 PM	0	1	0	0	0	2	2	0	2	5	1	0	0	4	0	0	17	
4:20 PM	0	1	1	0	0	2	0	0	3	3	1	0	1	6	0	0	18	
4:25 PM	0	0	0	0	1	2	0	0	0	7	3	0	1	3	0	0	17	
4:30 PM	1	1	0	0	1	1	1	0	3	2	1	0	0	2	1	0	14	
4:35 PM	1	0	0	0	0	2	7	0	0	6	1	0	0	6	0	0	23	
4:40 PM	1	3	1	0	1	4	0	0	1	3	0	0	0	4	1	0	19	
4:45 PM	1	2	0	0	0	2	0	0	0	5	0	0	1	2	1	0	14	
4:50 PM	3	0	1	0	0	2	0	0	1	4	0	0	0	2	2	0	15	
4:55 PM	1	1	0	0	1	2	2	0	2	10	1	0	0	5	1	0	26	205
5:00 PM	2	3	0	0	2	1	3	0	3	3	0	0	0	4	0	0	21	216
5:05 PM	0	4	1	0	0	2	2	0	1	1	0	0	0	1	1	0	13	217
5:10 PM	0	3	0	0	0	3	1	0	0	12	0	0	0	3	1	0	23	220
5:15 PM	0	1	1	0	0	0	2	0	1	2	1	0	1	3	0	0	12	215
5:20 PM	0	2	0	0	0	2	2	0	0	10	1	0	0	7	0	0	24	221
5:25 PM	1	1	0	0	1	0	0	0	3	4	5	0	0	9	2	0	26	230
5:30 PM	1	0	0	0	0	2	0	0	2	4	0	0	0	5	0	0	14	230
5:35 PM	1	2	0	0	0	2	1	0	0	5	1	0	1	2	2	0	17	224
5:40 PM	2	3	1	0	0	2	0	0	3	3	1	0	0	2	1	0	18	223
5:45 PM	2	1	0	0	1	2	0	0	0	6	1	0	1	1	0	0	15	224
5:50 PM	0	1	0	0	2	0	0	0	1	11	2	0	0	1	0	0	18	227
5:55 PM	2	2	0	0	1	3	1	0	1	5	1	0	0	2	0	0	18	219

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	16	4	0	12	20	20	0	24	68	4	0	0	44	12	0	248
Heavy Trucks	0	0	0		0	4	0		0	0	0		0	0	0		4
Buses																	
Pedestrians		4				0				4				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

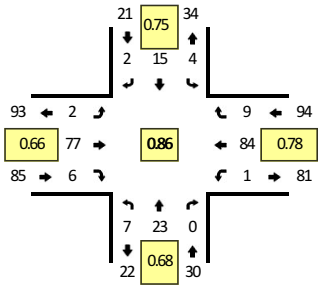
Type of peak hour being reported: Intersection Peak

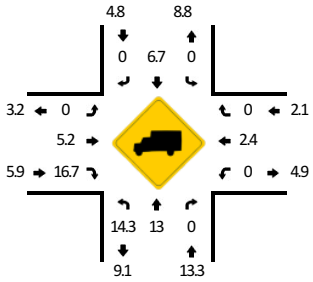
Method for determining peak hour: Total Entering Volume

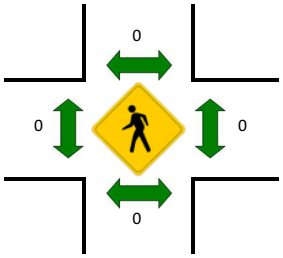
LOCATION: Pleasant Home Road -- Bluff Road
CITY/STATE: Multnomah, OR

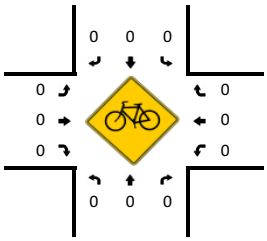
QC JOB #: 15711529
DATE: Wed, Feb 23 2022

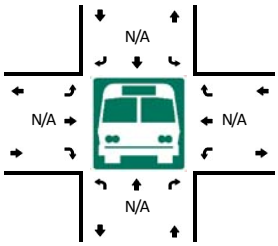
Peak-Hour: 7:10 AM -- 8:10 AM
Peak 15-Min: 7:20 AM -- 7:35 AM

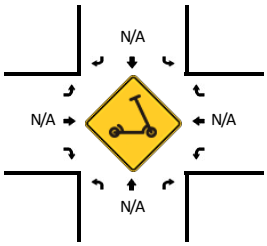












5-Min Count Period Beginning At	Pleasant Home Road (Northbound)				Pleasant Home Road (Southbound)				Bluff Road (Eastbound)				Bluff Road (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	3	0	0	0	0	0	0	1	9	1	0	0	2	0	0	16	
7:05 AM	0	0	0	0	1	2	1	0	0	5	0	0	0	3	0	0	12	
7:10 AM	0	1	0	0	1	1	0	0	0	6	1	0	0	8	1	0	19	
7:15 AM	0	0	0	0	0	2	0	0	0	9	0	0	0	10	0	0	21	
7:20 AM	0	5	0	0	0	1	0	0	0	9	0	0	0	7	0	0	22	
7:25 AM	0	4	0	0	0	3	1	0	0	8	0	0	0	6	0	0	22	
7:30 AM	1	0	0	0	0	0	0	0	0	12	0	0	0	10	0	0	23	
7:35 AM	0	1	0	0	1	1	0	0	1	10	1	0	1	5	1	0	22	
7:40 AM	0	0	0	0	0	3	0	0	0	3	2	0	0	3	1	0	12	
7:45 AM	1	4	0	0	1	0	0	0	0	3	2	0	0	10	1	0	22	
7:50 AM	2	0	0	0	0	2	0	0	0	5	0	0	0	12	3	0	24	
7:55 AM	0	0	0	0	0	1	0	0	0	5	0	0	0	3	1	0	10	225
8:00 AM	1	2	0	0	0	0	0	0	0	5	0	0	0	7	1	0	16	225
8:05 AM	2	6	0	0	1	1	1	0	1	2	0	0	0	3	0	0	17	230
8:10 AM	1	0	0	0	0	2	0	0	2	4	0	0	0	1	1	0	11	222
8:15 AM	1	3	0	0	1	1	1	0	1	3	0	0	0	1	0	0	12	213
8:20 AM	0	1	0	0	0	4	1	0	0	3	1	0	0	2	0	0	12	203
8:25 AM	0	1	0	1	0	0	0	0	0	5	1	0	0	4	0	0	12	193
8:30 AM	0	2	0	0	0	0	1	0	0	4	2	0	0	5	0	0	14	184
8:35 AM	1	0	0	0	0	1	1	0	0	3	0	0	1	4	0	0	11	173
8:40 AM	0	1	0	0	0	1	0	0	1	5	0	0	0	5	0	0	13	174
8:45 AM	0	2	0	0	0	0	0	0	0	3	0	0	1	4	0	0	10	162
8:50 AM	1	1	0	0	0	2	1	0	0	4	0	0	0	5	1	0	15	153
8:55 AM	0	0	0	0	1	2	0	0	1	3	0	0	1	4	0	0	12	155

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	36	0	0	0	16	4	0	0	116	0	0	0	92	0	0	268
Heavy Trucks	0	4	0		0	0	0		0	8	0		0	4	0		16
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

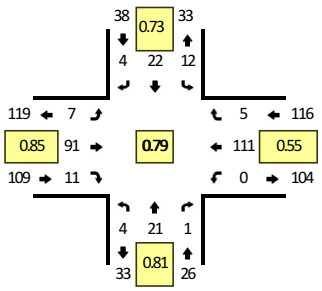
Type of peak hour being reported: Intersection Peak

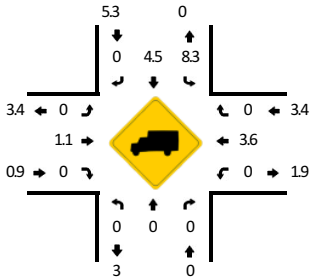
Method for determining peak hour: Total Entering Volume

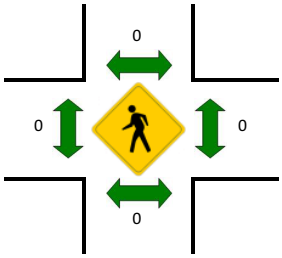
LOCATION: Pleasant Home Road -- Bluff Road
CITY/STATE: Multnomah, OR

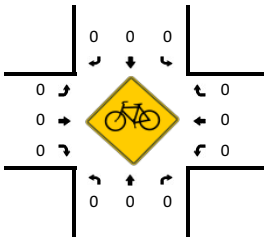
QC JOB #: 15711530
DATE: Wed, Feb 23 2022

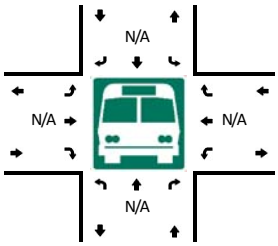
Peak-Hour: 4:10 PM -- 5:10 PM
Peak 15-Min: 4:35 PM -- 4:50 PM

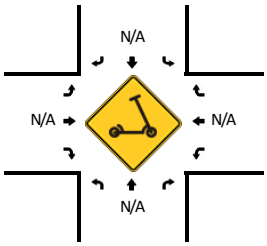












5-Min Count Period Beginning At	Pleasant Home Road (Northbound)				Pleasant Home Road (Southbound)				Bluff Road (Eastbound)				Bluff Road (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	3	0	0	0	1	0	0	0	4	0	0	0	2	2	0	12	
4:05 PM	1	2	0	0	0	1	0	0	0	10	0	0	0	7	0	0	21	
4:10 PM	0	3	0	0	0	4	0	0	2	12	2	0	0	10	0	0	33	
4:15 PM	0	1	0	0	1	4	1	0	0	6	0	0	0	8	1	0	22	
4:20 PM	0	4	0	0	0	3	0	0	0	10	0	0	0	7	0	0	24	
4:25 PM	1	0	0	0	1	1	1	0	0	5	1	0	0	7	0	0	17	
4:30 PM	0	1	0	0	1	2	0	0	0	6	1	0	0	5	0	0	16	
4:35 PM	0	2	0	0	0	1	0	0	0	3	1	0	0	26	0	0	33	
4:40 PM	1	1	0	0	2	2	0	0	0	10	1	0	0	15	0	0	32	
4:45 PM	0	1	0	0	3	2	0	0	0	7	1	0	0	12	0	0	26	
4:50 PM	1	3	0	0	1	2	1	0	2	6	1	0	0	5	0	0	22	
4:55 PM	0	1	0	0	0	0	1	0	1	8	3	0	0	6	1	0	21	279
5:00 PM	1	2	0	0	3	0	0	0	1	8	0	0	0	4	1	0	20	287
5:05 PM	0	2	1	0	0	1	0	0	1	10	0	0	0	6	2	0	23	289
5:10 PM	0	3	0	0	1	1	1	0	0	9	0	0	0	6	0	0	21	277
5:15 PM	1	2	0	0	1	1	0	0	0	9	1	0	0	8	1	0	24	279
5:20 PM	2	3	0	0	0	1	1	0	0	10	1	0	0	2	0	0	20	275
5:25 PM	1	2	0	0	0	0	0	0	0	5	0	0	0	6	0	1	15	273
5:30 PM	2	1	0	0	0	1	0	0	1	11	1	0	0	3	0	0	20	277
5:35 PM	1	3	1	0	0	5	0	0	0	8	0	0	0	10	1	0	29	273
5:40 PM	1	5	0	0	0	1	1	0	0	6	0	0	1	5	0	0	20	261
5:45 PM	0	2	0	0	1	0	0	0	0	8	1	0	0	5	1	0	18	253
5:50 PM	1	2	1	0	1	3	0	0	0	5	0	0	0	4	0	0	17	248
5:55 PM	0	1	1	0	1	3	0	0	0	4	0	0	0	5	1	0	16	243

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	16	0	0	20	20	0	0	0	80	12	0	0	212	0	0	364
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	4	0		8
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

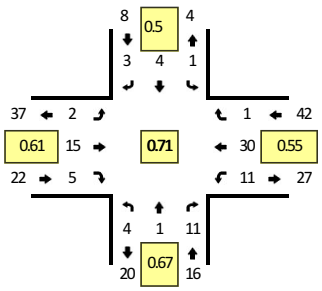
Type of peak hour being reported: Intersection Peak

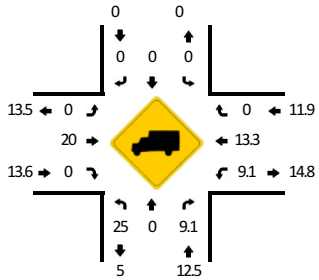
Method for determining peak hour: Total Entering Volume

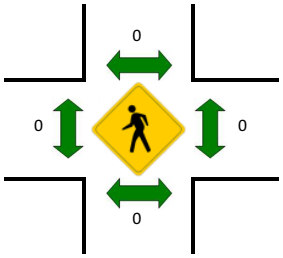
LOCATION: Dodge Park Blvd -- Lusted Road
CITY/STATE: Clackamas, OR

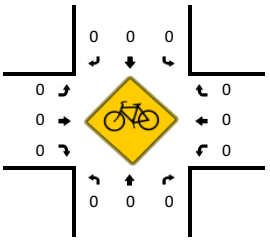
QC JOB #: 15711531
DATE: Wed, Feb 23 2022

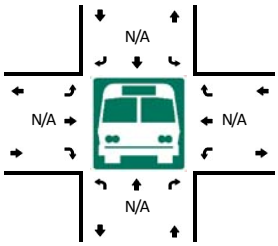
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 7:50 AM -- 8:05 AM

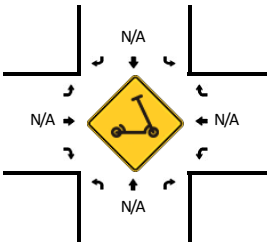












5-Min Count Period Beginning At	Dodge Park Blvd (Northbound)				Dodge Park Blvd (Southbound)				Lusted Road (Eastbound)				Lusted Road (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
7:05 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	2	
7:10 AM	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	3	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	
7:20 AM	0	0	1	0	1	0	1	0	0	0	0	0	1	0	0	0	4	
7:25 AM	0	0	2	0	0	0	0	0	0	1	0	0	2	0	0	0	5	
7:30 AM	0	0	1	0	0	0	1	0	0	3	0	0	2	0	0	0	7	
7:35 AM	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	3	
7:40 AM	1	1	2	0	1	0	0	0	0	2	0	0	0	1	0	0	8	
7:45 AM	0	0	1	0	0	0	0	0	0	1	1	0	2	3	0	0	8	
7:50 AM	0	0	1	0	0	1	0	0	0	2	1	0	1	5	1	0	12	
7:55 AM	1	0	0	0	0	0	1	0	1	0	0	0	1	6	0	0	10	64
8:00 AM	0	0	2	0	0	1	1	0	1	0	0	0	2	2	0	0	9	72
8:05 AM	1	0	0	0	0	1	0	0	0	1	1	0	1	2	0	0	7	77
8:10 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	75
8:15 AM	0	0	0	0	0	1	1	0	0	3	0	0	1	1	0	0	7	81
8:20 AM	1	0	2	0	0	0	0	0	0	1	2	0	0	1	0	0	7	84
8:25 AM	0	0	1	0	0	0	0	0	0	3	0	0	0	3	0	0	7	86
8:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	4	83
8:35 AM	0	0	1	0	0	0	0	0	0	1	0	0	3	3	0	0	8	88
8:40 AM	1	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	4	84
8:45 AM	0	0	1	0	0	0	0	0	1	0	0	0	0	2	0	0	4	80
8:50 AM	0	0	2	0	0	0	0	0	0	1	1	0	1	2	0	0	7	75
8:55 AM	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	4	69

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	0	12	0	0	8	8	0	8	8	4	0	16	52	4	0	124
Heavy Trucks	4	0	0		0	0	0		0	0	0		4	8	0		16
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

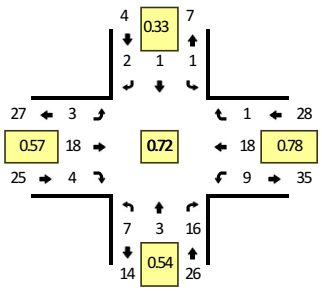
Type of peak hour being reported: Intersection Peak

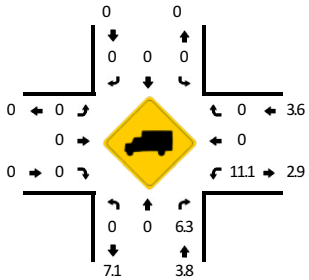
Method for determining peak hour: Total Entering Volume

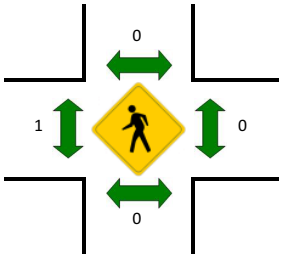
LOCATION: Dodge Park Blvd -- Lusted Road
CITY/STATE: Clackamas, OR

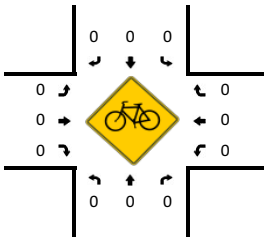
QC JOB #: 15711532
DATE: Wed, Feb 23 2022

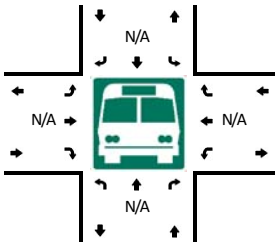
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

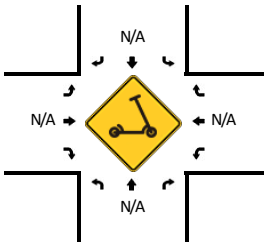












5-Min Count Period Beginning At	Dodge Park Blvd (Northbound)				Dodge Park Blvd (Southbound)				Lusted Road (Eastbound)				Lusted Road (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	2	3	0	0	6	
4:05 PM	0	0	1	0	0	0	0	0	1	0	1	0	0	3	0	0	6	
4:10 PM	1	0	1	0	0	0	0	0	0	5	1	0	0	1	0	0	9	
4:15 PM	1	1	2	0	0	0	0	0	0	2	0	0	0	2	0	0	8	
4:20 PM	2	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	5	
4:25 PM	0	1	0	0	0	0	0	0	0	3	1	0	0	2	0	0	7	
4:30 PM	0	1	1	0	0	0	0	0	0	2	0	0	1	2	0	0	7	
4:35 PM	1	1	3	0	0	0	0	0	0	1	0	0	0	1	0	0	7	
4:40 PM	1	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0	5	
4:45 PM	0	0	3	0	0	0	0	0	0	2	1	0	0	2	0	0	8	
4:50 PM	0	1	1	0	0	0	0	0	0	2	1	0	1	4	1	0	11	
4:55 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	3	82
5:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	77
5:05 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	3	74
5:10 PM	2	0	2	0	0	0	0	0	1	2	0	0	2	2	0	0	11	76
5:15 PM	1	0	1	0	0	0	0	0	0	3	0	0	1	0	0	0	6	74
5:20 PM	0	0	0	0	0	1	0	0	0	5	0	0	1	1	0	0	8	77
5:25 PM	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	3	73
5:30 PM	2	1	3	0	0	0	0	0	0	1	0	0	0	1	0	0	8	74
5:35 PM	0	0	2	0	1	0	1	0	2	0	1	0	1	2	0	0	10	77
5:40 PM	1	0	3	0	0	0	1	0	0	2	0	0	1	3	0	0	11	83
5:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2	77
5:50 PM	0	1	1	0	0	0	0	0	0	0	1	0	0	1	0	0	4	70
5:55 PM	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	70

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	4	32	0	4	0	8	0	8	12	4	0	8	24	0	0	116
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

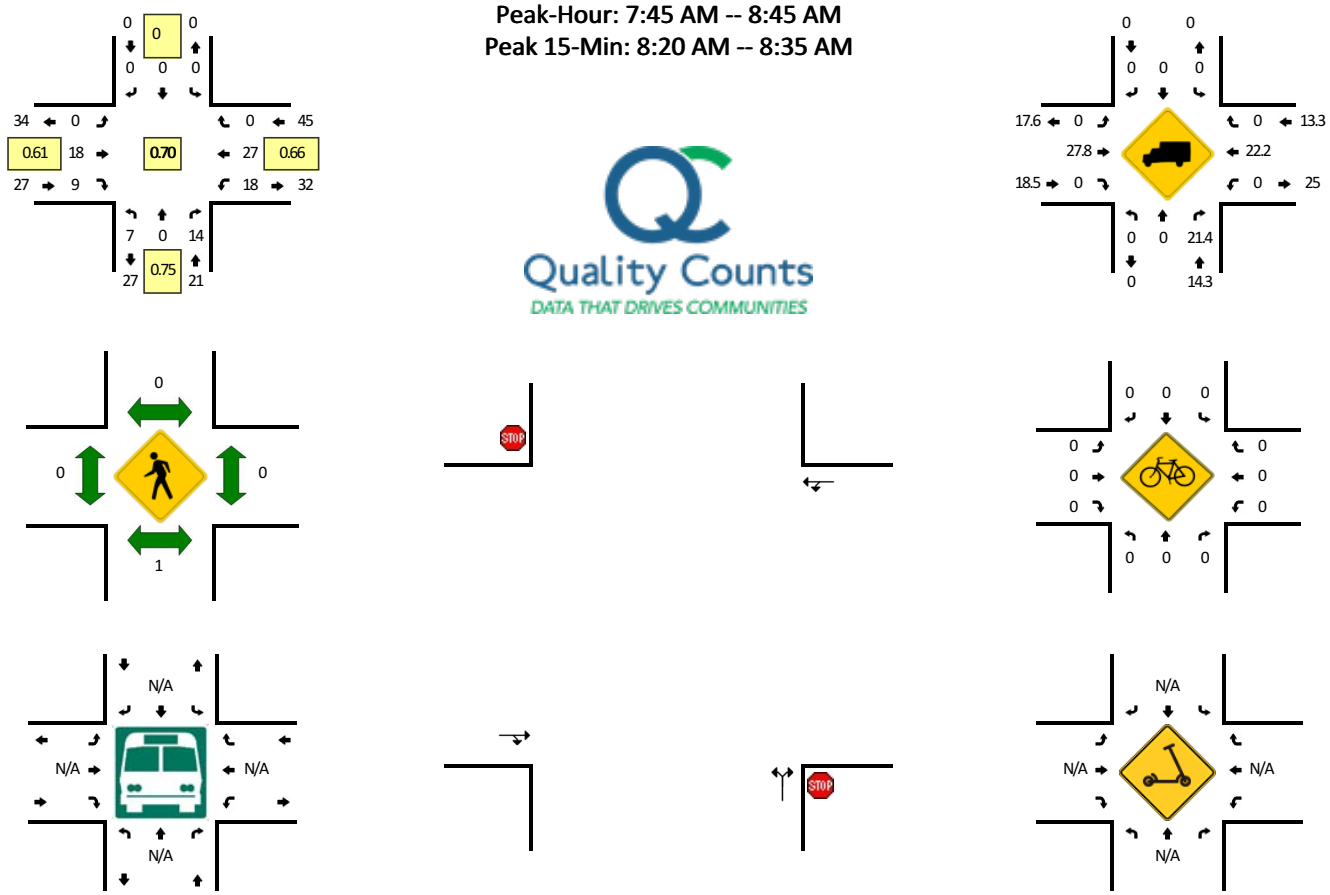
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Hudson Road -- Lusted Road
CITY/STATE: Clackamas, OR

QC JOB #: 15711533
DATE: Wed, Feb 23 2022

Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 8:20 AM -- 8:35 AM



5-Min Count Period Beginning At	Hudson Road (Northbound)				Hudson Road (Southbound)				Lusted Road (Eastbound)				Lusted Road (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:05 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	3	0	0	5	
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
7:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	3	
7:20 AM	0	0	1	0	0	0	0	0	0	1	0	0	2	0	0	0	4	
7:25 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	
7:30 AM	0	0	0	0	0	0	0	0	0	3	0	0	1	2	0	0	6	
7:35 AM	0	0	0	0	0	0	0	0	0	1	2	0	1	1	0	0	5	
7:40 AM	0	0	1	0	0	0	0	0	0	2	1	0	1	0	0	0	5	
7:45 AM	1	0	4	0	0	0	0	0	0	3	0	0	1	4	0	0	13	
7:50 AM	1	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	4	
7:55 AM	1	0	0	0	0	0	0	0	0	3	1	0	1	8	0	0	14	63
8:00 AM	0	0	1	0	0	0	0	0	0	0	1	0	1	3	0	0	6	69
8:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	66
8:10 AM	0	0	2	0	0	0	0	0	0	1	1	0	0	0	0	0	4	69
8:15 AM	0	0	1	0	0	0	0	0	0	1	0	0	2	1	0	0	5	71
8:20 AM	0	0	2	0	0	0	0	0	0	3	1	0	3	2	0	0	11	78
8:25 AM	4	0	0	0	0	0	0	0	0	2	1	0	3	1	0	0	11	86
8:30 AM	0	0	0	0	0	0	0	0	0	2	2	0	4	3	0	0	11	91
8:35 AM	0	0	1	0	0	0	0	0	0	0	2	0	1	0	0	0	4	90
8:40 AM	0	0	3	0	0	0	0	0	0	3	0	0	0	2	0	0	8	93
8:45 AM	0	0	2	0	0	0	0	0	0	0	0	0	1	2	0	0	5	85
8:50 AM	0	0	2	0	0	0	0	0	0	1	0	0	0	2	0	0	5	86
8:55 AM	0	0	2	0	0	0	0	0	0	3	0	0	1	0	0	0	6	78

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	16	0	8	0	0	0	0	0	0	28	16	0	40	24	0	0	132
Heavy Trucks	0	0	0		0	0	0		0	8	0		0	0	0		8
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

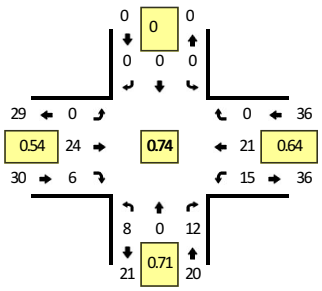
Type of peak hour being reported: Intersection Peak

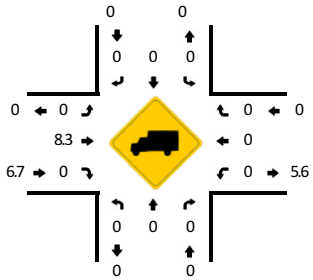
Method for determining peak hour: Total Entering Volume

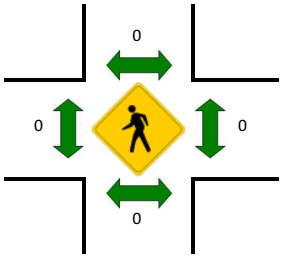
LOCATION: Hudson Road -- Lusted Road
CITY/STATE: Clackamas, OR

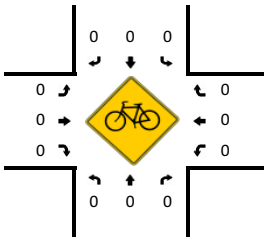
QC JOB #: 15711534
DATE: Wed, Feb 23 2022

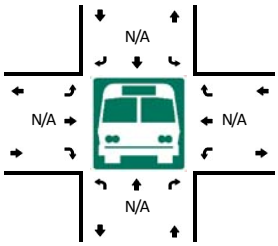
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:15 PM -- 4:30 PM

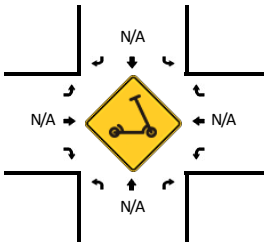












5-Min Count Period Beginning At	Hudson Road (Northbound)				Hudson Road (Southbound)				Lusted Road (Eastbound)				Lusted Road (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	0	0	0	0	0	0	0	0	2	1	0	5	7	0	0	16	
4:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	
4:10 PM	0	0	2	0	0	0	0	0	0	4	0	0	0	0	0	0	6	
4:15 PM	0	0	2	0	0	0	0	0	0	7	1	0	2	2	0	0	14	
4:20 PM	0	0	2	0	0	0	0	0	0	1	1	0	2	1	0	0	7	
4:25 PM	2	0	1	0	0	0	0	0	0	0	1	0	0	4	0	0	8	
4:30 PM	1	0	0	0	0	0	0	0	0	2	0	0	2	1	0	0	6	
4:35 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	
4:40 PM	2	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	5	
4:45 PM	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	3	
4:50 PM	2	0	2	0	0	0	0	0	0	3	0	0	1	3	0	0	11	
4:55 PM	0	0	3	0	0	0	0	0	0	2	1	0	0	0	0	0	6	86
5:00 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	4	74
5:05 PM	1	0	4	0	0	0	0	0	0	0	0	0	1	2	0	0	8	80
5:10 PM	1	0	3	0	0	0	0	0	0	0	1	0	0	3	0	0	8	82
5:15 PM	0	0	1	0	0	0	0	0	0	3	1	0	1	0	0	0	6	74
5:20 PM	0	0	1	0	0	0	0	0	0	3	1	0	1	2	0	0	8	75
5:25 PM	1	0	1	0	0	0	0	0	0	2	1	0	0	1	0	0	6	73
5:30 PM	2	0	1	0	0	0	0	0	0	2	0	0	0	1	0	0	6	73
5:35 PM	2	0	1	0	0	0	0	0	0	2	0	0	0	1	0	0	6	77
5:40 PM	0	0	1	0	0	0	0	0	0	3	1	0	1	2	0	0	8	80
5:45 PM	0	0	1	0	0	0	0	0	0	2	0	0	0	1	0	0	4	81
5:50 PM	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	3	73
5:55 PM	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	2	69

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	0	20	0	0	0	0	0	0	32	12	0	16	28	0	0	116
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	0	0		4
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

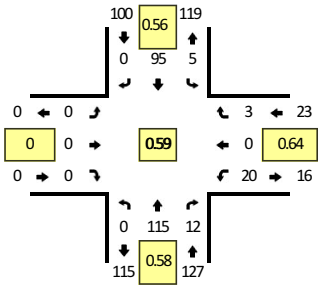
Type of peak hour being reported: Intersection Peak

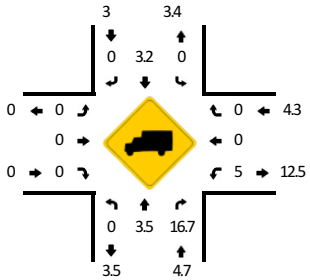
Method for determining peak hour: Total Entering Volume

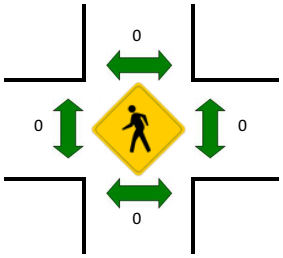
LOCATION: Bluff Road -- Hudson Road
CITY/STATE: Clackamas, OR

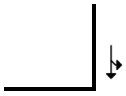
QC JOB #: 15711535
DATE: Wed, Feb 23 2022

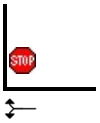
Peak-Hour: 7:10 AM -- 8:10 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

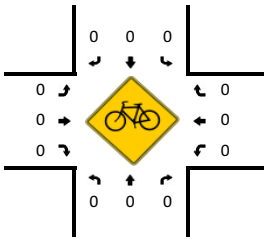


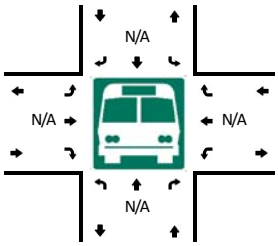


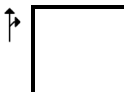


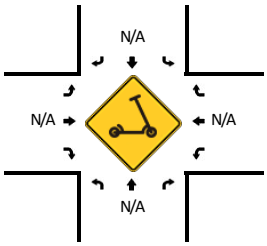












5-Min Count Period Beginning At	Bluff Road (Northbound)				Bluff Road (Southbound)				Hudson Road (Eastbound)				Hudson Road (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	3	1	0	0	2	0	0	0	0	0	0	3	0	0	0	9	
7:05 AM	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4	
7:10 AM	0	9	0	0	0	1	0	0	0	0	0	0	1	0	0	0	11	
7:15 AM	0	8	1	0	0	4	0	0	0	0	0	0	1	0	1	0	15	
7:20 AM	0	9	1	0	0	3	0	0	0	0	0	0	3	0	0	0	16	
7:25 AM	0	15	0	0	0	7	0	0	0	0	0	0	2	0	1	0	25	
7:30 AM	0	16	1	0	0	13	0	0	0	0	0	0	3	0	0	0	33	
7:35 AM	0	18	1	0	0	14	0	0	0	0	0	0	1	0	0	0	34	
7:40 AM	0	17	2	0	0	17	0	0	0	0	0	0	3	0	0	0	39	
7:45 AM	0	8	3	0	0	13	0	1	0	0	0	0	1	0	0	0	26	
7:50 AM	0	4	0	0	0	9	0	0	0	0	0	0	1	0	0	0	14	
7:55 AM	0	3	2	0	2	4	0	0	0	0	0	0	2	0	1	0	14	240
8:00 AM	0	3	1	0	2	5	0	0	0	0	0	0	1	0	0	0	12	243
8:05 AM	0	5	0	0	0	5	0	0	0	0	0	0	1	0	0	0	11	250
8:10 AM	0	2	3	0	0	4	0	0	0	0	0	0	1	0	0	0	10	249
8:15 AM	0	1	1	0	0	7	0	0	0	0	0	0	1	0	0	0	10	244
8:20 AM	0	4	3	0	0	3	0	0	0	0	0	0	3	0	0	0	13	241
8:25 AM	0	2	3	0	0	1	0	0	0	0	0	0	5	0	0	0	11	227
8:30 AM	0	1	1	0	0	2	0	0	0	0	0	0	7	0	1	0	12	206
8:35 AM	0	3	1	0	0	3	0	0	0	0	0	0	5	0	1	0	13	185
8:40 AM	0	4	4	0	0	1	0	0	0	0	0	0	0	0	0	0	9	155
8:45 AM	0	2	3	0	0	0	0	0	0	0	0	0	1	0	0	0	6	135
8:50 AM	0	3	3	1	0	8	0	0	0	0	0	0	1	0	1	0	17	138
8:55 AM	0	2	1	0	0	1	0	0	0	0	0	0	1	0	0	0	5	129

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	204	16	0	0	176	0	0	0	0	0	0	28	0	0	0	424
Heavy Trucks	0	8	4		0	0	0		0	0	0		0	0	0		12
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

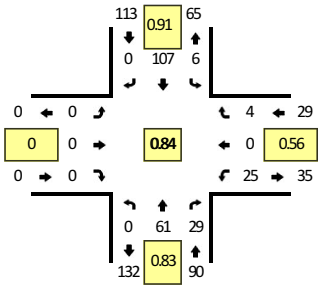
Type of peak hour being reported: Intersection Peak

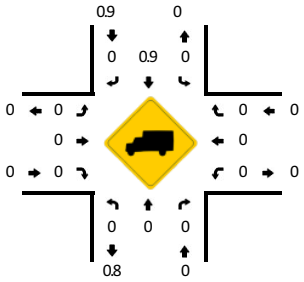
Method for determining peak hour: Total Entering Volume

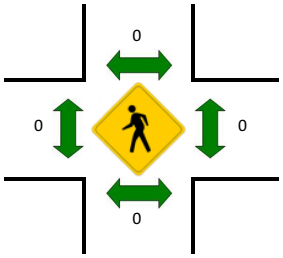
LOCATION: Bluff Road -- Hudson Road
CITY/STATE: Clackamas, OR

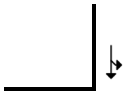
QC JOB #: 15711536
DATE: Wed, Feb 23 2022

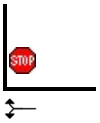
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:10 PM -- 4:25 PM

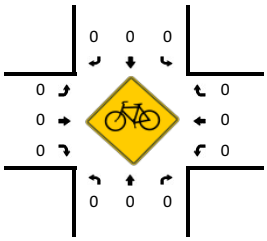


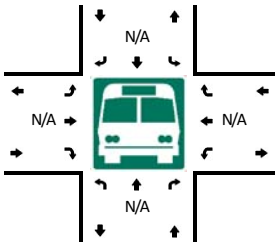


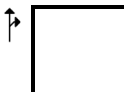


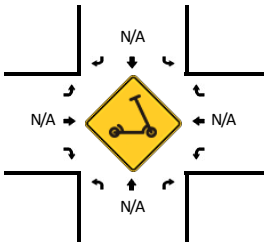












5-Min Count Period Beginning At	Bluff Road (Northbound)				Bluff Road (Southbound)				Hudson Road (Eastbound)				Hudson Road (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	4	4	0	2	9	0	0	0	0	0	0	5	0	1	0	25	
4:05 PM	0	3	1	0	0	10	0	0	0	0	0	0	3	0	0	0	17	
4:10 PM	0	9	2	0	0	10	0	0	0	0	0	0	2	0	2	0	25	
4:15 PM	0	4	2	0	0	9	0	0	0	0	0	0	2	0	0	0	17	
4:20 PM	0	8	2	0	0	11	0	0	0	0	0	0	6	0	0	0	27	
4:25 PM	0	5	3	0	1	8	0	0	0	0	0	0	0	0	0	0	17	
4:30 PM	0	7	1	0	0	10	0	0	0	0	0	0	3	0	0	0	21	
4:35 PM	0	4	2	0	0	10	0	0	0	0	0	0	0	0	0	0	16	
4:40 PM	0	7	1	0	0	5	0	0	0	0	0	0	0	0	1	0	14	
4:45 PM	0	2	1	0	1	10	0	0	0	0	0	0	2	0	0	0	16	
4:50 PM	0	1	7	0	1	9	0	0	0	0	0	0	0	0	0	0	18	
4:55 PM	0	7	3	0	1	6	0	0	0	0	0	0	2	0	0	0	19	232
5:00 PM	0	4	3	0	0	9	0	0	0	0	0	0	0	0	0	0	16	223
5:05 PM	0	2	5	0	1	8	0	0	0	0	0	0	2	0	0	0	18	224
5:10 PM	0	4	3	0	2	5	0	0	0	0	0	0	1	0	1	0	16	215
5:15 PM	0	3	1	0	0	6	0	0	0	0	0	0	0	0	0	0	10	208
5:20 PM	0	2	2	0	1	7	0	0	0	0	0	0	2	0	1	0	15	196
5:25 PM	0	2	1	0	1	12	0	0	0	0	0	0	1	0	0	0	17	196
5:30 PM	0	3	6	0	1	4	0	0	0	0	0	0	1	0	1	0	16	191
5:35 PM	0	5	4	0	0	12	0	0	0	0	0	0	0	0	0	0	21	196
5:40 PM	0	3	1	0	2	8	0	0	0	0	0	0	3	0	0	0	17	199
5:45 PM	0	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	7	190
5:50 PM	0	2	1	0	0	4	0	0	0	0	0	0	2	0	0	0	9	181
5:55 PM	0	5	2	0	1	9	0	0	0	0	0	0	1	0	0	0	18	180

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	84	24	0	0	120	0	0	0	0	0	0	40	0	8	0	276
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/4/2022 10:58 AM

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

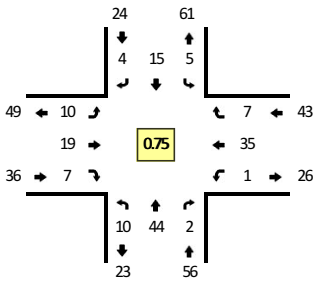
Type of peak hour being reported: Intersection Peak

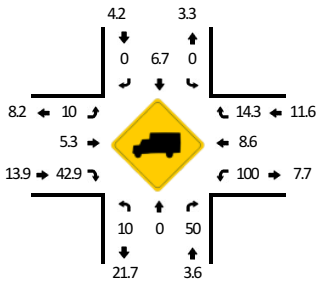
Method for determining peak hour: Total Entering Volume

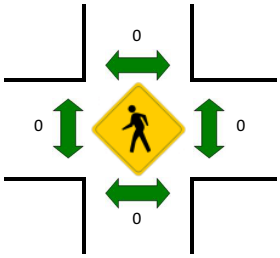
LOCATION: SE Altman Rd -- SE Dodge Park Blvd
CITY/STATE: Multnomah, OR

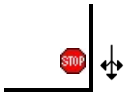
QC JOB #: 14910301
DATE: Thu, Feb 28 2019

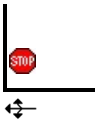
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:15 AM -- 7:30 AM

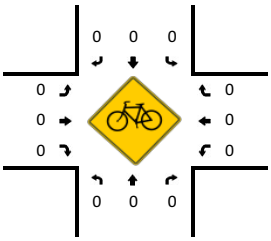


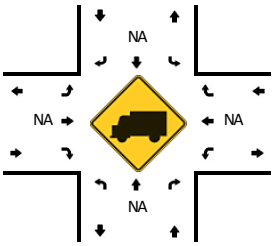


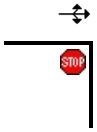


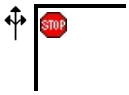


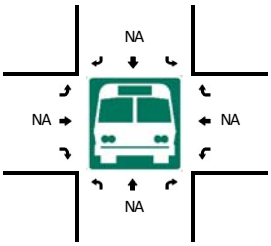












15-Min Count Period Beginning At	SE Altman Rd (Northbound)				SE Altman Rd (Southbound)				SE Dodge Park Blvd (Eastbound)				SE Dodge Park Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	12	0	0	0	2	1	0	2	3	1	0	0	6	2	0	30	
7:15 AM	3	17	0	0	2	6	1	0	6	5	1	0	0	10	2	0	53	
7:30 AM	6	9	1	0	0	4	1	0	1	4	2	0	0	10	1	0	39	
7:45 AM	0	6	1	0	3	3	1	0	1	7	3	0	1	9	2	0	37	159
8:00 AM	1	3	1	0	1	4	3	0	2	2	0	0	1	8	0	0	26	155
8:15 AM	3	0	1	0	0	4	5	0	1	3	2	0	0	4	3	0	26	128
8:30 AM	4	4	1	0	0	8	3	0	4	8	0	0	0	6	2	0	40	129
8:45 AM	2	4	1	0	0	4	5	0	2	0	0	0	0	7	0	0	25	117

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	68	0	0	8	24	4	0	24	20	4	0	0	40	8	0	212
Heavy Trucks	4	0	0		0	4	0		0	0	0		0	4	0		12
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 3/14/2019 4:20 PM

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

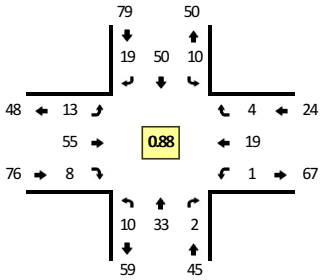
Type of peak hour being reported: Intersection Peak

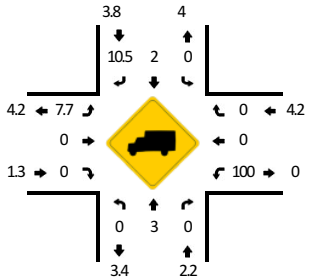
Method for determining peak hour: Total Entering Volume

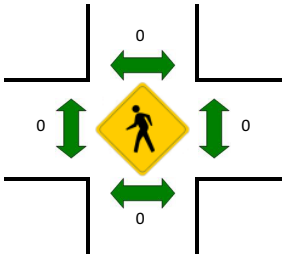
LOCATION: SE Altman Rd -- SE Dodge Park Blvd
CITY/STATE: Multnomah, OR

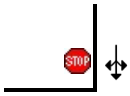
QC JOB #: 14910302
DATE: Thu, Mar 7 2019

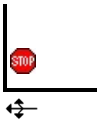
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:45 PM -- 5:00 PM

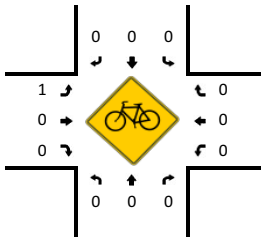


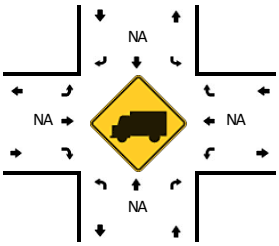


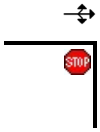


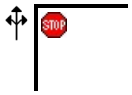


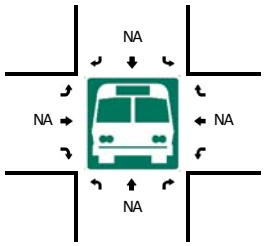












15-Min Count Period Beginning At	SE Altman Rd (Northbound)				SE Altman Rd (Southbound)				SE Dodge Park Blvd (Eastbound)				SE Dodge Park Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	13	0	0	1	11	9	0	2	9	3	0	1	4	1	0	56	
4:15 PM	1	8	0	0	3	16	6	0	2	14	2	0	0	4	1	0	57	
4:30 PM	2	6	2	0	2	9	3	0	5	11	2	0	0	5	0	0	47	
4:45 PM	5	6	0	0	4	14	1	0	4	21	1	0	0	6	2	0	64	224
5:00 PM	4	7	0	0	1	7	3	0	0	6	3	0	0	8	1	0	40	208
5:15 PM	2	4	0	0	4	5	2	0	0	6	5	0	1	13	0	0	42	193
5:30 PM	2	4	2	0	1	6	5	0	1	11	4	0	0	6	6	0	48	194
5:45 PM	0	5	0	0	3	14	2	0	1	13	3	0	1	3	0	0	45	175

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	20	24	0	0	16	56	4	0	16	84	4	0	0	24	8	0	256
Heavy Trucks	0	0	0		0	0	0		4	0	0		0	0	0		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 3/14/2019 4:20 PM

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

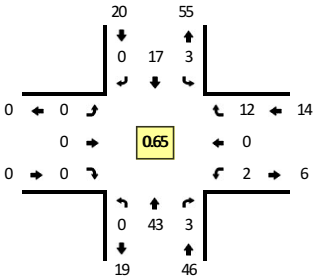
Type of peak hour being reported: Intersection Peak

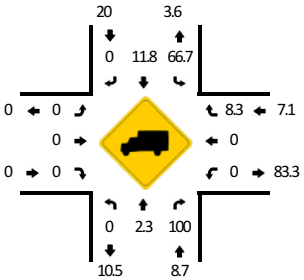
Method for determining peak hour: Total Entering Volume

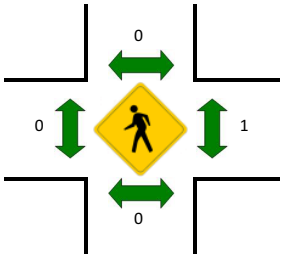
LOCATION: SE Altman Rd -- SE Carpenter Ln
CITY/STATE: Multnomah, OR

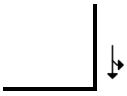
QC JOB #: 14910303
DATE: Thu, Feb 28 2019

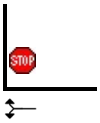
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:15 AM -- 7:30 AM

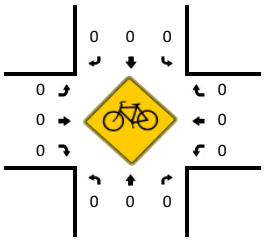


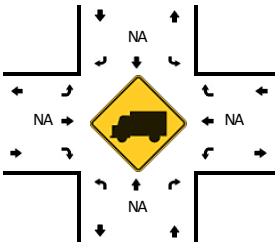


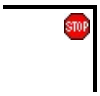


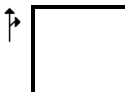


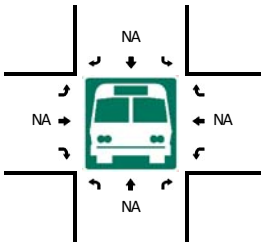












15-Min Count Period Beginning At	SE Altman Rd (Northbound)				SE Altman Rd (Southbound)				SE Carpenter Ln (Eastbound)				SE Carpenter Ln (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	9	1	0	1	2	0	0	0	0	0	0	0	0	3	0	16	
7:15 AM	0	16	0	0	1	7	0	0	0	0	0	0	2	0	5	0	31	
7:30 AM	0	12	1	0	0	5	0	0	0	0	0	0	0	0	3	0	21	
7:45 AM	0	6	1	0	1	3	0	0	0	0	0	0	0	0	1	0	12	80
8:00 AM	0	4	1	0	0	5	0	0	0	0	0	0	0	0	1	0	11	75
8:15 AM	0	2	0	0	1	5	0	0	0	0	0	0	0	0	3	0	11	55
8:30 AM	0	5	2	0	1	6	0	0	0	0	0	0	2	0	3	0	19	53
8:45 AM	0	5	0	0	0	3	0	0	0	0	0	0	0	0	2	0	10	51

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	64	0	0	4	28	0	0	0	0	0	0	8	0	20	0	124
Heavy Trucks	0	0	0		0	4	0		0	0	0		0	0	4		8
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 3/14/2019 4:20 PM

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

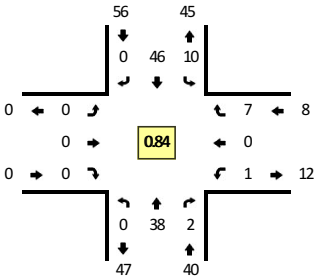
Type of peak hour being reported: Intersection Peak

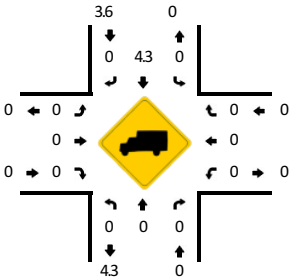
Method for determining peak hour: Total Entering Volume

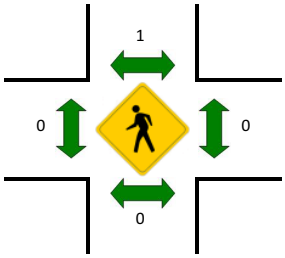
LOCATION: SE Altman Rd -- SE Carpenter Ln
CITY/STATE: Multnomah, OR

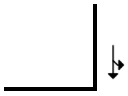
QC JOB #: 14910304
DATE: Thu, Mar 7 2019

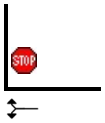
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

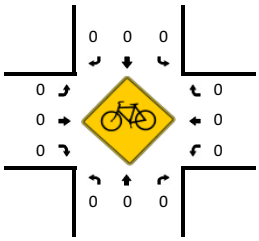


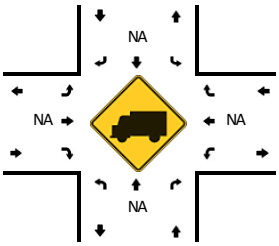


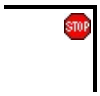


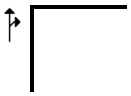


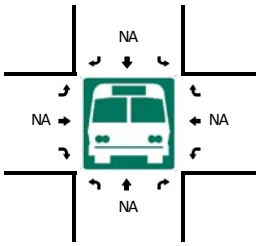












15-Min Count Period Beginning At	SE Altman Rd (Northbound)				SE Altman Rd (Southbound)				SE Carpenter Ln (Eastbound)				SE Carpenter Ln (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	15	1	0	2	12	0	0	0	0	0	0	0	0	1	0	31	
4:15 PM	0	7	0	0	3	14	0	0	0	0	0	0	0	0	1	0	25	
4:30 PM	0	8	0	0	2	9	0	0	0	0	0	0	0	0	2	0	21	
4:45 PM	0	8	1	0	3	11	0	0	0	0	0	0	1	0	3	0	27	104
5:00 PM	0	7	1	0	2	8	0	0	0	0	0	0	0	0	4	0	22	95
5:15 PM	0	5	0	0	4	6	0	0	0	0	0	0	0	0	1	0	16	86
5:30 PM	0	7	1	0	3	6	0	0	0	0	0	0	0	0	2	0	19	84
5:45 PM	0	2	0	0	4	14	0	0	0	0	0	0	0	0	2	0	22	79

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	60	4	0	8	48	0	0	0	0	0	0	0	0	4	0	124
Heavy Trucks	0	0	0		0	4	0		0	0	0		0	0	0		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 3/14/2019 4:20 PM

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

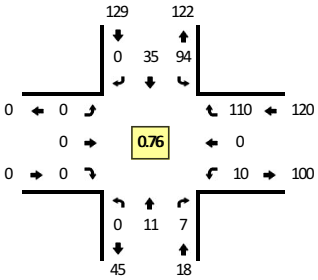
Type of peak hour being reported: Intersection Peak

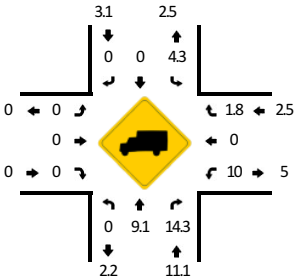
Method for determining peak hour: Total Entering Volume

LOCATION: SE Altman Rd -- SE Bluff Rd
CITY/STATE: Clackamas, OR

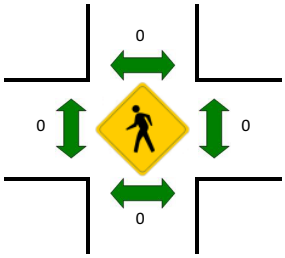
QC JOB #: 14910305
DATE: Thu, Feb 28 2019

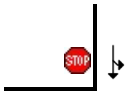
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:15 AM -- 7:30 AM

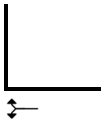


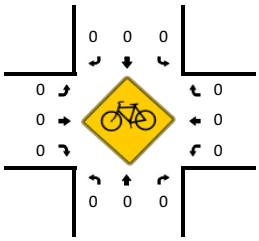


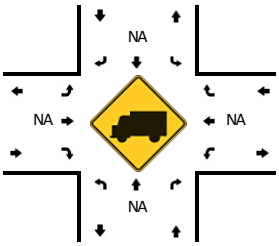
Quality Counts
DATA THAT DRIVES COMMUNITIES

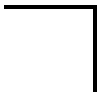


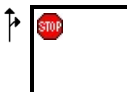


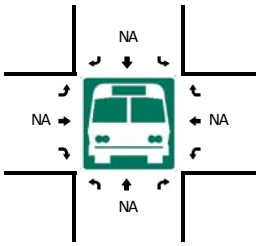












15-Min Count Period Beginning At	SE Altman Rd (Northbound)				SE Altman Rd (Southbound)				SE Bluff Rd (Eastbound)				SE Bluff Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	1	4	0	22	17	0	0	0	0	0	0	3	0	21	0	68	
7:15 AM	0	4	1	0	35	14	0	0	0	0	0	0	5	0	29	0	88	
7:30 AM	0	5	1	0	21	4	0	1	0	0	0	0	1	0	31	0	64	
7:45 AM	0	1	1	0	15	0	0	0	0	0	0	0	1	0	29	0	47	267
8:00 AM	0	3	2	0	12	4	0	0	0	0	0	0	3	0	12	0	36	235
8:15 AM	0	1	2	0	11	3	0	1	0	0	0	0	0	0	14	0	32	179
8:30 AM	0	3	0	0	7	7	0	0	0	0	0	0	1	0	17	0	35	150
8:45 AM	0	3	2	0	7	0	0	0	0	0	0	0	1	0	10	0	23	126

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	16	4	0	140	56	0	0	0	0	0	0	20	0	116	0	352
Heavy Trucks	0	0	0		4	0	0		0	0	0		0	0	0		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 3/14/2019 4:20 PM

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

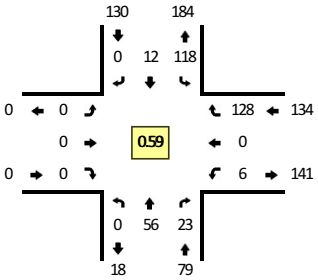
Type of peak hour being reported: Intersection Peak

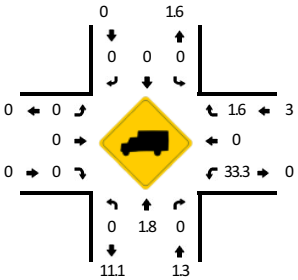
Method for determining peak hour: Total Entering Volume

LOCATION: SE Altman Rd -- SE Bluff Rd
CITY/STATE: Clackamas, OR

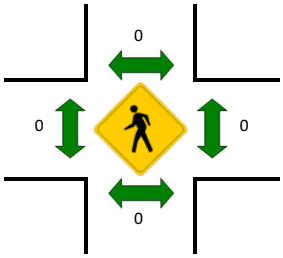
QC JOB #: 14910306
DATE: Thu, Mar 7 2019

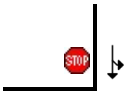
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

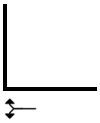


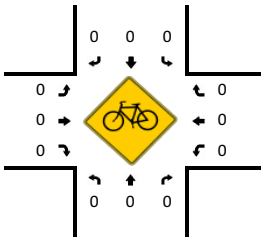


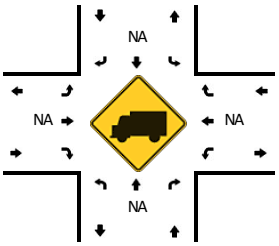
Quality Counts
DATA THAT DRIVES COMMUNITIES

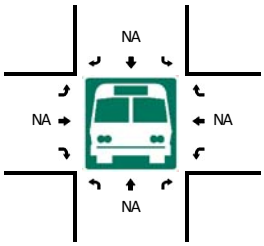












15-Min Count Period Beginning At	SE Altman Rd (Northbound)				SE Altman Rd (Southbound)				SE Bluff Rd (Eastbound)				SE Bluff Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	32	16	0	33	5	0	0	0	0	0	0	3	0	56	0	145	
4:15 PM	0	5	2	0	30	5	0	0	0	0	0	0	0	0	27	0	69	
4:30 PM	0	14	3	0	25	1	0	0	0	0	0	0	3	0	25	0	71	
4:45 PM	0	5	2	0	30	1	0	0	0	0	0	0	0	0	20	0	58	343
5:00 PM	0	7	1	0	28	2	0	0	0	0	0	0	0	0	15	0	53	251
5:15 PM	0	5	1	0	18	5	0	0	0	0	0	0	0	0	15	0	44	226
5:30 PM	0	3	1	0	23	0	0	0	0	0	0	0	0	0	13	0	40	195
5:45 PM	0	1	1	0	31	3	0	0	0	0	0	0	0	0	16	0	52	189

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	128	64	0	132	20	0	0	0	0	0	0	12	0	224	0	580
Heavy Trucks	0	4	0		0	0	0		0	0	0		4	0	4		12
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 3/14/2019 4:20 PM

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

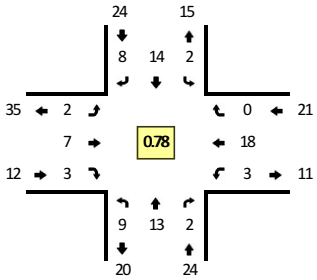
Type of peak hour being reported: Intersection Peak

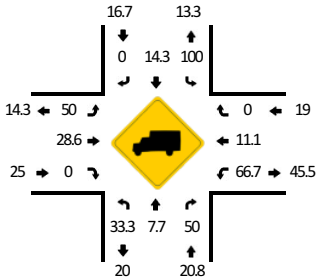
Method for determining peak hour: Total Entering Volume

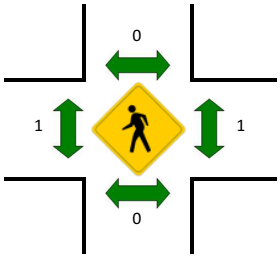
LOCATION: SE Cottell Rd -- SE Dodge Park Blvd
CITY/STATE: Multnomah, OR

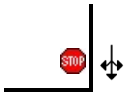
QC JOB #: 14910307
DATE: Thu, Feb 28 2019

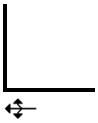
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:15 AM -- 7:30 AM

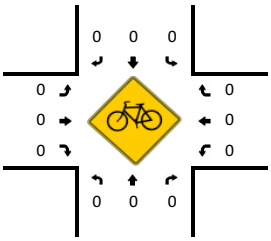


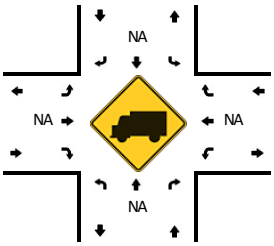


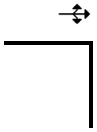


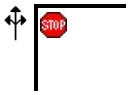


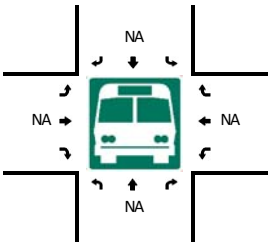












15-Min Count Period Beginning At	SE Cottell Rd (Northbound)				SE Cottell Rd (Southbound)				SE Dodge Park Blvd (Eastbound)				SE Dodge Park Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	3	0	0	0	1	1	0	1	0	2	0	0	3	0	0	14	
7:15 AM	3	5	1	0	1	4	2	0	0	1	2	0	1	6	0	0	26	
7:30 AM	3	4	1	0	1	5	0	0	1	1	0	0	0	5	0	0	21	
7:45 AM	2	3	0	0	0	1	2	0	1	4	1	0	0	5	0	0	19	80
8:00 AM	1	1	0	0	0	4	4	0	0	1	0	0	2	2	0	0	15	81
8:15 AM	4	2	0	0	0	0	1	0	1	1	1	0	0	2	0	0	12	67
8:30 AM	2	1	1	0	1	1	2	0	1	2	5	0	0	4	0	0	20	66
8:45 AM	2	1	0	0	0	2	2	0	0	1	0	0	1	1	0	0	10	57

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	20	4	0	4	16	8	0	0	4	8	0	4	24	0	0	104
Heavy Trucks	0	0	4		4	0	0		0	0	0		4	4	0		16
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 3/14/2019 4:20 PM

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

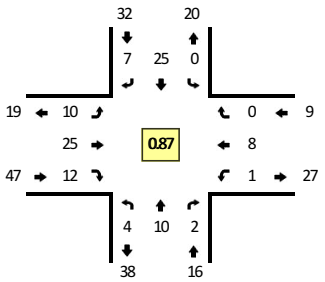
Type of peak hour being reported: Intersection Peak

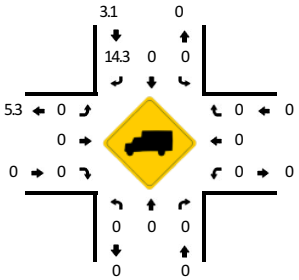
Method for determining peak hour: Total Entering Volume

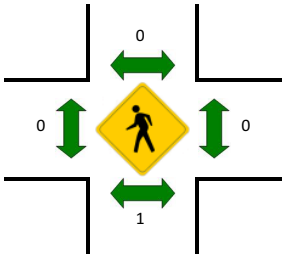
LOCATION: SE Cottell Rd -- SE Dodge Park Blvd
CITY/STATE: Multnomah, OR

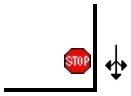
QC JOB #: 14910308
DATE: Thu, Mar 7 2019

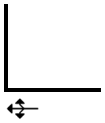
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

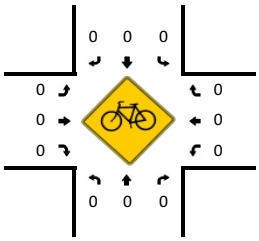


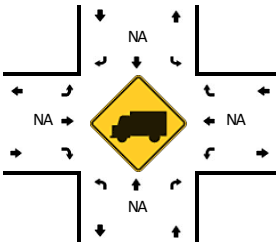


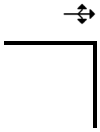


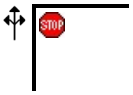


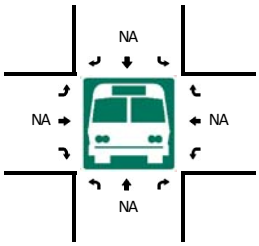












15-Min Count Period Beginning At	SE Cottell Rd (Northbound)				SE Cottell Rd (Southbound)				SE Dodge Park Blvd (Eastbound)				SE Dodge Park Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	6	1	0	0	7	3	0	0	5	4	0	0	0	0	0	27	
4:15 PM	0	2	0	0	0	2	3	0	3	6	3	0	1	2	0	0	22	
4:30 PM	2	1	0	0	0	12	1	0	4	7	1	0	0	2	0	0	30	
4:45 PM	1	1	1	0	0	4	0	0	3	7	4	0	0	4	0	0	25	104
5:00 PM	2	1	0	0	1	7	0	0	1	2	1	0	0	4	0	0	19	96
5:15 PM	3	3	0	0	0	3	0	0	2	6	2	0	0	4	0	0	23	97
5:30 PM	1	1	0	0	1	2	1	0	2	8	5	0	1	3	0	0	25	92
5:45 PM	1	1	0	0	0	1	0	0	2	11	3	0	0	3	0	0	22	89

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	4	0	0	0	48	4	0	16	28	4	0	0	8	0	0	120
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 3/14/2019 4:20 PM

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

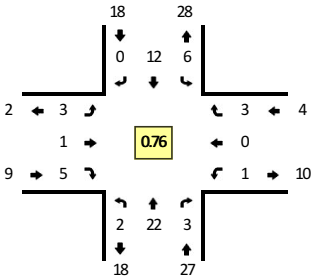
Type of peak hour being reported: Intersection Peak

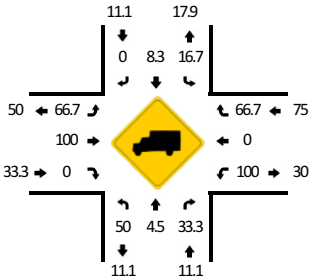
Method for determining peak hour: Total Entering Volume

LOCATION: SE Cottell Rd -- SE Carpenter Ln
CITY/STATE: Multnomah, OR

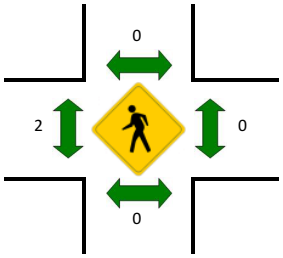
QC JOB #: 14910309
DATE: Thu, Feb 28 2019

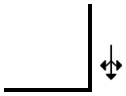
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

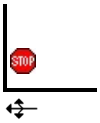


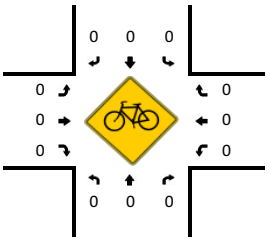


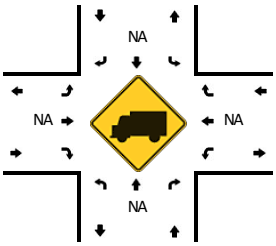
Quality Counts
DATA THAT DRIVES COMMUNITIES

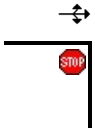


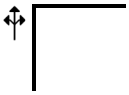


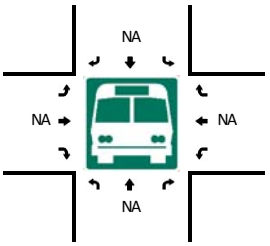












15-Min Count Period Beginning At	SE Cottell Rd (Northbound)				SE Cottell Rd (Southbound)				SE Carpenter Ln (Eastbound)				SE Carpenter Ln (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	5	0	0	2	2	0	0	1	0	2	0	0	0	0	0	12	
7:15 AM	0	8	1	0	2	4	0	0	1	0	1	0	0	0	0	0	17	
7:30 AM	0	6	2	0	1	5	0	0	0	1	1	0	1	0	2	0	19	
7:45 AM	2	3	0	0	1	1	0	0	1	0	1	0	0	0	1	0	10	58
8:00 AM	1	1	0	0	1	4	1	0	1	0	0	0	0	0	0	0	9	55
8:15 AM	1	3	1	0	1	0	0	0	0	0	1	0	0	0	2	0	9	47
8:30 AM	0	3	1	0	2	1	1	0	1	0	0	0	0	0	0	0	9	37
8:45 AM	0	2	0	0	2	1	0	0	0	0	0	0	0	0	1	0	6	33

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	24	8	0	4	20	0	0	0	4	4	0	4	0	8	0	76
Heavy Trucks	0	0	4		4	0	0		0	4	0		4	0	4		20
Pedestrians		0				0				4				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 3/14/2019 4:20 PM

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

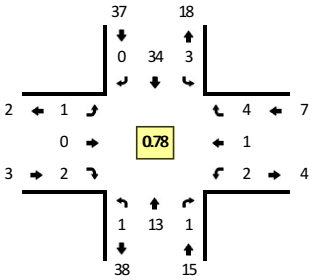
Type of peak hour being reported: Intersection Peak

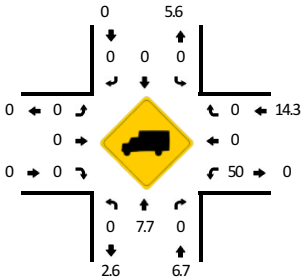
Method for determining peak hour: Total Entering Volume

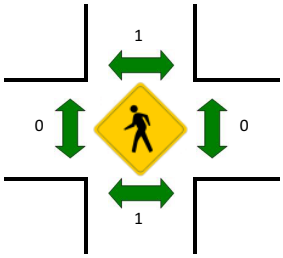
LOCATION: SE Cottell Rd -- SE Carpenter Ln
CITY/STATE: Multnomah, OR

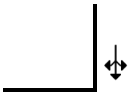
QC JOB #: 14910310
DATE: Thu, Mar 7 2019

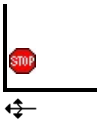
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

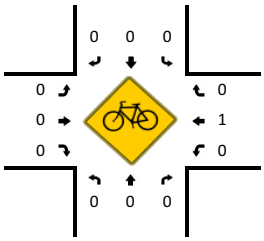


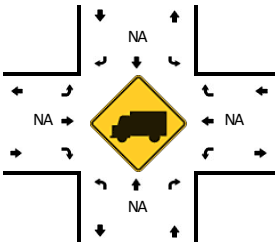


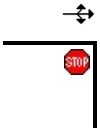


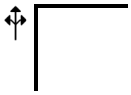


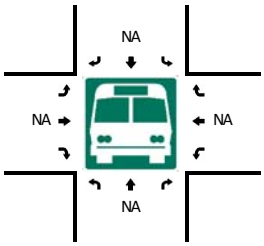












15-Min Count Period Beginning At	SE Cottell Rd (Northbound)				SE Cottell Rd (Southbound)				SE Carpenter Ln (Eastbound)				SE Carpenter Ln (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	6	0	0	1	8	0	0	0	0	2	0	1	0	2	0	20	
4:15 PM	0	3	0	0	0	7	0	0	0	0	0	0	1	0	1	0	12	
4:30 PM	0	2	0	0	0	13	0	0	0	0	0	0	0	0	1	0	16	
4:45 PM	1	2	1	0	2	6	0	0	1	0	0	0	0	1	0	0	14	62
5:00 PM	1	2	0	0	0	7	1	1	0	0	1	0	0	0	1	0	14	56
5:15 PM	1	5	0	0	0	5	0	0	0	0	0	0	0	0	1	0	12	56
5:30 PM	0	1	0	0	1	7	0	0	0	0	3	0	0	0	1	0	13	53
5:45 PM	0	2	1	0	0	3	1	0	0	0	1	0	0	0	0	0	8	47

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	24	0	0	4	32	0	0	0	0	8	0	4	0	8	0	80
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 3/14/2019 4:20 PM

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

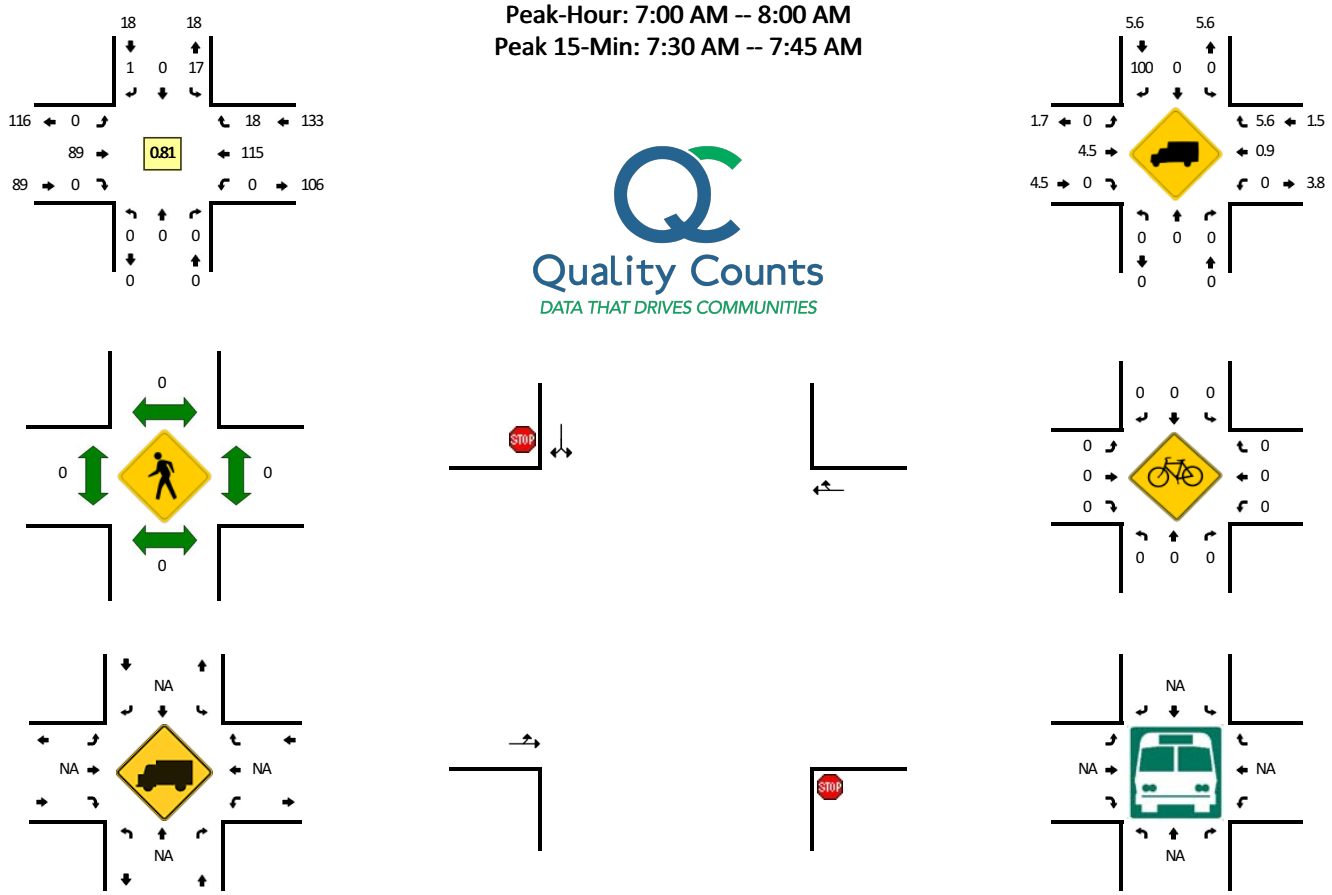
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SE Cottell Rd -- SE Bluff Rd
CITY/STATE: Clackamas, OR

QC JOB #: 14910311
DATE: Thu, Feb 28 2019

Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



15-Min Count Period Beginning At	SE Cottell Rd (Northbound)				SE Cottell Rd (Southbound)				SE Bluff Rd (Eastbound)				SE Bluff Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	4	0	0	0	0	12	0	0	0	31	3	0	50	
7:15 AM	0	0	0	0	5	0	0	0	0	28	0	0	0	26	4	0	63	
7:30 AM	0	0	0	0	6	0	1	0	0	29	0	0	0	32	6	0	74	
7:45 AM	0	0	0	0	2	0	0	0	0	20	0	0	0	26	5	0	53	240
8:00 AM	0	0	0	0	6	0	0	0	1	14	0	0	0	14	1	0	36	226
8:15 AM	0	0	0	0	1	0	0	0	2	8	0	0	0	14	4	0	29	192
8:30 AM	0	0	0	0	2	0	0	0	0	8	0	0	0	15	2	0	27	145
8:45 AM	0	0	0	0	1	0	0	0	1	3	0	0	0	8	1	0	14	106

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	24	0	4	0	0	116	0	0	0	128	24	0	296
Heavy Trucks	0	0	0		0	0	4		0	0	0		0	4	0		8
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 3/14/2019 4:20 PM

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

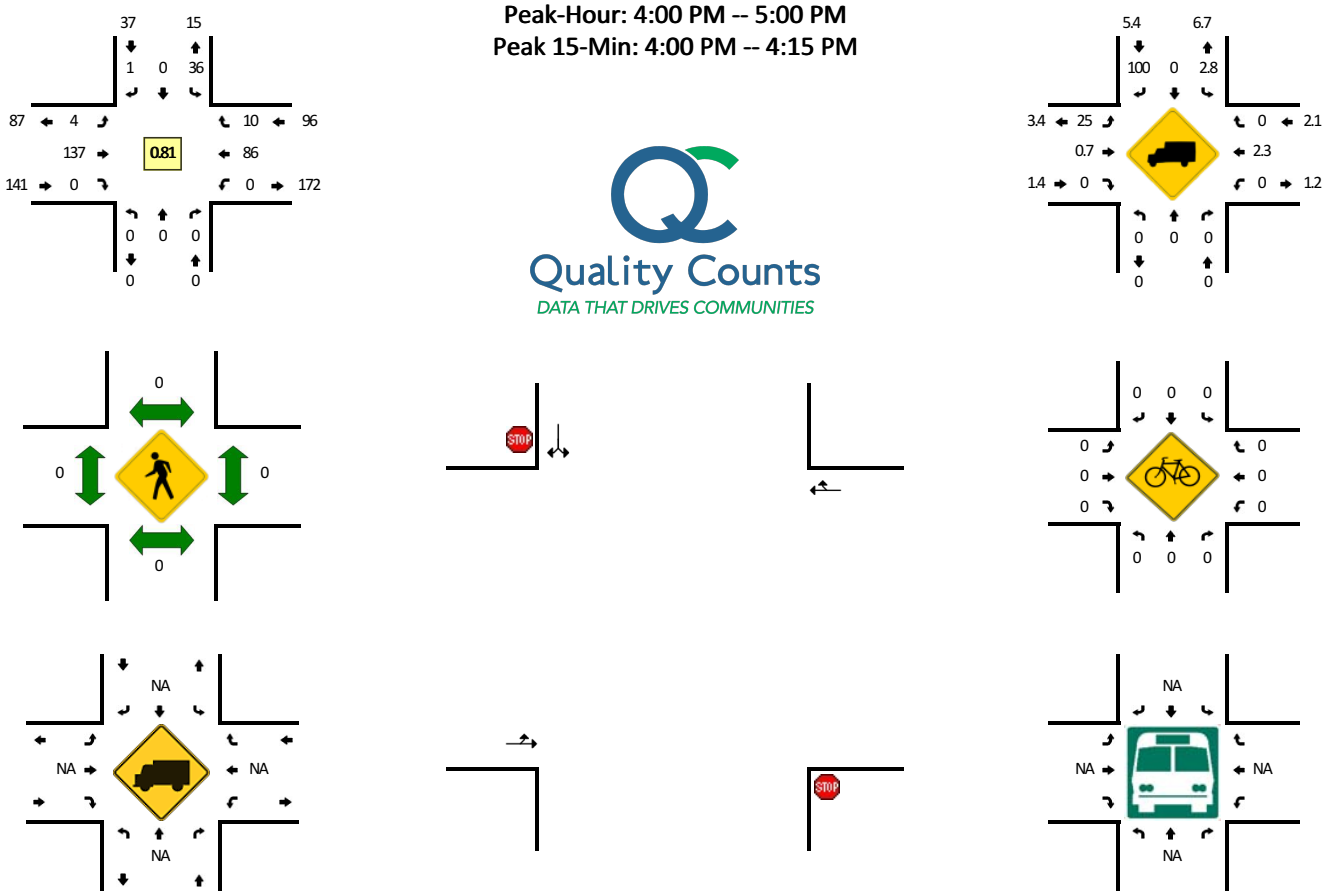
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SE Cottell Rd -- SE Bluff Rd
CITY/STATE: Clackamas, OR

QC JOB #: 14910312
DATE: Thu, Mar 7 2019

Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:00 PM -- 4:15 PM



15-Min Count Period Beginning At	SE Cottell Rd (Northbound)				SE Cottell Rd (Southbound)				SE Bluff Rd (Eastbound)				SE Bluff Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	11	0	0	0	2	46	0	0	0	22	4	0	85	
4:15 PM	0	0	0	0	9	0	0	0	2	27	0	0	0	25	3	0	66	
4:30 PM	0	0	0	0	10	0	1	0	0	34	0	0	0	23	1	0	69	
4:45 PM	0	0	0	0	5	0	0	1	0	30	0	0	0	16	2	0	54	274
5:00 PM	0	0	0	0	7	0	0	0	2	27	0	0	0	15	2	0	53	242
5:15 PM	0	0	0	0	5	0	0	0	0	15	0	0	0	16	4	0	40	216
5:30 PM	0	0	0	0	7	0	1	0	0	24	0	0	0	15	4	0	51	198
5:45 PM	0	0	0	0	3	0	0	0	1	28	0	0	0	11	0	0	43	187

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	44	0	0	0	8	184	0	0	0	88	16	0	340
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	4	0		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 3/14/2019 4:20 PM

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

Quality Counts
DATA THAT DRIVES COMMUNITIES

Location: SE Proctor Rd -- SE Bluff Rd
Date: 2/28/2019
Site Code: 14910313

	SE Proctor Rd Southbound					SE Bluff Rd Westbound					SE 362nd Ave Northbound					SE Bluff Rd Eastbound					Oregon Trail Academy Dwy Southeastbound				
Start Time	Right to School Dwy	Right	Thru	Left	U-Turn	Right	Right to School Dwy	Thru	Left	U-Turn	Right	Thru	Left to School Dwy	Left	U-Turn	Right	Thru	Left	Left to School Dwy	U-Turn	Right to Bluff Rd	Right to 362nd Ave	Left to Bluff Rd	Left to Proctor Rd	U-Turn
07:00 AM	0	0	0	1	0	0	0	5	0	0	0	0	0	2	0	1	3	0	1	0	0	0	0	0	0
07:05 AM	0	1	0	0	0	1	0	5	0	0	0	0	0	4	0	1	3	1	0	0	0	0	0	0	0
07:10 AM	0	0	0	0	0	2	2	10	0	0	0	0	0	9	0	2	4	1	0	0	1	0	0	0	0
07:15 AM	0	0	0	0	0	2	0	3	0	0	0	0	0	7	0	1	3	1	0	0	0	0	0	0	0
07:20 AM	0	2	0	0	0	3	0	6	0	0	1	0	0	6	0	1	6	5	1	0	1	0	0	0	0
07:25 AM	0	1	0	1	0	12	0	1	0	0	0	1	0	0	0	0	3	5	0	0	0	0	0	0	0
07:30 AM	0	3	0	7	0	19	0	5	0	0	0	2	0	1	0	3	1	9	0	0	6	0	6	0	0
07:35 AM	0	9	1	5	0	18	0	1	0	0	0	1	0	1	0	1	6	6	0	0	6	1	11	0	0
07:40 AM	0	6	1	4	0	20	0	2	0	0	0	0	0	3	0	1	1	5	0	0	4	0	4	1	0
07:45 AM	0	4	0	1	0	11	0	4	0	0	0	0	0	2	0	1	2	8	0	0	9	0	17	1	0
07:50 AM	0	0	0	3	0	3	0	4	0	0	0	0	0	1	0	1	3	1	0	0	1	0	3	0	0
07:55 AM	0	0	0	3	0	3	0	4	0	0	0	0	0	1	0	1	4	1	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	4	2	0	0	0	0	1	0	0
08:05 AM	0	3	0	0	0	0	0	4	0	0	0	0	0	1	0	1	4	0	0	0	0	0	0	0	0
08:10 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	4	1	0	0	0	0	0	0	0
08:15 AM	0	1	0	0	0	0	0	2	2	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0
08:20 AM	0	1	0	0	0	0	0	2	0	0	0	0	0	3	0	1	3	0	0	0	0	0	0	0	0
08:25 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	2	2	0	0	0	0	0	0	0	0
08:30 AM	0	3	0	1	0	2	0	7	0	0	0	0	0	1	0	0	3	1	0	0	0	0	0	0	0
08:35 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0
08:40 AM	0	1	0	1	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0
08:45 AM	0	1	0	0	0	0	0	5	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
08:50 AM	0	0	0	0	0	1	0	2	0	0	0	0	0	1	0	0	2	1	0	0	0	0	0	0	0
08:55 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Total	**0**	**36**	**2**	**27**	**0**	**101**	**2**	**78**	**2**	**0**	**1**	**4**	**0**	**53**	**0**	**20**	**68**	**49**	**2**	**0**	**28**	**1**	**43**	**2**	**0**

Peak Hour: 7:00 AM - 8:00 AM
Peak 15: 7:30 AM - 7:45 AM
PHF: 0.56768

Quality Counts
DATA THAT DRIVES COMMUNITIES

Location: SE Proctor Rd -- SE Bluff Rd
Date: 3/7/2019
Site Code: 14910314

	SE Proctor Rd Southbound					SE Bluff Rd Westbound					SE 362nd Ave Northbound					SE Bluff Rd Eastbound					Oregon Trail Academy Dwy Southeastbound				
Start Time	Right to School Dwy	Right	Thru	Left	U-Turn	Right	Right to School Dwy	Thru	Left	U-Turn	Right	Thru	Left to School Dwy	Left	U-Turn	Right	Thru	Left	Left to School Dwy	U-Turn	Right to SE Bluff Rd	Right to SE 362nd Ave	Left to SE Bluff Rd	Left to SE Proctor Rd	U-Turn
4:00 PM	0	0	0	0	0	1	0	6	0	0	0	0	0	1	0	1	10	0	0	0	0	0	0	0	0
4:05 PM	0	2	0	1	0	0	0	3	0	0	0	0	0	0	0	6	15	0	0	0	0	0	2	0	0
4:10 PM	0	1	0	2	0	2	0	1	0	0	1	0	0	2	0	5	13	0	0	0	0	0	0	0	0
4:15 PM	0	2	0	0	0	2	0	4	0	0	0	0	0	0	0	0	9	0	0	0	1	0	0	0	0
4:20 PM	0	1	0	0	0	3	0	2	0	0	0	1	0	3	0	3	5	1	0	0	0	0	0	0	0
4:25 PM	0	1	0	0	0	2	0	1	0	0	0	0	0	5	0	4	2	1	0	0	0	0	0	0	0
4:30 PM	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	4	14	1	0	0	0	0	0	0	0
4:35 PM	0	2	0	7	0	0	0	8	0	0	0	0	0	1	0	2	4	1	0	0	0	0	0	0	0
4:40 PM	0	1	1	2	0	1	0	1	0	0	0	0	0	3	0	2	12	1	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	1	0	2	0	0	1	0	0	3	0	2	8	0	0	0	1	0	1	0	0
4:50 PM	0	0	1	0	0	2	0	1	0	0	0	1	0	1	0	0	8	0	0	0	0	0	0	0	0
4:55 PM	0	0	0	0	0	8	0	4	0	0	0	0	0	4	0	2	9	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	4	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0
5:05 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	3	0	5	5	1	0	0	0	0	0	0	0
5:10 PM	0	0	0	0	0	1	0	1	1	0	0	0	0	2	0	4	7	0	0	0	0	0	0	0	0
5:15 PM	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	2	7	1	0	0	0	0	0	0	0
5:20 PM	0	0	0	0	0	0	0	6	2	0	0	0	0	2	0	1	6	0	0	0	0	0	0	0	0
5:25 PM	0	1	0	0	0	1	0	5	0	0	0	0	0	3	0	2	5	1	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0
5:35 PM	0	0	0	0	0	1	0	3	0	0	0	0	0	1	0	2	5	0	0	0	0	0	0	0	0
5:40 PM	0	0	0	1	0	0	0	4	0	0	0	0	0	3	0	3	7	0	0	0	0	0	0	0	0
5:45 PM	1	0	0	0	0	0	0	3	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
5:50 PM	0	0	0	0	0	1	0	2	0	0	0	0	0	1	0	7	5	0	0	0	0	0	0	0	0
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	7	2	0	0	0	0	0	0	0
Total	**1**	**11**	**3**	**14**	**0**	**27**	**0**	**66**	**6**	**0**	**2**	**2**	**0**	**44**	**0**	**60**	**171**	**10**	**0**	**0**	**2**	**0**	**3**	**0**	**0**

Peak Hour: 4:00 PM - 5:00 PM
Peak 15: 4:00 PM - 4:15 PM
PHF: 0.86333

Appendix C: Site Trips Documentation

Richard Martin

From: Jon Holland <JRHolland@BrwnCald.com>
Sent: Wednesday, October 13, 2021 11:37 AM
To: Dana Beckwith
Cc: Richard Martin
Subject: FW: Chemical Deliveries estimate

Dana,

Please see below. In short, our filtration facility designer has updated their estimate of chemical deliveries. Please use these new numbers in your ongoing operations traffic impact study.

Thanks,

Jon

12.) Can you provide details on the average delivery volume of each chemical or other material requir
for plant operation?

Response: Yes. Details are shown below for average delivery volume.

Chemical	Delivery Quantity	Deliveries per year
Primary Coagulants	4,300 gal	183
Quenching Agents	4,300 gal	11
Liquid Ammonium Sulfate	4,700 gal	37
Salt	25 tons	73
Coagulant Aid	4,900 gal	4
Thickening Aid	330 gal	7
Filter Aid	2,300 lbs	7
Carbon Dioxide	20 tons	110
Soda Ash	20 tons	292
Dewatering Polymer	660 gal	26
Liquid Oxygen	3,000 gal	73
Total		**823**

From: Graham, Mark <mark.graham@stantec.com>
Sent: Monday, October 11, 2021 8:13 PM
To: Jon Holland <JRHolland@BrwnCald.com>
Cc: Hakes, Lyda <lyda.hakes@portlandoregon.gov>; Qianru Deng <qdeng@carollo.com>; Jude Grounds <jgrounds@carollo.com>
Subject: RE: Chemical Deliveries estimate

Jon –

4.9.5 Mechanical Dewatering Building Configuration

In addition to selection of the mechanical dewatering technology, the basic configuration of the mechanical dewatering building was also developed as part of the preliminary design phase. This included establishing a basis of design for the following building features:

- Number of building levels (stories)
- Location of mechanical dewatering equipment (level)
- Number of truck loading bays for solids
- Minimizing or removing single points of failure.

Alternatives analysis and recommendations for the above features are discussed in the following sections.

Background and Alternatives

The mechanical dewatering building will serve as the central point of operation for solids handling activities. The building will house not only the mechanical dewatering equipment (centrifuges) but also the chemical polymers required for sludge conditioning as well as dedicated rooms for electrical and HVAC supporting infrastructure.

Critical to selecting appropriate features for the building is a solid understanding of the anticipated operations, including operations frequency and truck loading. As such, Table 4-122 provides the anticipated operations, solids loading and truck traffic associated with mechanical dewatering.

Table 4-122: Anticipated Operations, Solids Loading, and Truck Traffic

	'Normal' Staffing ***(Typical operation up to 99th Percentile Solids Loading)***	**'Medium' Staffing** ***(Typical operation beyond 99th Percentile)***	**Extended Hours** ***(LOS event)***	**Maximum Hours** ***(Maximum capacity)***
Number of Dewatering Units Online	1 or 2 of 3	2 of 3	3 of 3	3 of 3
Operating Hours	7 hours/day 5 days/week	8 hours/day 7 days/week	16 hours/day 7 days/week	24 hours/day 7 days/week
Approximate Daily Capacity, lbs/day	5,000 to 10,000	16,000	48,000	56,000 to 72,000
# of Trucks[a]	4 to 8 per week	2 per day	6 per day	7 to 9 per day
Minimum Time to Fill Truck[a]	8 hours with 1 Dewatering Unit Running	4 hours with 2 Dewatering Units Running	2.7 hours with 3 Dewatering Unit Running	

a. Assumes 20% cake solids concentration dewatering performance, 20 tons of solids per truck (tractor trailer)

lbs/day = pounds per day

LOS = level of service

Appendix D: Level of Service and HCM Results

Level of Service Categories (LOS)

Level of Service A - free flow. Traffic flows at or above the posted speed limit and motorists have complete mobility between lanes. Motorists have a high level of physical and psychological comfort. The effects of incidents or point breakdowns are easily absorbed. LOS A generally occurs late at night in urban areas and frequently in rural areas.

Level of Service B - reasonably free flow. LOS A speeds are maintained, maneuverability within the traffic stream is slightly restricted. Motorists still have a high level of physical and psychological comfort.

Level of Service C - stable flow, at or near free flow. Ability to maneuver through lanes is noticeably restricted and lane changes require more driver awareness. Most experienced drivers are comfortable, roads remain safely below but efficiently close to capacity, and posted speed is maintained. Minor incidents may still have no effect but localized service will have noticeable effects and traffic delays will form behind the incident.

Level of Service D - approaching unstable flow. Speeds slightly decrease as traffic volume slightly increase. Freedom to maneuver within the traffic stream is much more limited and driver comfort levels decrease. Minor incidents are expected to create delays.

Level of Service E - unstable flow, operating at capacity. Flow becomes irregular and speed varies rapidly because there are virtually no usable gaps to maneuver in the traffic stream and speeds rarely reach the posted limit. Any incident will create serious delays. Drivers' level of comfort become poor.

Level of Service F - forced or breakdown flow. Operations are characterized by stop-and-go traffic. Travel time cannot be predicted, with generally more demand than capacity. Vehicles may progress at reasonable speeds for several hundred feet or more, and then be required to stop in a cyclic fashion, resulting in long delays.

Level of Service Criteria Table		
LOS	Signalized Intersection	Unsignalized Intersection
	Control Delay (s/veh)	
A	≤10 sec	≤10 sec
B	10–20 sec	10–15 sec
C	20–35 sec	15–25 sec
D	35–55 sec	25–35 sec
E	55–80 sec	35–50 sec
F	>80 sec	>50 sec

HCM Unsignalized Intersection Capacity Analysis
1: SE Altman Road & SE Oxbow Drive

05/13/2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	35	39	2	32	51	4
Future Volume (Veh/h)	35	39	2	32	51	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	45	51	3	42	66	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			96		118	70
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			96		118	70
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		92	99
cM capacity (veh/h)			1510		871	998

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	96	45	71
Volume Left	0	3	66
Volume Right	51	0	5
cSH	1700	1510	879
Volume to Capacity	0.06	0.00	0.08
Queue Length 95th (ft)	0	0	7
Control Delay (s)	0.0	0.5	9.5
Lane LOS		A	A
Approach Delay (s)	0.0	0.5	9.5
Approach LOS			A

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	14.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
2: SE Hosner Road & SE Oxbow Drive/SE Homan Road

05/13/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	4	2	48	0	1	1	40	4	0	0	9	8
Future Volume (vph)	4	2	48	0	1	1	40	4	0	0	9	8
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	5	3	62	0	1	1	52	5	0	0	12	10

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	70	2	57	22
Volume Left (vph)	5	0	52	0
Volume Right (vph)	62	1	0	10
Hadj (s)	-0.11	-0.30	0.72	-0.17
Departure Headway (s)	4.0	3.9	4.8	3.9
Degree Utilization, x	0.08	0.00	0.08	0.02
Capacity (veh/h)	882	906	730	889
Control Delay (s)	7.3	6.9	8.2	7.0
Approach Delay (s)	7.3	6.9	8.2	7.0
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.6		
Level of Service	A		
Intersection Capacity Utilization	22.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	13	3	4	27	11	6	36	2	13	26	2
Future Volume (Veh/h)	3	13	3	4	27	11	6	36	2	13	26	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	3	15	3	4	30	12	7	40	2	15	29	2
Pedestrians					1							
Lane Width (ft)					12.0							
Walking Speed (ft/s)					3.5							
Percent Blockage					0							
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	42			18			83	72	18	90	68	36
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	42			18			83	72	18	90	68	36
tC, single (s)	4.1			4.1			7.1	6.6	6.7	7.2	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.1	3.8	3.6	4.0	3.3
p0 queue free %	100			100			99	95	100	98	96	100
cM capacity (veh/h)	1580			1612			880	803	937	842	815	1042

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	21	46	49	46
Volume Left	3	4	7	15
Volume Right	3	12	2	2
cSH	1580	1612	818	832
Volume to Capacity	0.00	0.00	0.06	0.06
Queue Length 95th (ft)	0	0	5	4
Control Delay (s)	1.1	0.6	9.7	9.6
Lane LOS	A	A	A	A
Approach Delay (s)	1.1	0.6	9.7	9.6
Approach LOS			A	A

Intersection Summary			
Average Delay	6.0		
Intersection Capacity Utilization	14.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	15	12	5	27	19	8
Future Volume (Veh/h)	15	12	5	27	19	8
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	19	15	6	34	24	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			34		72	26
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			34		72	26
tC, single (s)			4.7		6.4	6.7
tC, 2 stage (s)						
tF (s)			2.7		3.5	3.8
p0 queue free %			100		97	99
cM capacity (veh/h)			1273		920	926

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	34	40	34
Volume Left	0	6	24
Volume Right	15	0	10
cSH	1700	1273	922
Volume to Capacity	0.02	0.00	0.04
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.0	1.2	9.1
Lane LOS		A	A
Approach Delay (s)	0.0	1.2	9.1
Approach LOS			A

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	15.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
5: Altman Rd & Dodge Park Blvd

05/16/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	12	23	2	0	27	9	10	26	3	7	22	3
Future Volume (vph)	12	23	2	0	27	9	10	26	3	7	22	3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	13	26	2	0	30	10	11	29	3	8	24	3

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	41	40	43	35
Volume Left (vph)	13	0	11	8
Volume Right (vph)	2	10	3	3
Hadj (s)	0.17	-0.05	0.06	-0.01
Departure Headway (s)	4.3	4.1	4.2	4.1
Degree Utilization, x	0.05	0.05	0.05	0.04
Capacity (veh/h)	819	863	836	852
Control Delay (s)	7.5	7.3	7.4	7.3
Approach Delay (s)	7.5	7.3	7.4	7.3
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.4		
Level of Service	A		
Intersection Capacity Utilization	18.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	12	7	3	24	2	12	13	1	1	8	3
Future Volume (Veh/h)	3	12	7	3	24	2	12	13	1	1	8	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	4	15	9	4	29	2	15	16	1	1	10	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	31			24			74	66	20	74	70	30
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	31			24			74	66	20	74	70	30
tC, single (s)	4.4			4.4			7.1	6.6	6.2	8.1	6.8	6.2
tC, 2 stage (s)												
tF (s)	2.5			2.5			3.5	4.1	3.3	4.4	4.2	3.3
p0 queue free %	100			100			98	98	100	100	99	100
cM capacity (veh/h)	1403			1411			904	808	1064	709	774	1050

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	28	35	32	15
Volume Left	4	4	15	1
Volume Right	9	2	1	4
cSH	1403	1411	857	827
Volume to Capacity	0.00	0.00	0.04	0.02
Queue Length 95th (ft)	0	0	3	1
Control Delay (s)	1.1	0.9	9.4	9.4
Lane LOS	A	A	A	A
Approach Delay (s)	1.1	0.9	9.4	9.4
Approach LOS			A	A

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	14.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	4	10	29	0	2	22
Future Volume (Veh/h)	4	10	29	0	2	22
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	4	11	31	0	2	24
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	59	31			31	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	59	31			31	
tC, single (s)	6.6	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.7	3.3			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	892	1049			1595	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	15	31	26
Volume Left	4	0	2
Volume Right	11	0	0
cSH	1002	1700	1595
Volume to Capacity	0.01	0.02	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	8.6	0.0	0.6
Lane LOS	A		A
Approach Delay (s)	8.6	0.0	0.6
Approach LOS	A		

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	1	3	1	0	6	1	18	1	5	11	3
Future Volume (Veh/h)	2	1	3	1	0	6	1	18	1	5	11	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	3	1	4	1	0	8	1	24	1	7	14	4
Pedestrians		2										
Lane Width (ft)		12.0										
Walking Speed (ft/s)		3.5										
Percent Blockage		0										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	66	59	18	61	60	24	20			25		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	66	59	18	61	60	24	20			25		
tC, single (s)	7.8	7.5	6.2	8.1	6.5	6.9	4.6			4.3		
tC, 2 stage (s)												
tF (s)	4.1	4.9	3.3	4.4	4.0	3.9	2.7			2.4		
p0 queue free %	100	100	100	100	100	99	100			100		
cM capacity (veh/h)	776	671	1064	732	828	892	1331			1497		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	8	9	26	25
Volume Left	3	1	1	7
Volume Right	4	8	1	4
cSH	878	871	1331	1497
Volume to Capacity	0.01	0.01	0.00	0.00
Queue Length 95th (ft)	1	1	0	0
Control Delay (s)	9.1	9.2	0.3	2.1
Lane LOS	A	A	A	A
Approach Delay (s)	9.1	9.2	0.3	2.1
Approach LOS	A	A		

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	14.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	92	83	28	25	0
Future Volume (Veh/h)	0	92	83	28	25	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	107	97	33	29	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	130				220	114
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	130				220	114
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				96	100
cM capacity (veh/h)	1468				763	945

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	107	130	29
Volume Left	0	0	29
Volume Right	0	33	0
cSH	1468	1700	763
Volume to Capacity	0.00	0.08	0.04
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.0	0.0	9.9
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.9
Approach LOS			A

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	16.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	91	105	14	15	0
Future Volume (Veh/h)	1	91	105	14	15	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	1	112	130	17	19	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	147				252	138
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	147				252	138
tC, single (s)	4.1				6.4	7.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	4.2
p0 queue free %	100				97	100
cM capacity (veh/h)	1447				740	704

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	113	147	19
Volume Left	1	0	19
Volume Right	0	17	0
cSH	1447	1700	740
Volume to Capacity	0.00	0.09	0.03
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.1	0.0	10.0
Lane LOS	A		A
Approach Delay (s)	0.1	0.0	10.0
Approach LOS			A

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	16.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	39	18	1	43	79	18	4	1	59	5	52
Future Volume (Veh/h)	47	39	18	1	43	79	18	4	1	59	5	52
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	51	42	20	1	47	86	20	4	1	64	5	57
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	133			62			306	289	52	249	256	90
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	133			62			306	289	52	249	256	90
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			97	99	100	91	99	94
cM capacity (veh/h)	1452			1541			589	599	1016	681	625	968

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	113	134	25	126
Volume Left	51	1	20	64
Volume Right	20	86	1	57
cSH	1452	1541	600	783
Volume to Capacity	0.04	0.00	0.04	0.16
Queue Length 95th (ft)	3	0	3	14
Control Delay (s)	3.6	0.1	11.3	10.5
Lane LOS	A	A	B	B
Approach Delay (s)	3.6	0.1	11.3	10.5
Approach LOS			B	B

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	29.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	15	5	11	30	1	4	1	1	1	4	3
Future Volume (Veh/h)	2	15	5	11	30	1	4	1	1	1	4	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Hourly flow rate (vph)	3	21	7	15	42	1	6	1	1	1	6	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	43			28			110	104	24	104	106	42
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	43			28			110	104	24	104	106	42
tC, single (s)	4.1			4.2			7.3	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.7	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			99			99	100	100	100	99	100
cM capacity (veh/h)	1579			1541			802	781	1032	871	778	1034

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	31	58	8	11
Volume Left	3	15	6	1
Volume Right	7	1	1	4
cSH	1579	1541	822	864
Volume to Capacity	0.00	0.01	0.01	0.01
Queue Length 95th (ft)	0	1	1	1
Control Delay (s)	0.7	2.0	9.4	9.2
Lane LOS	A	A	A	A
Approach Delay (s)	0.7	2.0	9.4	9.2
Approach LOS			A	A

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	14.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	18	9	18	27	7	14
Future Volume (Veh/h)	18	9	18	27	7	14
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	26	13	26	39	10	20
Pedestrians					1	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			40		124	34
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			40		124	34
tC, single (s)			4.1		6.4	6.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			98		99	98
cM capacity (veh/h)			1581		860	987

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	39	65	30
Volume Left	0	26	10
Volume Right	13	0	20
cSH	1700	1581	941
Volume to Capacity	0.02	0.02	0.03
Queue Length 95th (ft)	0	1	2
Control Delay (s)	0.0	3.0	9.0
Lane LOS		A	A
Approach Delay (s)	0.0	3.0	9.0
Approach LOS			A

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	19.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
1: SE Altman Road & SE Oxbow Drive

05/13/2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	45	62	8	45	52	4
Future Volume (Veh/h)	45	62	8	45	52	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	47	65	8	47	55	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			112		142	80
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			112		142	80
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			99		94	100
cM capacity (veh/h)			1412		850	986

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	112	55	59
Volume Left	0	8	55
Volume Right	65	0	4
cSH	1700	1412	858
Volume to Capacity	0.07	0.01	0.07
Queue Length 95th (ft)	0	0	6
Control Delay (s)	0.0	1.1	9.5
Lane LOS		A	A
Approach Delay (s)	0.0	1.1	9.5
Approach LOS			A

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	19.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
2: SE Hosner Road & SE Oxbow Drive/SE Homan Road

05/13/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	16	1	41	3	2	0	41	8	3	0	8	11
Future Volume (vph)	16	1	41	3	2	0	41	8	3	0	8	11
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	18	1	45	3	2	0	45	9	3	0	9	12

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	64	5	57	21
Volume Left (vph)	18	3	45	0
Volume Right (vph)	45	0	3	12
Hadj (s)	-0.04	0.12	0.48	-0.10
Departure Headway (s)	4.0	4.3	4.6	4.0
Degree Utilization, x	0.07	0.01	0.07	0.02
Capacity (veh/h)	868	822	769	874
Control Delay (s)	7.4	7.3	7.9	7.1
Approach Delay (s)	7.4	7.3	7.9	7.1
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.5		
Level of Service	A		
Intersection Capacity Utilization	19.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	21	1	20	38	20	3	29	3	13	53	5
Future Volume (Veh/h)	1	21	1	20	38	20	3	29	3	13	53	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	1	26	1	25	48	25	4	36	4	16	66	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	73			27			178	152	26	161	140	60
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	73			27			178	152	26	161	140	60
tC, single (s)	4.1			4.2			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			99	95	100	98	91	99
cM capacity (veh/h)	1540			1536			721	731	1055	766	739	1010

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	28	98	44	88
Volume Left	1	25	4	16
Volume Right	1	25	4	6
cSH	1540	1536	751	758
Volume to Capacity	0.00	0.02	0.06	0.12
Queue Length 95th (ft)	0	1	5	10
Control Delay (s)	0.3	2.0	10.1	10.4
Lane LOS	A	A	B	B
Approach Delay (s)	0.3	2.0	10.1	10.4
Approach LOS			B	B

Intersection Summary			
Average Delay	6.0		
Intersection Capacity Utilization	24.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	34	22	0	28	15	1
Future Volume (Veh/h)	34	22	0	28	15	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	44	29	0	36	19	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			73		94	58
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			73		94	58
tC, single (s)			4.1		6.4	7.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	4.2
p0 queue free %			100		98	100
cM capacity (veh/h)			1540		910	789

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	73	36	20
Volume Left	0	0	19
Volume Right	29	0	1
cSH	1700	1540	903
Volume to Capacity	0.04	0.00	0.02
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.0	9.1
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.1
Approach LOS			A

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
5: Altman Rd & Dodge Park Blvd

05/16/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	6	48	12	1	27	4	10	32	2	12	37	12
Future Volume (vph)	6	48	12	1	27	4	10	32	2	12	37	12
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	7	59	15	1	33	5	12	39	2	15	45	15

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	81	39	53	75
Volume Left (vph)	7	1	12	15
Volume Right (vph)	15	5	2	15
Hadj (s)	-0.02	-0.07	0.02	-0.05
Departure Headway (s)	4.2	4.2	4.3	4.2
Degree Utilization, x	0.09	0.05	0.06	0.09
Capacity (veh/h)	826	825	810	835
Control Delay (s)	7.6	7.4	7.5	7.6
Approach Delay (s)	7.6	7.4	7.5	7.6
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.6		
Level of Service	A		
Intersection Capacity Utilization	17.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	24	5	0	10	0	8	13	2	1	19	4
Future Volume (Veh/h)	7	24	5	0	10	0	8	13	2	1	19	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	8	28	6	0	12	0	9	15	2	1	22	5
Pedestrians		1										
Lane Width (ft)		12.0										
Walking Speed (ft/s)		3.5										
Percent Blockage		0										
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	12			34			76	59	31	68	62	13
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	12			34			76	59	31	68	62	13
tC, single (s)	4.1			4.1			7.1	6.6	6.2	8.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.1	3.3	4.4	4.0	3.3
p0 queue free %	100			100			99	98	100	100	97	100
cM capacity (veh/h)	1620			1591			891	816	1049	717	829	1072

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	42	12	26	28
Volume Left	8	0	9	1
Volume Right	6	0	2	5
cSH	1620	1591	856	859
Volume to Capacity	0.00	0.00	0.03	0.03
Queue Length 95th (ft)	0	0	2	3
Control Delay (s)	1.4	0.0	9.3	9.3
Lane LOS	A		A	A
Approach Delay (s)	1.4	0.0	9.3	9.3
Approach LOS			A	A

Intersection Summary			
Average Delay	5.2		
Intersection Capacity Utilization	18.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	2	6	40	2	12	35
Future Volume (Veh/h)	2	6	40	2	12	35
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	2	7	49	2	15	43
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	123	50			51	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	123	50			51	
tC, single (s)	6.4	6.5			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.6			2.3	
p0 queue free %	100	99			99	
cM capacity (veh/h)	868	937			1518	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	9	51	58
Volume Left	2	0	15
Volume Right	7	2	0
cSH	921	1700	1518
Volume to Capacity	0.01	0.03	0.01
Queue Length 95th (ft)	1	0	1
Control Delay (s)	8.9	0.0	2.0
Lane LOS	A		A
Approach Delay (s)	8.9	0.0	2.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	19.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	4	1	0	6	2	16	2	2	20	1
Future Volume (Veh/h)	0	0	4	1	0	6	2	16	2	2	20	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Hourly flow rate (vph)	0	0	6	1	0	8	3	23	3	3	28	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	73	66	28	71	66	24	29			26		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	73	66	28	71	66	24	29			26		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	100	100	99	100			100		
cM capacity (veh/h)	913	825	1052	917	826	1058	1597			1601		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	6	9	29	32
Volume Left	0	1	3	3
Volume Right	6	8	3	1
cSH	1052	1040	1597	1601
Volume to Capacity	0.01	0.01	0.00	0.00
Queue Length 95th (ft)	0	1	0	0
Control Delay (s)	8.4	8.5	0.8	0.7
Lane LOS	A	A	A	A
Approach Delay (s)	8.4	8.5	0.8	0.7
Approach LOS	A	A		

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	103	115	40	35	0
Future Volume (Veh/h)	1	103	115	40	35	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	1	124	139	48	42	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	187				289	163
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	187				289	163
tC, single (s)	4.1				6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.3
p0 queue free %	100				94	100
cM capacity (veh/h)	1399				693	887

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	125	187	42
Volume Left	1	0	42
Volume Right	0	48	0
cSH	1399	1700	693
Volume to Capacity	0.00	0.11	0.06
Queue Length 95th (ft)	0	0	5
Control Delay (s)	0.1	0.0	10.5
Lane LOS	A		B
Approach Delay (s)	0.1	0.0	10.5
Approach LOS			B

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	18.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	134	89	20	25	0
Future Volume (Veh/h)	2	134	89	20	25	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	2	152	101	23	28	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	124				268	112
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	124				268	112
tC, single (s)	4.6				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.7				3.5	3.3
p0 queue free %	100				96	100
cM capacity (veh/h)	1213				715	946

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	154	124	28
Volume Left	2	0	28
Volume Right	0	23	0
cSH	1213	1700	715
Volume to Capacity	0.00	0.07	0.04
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.1	0.0	10.2
Lane LOS	A		B
Approach Delay (s)	0.1	0.0	10.2
Approach LOS			B

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	18.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	102	36	1	58	8	24	2	1	6	3	5
Future Volume (Veh/h)	6	102	36	1	58	8	24	2	1	6	3	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	7	119	42	1	67	9	28	2	1	7	3	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	76			161			235	232	140	230	248	72
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	76			161			235	232	140	230	248	72
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			96	100	100	99	100	99
cM capacity (veh/h)	1536			1430			714	668	913	724	654	996

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	168	77	31	16
Volume Left	7	1	28	7
Volume Right	42	9	1	6
cSH	1536	1430	716	789
Volume to Capacity	0.00	0.00	0.04	0.02
Queue Length 95th (ft)	0	0	3	2
Control Delay (s)	0.3	0.1	10.3	9.7
Lane LOS	A	A	B	A
Approach Delay (s)	0.3	0.1	10.3	9.7
Approach LOS			B	A

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	21.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	18	4	9	18	1	7	3	16	1	1	2
Future Volume (Veh/h)	3	18	4	9	18	1	7	3	16	1	1	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Hourly flow rate (vph)	4	25	6	13	25	1	10	4	22	1	1	3
Pedestrians		1										
Lane Width (ft)		12.0										
Walking Speed (ft/s)		3.5										
Percent Blockage		0										
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	26			31			92	88	28	112	90	26
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	26			31			92	88	28	112	90	26
tC, single (s)	4.1			4.1			7.1	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			99			99	99	98	100	100	100
cM capacity (veh/h)	1601			1595			885	797	1036	842	795	1054

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	35	39	36	5
Volume Left	4	13	10	1
Volume Right	6	1	22	3
cSH	1601	1595	959	945
Volume to Capacity	0.00	0.01	0.04	0.01
Queue Length 95th (ft)	0	1	3	0
Control Delay (s)	0.8	2.5	8.9	8.8
Lane LOS	A	A	A	A
Approach Delay (s)	0.8	2.5	8.9	8.8
Approach LOS			A	A

Intersection Summary			
Average Delay	4.3		
Intersection Capacity Utilization	13.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	24	6	15	21	8	12
Future Volume (Veh/h)	24	6	15	21	8	12
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	32	8	20	28	11	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			40		104	36
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			40		104	36
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		99	98
cM capacity (veh/h)			1583		888	1042

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	40	48	27
Volume Left	0	20	11
Volume Right	8	0	16
cSH	1700	1583	973
Volume to Capacity	0.02	0.01	0.03
Queue Length 95th (ft)	0	1	2
Control Delay (s)	0.0	3.1	8.8
Lane LOS		A	A
Approach Delay (s)	0.0	3.1	8.8
Approach LOS			A

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	18.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
1: SE Altman Road & SE Oxbow Drive

05/16/2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	50	56	3	46	73	6
Future Volume (Veh/h)	50	56	3	46	73	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	65	73	4	60	95	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			138		170	102
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			138		170	102
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		88	99
cM capacity (veh/h)			1458		814	959

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	138	64	103
Volume Left	0	4	95
Volume Right	73	0	8
cSH	1700	1458	824
Volume to Capacity	0.08	0.00	0.13
Queue Length 95th (ft)	0	0	11
Control Delay (s)	0.0	0.5	10.0
Lane LOS		A	A
Approach Delay (s)	0.0	0.5	10.0
Approach LOS			A

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	17.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
2: SE Hosner Road & SE Oxbow Drive/SE Homan Road

05/16/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	6	3	69	0	1	1	57	6	0	0	13	11
Future Volume (vph)	6	3	69	0	1	1	57	6	0	0	13	11
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	8	4	90	0	1	1	74	8	0	0	17	14

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	102	2	82	31
Volume Left (vph)	8	0	74	0
Volume Right (vph)	90	1	0	14
Hadj (s)	-0.11	-0.30	0.72	-0.17
Departure Headway (s)	4.1	4.0	4.9	4.1
Degree Utilization, x	0.12	0.00	0.11	0.03
Capacity (veh/h)	858	869	714	858
Control Delay (s)	7.6	7.0	8.5	7.2
Approach Delay (s)	7.6	7.0	8.5	7.2
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.9		
Level of Service	A		
Intersection Capacity Utilization	26.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	19	4	6	39	16	9	51	3	19	37	3
Future Volume (Veh/h)	4	19	4	6	39	16	9	51	3	19	37	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	4	21	4	7	44	18	10	57	3	21	42	3
Pedestrians					1							
Lane Width (ft)					12.0							
Walking Speed (ft/s)					3.5							
Percent Blockage					0							
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	62			25			122	107	24	130	100	53
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	62			25			122	107	24	130	100	53
tC, single (s)	4.1			4.1			7.1	6.6	6.7	7.2	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.1	3.8	3.6	4.0	3.3
p0 queue free %	100			100			99	93	100	97	95	100
cM capacity (veh/h)	1554			1603			816	767	929	774	781	1020

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	29	69	70	66
Volume Left	4	7	10	21
Volume Right	4	18	3	3
cSH	1554	1603	779	787
Volume to Capacity	0.00	0.00	0.09	0.08
Queue Length 95th (ft)	0	0	7	7
Control Delay (s)	1.0	0.8	10.1	10.0
Lane LOS	A	A	B	A
Approach Delay (s)	1.0	0.8	10.1	10.0
Approach LOS			B	A

Intersection Summary			
Average Delay	6.2		
Intersection Capacity Utilization	16.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	21	17	7	39	27	11
Future Volume (Veh/h)	21	17	7	39	27	11
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	26	21	9	49	34	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			47		104	36
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			47		104	36
tC, single (s)			4.7		6.4	6.7
tC, 2 stage (s)						
tF (s)			2.7		3.5	3.8
p0 queue free %			99		96	98
cM capacity (veh/h)			1258		881	914

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	47	58	48
Volume Left	0	9	34
Volume Right	21	0	14
cSH	1700	1258	890
Volume to Capacity	0.03	0.01	0.05
Queue Length 95th (ft)	0	1	4
Control Delay (s)	0.0	1.3	9.3
Lane LOS		A	A
Approach Delay (s)	0.0	1.3	9.3
Approach LOS			A

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	18.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
5: Altman Rd & Dodge Park Blvd

05/16/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	17	33	3	0	39	13	14	37	4	10	31	4
Future Volume (vph)	17	33	3	0	39	13	14	37	4	10	31	4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	19	37	3	0	43	14	16	41	4	11	34	4

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	59	57	61	49
Volume Left (vph)	19	0	16	11
Volume Right (vph)	3	14	4	4
Hadj (s)	0.17	-0.04	0.06	0.00
Departure Headway (s)	4.4	4.2	4.3	4.2
Degree Utilization, x	0.07	0.07	0.07	0.06
Capacity (veh/h)	796	837	811	825
Control Delay (s)	7.7	7.5	7.6	7.5
Approach Delay (s)	7.7	7.5	7.6	7.5
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.6		
Level of Service	A		
Intersection Capacity Utilization	20.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	17	10	4	34	3	17	19	1	1	11	4
Future Volume (Veh/h)	4	17	10	4	34	3	17	19	1	1	11	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	5	21	12	5	41	4	21	23	1	1	13	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	45			33			102	92	27	102	96	43
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	45			33			102	92	27	102	96	43
tC, single (s)	4.4			4.4			7.1	6.6	6.2	8.1	6.8	6.2
tC, 2 stage (s)												
tF (s)	2.5			2.5			3.5	4.1	3.3	4.4	4.2	3.3
p0 queue free %	100			100			98	97	100	100	98	100
cM capacity (veh/h)	1385			1400			864	781	1054	671	747	1033

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	38	50	45	19
Volume Left	5	5	21	1
Volume Right	12	4	1	5
cSH	1385	1400	823	801
Volume to Capacity	0.00	0.00	0.05	0.02
Queue Length 95th (ft)	0	0	4	2
Control Delay (s)	1.0	0.8	9.6	9.6
Lane LOS	A	A	A	A
Approach Delay (s)	1.0	0.8	9.6	9.6
Approach LOS			A	A

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	17.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	6	14	41	0	3	31
Future Volume (Veh/h)	6	14	41	0	3	31
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	6	15	44	0	3	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	83	44			44	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	83	44			44	
tC, single (s)	6.6	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.7	3.3			2.2	
p0 queue free %	99	99			100	
cM capacity (veh/h)	864	1032			1577	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	21	44	36
Volume Left	6	0	3
Volume Right	15	0	0
cSH	977	1700	1577
Volume to Capacity	0.02	0.03	0.00
Queue Length 95th (ft)	2	0	0
Control Delay (s)	8.8	0.0	0.6
Lane LOS	A		A
Approach Delay (s)	8.8	0.0	0.6
Approach LOS	A		

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	14.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	1	4	1	0	9	1	26	1	7	16	4
Future Volume (Veh/h)	3	1	4	1	0	9	1	26	1	7	16	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	4	1	5	1	0	12	1	34	1	9	21	5
Pedestrians		2										
Lane Width (ft)		12.0										
Walking Speed (ft/s)		3.5										
Percent Blockage		0										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	92	80	26	84	82	34	28			35		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	92	80	26	84	82	34	28			35		
tC, single (s)	7.8	7.5	6.2	8.1	6.5	6.9	4.6			4.3		
tC, 2 stage (s)												
tF (s)	4.1	4.9	3.3	4.4	4.0	3.9	2.7			2.4		
p0 queue free %	99	100	100	100	100	99	100			99		
cM capacity (veh/h)	741	650	1054	704	804	880	1322			1485		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	10	13	36	35
Volume Left	4	1	1	9
Volume Right	5	12	1	5
cSH	856	863	1322	1485
Volume to Capacity	0.01	0.02	0.00	0.01
Queue Length 95th (ft)	1	1	0	0
Control Delay (s)	9.3	9.2	0.2	1.9
Lane LOS	A	A	A	A
Approach Delay (s)	9.3	9.2	0.2	1.9
Approach LOS	A	A		

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	15.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	131	119	40	36	0
Future Volume (Veh/h)	0	131	119	40	36	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	152	138	47	42	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	185				314	162
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	185				314	162
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				94	100
cM capacity (veh/h)	1402				675	889

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	152	185	42
Volume Left	0	0	42
Volume Right	0	47	0
cSH	1402	1700	675
Volume to Capacity	0.00	0.11	0.06
Queue Length 95th (ft)	0	0	5
Control Delay (s)	0.0	0.0	10.7
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.7
Approach LOS			B

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	18.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	130	150	20	21	0
Future Volume (Veh/h)	1	130	150	20	21	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	1	160	185	25	26	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	210				360	198
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	210				360	198
tC, single (s)	4.1				6.4	7.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	4.2
p0 queue free %	100				96	100
cM capacity (veh/h)	1373				643	647

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	161	210	26
Volume Left	1	0	26
Volume Right	0	25	0
cSH	1373	1700	643
Volume to Capacity	0.00	0.12	0.04
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.1	0.0	10.8
Lane LOS	A		B
Approach Delay (s)	0.1	0.0	10.8
Approach LOS			B

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	19.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	56	26	1	61	113	26	6	1	84	7	74
Future Volume (Veh/h)	67	56	26	1	61	113	26	6	1	84	7	74
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	73	61	28	1	66	123	28	7	1	91	8	80
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	189			89			434	412	75	355	364	128
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	189			89			434	412	75	355	364	128
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			100			94	99	100	84	99	91
cM capacity (veh/h)	1385			1506			461	502	986	569	534	923

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	162	190	36	179
Volume Left	73	1	28	91
Volume Right	28	123	1	80
cSH	1385	1506	475	684
Volume to Capacity	0.05	0.00	0.08	0.26
Queue Length 95th (ft)	4	0	6	26
Control Delay (s)	3.7	0.0	13.2	12.1
Lane LOS	A	A	B	B
Approach Delay (s)	3.7	0.0	13.2	12.1
Approach LOS			B	B

Intersection Summary			
Average Delay	5.7		
Intersection Capacity Utilization	37.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	21	7	16	43	1	6	1	16	1	6	4
Future Volume (Veh/h)	3	21	7	16	43	1	6	1	16	1	6	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Hourly flow rate (vph)	4	30	10	23	61	1	8	1	23	1	8	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	62			40			160	151	35	174	156	62
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	62			40			160	151	35	174	156	62
tC, single (s)	4.1			4.2			7.3	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.7	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			98			99	100	98	100	99	99
cM capacity (veh/h)	1554			1526			735	731	1018	764	727	1009

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	44	85	32	15
Volume Left	4	23	8	1
Volume Right	10	1	23	6
cSH	1554	1526	918	822
Volume to Capacity	0.00	0.02	0.03	0.02
Queue Length 95th (ft)	0	1	3	1
Control Delay (s)	0.7	2.1	9.1	9.5
Lane LOS	A	A	A	A
Approach Delay (s)	0.7	2.1	9.1	9.5
Approach LOS			A	A

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	16.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	26	13	26	39	10	20
Future Volume (Veh/h)	26	13	26	39	10	20
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	37	19	37	56	14	29
Pedestrians					1	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			57		178	48
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			57		178	48
tC, single (s)			4.1		6.4	6.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			98		98	97
cM capacity (veh/h)			1559		797	969

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	56	93	43
Volume Left	0	37	14
Volume Right	19	0	29
cSH	1700	1559	905
Volume to Capacity	0.03	0.02	0.05
Queue Length 95th (ft)	0	2	4
Control Delay (s)	0.0	3.0	9.2
Lane LOS		A	A
Approach Delay (s)	0.0	3.0	9.2
Approach LOS			A

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	20.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
1: SE Altman Road & SE Oxbow Drive

05/16/2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	64	89	11	64	74	6
Future Volume (Veh/h)	64	89	11	64	74	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	67	94	12	67	78	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			161		205	114
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			161		205	114
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			99		90	99
cM capacity (veh/h)			1354		781	944

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	161	79	84
Volume Left	0	12	78
Volume Right	94	0	6
cSH	1700	1354	791
Volume to Capacity	0.09	0.01	0.11
Queue Length 95th (ft)	0	1	9
Control Delay (s)	0.0	1.2	10.1
Lane LOS		A	B
Approach Delay (s)	0.0	1.2	10.1
Approach LOS			B

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	23.8%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
2: SE Hosner Road & SE Oxbow Drive/SE Homan Road

05/16/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	23	1	59	4	3	0	59	11	4	0	13	16
Future Volume (vph)	23	1	59	4	3	0	59	11	4	0	13	16
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	25	1	65	4	3	0	65	12	4	0	14	18

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	91	7	81	32
Volume Left (vph)	25	4	65	0
Volume Right (vph)	65	0	4	18
Hadj (s)	-0.05	0.11	0.49	-0.09
Departure Headway (s)	4.1	4.4	4.6	4.1
Degree Utilization, x	0.10	0.01	0.10	0.04
Capacity (veh/h)	846	793	751	847
Control Delay (s)	7.6	7.4	8.2	7.3
Approach Delay (s)	7.6	7.4	8.2	7.3
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.8		
Level of Service	A		
Intersection Capacity Utilization	22.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	30	1	29	54	29	4	41	4	19	76	7
Future Volume (Veh/h)	1	30	1	29	54	29	4	41	4	19	76	7
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	1	38	1	36	68	36	5	51	5	24	95	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	104			39			255	216	38	229	199	86
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	104			39			255	216	38	229	199	86
tC, single (s)	4.1			4.2			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			99	92	100	96	86	99
cM capacity (veh/h)	1500			1521			610	668	1039	672	680	978

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	40	140	61	128
Volume Left	1	36	5	24
Volume Right	1	36	5	9
cSH	1500	1521	683	693
Volume to Capacity	0.00	0.02	0.09	0.18
Queue Length 95th (ft)	0	2	7	17
Control Delay (s)	0.2	2.0	10.8	11.4
Lane LOS	A	A	B	B
Approach Delay (s)	0.2	2.0	10.8	11.4
Approach LOS			B	B

Intersection Summary			
Average Delay	6.5		
Intersection Capacity Utilization	29.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	49	31	0	40	21	1
Future Volume (Veh/h)	49	31	0	40	21	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	64	40	0	52	27	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			104		136	84
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			104		136	84
tC, single (s)			4.1		6.4	7.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	4.2
p0 queue free %			100		97	100
cM capacity (veh/h)			1500		862	761

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	104	52	28
Volume Left	0	0	27
Volume Right	40	0	1
cSH	1700	1500	858
Volume to Capacity	0.06	0.00	0.03
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.0	0.0	9.3
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.3
Approach LOS			A

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	14.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
5: Altman Rd & Dodge Park Blvd

05/16/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	9	69	17	1	39	6	14	46	3	17	53	17
Future Volume (vph)	9	69	17	1	39	6	14	46	3	17	53	17
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	11	84	21	1	48	7	17	56	4	21	65	21

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	116	56	77	107
Volume Left (vph)	11	1	17	21
Volume Right (vph)	21	7	4	21
Hadj (s)	-0.01	-0.07	0.01	-0.05
Departure Headway (s)	4.4	4.4	4.4	4.3
Degree Utilization, x	0.14	0.07	0.09	0.13
Capacity (veh/h)	787	771	771	785
Control Delay (s)	8.1	7.7	7.9	8.0
Approach Delay (s)	8.1	7.7	7.9	8.0
Approach LOS	A	A	A	A

Intersection Summary			
Delay	8.0		
Level of Service	A		
Intersection Capacity Utilization	22.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
6: Cottrell Rd & Dodge Park Blvd

05/16/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	34	7	0	14	0	11	19	3	1	27	6
Future Volume (Veh/h)	10	34	7	0	14	0	11	19	3	1	27	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	12	40	8	0	16	0	13	22	3	1	31	7
Pedestrians		1										
Lane Width (ft)		12.0										
Walking Speed (ft/s)		3.5										
Percent Blockage		0										
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	16			48			108	84	44	98	88	17
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	16			48			108	84	44	98	88	17
tC, single (s)	4.1			4.1			7.1	6.6	6.2	8.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.1	3.3	4.4	4.0	3.3
p0 queue free %	99			100			98	97	100	100	96	99
cM capacity (veh/h)	1615			1572			839	789	1032	676	800	1067

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	60	16	38	39
Volume Left	12	0	13	1
Volume Right	8	0	3	7
cSH	1615	1572	821	833
Volume to Capacity	0.01	0.00	0.05	0.05
Queue Length 95th (ft)	1	0	4	4
Control Delay (s)	1.5	0.0	9.6	9.5
Lane LOS	A		A	A
Approach Delay (s)	1.5	0.0	9.6	9.5
Approach LOS			A	A

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	23.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	9	57	3	17	50
Future Volume (Veh/h)	3	9	57	3	17	50
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	4	11	70	4	21	62
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	176	72			74	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	176	72			74	
tC, single (s)	6.4	6.5			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.6			2.3	
p0 queue free %	100	99			99	
cM capacity (veh/h)	807	910			1488	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	15	74	83
Volume Left	4	0	21
Volume Right	11	4	0
cSH	880	1700	1488
Volume to Capacity	0.02	0.04	0.01
Queue Length 95th (ft)	1	0	1
Control Delay (s)	9.2	0.0	2.0
Lane LOS	A		A
Approach Delay (s)	9.2	0.0	2.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	20.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	6	1	0	9	3	23	3	3	29	1
Future Volume (Veh/h)	0	0	6	1	0	9	3	23	3	3	29	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Hourly flow rate (vph)	0	0	8	1	0	13	4	32	4	4	41	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	104	94	42	100	92	34	42			36		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	104	94	42	100	92	34	42			36		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	100	100	99	100			100		
cM capacity (veh/h)	866	796	1035	877	798	1045	1580			1588		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	8	14	40	46
Volume Left	0	1	4	4
Volume Right	8	13	4	1
cSH	1035	1031	1580	1588
Volume to Capacity	0.01	0.01	0.00	0.00
Queue Length 95th (ft)	1	1	0	0
Control Delay (s)	8.5	8.5	0.7	0.6
Lane LOS	A	A	A	A
Approach Delay (s)	8.5	8.5	0.7	0.6
Approach LOS	A	A		

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	147	115	57	50	0
Future Volume (Veh/h)	1	147	115	57	50	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	1	177	139	69	60	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	208				352	174
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	208				352	174
tC, single (s)	4.1				6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.3
p0 queue free %	100				91	100
cM capacity (veh/h)	1375				637	875

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	178	208	60
Volume Left	1	0	60
Volume Right	0	69	0
cSH	1375	1700	637
Volume to Capacity	0.00	0.12	0.09
Queue Length 95th (ft)	0	0	8
Control Delay (s)	0.0	0.0	11.2
Lane LOS	A		B
Approach Delay (s)	0.0	0.0	11.2
Approach LOS			B

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	19.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	191	127	29	36	0
Future Volume (Veh/h)	3	191	127	29	36	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	3	217	144	33	41	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	177				384	160
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	177				384	160
tC, single (s)	4.6				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.7				3.5	3.3
p0 queue free %	100				93	100
cM capacity (veh/h)	1156				614	890

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	220	177	41
Volume Left	3	0	41
Volume Right	0	33	0
cSH	1156	1700	614
Volume to Capacity	0.00	0.10	0.07
Queue Length 95th (ft)	0	0	5
Control Delay (s)	0.1	0.0	11.3
Lane LOS	A		B
Approach Delay (s)	0.1	0.0	11.3
Approach LOS			B

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	22.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	146	51	1	83	11	34	3	1	9	4	7
Future Volume (Veh/h)	9	146	51	1	83	11	34	3	1	9	4	7
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	10	170	59	1	97	13	40	3	1	10	5	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	110			229			336	332	200	328	354	104
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	110			229			336	332	200	328	354	104
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			93	99	100	98	99	99
cM capacity (veh/h)	1493			1351			609	587	847	623	570	957

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	239	111	44	23
Volume Left	10	1	40	10
Volume Right	59	13	1	8
cSH	1493	1351	611	693
Volume to Capacity	0.01	0.00	0.07	0.03
Queue Length 95th (ft)	1	0	6	3
Control Delay (s)	0.4	0.1	11.3	10.4
Lane LOS	A	A	B	B
Approach Delay (s)	0.4	0.1	11.3	10.4
Approach LOS			B	B

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	27.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	26	6	13	26	1	10	4	23	1	1	3
Future Volume (Veh/h)	4	26	6	13	26	1	10	4	23	1	1	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Hourly flow rate (vph)	6	36	8	18	36	1	14	6	32	1	1	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	37			44			129	125	40	160	128	36
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	37			44			129	125	40	160	128	36
tC, single (s)	4.1			4.1			7.1	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			99			98	99	97	100	100	100
cM capacity (veh/h)	1587			1577			835	758	1020	772	754	1042

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	50	55	52	6
Volume Left	6	18	14	1
Volume Right	8	1	32	4
cSH	1587	1577	927	928
Volume to Capacity	0.00	0.01	0.06	0.01
Queue Length 95th (ft)	0	1	4	0
Control Delay (s)	0.9	2.4	9.1	8.9
Lane LOS	A	A	A	A
Approach Delay (s)	0.9	2.4	9.1	8.9
Approach LOS			A	A

Intersection Summary			
Average Delay	4.3		
Intersection Capacity Utilization	14.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	34	9	21	30	11	17
Future Volume (Veh/h)	34	9	21	30	11	17
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	46	12	28	41	15	23
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			58		149	52
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			58		149	52
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		98	98
cM capacity (veh/h)			1559		833	1021

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	58	69	38
Volume Left	0	28	15
Volume Right	12	0	23
cSH	1700	1559	937
Volume to Capacity	0.03	0.02	0.04
Queue Length 95th (ft)	0	1	3
Control Delay (s)	0.0	3.1	9.0
Lane LOS		A	A
Approach Delay (s)	0.0	3.1	9.0
Approach LOS			A

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	19.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
1: SE Altman Road & SE Oxbow Drive

06/16/2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	50	58	3	46	74	6
Future Volume (Veh/h)	50	58	3	46	74	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	65	75	4	60	96	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			140		170	102
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			140		170	102
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		88	99
cM capacity (veh/h)			1456		813	958

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	140	64	104
Volume Left	0	4	96
Volume Right	75	0	8
cSH	1700	1456	822
Volume to Capacity	0.08	0.00	0.13
Queue Length 95th (ft)	0	0	11
Control Delay (s)	0.0	0.5	10.0
Lane LOS		A	B
Approach Delay (s)	0.0	0.5	10.0
Approach LOS			B

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	17.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
2: SE Hosner Road & SE Oxbow Drive/SE Homan Road

06/16/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	6	3	69	0	1	1	57	6	0	0	13	11
Future Volume (vph)	6	3	69	0	1	1	57	6	0	0	13	11
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	8	4	90	0	1	1	74	8	0	0	17	14

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	102	2	82	31
Volume Left (vph)	8	0	74	0
Volume Right (vph)	90	1	0	14
Hadj (s)	-0.11	-0.30	0.72	-0.17
Departure Headway (s)	4.1	4.0	4.9	4.1
Degree Utilization, x	0.12	0.00	0.11	0.03
Capacity (veh/h)	858	869	714	858
Control Delay (s)	7.6	7.0	8.5	7.2
Approach Delay (s)	7.6	7.0	8.5	7.2
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.9		
Level of Service	A		
Intersection Capacity Utilization	26.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	20	4	6	40	16	9	52	3	19	39	3
Future Volume (Veh/h)	4	20	4	6	40	16	9	52	3	19	39	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	4	22	4	7	45	18	10	58	3	21	44	3
Pedestrians					1							
Lane Width (ft)					12.0							
Walking Speed (ft/s)					3.5							
Percent Blockage					0							
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	63			26			125	109	25	133	102	54
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	63			26			125	109	25	133	102	54
tC, single (s)	4.1			4.1			7.1	6.6	6.7	7.2	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.1	3.8	3.6	4.0	3.3
p0 queue free %	100			100			99	92	100	97	94	100
cM capacity (veh/h)	1553			1601			810	765	927	770	779	1019

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	30	70	71	68
Volume Left	4	7	10	21
Volume Right	4	18	3	3
cSH	1553	1601	777	784
Volume to Capacity	0.00	0.00	0.09	0.09
Queue Length 95th (ft)	0	0	8	7
Control Delay (s)	1.0	0.8	10.1	10.0
Lane LOS	A	A	B	B
Approach Delay (s)	1.0	0.8	10.1	10.0
Approach LOS			B	B

Intersection Summary			
Average Delay	6.2		
Intersection Capacity Utilization	17.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	21	18	7	39	28	11
Future Volume (Veh/h)	21	18	7	39	28	11
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	26	23	9	49	35	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			49		104	38
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			49		104	38
tC, single (s)			4.7		6.4	6.7
tC, 2 stage (s)						
tF (s)			2.7		3.5	3.8
p0 queue free %			99		96	98
cM capacity (veh/h)			1256		880	913

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	49	58	49
Volume Left	0	9	35
Volume Right	23	0	14
cSH	1700	1256	889
Volume to Capacity	0.03	0.01	0.06
Queue Length 95th (ft)	0	1	4
Control Delay (s)	0.0	1.3	9.3
Lane LOS		A	A
Approach Delay (s)	0.0	1.3	9.3
Approach LOS			A

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	18.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
5: Altman Rd & Dodge Park Blvd

06/16/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	17	45	3	0	44	13	14	37	4	12	31	4
Future Volume (vph)	17	45	3	0	44	13	14	37	4	12	31	4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	19	50	3	0	49	14	16	41	4	13	34	4

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	72	63	61	51
Volume Left (vph)	19	0	16	13
Volume Right (vph)	3	14	4	4
Hadj (s)	0.17	-0.03	0.06	0.00
Departure Headway (s)	4.4	4.2	4.3	4.3
Degree Utilization, x	0.09	0.07	0.07	0.06
Capacity (veh/h)	794	829	799	810
Control Delay (s)	7.8	7.5	7.7	7.5
Approach Delay (s)	7.8	7.5	7.7	7.5
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.6		
Level of Service	A		
Intersection Capacity Utilization	20.8%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
6: Cottrell Rd & Dodge Park Blvd

06/16/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	17	24	4	34	3	23	20	1	1	12	4
Future Volume (Veh/h)	4	17	24	4	34	3	23	20	1	1	12	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	5	21	29	5	41	4	28	24	1	1	15	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	45			50			111	100	36	112	113	43
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	45			50			111	100	36	112	113	43
tC, single (s)	4.4			4.4			7.1	6.6	6.2	8.1	6.8	6.2
tC, 2 stage (s)												
tF (s)	2.5			2.5			3.5	4.1	3.3	4.4	4.2	3.3
p0 queue free %	100			100			97	97	100	100	98	100
cM capacity (veh/h)	1385			1379			849	773	1043	661	731	1033

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	55	50	53	21
Volume Left	5	5	28	1
Volume Right	29	4	1	5
cSH	1385	1379	816	781
Volume to Capacity	0.00	0.00	0.06	0.03
Queue Length 95th (ft)	0	0	5	2
Control Delay (s)	0.7	0.8	9.7	9.7
Lane LOS	A	A	A	A
Approach Delay (s)	0.7	0.8	9.7	9.7
Approach LOS			A	A

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	19.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	6	14	41	0	3	31
Future Volume (Veh/h)	6	14	41	0	3	31
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	6	15	44	0	3	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	83	44			44	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	83	44			44	
tC, single (s)	6.6	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.7	3.3			2.2	
p0 queue free %	99	99			100	
cM capacity (veh/h)	864	1032			1577	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	21	44	36
Volume Left	6	0	3
Volume Right	15	0	0
cSH	977	1700	1577
Volume to Capacity	0.02	0.03	0.00
Queue Length 95th (ft)	2	0	0
Control Delay (s)	8.8	0.0	0.6
Lane LOS	A		A
Approach Delay (s)	8.8	0.0	0.6
Approach LOS	A		

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	14.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	1	4	4	0	16	1	26	8	22	16	4
Future Volume (Veh/h)	3	1	4	4	0	16	1	26	8	22	16	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	4	1	5	5	0	21	1	34	11	29	21	5
Pedestrians		2										
Lane Width (ft)		12.0										
Walking Speed (ft/s)		3.5										
Percent Blockage		0										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	146	130	26	128	128	40	28			45		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	146	130	26	128	128	40	28			45		
tC, single (s)	7.8	7.5	6.2	8.1	6.5	6.9	4.6			4.3		
tC, 2 stage (s)												
tF (s)	4.1	4.9	3.3	4.4	4.0	3.9	2.7			2.4		
p0 queue free %	99	100	100	99	100	98	100			98		
cM capacity (veh/h)	665	597	1054	647	750	874	1322			1472		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	10	26	46	55
Volume Left	4	5	1	29
Volume Right	5	21	11	5
cSH	805	819	1322	1472
Volume to Capacity	0.01	0.03	0.00	0.02
Queue Length 95th (ft)	1	2	0	2
Control Delay (s)	9.5	9.5	0.2	4.0
Lane LOS	A	A	A	A
Approach Delay (s)	9.5	9.5	0.2	4.0
Approach LOS	A	A		

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	19.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	131	119	40	36	0
Future Volume (Veh/h)	0	131	119	40	36	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	152	138	47	42	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	185				314	162
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	185				314	162
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				94	100
cM capacity (veh/h)	1402				675	889

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	152	185	42
Volume Left	0	0	42
Volume Right	0	47	0
cSH	1402	1700	675
Volume to Capacity	0.00	0.11	0.06
Queue Length 95th (ft)	0	0	5
Control Delay (s)	0.0	0.0	10.7
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.7
Approach LOS			B

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	18.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	130	150	27	24	0
Future Volume (Veh/h)	1	130	150	27	24	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	1	160	185	33	30	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	218				364	202
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	218				364	202
tC, single (s)	4.1				6.4	7.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	4.2
p0 queue free %	100				95	100
cM capacity (veh/h)	1364				639	643

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	161	218	30
Volume Left	1	0	30
Volume Right	0	33	0
cSH	1364	1700	639
Volume to Capacity	0.00	0.13	0.05
Queue Length 95th (ft)	0	0	4
Control Delay (s)	0.1	0.0	10.9
Lane LOS	A		B
Approach Delay (s)	0.1	0.0	10.9
Approach LOS			B

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	19.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	59	26	1	68	113	26	6	1	84	7	74
Future Volume (Veh/h)	67	59	26	1	68	113	26	6	1	84	7	74
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	73	64	28	1	74	123	28	7	1	91	8	80
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	197			92			446	423	78	366	376	136
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	197			92			446	423	78	366	376	136
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			100			94	99	100	84	98	91
cM capacity (veh/h)	1376			1503			452	494	983	559	526	913

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	165	198	36	179
Volume Left	73	1	28	91
Volume Right	28	123	1	80
cSH	1376	1503	467	674
Volume to Capacity	0.05	0.00	0.08	0.27
Queue Length 95th (ft)	4	0	6	27
Control Delay (s)	3.7	0.0	13.4	12.3
Lane LOS	A	A	B	B
Approach Delay (s)	3.7	0.0	13.4	12.3
Approach LOS			B	B

Intersection Summary			
Average Delay	5.7		
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	21	7	16	43	1	6	1	16	1	6	4
Future Volume (Veh/h)	3	21	7	16	43	1	6	1	16	1	6	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Hourly flow rate (vph)	4	30	10	23	61	1	8	1	23	1	8	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	62			40			160	151	35	174	156	62
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	62			40			160	151	35	174	156	62
tC, single (s)	4.1			4.2			7.3	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.7	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			98			99	100	98	100	99	99
cM capacity (veh/h)	1554			1526			735	731	1018	764	727	1009

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	44	85	32	15
Volume Left	4	23	8	1
Volume Right	10	1	23	6
cSH	1554	1526	918	822
Volume to Capacity	0.00	0.02	0.03	0.02
Queue Length 95th (ft)	0	1	3	1
Control Delay (s)	0.7	2.1	9.1	9.5
Lane LOS	A	A	A	A
Approach Delay (s)	0.7	2.1	9.1	9.5
Approach LOS			A	A

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	16.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	26	13	26	39	10	20
Future Volume (Veh/h)	26	13	26	39	10	20
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	37	19	37	56	14	29
Pedestrians					1	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			57		178	48
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			57		178	48
tC, single (s)			4.1		6.4	6.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			98		98	97
cM capacity (veh/h)			1559		797	969

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	56	93	43
Volume Left	0	37	14
Volume Right	19	0	29
cSH	1700	1559	905
Volume to Capacity	0.03	0.02	0.05
Queue Length 95th (ft)	0	2	4
Control Delay (s)	0.0	3.0	9.2
Lane LOS		A	A
Approach Delay (s)	0.0	3.0	9.2
Approach LOS			A

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	20.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
1: SE Altman Road & SE Oxbow Drive

06/16/2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	64	90	11	64	75	6
Future Volume (Veh/h)	64	90	11	64	75	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	67	95	12	67	79	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			162		206	114
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			162		206	114
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			99		90	99
cM capacity (veh/h)			1353		780	943

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	162	79	85
Volume Left	0	12	79
Volume Right	95	0	6
cSH	1700	1353	790
Volume to Capacity	0.10	0.01	0.11
Queue Length 95th (ft)	0	1	9
Control Delay (s)	0.0	1.2	10.1
Lane LOS		A	B
Approach Delay (s)	0.0	1.2	10.1
Approach LOS			B

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	23.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
2: SE Hosner Road & SE Oxbow Drive/SE Homan Road

06/16/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	23	1	59	4	3	0	59	11	4	0	13	16
Future Volume (vph)	23	1	59	4	3	0	59	11	4	0	13	16
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	25	1	65	4	3	0	65	12	4	0	14	18

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	91	7	81	32
Volume Left (vph)	25	4	65	0
Volume Right (vph)	65	0	4	18
Hadj (s)	-0.05	0.11	0.49	-0.09
Departure Headway (s)	4.1	4.4	4.6	4.1
Degree Utilization, x	0.10	0.01	0.10	0.04
Capacity (veh/h)	846	793	751	847
Control Delay (s)	7.6	7.4	8.2	7.3
Approach Delay (s)	7.6	7.4	8.2	7.3
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.8		
Level of Service	A		
Intersection Capacity Utilization	22.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	31	1	29	55	29	4	42	4	19	77	7
Future Volume (Veh/h)	1	31	1	29	55	29	4	42	4	19	77	7
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	1	39	1	36	69	36	5	53	5	24	96	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	105			40			258	218	40	232	201	87
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	105			40			258	218	40	232	201	87
tC, single (s)	4.1			4.2			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			99	92	100	96	86	99
cM capacity (veh/h)	1499			1520			607	667	1038	667	678	977

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	41	141	63	129
Volume Left	1	36	5	24
Volume Right	1	36	5	9
cSH	1499	1520	681	691
Volume to Capacity	0.00	0.02	0.09	0.19
Queue Length 95th (ft)	0	2	8	17
Control Delay (s)	0.2	2.0	10.8	11.4
Lane LOS	A	A	B	B
Approach Delay (s)	0.2	2.0	10.8	11.4
Approach LOS			B	B

Intersection Summary			
Average Delay	6.5		
Intersection Capacity Utilization	29.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	49	32	0	40	22	0
Future Volume (Veh/h)	49	32	0	40	22	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	64	42	0	52	29	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			106		137	85
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			106		137	85
tC, single (s)			4.1		6.4	7.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	4.2
p0 queue free %			100		97	100
cM capacity (veh/h)			1498		861	760

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	106	52	29
Volume Left	0	0	29
Volume Right	42	0	0
cSH	1700	1498	861
Volume to Capacity	0.06	0.00	0.03
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.0	0.0	9.3
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.3
Approach LOS			A

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	14.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
5: Altman Rd & Dodge Park Blvd

06/16/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	9	74	17	1	52	7	14	46	3	18	53	17
Future Volume (vph)	9	74	17	1	52	7	14	46	3	18	53	17
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	11	90	21	1	63	9	17	56	4	22	65	21

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	122	73	77	108
Volume Left (vph)	11	1	17	22
Volume Right (vph)	21	9	4	21
Hadj (s)	-0.01	-0.07	0.01	-0.05
Departure Headway (s)	4.4	4.4	4.5	4.4
Degree Utilization, x	0.15	0.09	0.10	0.13
Capacity (veh/h)	781	769	758	772
Control Delay (s)	8.2	7.8	8.0	8.1
Approach Delay (s)	8.2	7.8	8.0	8.1
Approach LOS	A	A	A	A

Intersection Summary			
Delay	8.0		
Level of Service	A		
Intersection Capacity Utilization	23.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
6: Cottrell Rd & Dodge Park Blvd

06/16/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	34	13	0	14	0	25	20	3	1	28	6
Future Volume (Veh/h)	10	34	13	0	14	0	25	20	3	1	28	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	12	40	15	0	16	0	29	23	3	1	33	7
Pedestrians		1										
Lane Width (ft)		12.0										
Walking Speed (ft/s)		3.5										
Percent Blockage		0										
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	16			55			112	88	48	102	95	17
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	16			55			112	88	48	102	95	17
tC, single (s)	4.1			4.1			7.1	6.6	6.2	8.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.1	3.3	4.4	4.0	3.3
p0 queue free %	99			100			97	97	100	100	96	99
cM capacity (veh/h)	1615			1563			832	785	1027	671	793	1067

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	67	16	55	41
Volume Left	12	0	29	1
Volume Right	15	0	3	7
cSH	1615	1563	820	825
Volume to Capacity	0.01	0.00	0.07	0.05
Queue Length 95th (ft)	1	0	5	4
Control Delay (s)	1.3	0.0	9.7	9.6
Lane LOS	A		A	A
Approach Delay (s)	1.3	0.0	9.7	9.6
Approach LOS			A	A

Intersection Summary			
Average Delay	5.7		
Intersection Capacity Utilization	25.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	9	57	3	17	50
Future Volume (Veh/h)	3	9	57	3	17	50
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	4	11	70	4	21	62
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	176	72			74	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	176	72			74	
tC, single (s)	6.4	6.5			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.6			2.3	
p0 queue free %	100	99			99	
cM capacity (veh/h)	807	910			1488	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	15	74	83
Volume Left	4	0	21
Volume Right	11	4	0
cSH	880	1700	1488
Volume to Capacity	0.02	0.04	0.01
Queue Length 95th (ft)	1	0	1
Control Delay (s)	9.2	0.0	2.0
Lane LOS	A		A
Approach Delay (s)	9.2	0.0	2.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	20.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	6	8	0	24	3	23	6	10	29	1
Future Volume (Veh/h)	0	0	6	8	0	24	3	23	6	10	29	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Hourly flow rate (vph)	0	0	8	11	0	34	4	32	8	14	41	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	148	118	42	122	114	36	42			40		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	148	118	42	122	114	36	42			40		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	99	100	97	100			99		
cM capacity (veh/h)	792	768	1035	844	771	1042	1580			1583		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	8	45	44	56
Volume Left	0	11	4	14
Volume Right	8	34	8	1
cSH	1035	986	1580	1583
Volume to Capacity	0.01	0.05	0.00	0.01
Queue Length 95th (ft)	1	4	0	1
Control Delay (s)	8.5	8.8	0.7	1.9
Lane LOS	A	A	A	A
Approach Delay (s)	8.5	8.8	0.7	1.9
Approach LOS	A	A		

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	19.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	147	115	57	50	0
Future Volume (Veh/h)	1	147	115	57	50	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	1	177	139	69	60	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	208				352	174
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	208				352	174
tC, single (s)	4.1				6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.3
p0 queue free %	100				91	100
cM capacity (veh/h)	1375				637	875

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	178	208	60
Volume Left	1	0	60
Volume Right	0	69	0
cSH	1375	1700	637
Volume to Capacity	0.00	0.12	0.09
Queue Length 95th (ft)	0	0	8
Control Delay (s)	0.0	0.0	11.2
Lane LOS	A		B
Approach Delay (s)	0.0	0.0	11.2
Approach LOS			B

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	19.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	191	127	32	43	0
Future Volume (Veh/h)	3	191	127	32	43	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	3	217	144	36	49	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	180				385	162
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	180				385	162
tC, single (s)	4.6				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.7				3.5	3.3
p0 queue free %	100				92	100
cM capacity (veh/h)	1152				612	888

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	220	180	49
Volume Left	3	0	49
Volume Right	0	36	0
cSH	1152	1700	612
Volume to Capacity	0.00	0.11	0.08
Queue Length 95th (ft)	0	0	6
Control Delay (s)	0.1	0.0	11.4
Lane LOS	A		B
Approach Delay (s)	0.1	0.0	11.4
Approach LOS			B

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	22.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	153	51	1	86	11	34	3	1	9	4	7
Future Volume (Veh/h)	9	153	51	1	86	11	34	3	1	9	4	7
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	10	178	59	1	100	13	40	3	1	10	5	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	113			237			346	342	208	338	366	106
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	113			237			346	342	208	338	366	106
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			93	99	100	98	99	99
cM capacity (veh/h)	1489			1342			599	579	838	612	562	953

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	247	114	44	23
Volume Left	10	1	40	10
Volume Right	59	13	1	8
cSH	1489	1342	601	684
Volume to Capacity	0.01	0.00	0.07	0.03
Queue Length 95th (ft)	1	0	6	3
Control Delay (s)	0.4	0.1	11.5	10.4
Lane LOS	A	A	B	B
Approach Delay (s)	0.4	0.1	11.5	10.4
Approach LOS			B	B

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	27.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	26	6	13	26	1	10	4	23	1	1	6
Future Volume (Veh/h)	4	26	6	13	26	1	10	4	23	1	1	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Hourly flow rate (vph)	6	36	8	18	36	1	14	6	32	1	1	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	37			44			133	125	40	160	128	36
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	37			44			133	125	40	160	128	36
tC, single (s)	4.1			4.1			7.1	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			99			98	99	97	100	100	99
cM capacity (veh/h)	1587			1577			827	758	1020	772	754	1042

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	50	55	52	10
Volume Left	6	18	14	1
Volume Right	8	1	32	8
cSH	1587	1577	925	971
Volume to Capacity	0.00	0.01	0.06	0.01
Queue Length 95th (ft)	0	1	4	1
Control Delay (s)	0.9	2.4	9.1	8.7
Lane LOS	A	A	A	A
Approach Delay (s)	0.9	2.4	9.1	8.7
Approach LOS			A	A

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	15.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	34	9	21	30	11	17
Future Volume (Veh/h)	34	9	21	30	11	17
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	46	12	28	41	15	23
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			58		149	52
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			58		149	52
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		98	98
cM capacity (veh/h)			1559		833	1021

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	58	69	38
Volume Left	0	28	15
Volume Right	12	0	23
cSH	1700	1559	937
Volume to Capacity	0.03	0.02	0.04
Queue Length 95th (ft)	0	1	3
Control Delay (s)	0.0	3.1	9.0
Lane LOS		A	A
Approach Delay (s)	0.0	3.1	9.0
Approach LOS			A

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	19.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
1: Site Access A & SE Carpenter Lane

06/17/2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	35	22	0	7	10	0
Future Volume (Veh/h)	35	22	0	7	10	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	46	29	0	9	13	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			75		70	60
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			75		70	60
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1524		935	1005

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	75	9	13
Volume Left	0	0	13
Volume Right	29	0	0
cSH	1700	1524	935
Volume to Capacity	0.04	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	8.9
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.9
Approach LOS			A

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		
Description: AM Peak Hour			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	7	10	0	11	22	0
Future Volume (Veh/h)	7	10	0	11	22	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	9	13	0	14	28	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			22		30	16
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			22		30	16
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		97	100
cM capacity (veh/h)			1593		985	1064

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	22	14	28
Volume Left	0	0	28
Volume Right	13	0	0
cSH	1700	1593	985
Volume to Capacity	0.01	0.00	0.03
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.0	8.8
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.8
Approach LOS			A

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		
Description: PM Peak Hour			

Appendix E: Warrants Analyses

LEFT TURN WARRANT ANALYSIS

PWB Filtration Plant
2040 Buildout AM PEAK HOUR
DATE: 06/15/2022

Unsignalized Intersections

No.	Intersection	Movement	Speed	Advancing Volume	Left Turn Volume	Opposing Volume	Calculations				HRB Warrant Met?
							LT %	Warrant Factor	5% Warrant Va	Va Warrant Threshold	
1	Altman Rd / Oxbow Rd	NBL	55	80	74	99	92.5%	0.83	508	420	No
		SBL	55	N/A	N/A	N/A	#######	#VALUE!	#N/A	#VALUE!	#VALUE!
		EBL	55	N/A	N/A	N/A	#######	#VALUE!	#N/A	#VALUE!	#VALUE!
		WBL	55	49	3	182	6.1%	0.91	464	422	No
2	SE Hosner Rd / Oxbow Dr	NBL	55	63	57	34	90.5%	0.74	543	403	No
		SBL	55	24	0	16	0.0%	N/A	552	N/A	N/A
		EBL	25	77	6	79	7.8%	0.81	729	593	No
		WBL	25	2	0	147	0.0%	N/A	676	N/A	N/A
3	SE Altman Rd / Lusted Rd	NBL	55	64	9	111	14.1%	0.63	500	313	No
		SBL	55	61	19	124	31.1%	0.47	495	233	No
		EBL	45	28	4	174	14.3%	0.62	566	353	No
		WBL	45	61	6	143	9.8%	0.73	585	428	No
4	SE Cottrell Rd / Lusted Rd	NBL	55	40	28	67	70.0%	0.48	524	249	No
		SBL	55	N/A	N/A	N/A	#######	#VALUE!	#N/A	#VALUE!	#VALUE!
		EBL	55	N/A	N/A	N/A	#######	#VALUE!	#N/A	#VALUE!	#VALUE!
		WBL	55	46	7	68	15.2%	0.61	524	318	No
5	SE Altman Rd / Dodge Park Blvd	NBL	55	56	14	141	25.0%	0.50	484	244	No
		SBL	55	48	12	147	25.0%	0.50	482	243	No
		EBL	45	65	17	151	26.2%	0.50	579	287	No
		WBL	45	56	0	143	0.0%	N/A	585	N/A	N/A
6	SE Cottrell Rd / Dodge Park Blvd	NBL	55	44	23	77	52.3%	0.44	519	226	No
		SBL	55	18	1	81	5.6%	0.95	516	491	No
		EBL	45	45	4	94	8.9%	0.77	618	474	No
		WBL	45	41	4	98	9.8%	0.73	615	452	No
7	SE Altman Rd / Carpenter Ln	NBL	55	N/A	N/A	N/A	#######	#VALUE!	#N/A	#VALUE!	#VALUE!
		SBL	55	34	3	47	8.8%	0.77	535	411	No
		EBL	25	N/A	N/A	N/A	#######	#VALUE!	#N/A	#VALUE!	#VALUE!
		WBL	25	20	6	76	30.0%	0.48	729	347	No
8	SE Cottrell Rd / Carpenter Ln	NBL	55	36	1	29	2.8%	1.33	546	724	No
		SBL	55	42	22	43	52.4%	0.44	538	235	No
		EBL	55	9	3	81	33.3%	0.46	516	239	No
		WBL	55	20	4	71	20.0%	0.54	521	284	No
9	SE Altman Rd / Bluff Rd	NBL	55	N/A	N/A	N/A	#######	#VALUE!	#N/A	#VALUE!	#VALUE!
		SBL	55	37	36	290	97.3%	1.34	412	553	No
		EBL	55	148	1	159	0.7%	2.66	477	1268	No
		WBL	55	N/A	N/A	N/A	#######	#VALUE!	#N/A	#VALUE!	#VALUE!
10	SE Cottrell Rd / Bluff Rd	NBL	55	N/A	N/A	N/A	#######	#VALUE!	#N/A	#VALUE!	#VALUE!
		SBL	55	25	24	281	96.0%	1.11	416	463	No
		EBL	45	131	1	177	0.8%	2.50	563	1409	No
		WBL	45	N/A	N/A	N/A	#######	#VALUE!	#N/A	#VALUE!	#VALUE!
11	SE Bluff Rd / Proctor Rd	NBL	55	33	26	277	78.8%	0.53	419	223	No
		SBL	55	166	84	203	50.6%	0.44	454	198	No
		EBL	45	152	67	304	44.1%	0.44	489	215	No
		WBL	45	183	1	207	0.5%	2.96	544	1609	No
12	SE Dodge Park Blvd / SE Lusted Rd	NBL	55	23	6	93	26.1%	0.50	511	253	No
		SBL	55	11	1	100	9.1%	0.76	505	383	No
		EBL	55	31	3	59	9.7%	0.74	529	390	No
		WBL	55	60	16	43	26.7%	0.49	538	265	No
13	SE Hudson Rd / SE Lusted Rd	NBL	55	30	10	90	33.3%	0.46	511	236	No
		SBL	55	N/A	N/A	N/A	#######	#VALUE!	#N/A	#VALUE!	#VALUE!
		EBL	55	N/A	N/A	N/A	#######	#VALUE!	#N/A	#VALUE!	#VALUE!
		WBL	55	64	26	49	40.6%	0.44	535	237	No
A	Site Access A/ SE Carpenter Ln	NBL	25	11	10	42	90.9%	0.76	757	574	No
		SBL	25	N/A	N/A	N/A	#######	#VALUE!	#N/A	#VALUE!	#VALUE!
		EBL	25	N/A	N/A	N/A	#######	#VALUE!	#N/A	#VALUE!	#VALUE!
		WBL	25	7	0	57	0.0%	N/A	745	N/A	N/A

LEFT TURN WARRANT ANALYSIS

PWB Filtration Plant
2040 Buildout PM PEAK HOUR
DATE: 06/15/2022

Unsignalized Intersections

No.	Intersection	Movement	Speed	Advancing Volume	Left Turn Volume	Opposing Volume	Calculations				HRB Warrant Met?
							LT %	Warrant Factor	5% Warrant Va	Va Warrant Threshold	
1	Altman Rd / Oxbow Rd	NBL	55	81	75	140	92.6%	0.83	484	403	No
		SBL	55	N/A	N/A	N/A	#######	#VALUE!	#N/A	#VALUE!	#VALUE!
		EBL	55	N/A	N/A	N/A	#######	#VALUE!	#N/A	#VALUE!	#VALUE!
		WBL	55	76	11	153	14.5%	0.62	479	297	No
2	SE Hosner Rd / Oxbow Dr	NBL	55	74	59	60	79.7%	0.54	527	286	No
		SBL	55	29	0	47	0.0%	N/A	535	N/A	N/A
		EBL	25	83	23	90	27.7%	0.49	717	349	No
		WBL	25	7	4	143	57.1%	0.44	679	299	No
3	SE Altman Rd / Lusted Rd	NBL	55	51	4	200	7.8%	0.81	454	368	No
		SBL	55	102	19	163	18.6%	0.56	474	265	No
		EBL	45	34	1	226	2.9%	1.29	532	686	No
		WBL	45	112	29	173	25.9%	0.50	566	282	No
4	SE Cottrell Rd / Lusted Rd	NBL	55	23	1	90	4.3%	1.07	511	546	No
		SBL	55	N/A	N/A	N/A	#######	#VALUE!	#N/A	#VALUE!	#VALUE!
		EBL	55	N/A	N/A	N/A	#######	#VALUE!	#N/A	#VALUE!	#VALUE!
		WBL	55	40	0	104	0.0%	N/A	505	N/A	N/A
5	SE Altman Rd / Dodge Park Blvd	NBL	55	63	14	205	22.2%	0.52	452	237	No
		SBL	55	88	18	184	20.5%	0.54	464	251	No
		EBL	45	99	9	189	9.1%	0.76	557	422	No
		WBL	45	60	1	222	1.7%	1.70	535	911	No
6	SE Cottrell Rd / Dodge Park Blvd	NBL	55	48	25	92	52.1%	0.44	511	223	No
		SBL	55	35	1	81	2.9%	1.31	516	675	No
		EBL	45	57	10	89	17.5%	0.57	622	356	No
		WBL	45	14	0	122	0.0%	N/A	598	N/A	N/A
7	SE Altman Rd / Carpenter Ln	NBL	55	N/A	N/A	N/A	#######	#VALUE!	#N/A	#VALUE!	#VALUE!
		SBL	55	67	17	63	25.4%	0.50	527	264	No
		EBL	25	N/A	N/A	N/A	#######	#VALUE!	#N/A	#VALUE!	#VALUE!
		WBL	25	12	3	110	25.0%	0.50	702	353	No
8	SE Cottrell Rd / Carpenter Ln	NBL	55	32	3	38	9.4%	0.75	540	404	No
		SBL	55	40	10	37	25.0%	0.50	540	272	No
		EBL	55	6	0	88	0.0%	N/A	513	N/A	N/A
		WBL	55	32	8	70	25.0%	0.50	521	262	No
9	SE Altman Rd / Bluff Rd	NBL	55	N/A	N/A	N/A	#######	#VALUE!	#N/A	#VALUE!	#VALUE!
		SBL	55	51	50	311	98.0%	1.57	403	633	No
		EBL	55	148	1	221	0.7%	2.66	445	1183	No
		WBL	55	N/A	N/A	N/A	#######	#VALUE!	#N/A	#VALUE!	#VALUE!
10	SE Cottrell Rd / Bluff Rd	NBL	55	N/A	N/A	N/A	#######	#VALUE!	#N/A	#VALUE!	#VALUE!
		SBL	55	43	42	321	97.7%	1.45	398	576	No
		EBL	45	194	3	159	1.5%	1.77	576	1017	No
		WBL	45	N/A	N/A	N/A	#######	#VALUE!	#N/A	#VALUE!	#VALUE!
11	SE Bluff Rd / Proctor Rd	NBL	55	39	34	260	87.2%	0.65	426	277	No
		SBL	55	20	9	253	45.0%	0.44	430	189	No
		EBL	45	213	9	147	4.2%	1.08	582	630	No
		WBL	45	99	1	254	1.0%	2.18	517	1128	No
12	SE Dodge Park Blvd / SE Lusted Rd	NBL	55	37	10	73	27.0%	0.49	521	256	No
		SBL	55	6	1	96	16.7%	0.58	508	297	No
		EBL	55	36	4	44	11.1%	0.69	538	373	No
		WBL	55	40	13	49	32.5%	0.47	535	249	No
13	SE Hudson Rd / SE Lusted Rd	NBL	55	29	11	86	37.9%	0.45	513	231	No
		SBL	55	N/A	N/A	N/A	#######	#VALUE!	#N/A	#VALUE!	#VALUE!
		EBL	55	N/A	N/A	N/A	#######	#VALUE!	#N/A	#VALUE!	#VALUE!
		WBL	55	51	21	43	41.2%	0.44	538	238	No
A	Site Access A/ SE Carpenter Ln	NBL	25	23	22	18	95.7%	1.07	778	831	No
		SBL	25	N/A	N/A	N/A	#######	#VALUE!	#N/A	#VALUE!	#VALUE!
		EBL	25	N/A	N/A	N/A	#######	#VALUE!	#N/A	#VALUE!	#VALUE!
		WBL	25	0	0	17	0.0%	N/A	778	N/A	N/A

RIGHT TURN WARRANT ANALYSIS

PWB Filtration Facility
2040 Total Traffic AM Peak Hour
DATE: 06/15/2022

Unsignalized Intersections

No.	Intersection	Movement	2-lane (1), Multi-lane (2)	Posted Speed	Advancing Volume	Right Turn Volume	Calculations				
							NCHRP RT Volume	Taper Warrant	RT Lane Warrant	Meets NCHRP Taper	Meets NCHRP RT Lane
1	Altman Rd / Oxbow Rd	NBR	1	55	80	6	6	62	109	No	No
		SBR	1	55	N/A	N/A	N/A	#N/A	#N/A	#N/A	#N/A
		EBR	1	45	108	58	18	60	107	No	No
		WBR	1	45	N/A	N/A	N/A	#N/A	#N/A	#N/A	#N/A
2	SE Hosner Rd / Oxbow Dr	NBR	1	55	63	0	0	64	112	No	No
		SBR	1	55	24	11	11	68	117	No	No
		EBR	1	55	77	69	69	63	111	Yes	No
		WBR	1	55	2	1	1	#N/A	#N/A	#N/A	#N/A
3	SE Altman Rd / Lusted Rd	NBR	1	55	64	3	3	64	112	No	No
		SBR	1	55	61	3	3	64	112	No	No
		EBR	1	55	28	4	4	68	117	No	No
		WBR	1	55	62	16	16	64	112	No	No
4	SE Cottrell Rd / Lusted Rd	NBR	1	55	40	11	11	66	115	No	No
		SBR	1	55	N/A	N/A	N/A	#N/A	#N/A	#N/A	#N/A
		EBR	1	55	40	18	18	66	115	No	No
		WBR	1	55	N/A	N/A	N/A	#N/A	#N/A	#N/A	#N/A
5	SE Altman Rd / Dodge Park Blvd	NBR	1	55	56	4	4	65	113	No	No
		SBR	1	55	48	4	4	66	115	No	No
		EBR	1	55	65	3	3	64	112	No	No
		WBR	1	55	56	13	13	65	113	No	No
6	SE Cottrell Rd / Dodge Park Blvd	NBR	1	55	44	1	1	66	115	No	No
		SBR	1	55	18	4	4	69	119	No	No
		EBR	1	55	45	24	24	66	115	No	No
		WBR	1	55	41	3	3	66	115	No	No
7	SE Altman Rd / Carpenter Ln	NBR	1	55	41	0	0	66	115	No	No
		SBR	1	55	N/A	N/A	N/A	#N/A	#N/A	#N/A	#N/A
		EBR	1	25	N/A	N/A	N/A	#N/A	#N/A	#N/A	#N/A
		WBR	1	25	20	14	14	68	117	No	No
8	SE Cottrell Rd / Carpenter Ln	NBR	1	55	36	8	8	67	116	No	No
		SBR	1	55	42	4	4	66	115	No	No
		EBR	1	55	8	4	4	#N/A	#N/A	#N/A	#N/A
		WBR	1	55	20	16	16	68	117	No	No
9	SE Altman Rd / Bluff Rd	NBR	1	55	N/A	N/A	N/A	#N/A	#N/A	#N/A	#N/A
		SBR	1	55	36	0	0	67	116	No	No
		EBR	1	45	N/A	N/A	N/A	#N/A	#N/A	#N/A	#N/A
		WBR	1	45	159	40	40	55	100	No	No
10	SE Cottrell Rd / Bluff Rd	NBR	1	55	N/A	N/A	N/A	#N/A	#N/A	#N/A	#N/A
		SBR	1	55	24	0	0	68	117	No	No
		EBR	1	45	N/A	N/A	N/A	#N/A	#N/A	#N/A	#N/A
		WBR	1	45	177	27	27	53	97	No	No
11	SE Bluff Rd / Proctor Rd	NBR	1	55	33	1	1	67	116	No	No
		SBR	1	55	166	74	74	54	99	Yes	No
		EBR	1	45	152	26	26	55	100	No	No
		WBR	1	45	183	113	73	52	96	Yes	No
12	SE Dodge Park Blvd / Lusted Rd	NBR	1	55	23	16	16	68	117	No	No
		SBR	1	55	11	4	4	69	119	No	No
		EBR	1	55	31	7	7	67	116	No	No
		WBR	1	55	60	1	1	64	112	No	No
13	SE Hudson Rd / Lusted Rd	NBR	1	55	30	20	20	67	116	No	No
		SBR	1	55	N/A	N/A	N/A	#N/A	#N/A	#N/A	#N/A
		EBR	1	55	39	13	13	67	116	No	No
		WBR	1	55	N/A	N/A	N/A	#N/A	#N/A	#N/A	#N/A
A	Site Access A/ SE Carpenter Ln	NBR	1	55	10	0	0	69	119	No	No
		SBR	1	55	0	0	0	#N/A	#N/A	#N/A	#N/A
		EBR	1	25	57	22	22	65	113	No	No
		WBR	1	25	7	0	0	#N/A	#N/A	#N/A	#N/A

RIGHT TURN WARRANT ANALYSIS

PWB Filtration Facility
2040 Total Traffic PM Peak Hour
DATE: 06/15/2022

Unsignalized Intersections

No.	Intersection	Movement	2-lane (1), Multi-lane (2)	Posted Speed	Advancing Volume	Right Turn Volume	Calculations				
							NCHRP RT Volume	Taper Warrant	RT Lane Warrant	Meets NCHRP Taper	Meets NCHRP RT Lane
1	Altman Rd / Oxbow Rd	NBR	1	55	81	6	6	62	109	No	No
		SBR	1	55	N/A	N/A	N/A	#N/A	#N/A	#N/A	#N/A
		EBR	1	45	154	90	50	55	100	No	No
		WBR	1	45	N/A	N/A	N/A	#N/A	#N/A	#N/A	#N/A
2	SE Hosner Rd / Oxbow Dr	NBR	1	55	74	4	4	63	111	No	No
		SBR	1	55	29	16	16	68	117	No	No
		EBR	1	55	83	59	59	62	109	No	No
		WBR	1	55	7	0	0	#N/A	#N/A	#N/A	#N/A
3	SE Altman Rd / Lusted Rd	NBR	1	55	51	4	4	65	113	No	No
		SBR	1	55	102	7	7	60	107	No	No
		EBR	1	55	34	1	1	67	116	No	No
		WBR	1	55	112	29	29	59	105	No	No
4	SE Cottrell Rd / Lusted Rd	NBR	1	55	23	1	1	68	117	No	No
		SBR	1	55	N/A	N/A	N/A	#N/A	#N/A	#N/A	#N/A
		EBR	1	55	82	32	32	62	109	No	No
		WBR	1	55	N/A	N/A	N/A	#N/A	#N/A	#N/A	#N/A
5	SE Altman Rd / Dodge Park Blvd	NBR	1	55	63	3	3	64	112	No	No
		SBR	1	55	88	17	17	62	109	No	No
		EBR	1	55	99	17	17	61	108	No	No
		WBR	1	55	60	7	7	64	112	No	No
6	SE Cottrell Rd / Dodge Park Blvd	NBR	1	55	48	3	3	66	115	No	No
		SBR	1	55	35	6	6	67	116	No	No
		EBR	1	55	57	13	13	65	113	No	No
		WBR	1	55	14	0	0	69	119	No	No
7	SE Altman Rd / Carpenter Ln	NBR	1	55	60	3	3	64	112	No	No
		SBR	1	55	N/A	N/A	N/A	#N/A	#N/A	#N/A	#N/A
		EBR	1	25	N/A	N/A	N/A	#N/A	#N/A	#N/A	#N/A
		WBR	1	25	12	9	9	69	119	No	No
8	SE Cottrell Rd / Carpenter Ln	NBR	1	55	32	6	6	67	116	No	No
		SBR	1	55	40	1	1	66	115	No	No
		EBR	1	55	6	6	6	#N/A	#N/A	#N/A	#N/A
		WBR	1	55	32	24	24	67	116	No	No
9	SE Altman Rd / Bluff Rd	NBR	1	55	N/A	N/A	N/A	#N/A	#N/A	#N/A	#N/A
		SBR	1	55	50	0	0	65	113	No	No
		EBR	1	45	148	0	0	56	101	No	No
		WBR	1	45	N/A	N/A	N/A	#N/A	#N/A	#N/A	#N/A
10	SE Cottrell Rd / Bluff Rd	NBR	1	55	N/A	N/A	N/A	#N/A	#N/A	#N/A	#N/A
		SBR	1	55	43	0	0	66	115	No	No
		EBR	1	45	N/A	N/A	N/A	#N/A	#N/A	#N/A	#N/A
		WBR	1	45	159	32	32	55	100	No	No
11	SE Bluff Rd / Proctor Rd	NBR	1	55	38	1	1	67	116	No	No
		SBR	1	55	20	7	7	68	117	No	No
		EBR	1	45	213	51	11	49	92	No	No
		WBR	1	45	99	11	11	61	108	No	No
12	SE Dodge Park Blvd / Lusted Rd	NBR	1	55	37	23	23	67	116	No	No
		SBR	1	55	5	3	3	#N/A	#N/A	#N/A	#N/A
		EBR	1	55	36	6	6	67	116	No	No
		WBR	1	55	40	1	1	66	115	No	No
13	SE Hudson Rd / Lusted Rd	NBR	1	55	28	17	17	68	117	No	No
		SBR	1	55	N/A	N/A	N/A	#N/A	#N/A	#N/A	#N/A
		EBR	1	55	43	9	9	66	115	No	No
		WBR	1	55	N/A	N/A	N/A	#N/A	#N/A	#N/A	#N/A
A	Site Access A/ SE Carpenter Ln	NBR	1	55	22	0	0	68	117	No	No
		SBR	1	55	0	0	0	#N/A	#N/A	#N/A	#N/A
		EBR	1	25	17	10	10	69	119	No	No
		WBR	1	25	11	0	0	69	119	No	No

Appendix F: Circulation Diagrams