





RENEWS: 6/30/2024

Haworth Avenue Apartments

Transportation Impact Study

Newberg, Oregon

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Executive Summary

- 1. The proposed Haworth Avenue Apartments project will include the construction of a 24-to-30-unit apartment complex with access onto Haworth Avenue near west edge of the site. The site is located on a single property (tax lot R3216CB-00800) north of Portland Road (OR-99W), south of Haworth Avenue, east of N Deborah Road, and west of N Springbrook Road in Newberg, Oregon.
- 2. Assuming the development of 30 units, the trip generation calculations show that the proposed project is projected to generate 12 morning peak hour trips, 15 evening peak hour trips, and 202 average weekday trips.
- 3. No significant trends or crash patterns were identified at any of the study intersections that are indicative of safety concerns with the exception of the intersection of N Springbrook Road at Haworth Avenue which exhibits a crash rate in excess of 1.00 CMEV. Following installation of a traffic signal at the intersection once sufficient proportionate share contributions have been collected (TSP project I09), it is expected the crash rate will decrease to levels below 1.00 CMEV. Accordingly, no other safety mitigation is recommended per the crash data analysis.
- 4. Adequate sight distance is available to the east of the proposed site access intersection to allow safe operation along Haworth Avenue. To the west of the access intersection, sight distances are limited by trees which act as a barrier delineating the property line between the project site and the adjacent shopping center to the west. Provided this obstructing foliage is removed, adequate intersection sight distance of 240 feet or greater can be obtained to the west. No other sight distance related mitigation is necessary or recommended at the access intersection.
- 5. Left-turn lane warrants are not projected to be met for the site access intersection along Haworth Avenue under any analysis scenario through year 2029. Accordingly, no new turn lanes are necessary or recommended.
- 6. Traffic signal warrants are not projected to be met at any of the unsignalized study intersections by the 2029 planning year based on a review of traffic volumes. Specific to the intersection of N Springbrook Road at Haworth Avenue, Warrant 7 is triggered due to the number of recurring crashes at the intersection that could be mitigated by the installation of a traffic signal. Per the City of Newberg's TSP project I09, a traffic signal is planned for installation at the intersection after sufficient proportionate share contributions have been collected. No other traffic signals are necessary or warranted.
- 7. All study intersections are currently operating acceptably per jurisdictional standards and are projected to continue operating acceptably through the 2024 site buildout year and the future 2029 planning year, with the exception of the N Springbrook Road at Haworth Avenue intersection under existing all-way stop-controls. Once a traffic signal is installed at the intersection, City of Newberg mobility targets will be met for the intersection. No additional operational mitigation is necessary or recommended at the study intersections.



- 8. No queuing related mitigations are recommended at the intersections of N Springbrook Road at Haworth Avenue and N Springbrook Road at OR-99W which are projected to experience occasional 95th percentile queues which exceed available lane storages. All other study intersections and their respective turning movements are provided adequate vehicle storage space. Accordingly, no intersection queuing related mitigation is necessary or recommended as part of the proposed development project.
- 9. Given sufficient space between the site access and the 95th percentile eastbound queues at the N Springbrook Road at Haworth Avenue intersection are available and the potential for circulation/safety issues which could occur with a single restricted access point to the site, it is recommended that the proposed apartment complex be allowed an unrestricted full movement access onto Haworth Avenue.



Project Description

Introduction

The proposed Haworth Avenue Apartments project will include the construction of a 24-to-30-unit apartment complex with access onto Haworth Avenue near west edge of the site. The site is located on a single property (tax lot R3216CB-00800) north of Portland Road (OR-99W), south of Haworth Avenue, east of N Deborah Road, and west of N Springbrook Road in Newberg, Oregon.

Based on correspondence with City of Newberg and Oregon Department of Transportation (ODOT) staff, the report conducts safety and capacity/level of service analyses at the following intersections during the morning and evening peak hours:

- N Deborah Road at Haworth Avenue
- 2. Site Access at Haworth Avenue
- 3. N Springbrook Road at Haworth Avenue
- 4. N Springbrook Road at OR-99W

The purpose of this study is to determine whether the transportation system within the vicinity of the site is capable of safely and efficiently supporting the existing and proposed uses, and to determine any mitigation that may be necessary to do so. Detailed information on traffic counts, trip generation calculations, safety analyses, and level of service calculations is included in the appendix to this report.

Location Description

As described in the *Introduction*, the site is located north of OR-99W, south of Haworth Avenue, east of N Deborah Road, and west of N Springbrook Road in Newberg, Oregon. The subject site is located within a mixed-use area of the City, with residential uses to the north and commercial retail uses to the south, east and west.

The project site includes a single property (tax lot R3216CB-00800) which encompasses an approximate 0.8 acres. The project site is currently undeveloped but following buildout of the proposed development the site will take access onto Haworth Avenue near west edge of the site.

Figure 1 presents an aerial image of the nearby vicinity with the project site outlined in yellow.



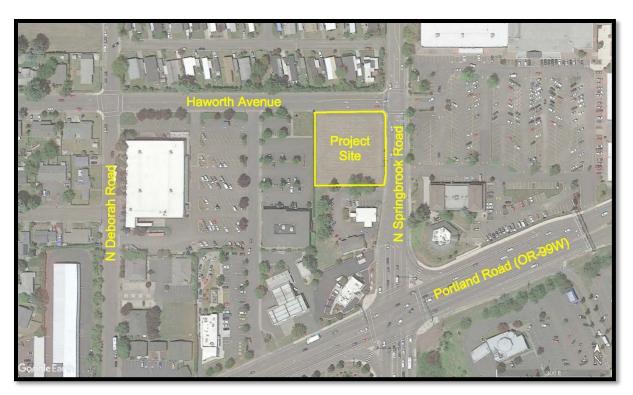


Figure 1: Aerial Photo of Site Vicinity (Image from Google Earth)

Vicinity Streets

The proposed development is expected to impact four roadways near the site. Table 1 provides a description of each roadway within the immediate site vicinity.

Table 1: Vicinity Roadway Descriptions

Street Name	Jurisdiction	Functional Classification	Speed (MPH)	On-Street Parking	Curbs & Sidewalks	Bicycle Lanes
Haworth Avenue	City of Newberg	Major Collector	25	Partially Permitted	Both Sides	None
Portland Road (OR-99W)	ODOT	Major Arterial/ Statewide Hwy	35	Not Permitted	Both Sides	Both Sides
N Deborah Road	City of Newberg	Minor Collector	25	Partially Permitted	Both Sides	None
N Springbrook Road	City of Newberg	Minor Arterial	25/35	Not Permitted	Both Sides	Partial Both Sides

Table Notes: Functional Classification & Jurisdiction based on City of Newberg TSP.



Study Intersections

Based on coordination with City of Newberg and ODOT staff, three existing intersections were identified for analysis. A summarized description of these study intersections, under their existing lane and control configurations, is provided in Table 2.

Table 2: Study Intersection Descriptions

Number	Intersection	Geometry	Traffic Control	Phasing/Stopped Approaches
1	N Deborah Road at Haworth Avenue	Four-Legged	Stop- Controlled	All-Way Stop-Controlled
3	N Springbrook Road at Haworth Avenue	Four-Legged	Stop- Controlled	All-Way Stop-Controlled
4	N Springbrook Road at OR-99W	Four-Legged	Signalized	Protected NB/SB/EB/WB Left-turns, Channliezed Yield-Controlled EB/WB Right-turns, Overlap NB Right-turn

Planned Improvements at N Springbrook Road at Haworth Avenue

According to the project's pre-application meeting notes, dated November 10, 2021, and the City of Newberg's Transportation System Plan (TSP) project 109, a traffic signal is planned for installation at the intersection of N Springbrook Road at Haworth Avenue. Additionally, is it expected that that existing eastbound travel lanes will be restriped to a dedicated left-turn lane and shared through/right-turn lane.

Proportionate share fees are currently being collected at the intersection for these improvements. Based on the impact fees required for the in-process Meadow Creek Apartment development, it was estimated that the proportionate share fee rate is approximately \$342.47 per morning peak hour trip impact. The proposed development is projected to add up to 10 morning peak hour site trip impacts to this intersection (see the *Site Trips* section of this report) whereby a proportionate share contribution of \$3,424.70 may be attributable to the Haworth Avenue Apartments project.

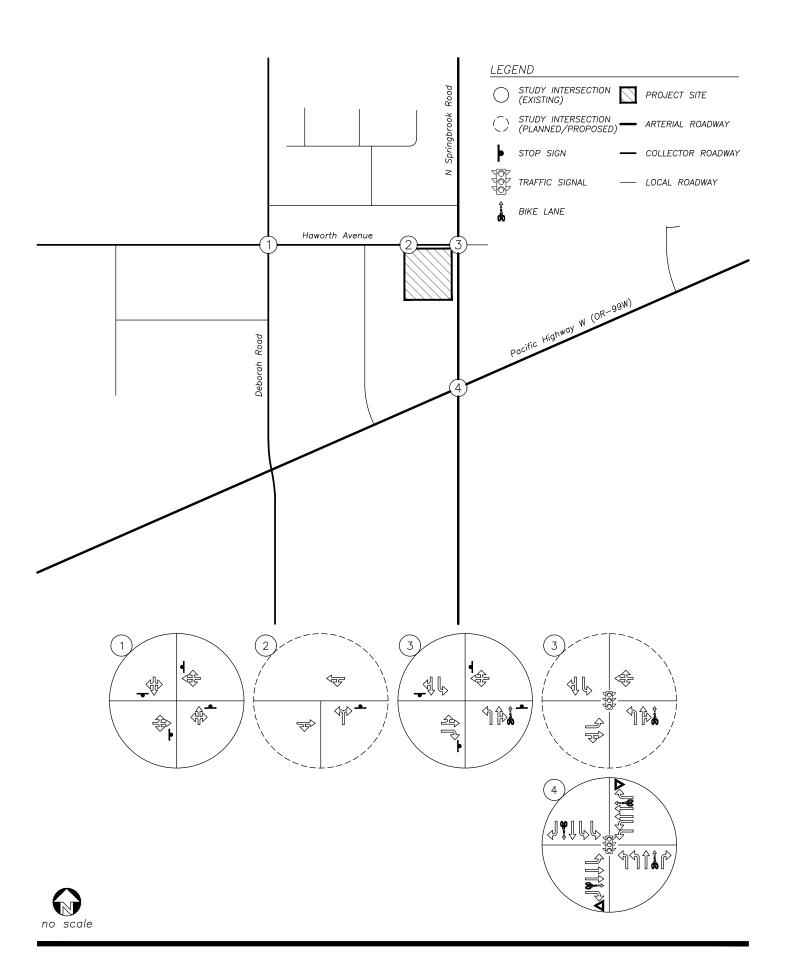
For the purposes of this analysis, the intersection was analyzed assuming operation under both all-way stop-control and with the traffic signal/westbound lane configurations installed/revised for future year 2024 and 2029 conditions.

Transit

The project site is located near bus line 7 – Newberg-Providence, which has stops located within a quarter-mile walking/biking distance of the project site. The nearest transit stops to the site are located along/near OR-99W, where complete sidewalks and marked crossings at intermittent public intersections are available between the site and these transit stops. Weekday service is scheduled from approximately 7:05 AM to 6:25 PM with typical headways of approximately 65 minutes. Weekend and holiday bus service is not provided for this transit route.

A vicinity map showing the project site, vicinity streets, and study intersection configurations is shown in Figure 2.







Site Trips

Trip Generation

The proposed development will include the construction of between 24 to 30 apartment units on a currently undeveloped property. To estimate the number of trips that are currently and will be generated by the proposed use, trip rates from the *Trip Generation Manual*¹ were used. Specifically, data from land use code 220, *Multifamily Housing (Low-Rise)*, was used to estimate site trip generation based on the number of dwelling units.

Assuming the development of 30 units, the trip generation calculations show that the proposed project is projected to generate 12 morning peak hour trips, 15 evening peak hour trips, and 202 average weekday trips. The trip generation estimates associated with the proposed development are summarized in Table 3 and detailed trip generation calculations are included in the appendix.

Table 3: Trip Generation Summary

			Morni	ng Peak	Hour	Eveni	ng Peak	Hour	Weekday
	Code	e Size	Enter	Exit	Total	Enter	Exit	Total	Total
Proposed Apartment	220	30 units	3	9	12	9	6	15	202

Trip Distribution

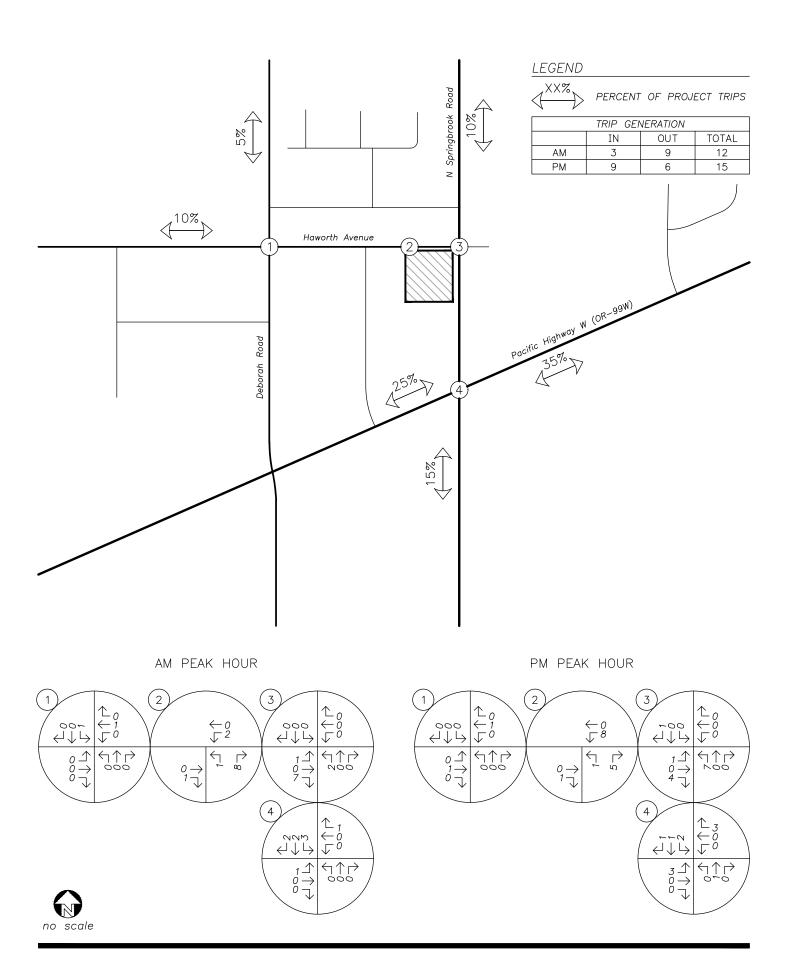
The directional distribution of site trips to/from the project site was estimated based on the locations of likely trip destinations and locations of major transportation facilities in the site vicinity. Based on correspondence with City of Newberg staff, the following trip distribution was confirmed and utilized:

- Approximately 35 percent of site trips will travel to/from the east along OR-99W;
- Approximately 25 percent of site trips will travel to/from the west along OR-99W;
- Approximately 15 percent of site trips will travel to/from the south along N Springbrook Road;
- Approximately 10 percent of site trips will travel to/from the west along Haworth Avenue;
- Approximately 10 percent of site trips will travel to/from the north along N Springbrook Road; and
- Approximately 5 percent of site trips will travel to/from the north along Deborah Road.

The trip distribution and assignment for the site trips generated during the morning and evening peak hours is shown in the Figure 3.

¹ Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 11th Edition, 2021.







Traffic Volumes

2022 Existing Conditions

Due to the ongoing COVID-19 viral pandemic, traffic volumes around Oregon have been depressed relative to normal conditions. However, at the time of writing schools and businesses have generally been operating at normal capacities, mask mandates have generally been lifted, and Oregon COVID-19 infection rates had decreased significantly since January 2022. Therefore, at the direction of City of Newberg staff new intersection traffic counts were collected at the study intersections and utilized for analysis.

Traffic counts were conducted at the study intersections on Tuesday, April 19, 2022, from 6:00/7:00 AM to 9:00 AM and from 3:00/4:00 PM to 6:00 PM. Data was used from each intersection's respective morning and evening peak hours.

Per the requirements established in ODOT's *Analysis Procedures Manual* (APM), a seasonal adjustment factor of 1.0540 was calculated for the April counts, utilizing the *On-site Automatic Traffic Recorder* (ATR) *Method*. This method referenced average weekday traffic volumes along OR-99W at a location approximately 0.01 miles west of Brutscher Street (ATR Station 36-004) from years 2016 through 2020. Given this ATR Station is located within approximately a quarter mile of the N Springbrook Road at OR-99W intersection and there are no major intermittent intersections between the two locations, the use of the *On-site ATR Method* is appropriate to determine a seasonal adjustment factor.

Figure 4 shows the existing traffic volumes at the study intersections during the morning and evening peak hours.

2024 Background Conditions

To provide analysis of the impact of the proposed development on the nearby transportation facilities, an estimate of future traffic volumes is required. It is expected that the proposed development will be constructed and in operation by year 2024. In order to approximate the future year 2024 traffic volumes at the study intersections, a compounded growth rate of two percent per year for an assumed buildout condition of two years was applied to the measured 2022 existing traffic volumes. Specific to the study intersection of N Springbrook Road at OR-99W, the through movement volumes along OR-99W were grown utilizing a 0.01413 percent per year linear growth rate, derived from ODOT's 2040 Future Volumes Table. When determining this ODOT growth rate, volume/growth projections at the following two locations were compared and the higher growth rate of the two locations was used:

- 0.01 miles west of Brutscher Steet (ATR Station 36-004, Milepost 21.81).
- 0.10 miles west of Springbrook Road (Milepost 22.15).



In addition to the traffic volume growth described above, there with several in-process developments within the site vicinity that are currently approved but not yet fully constructed or occupied. The following projects were assumed to be completed and occupied prior to year 2024:

- Crestview Crossing: 260 single-family detached houses and 48 apartment units at tax lots 1100 and 13800 north of Providence Newberg Medical Center addressed at 1001 Providence Drive.
- Meadow Creek Apartments: 47 apartment units located at tax lots 100 and 200 addressed at 1306 N Springbrook Road.
- Meadow Creek Apartments (Phase 2): 74 apartment units at located at tax lots 100 and 200 addressed at 1306 N Springbrook Road.

The in-process developments are currently not fully contributing trips to the transportation system but may potentially be by the assumed 2024 buildout year of the proposed development. Additional trips corresponding to each in-process development were added to the 2022 existing year traffic volumes in addition to the two years of traffic growth at each of the applicable study intersections. To maintain a conservative analysis of operation at the study intersections, the in-process developments were assumed to be fully built-out by year 2024.

Figure 5 shows the projected year 2024 background traffic volumes at the study intersections during the morning and evening peak hours. A figure depicting in-process trips is included in the appendix to this report.

2024 Buildout Conditions

Peak hour trips calculated to be generated by the proposed development, as described earlier within the *Site Trips* section, were added to the projected year 2024 background traffic volumes to obtain the expected 2024 site buildout volumes.

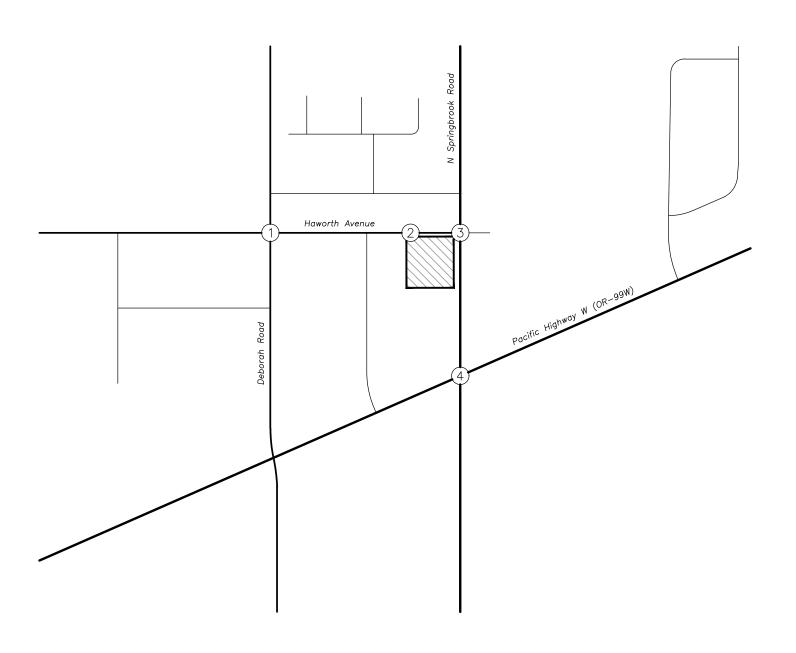
Figure 6 shows year 2024 buildout traffic volumes at the study intersections during the morning and evening peak hours.

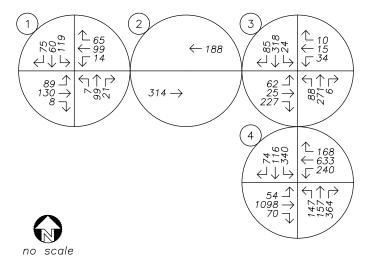
2029 Planning Year Conditions

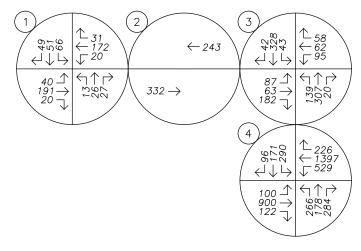
At the direction of City of Newberg staff, an additional future year analysis scenario was prepared which reviews traffic conditions five years beyond the assumed 2024 buildout year of the site. The traffic volumes were estimated in a manner consistent with the methodologies discussed in the aforementioned sections, with the exception that growth rates were applied to the existing year traffic volumes over a seven-year period to estimate 2029 traffic conditions

Figure 7 shows year 2029 planning year traffic volumes at the study intersections during the morning and evening peak hours.

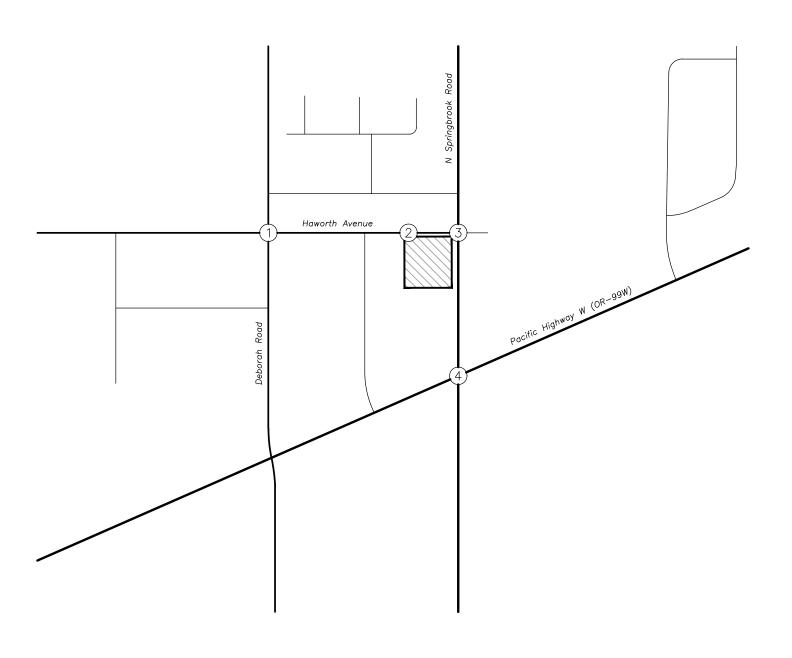


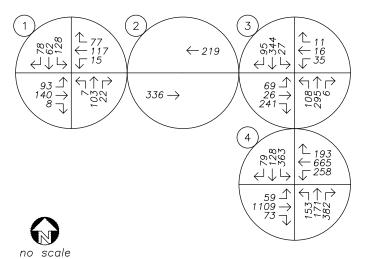


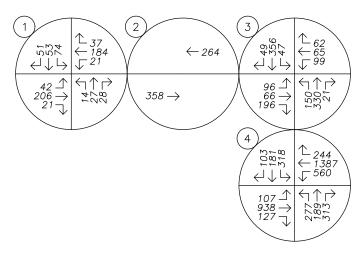




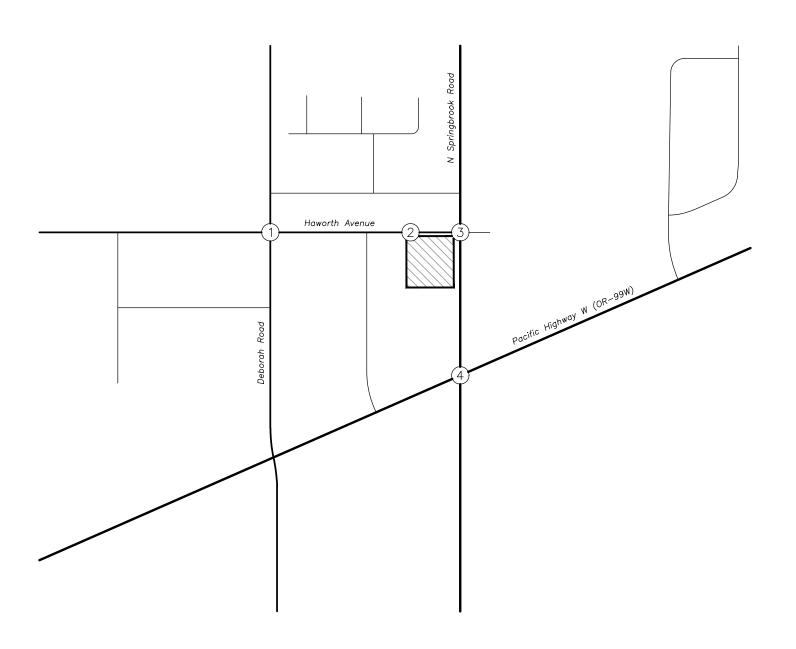


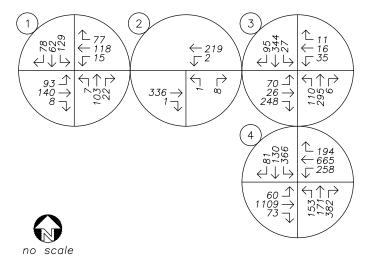


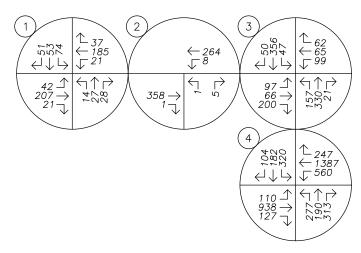




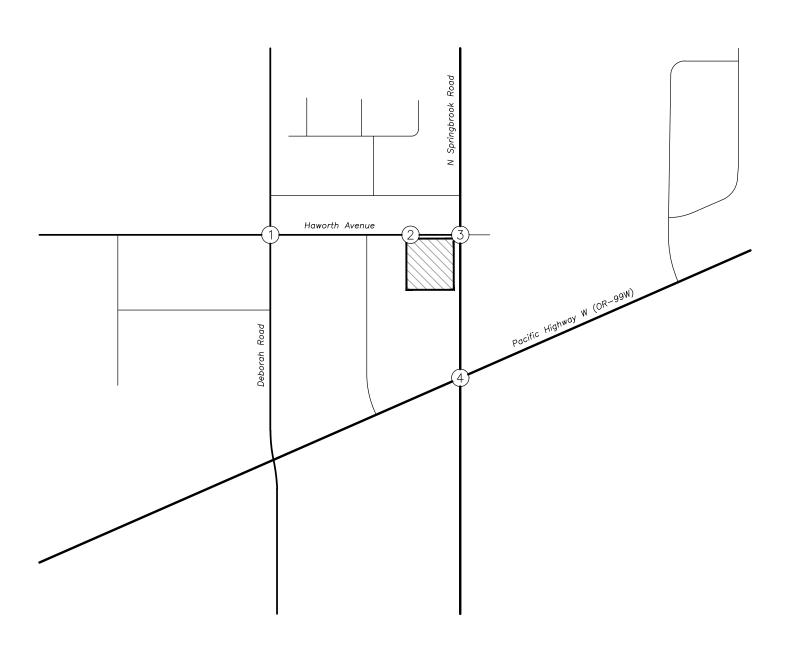


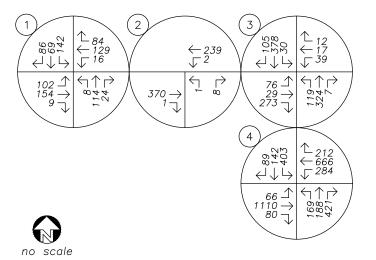


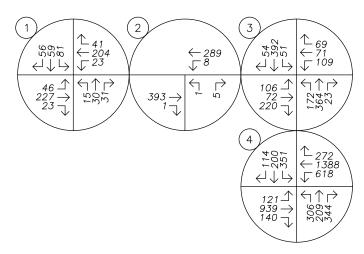














Safety Analysis

Crash History Review

Using data obtained from ODOT's Crash Analysis and Reporting Unit, a review was performed of the most recent five years of available crash data at the study intersections (January 2016 through December 2020). The crash data was evaluated based on the number of crashes, the type of collisions, the severity of the collisions, and the resulting crash rate for each intersection. Crash rates provide the ability to compare safety risks at different intersections by accounting for both the number of crashes that have occurred during the study period and the number of vehicles that typically travel through the intersection. Crash rates were calculated under the common assumption that traffic counted during the evening peak hour represents approximately ten percent of annual average daily traffic (AADT) at each intersection. Crash rates in excess of 1.00 crashes per million entering vehicles (CMEV) may be indicative of design deficiencies and therefore require a need for further investigation and possible mitigation.

With regard to crash severity, ODOT classifies crashes in the following categories:

- Property Damage Only (PDO);
- Possible Injury Complaint of Pain (Injury C);
- Non-Incapacitating Injury (Injury B);
- Incapacitating Injury Bleeding, Broken Bones (Injury A); and
- Fatality or Fatal Injury.

The intersection of N Springbrook Road at OR-99W is an ODOT facility which adheres to the crash analysis methodologies in ODOT's APM. According to *Exhibit 4-1: Intersection Crash Rates per MEV by Land Type and Traffic Control* of the APM, intersections which experience crash rates in excess of their respective 90th percentile crash rates should be "flagged for further analysis". For intersections in urban settings, the following average and 90th percentile rates are applicable to the study intersection:

- Signalized, Four-Legged Intersections:
 - o Average rate of 0.477 CMEV.
 - o 90th percentile rate of 0.860 CMEV.

Table 4 provides a summary of crash types while Table 5 summarizes crash severities and rates for each of the study intersections. Detailed crash data is provided in the appendix to this report (note the crashes highlighted in yellow in the appendix were determined to not be related to the associated with operations or infrastructure at the intersection).



Table 4: Crash Type Summary

		Crash Type							
Number	nber Intersection	Rear End	Turn/ Angle	Fixed Object	Side swipe	Ped/ Bike	Other	Total	
1	N Deborah Road at Haworth Avenue	0	2	0	0	1	0	3	
3	N Springbrook Road at Haworth Avenue	1	23	0	1	1	1	27	
4	N Springbrook Road at OR-99W	51	5	0	5	2	0	63	

Table 5: Crash Severity and Rate Summary

				Cra	sh Sev	erity		T		
Number	Intersection	PDO	С	В	Α	Fatal	Unknown	Total Crashes	AADT	Crash Rate
1	N Deborah Road at Haworth Avenue	1	1	1	0	0	0	3	7,060	0.233
3	N Springbrook Road at Haworth Avenue	13	9	4	1	0	0	27	14,260	1.037
4	N Springbrook Road at OR-99W	30	27	5	1	0	0	63	45,290	0.762

Table Notes: **BOLDED** text indicates a crash rate in excess of 1.00 CMEV or ODOT's 90th percentile rate.

Based on a review of the crash data, there were several crashes that involved either a pedestrian/bicyclist or was classified as Injury A. Additionally, the intersection of N Springbrook Road at Haworth Avenue exhibits a crash rate in excess of 1.00 CMEV. A detailed description of these crashes and intersections is provided below.

N Deborah Road at Haworth Avenue

The intersection of N Deborah Road at Haworth Avenue had one crash that involved a bicyclist. The crash occurred when the east/west crossing bicyclist disregarded intersection traffic controls, failed to yield right-of-way to a westbound left-turning passenger car which had initially stopped at the intersection, and collided with the motor vehicle. The bicyclist sustained injuries consistent with Injury B classification while the driver of the passenger car was uninjured.

N Springbrook Road at Haworth Avenue

The intersection of N Springbrook Road at Haworth Avenue had two crashes that either involved a bicyclist or was classified as Injury A.

• The bicycle-related collision occurred when an east/west crossing bicyclist failed to yield right-of-way to a southbound passenger car and collided with the motor vehicle. The bicyclist sustained injuries consistent with Injury B classification while the driver of the passenger car was uninjured.



• The crash that was classified as Injury A occurred when the driver of a northbound passenger car disregarded intersection traffic controls and collided with a westbound right-turning passenger car. A third passenger car that was stopped in the eastbound direction of travel was struck by one of the other vehicles after the initial collision. The driver of the vehicle that instigated the collision sustained injuries consistent with Injury B classification while a passenger in the same vehicle sustained injuries consistent with Injury A classification. The occupants of the two other vehicles did not sustain any reported injuries.

Additionally the intersection was identified to have a crash rate in excess of 1.00 CMEV. Upon closer inspection of the crash data, 23 of the 27 crashes reported at the intersection (i.e. approximately 85 percent of all reported crashes) were classified as angle/turning movement collisions. Per the City of Newberg's TSP project 109, a traffic signal is planned for installation at the intersection. Following installation of the traffic signal after sufficient proportionate share contributions have been collected, it is expected that the number of recurring angle/turning movement collisions at the intersection will decrease sufficiently to levels below 1.00 CMEV. No additional mitigation is necessary or recommended at the intersection.

N Springbrook Road at OR-99W

The intersection of N Springbrook Road at OR-99W had three crashes that either involved a pedestrian or was classified as Injury A.

- One of the crashes that involved a pedestrian occurred when the driver of a northbound right-turning passenger car failed to yield right-of-way to a north/south crossing pedestrian who was utilizing an intersection crosswalk. The pedestrian sustained injuries consistent with Injury B classification while the driver of the passenger car was uninjured.
- The second pedestrian-related collision occurred when the driver of a northbound left-turning passenger car was driving carelessly and failed to yield right-of-way to a north/south crossing pedestrian who was utilizing an intersection crosswalk. The pedestrian sustained injuries consistent with Injury C classification while the driver of the passenger car was uninjured.
- The crash that was classified as Injury A occurred when the driver of a southwest-bound passenger car disregarded intersection traffic controls and collided with a southbound passenger car. All occupants of the southbound vehicle sustained injuries consistent with Injury C classification. The driver of the southwest-bound vehicle sustained no injuries while the two other passengers of the vehicle sustained injuries classified as Injury C and Injury A.

Analysis Findings

Based on a review of available crash data, no significant trends or crash patterns were identified at any of the study intersections that are indicative of safety concerns with the exception of the intersection of N Springbrook Road at Haworth Avenue which exhibits a crash rate in excess of 1.00 CMEV. Following installation of a traffic signal at the intersection once sufficient proportionate share contributions have been collected (TSP project 109), it is expected the crash rate will decrease to levels below 1.00 CMEV. Accordingly, no other safety mitigation is recommended per the crash data analysis.



Sight Distance Evaluation

Intersection sight distances were measured at the proposed site access location along Haworth Avenue and evaluated in accordance with the standards established in *A Policy of Geometric Design of Highways and Streets*².

Methodology

According to AASHTO, the driver's eye is assumed to be approximately 15 feet from the near edge of the nearest travel lane of the intersecting street and at a height of 3.5 feet above the minor-street approach pavement. The vehicle driver's eye height along the major-street approach is assumed to be 3.5 feet above the cross-street pavement. Based on a posted speed of 25 mph along Haworth Avenue, the minimum recommended intersection sight distances include the following:

- 280 feet to the east for left-turn vehicles.
- 240 feet to the west for right-turn vehicles.

Per the AASHTO manual intersection sight distance is an operation measure intended to provide sufficient line of sight along the major-street so that a driver could turn from the minor-street approach without impeding traffic flow. Conversely, stopping sight distance is considered the minimum requirement to ensure safe operation of an intersection. This is the distance that allows an oncoming driver to see a hazard on the roadway, react, and come to a complete stop, if necessary, to avoid a collision. Based on the posted speed of 25 mph along Haworth Avenue, the minimum required stopping sight distance is 155 feet, assuming a major-street approach roadway grade of 3 percent or less.

Field Measurements

At the proposed access intersection along Haworth Avenue, sight distance to the east was measured back to the intersection of N Springbrook Road at Haworth Avenue, approximately 170 feet away, noting that sight distances extend back into the shopping center parking lot at distances greater than 280 feet. Given the intersection currently operates under all-way stop-controls (i.e. vehicles will be approach the proposed access intersection from a stopped position) and in the future will operate with a traffic signal (i.e. vehicles may reasonably turn from N Springbrook Road onto Haworth Avenue at speeds no greater than 20 mph), there is more than sufficient stopping sight distance to safely accommodate vehicles approaching the access intersection from this direction.

Sight distance to the west of the proposed access intersection was measured to be approximately 60 feet, limited by trees which act as a barrier delineating the property line between the project site and the adjacent shopping center to the west. Provided this obstructing foliage is removed, adequate intersection sight distance of 240 feet or greater can be obtained to the west.

Analysis Findings

Based on the above measurements, adequate sight distance is available to the east of the proposed site access intersection to allow safe operation along Haworth Avenue. To the west of the access intersection, sight distances are limited by trees which act as a barrier delineating the property line between the project site and

² American Association of State Highway and Transportation Officials (AASHTO), *A Policy on Geometric Design of Highways and Streets*, 6th Edition, 2011.



the adjacent shopping center to the west. Provided this obstructing foliage is removed, adequate intersection sight distance of 240 feet or greater can be obtained to the west. No other sight distance related mitigation is necessary or recommended at the access intersection.

Warrant Analysis

Left-turn lane and preliminary traffic signal warrants were examined at the study intersections where such treatments would be applicable.

Left-turn Lane Warrant

A left-turn refuge lane is primarily a safety consideration for the major-street, removing left-turning vehicles from the through traffic stream at unsignalized one/two-way stop-controlled intersections. The left-turn lane warrants used were developed from the *National Cooperative Highway Research Project's* (NCHRP) *Report 457*. Turn lane warrants were evaluated based on the number of advancing and opposing vehicles as well as the number of turning vehicles, the travel speed, and the number of through lanes.

Left-turn lane warrants are not projected to be met for the site access intersection along Haworth Avenue under any analysis scenario through year 2029. Accordingly, no new turn lanes are necessary or recommended.

Preliminary Traffic Signal Warrant

Preliminary traffic signal warrants were examined for the unsignalized study intersections along Haworth Avenue to determine whether the installation of a new traffic signal will be warranted at the intersections by the 2029 planning year with the proposed development constructed. Based on the analysis, traffic signal warrants are not projected to be met at any of the unsignalized study intersections by the 2029 planning year based on a review of traffic volumes (i.e. Warrant 1).

Specific to the intersection of N Springbrook Road at Haworth Avenue and referring to the *Crash History Review* section, Warrant 7 Crash Experience is triggered given the number of recurring crashes at the intersection over a single 12-month period that could be mitigated by the installation of a traffic signal. Per the City of Newberg's TSP project 109, a traffic signal is planned for installation at the intersection after sufficient proportionate share contributions have been collected.



Intersection Capacity Analysis

A capacity and delay analysis were conducted for each of the study intersections per the signalized and unsignalized intersection analysis methodologies in the *Highway Capacity Manual* (HCM)³. Intersections are generally evaluated based on the average control delay experienced by vehicles and are assigned a grade according to their operation. The level of service (LOS) of an intersection can range from LOS A, which indicates very little or no delay experienced by vehicles, to LOS F, which indicates a high degree of congestion and delay. The volume-to-capacity (v/c) ratio is a measure that compares the traffic volumes (demand) against the available capacity of an intersection.

Performance Standards

The operating standards adopted by the City of Newberg and ODOT are summarized below.

City of Newberg

According to the City of Newberg's TSP and Public Works Design and Construction Standards, intersections under City jurisdiction are required to operate at a minimum LOS D or better with a v/c ratio no greater than 0.90.

ODOT

Per an Oregon Highway Plan (OHP) amendment, the Oregon Transportation Commission (OTC) has adopted alternative mobility targets for OR-99W at a location from N Springbrook Road to the eastern City limits, as described in the *Alternative Mobility Targets for OR 99W and OR 219 in Newberg* memorandum, dated February 13, 2020. As part of these alternative mobility standards, the intersection of N Springbrook Road at OR-99W is required to operate with a v/c ratio no greater than 1.0.

Delay & Capacity Analysis

According to the project's pre-application meeting notes, dated November 10, 2021, and the City of Newberg's TSP project I09, a traffic signal is planned for installation at the intersection of N Springbrook Road at Haworth Avenue. Additionally, is it expected that that existing eastbound travel lanes will be restriped to a dedicated left-turn lane and shared through/right-turn lane. For the purposes of this analysis, the intersection was analyzed assuming operation under both all-way stop-control and with the traffic signal/westbound lane configurations installed/revised for future year 2024 and 2029 conditions.

The LOS, delay, and v/c results of the capacity analysis are shown in Table 6 for the morning and evening peak hours. The TrafficWare Synchro software utilized for analysis does not report the overall v/c ratio of signalized intersections in the HCM 6th Edition capacity reports. For these intersections, the v/c ratio was calculated based on methods detailed in ODOT's APM *Section 13 Signalized Intersection Analysis*. Detailed calculations as well as tables showing the relationship between delay and LOS are included in the appendix to this report.

³ Transportation Research Board, Highway Capacity Manual 6th Edition, 2016.



Table 6: Capacity Analysis Summary

	А	M Peak Ho	our		Р	M Peak Ho	ur	
	LOS	Delay (s)	v/c		LOS	Delay (s)	v/c	
1. N Deborah Road at Haworth Avenue								
2022 Existing Conditions	В	12	0.47		В	11	0.41	
2024 Background Conditions	В	14	0.52		В	12	0.45	
2024 Buildout Conditions	В	14	0.52		В	12	0.46	
2029 Future Conditions	С	16	0.61		В	13	0.52	
2. Site Ac	cess at Ha	worth Ave	nue					
2024 Buildout Conditions	В	11	0.02		В	12	0.01	
2029 Future Conditions	В	11	0.02		В	12	0.01	
3. N Springbro	ook Road a	at Haworth	Avenue					
2022 Existing Conditions	С	20	0.78		D	27	0.84	
2024 Background Conditions (AWSC)	D	26	0.89		Е	38	0.97	
2024 Background Conditions (Signal)	В	10	0.50		В	12	0.59	
2024 Buildout Conditions (AWSC)	D	26	0.89		Е	38	0.98	
2024 Buildout Conditions (Signal)	В	10	0.50		В	12	0.60	
2029 Future Conditions (AWSC)	E	40	1.02		F	58	1.12	
2029 Future Conditions (Signal)	В	10	0.53		В	12	0.67	
4. N Sprin	ngbrook R	oad at OR-	99W					
2022 Existing Conditions	D	37	0.78		D	40	0.81	
2024 Background Conditions	D	40	0.81		D	43	0.85	
2024 Buildout Conditions	D	40	0.82		D	43	0.85	
2029 Future Conditions	D	47	0.85		D	49	0.88	

Table Notes: **BOLDED** text indicates intersection operation above jurisdictional standards.

Based on the results of the operational analysis, all study intersections are currently operating acceptably per jurisdictional standards and are projected to continue operating acceptably through the 2024 site buildout year and the future 2029 planning year, with the exception of the N Springbrook Road at Haworth Avenue intersection under existing all-way stop-controls. Once a traffic signal is installed at the intersection, City of Newberg mobility targets will be met for the intersection. Accordingly, no additional operational mitigation is necessary or recommended at the study intersections.



Intersection Queuing Analysis

A queuing analysis was conducted at the study intersections to determine whether sufficient storage is available at applicable turning movements to accommodate projected queues. Additionally, the analysis was performed to demonstrate whether eastbound queues at the intersection of N Springbrook Road at Haworth Avenue will extend back to the proposed site access intersection along Haworth Avenue. Based on correspondence with City of Newberg staff, if queues from the N Springbrook Road at Haworth Avenue intersection obstruct turning movements at the site access intersection, turning movements at the site access may need to be restricted.

Queuing Analysis

The queue lengths were projected based on the results of a Synchro/SimTraffic simulation, with the reported values representing the 95th percentile queue length. The 95th percentile queue is a statistical measurement which indicates there is a 5 percent chance, that the queue may exceed this length during the analysis period; however, given this is a probability, the 95th percentile queue length may theoretically never be met or observed in the field.

The projected 95th percentile queue lengths reported in the simulation are presented in Table 7 for the morning and evening peak hours. Note the reported queue lengths were rounded up to the nearest five feet. Detailed queuing analysis worksheets are included in the technical appendix to this report.

Table 7: Queuing Analysis Summary

		Available	AM Peak Hour	PM Peak Hour
		Storage (ft)	95th (ft)	95th (ft)
1. N	l Deborah Road at	Haworth Aven	ue	
	EB Lane	-	90	85
2022 Existing Conditions	WB Lane	-	75	75
2022 Existing Conditions	NB Lane	-	80	65
	SB Lane	-	105	85
	EB Lane	-	95	85
2024 Background Conditions	WB Lane	-	75	75
2024 Background Conditions	NB Lane	-	85	65
	SB Lane	-	105	85
	EB Lane	-	95	90
2024 Buildout Conditions	WB Lane	-	75	75
2024 Buildout Collattions	NB Lane	-	85	65
	SB Lane	-	115	85
	EB Lane	-	105	95
2024 Future Conditions	WB Lane	-	90	75
2024 I didle Collations	NB Lane	-	85	65
	SB Lane	-	120	85
	2. Site Access at H	aworth Avenue		
2024 Buildout Conditions	WB Lane	150*	5	25
2024 Buildout Conditions	NB Lane	-	30	30
2024 Future Conditions	WB Lane	150*	10	30
2024 Future Conditions	NB Lane	-	30	30

Table Notes: BOLDED text indicates queue length exceeds available storage.

^{*} The distance between Haworth/Springbrook Intersection's marked crosswalk and the site access.



Table 7: Queuing Analysis Summary (Continued)

		Available	AM Peak Hour	PM Peak Ho
		Storage (ft)	95th (ft)	95th (ft)
3. N Spr	ingbrook Road at H	laworth Avenue	(AWSC)	
	EB Th/LT Lane	150*	55	85
	EB RT Lane	150*	85	85
	WB Lane	-	55	110
2022 Existing Conditions	NB LT Lane	90	70	95
	NB Th/RT Lane	-	120	160
	SB LT Lane	95	45	100
	SB Th/RT Lane	-	180	220
	EB Th/LT Lane	150*	60	85
	EB RT Lane	150*	95	85
	WB Lane	-	60	120
2024 Background Conditions	NB LT Lane	90	70	100
	NB Th/RT Lane	-	130	200
	SB LT Lane	95	70	180
	SB Th/RT Lane	-	210	410
	EB Th/LT Lane	150*	65	85
	EB RT Lane	150*	100	100
	WB Lane	-	60	130
2024 Buildout Conditions	NB LT Lane	90	65	120
	NB Th/RT Lane	-	135	205
	SB LT Lane	95	90	175
	SB Th/RT Lane	-	260	390
	EB Th/LT Lane	150*	70	110
	EB RT Lane	150*	110	115
	WB Lane	-	60	150
2024 Future Conditions	NB LT Lane	90	75	170
	NB Th/RT Lane	-	150	290
	SB LT Lane	95	145	285
	SB Th/RT Lane	-	405	895
3. N Spring	brook Road at Haw	orth Avenue (Tr	affic Signal)	
	EB LT Lane	150*	70	85
	EB Th/RT Lane	150*	120	115
	WB Lane	-	70	170
2024 Background Conditions	NB LT Lane	90	95	125
	NB Th/RT Lane	-	175	190
	SB LT Lane	95	70	75
	SB Th/RT Lane	-	210	195
	EB LT Lane	150*	70	90
	EB Th/RT Lane	150*	115	145
	WB Lane	-	65	180
2024 Buildout Conditions	NB LT Lane	90	95	130
	NB Th/RT Lane	-	160	200
	SB LT Lane	95	55	70
	SB Th/RT Lane	-	210	200

Table Notes: BOLDED text indicates queue length exceeds avaiable storage.

^{*} The distance between Haworth/Springbrook Intersection's marked crosswalk and the site access.



Table 7: Queuing Analysis Summary (Continued)

		Available	AM Peak Hour	PM Peak Hour
		Storage (ft)	95th (ft)	95th (ft)
3. N Spring	brook Road at Haw	orth Avenue (Tr	affic Signal)	
	EB LT Lane	150*	80	100
	EB Th/RT Lane	150*	140	145
	WB Lane	-	75	225
2024 Future Conditions	NB LT Lane	90	110	125
	NB Th/RT Lane	-	180	195
	SB LT Lane	95	70	95
	SB Th/RT Lane	-	215	235
	4. N Springbrook R	Road at OR-99W		
	EB LT Lane	350	105	160
	EB Th Lanes	-	405	340
	EB RT Lane	340	45	45
	WB LT Lanes	450	215	350
	WB Th Lanes	-	215	465
2022 5 : .:	WB RT Lane	335	0	200
2022 Existing Conditions	NB LT Lanes	245	175	260
	NB Th Lane	-	195	205
	NB RT Lane	260	260	200
	SB LT Lanes	115	185	170
	SB Th Lane	-	140	190
	SB RT Lane	125	55	105
	EB LT Lane	350	80	150
	EB Th Lanes	-	430	365
	EB RT Lane	340	95	0
	WB LT Lanes	450	215	350
	WB Th Lanes	-	225	445
2024 Background Conditions	WB RT Lane	335	0	200
2024 Background Conditions	NB LT Lanes	245	195	265
	NB Th Lane	-	250	220
	NB RT Lane	260	315	215
	SB LT Lanes	115	205	175
	SB Th Lane	-	145	190
	SB RT Lane	125	70	120
	EB LT Lane	350	125	155
	EB Th Lanes	-	445	370
	EB RT Lane	340	95	45
	WB LT Lanes	450	235	345
	WB Th Lanes	-	230	450
2024 Buildout Conditions	WB RT Lane	335	0	175
2024 Buildout Collattions	NB LT Lanes	245	215	255
	NB Th Lane	-	290	235
	NB RT Lane	260	340	225
	SB LT Lanes	115	205	195
	SB Th Lane	-	160	225
	SB RT Lane	125	65	135

Table Notes: **BOLDED** text indicates queue length exceeds avaiable storage.



Table 7: Queuing Analysis Summary (Continued)

		Available	AM Peak Hour	PM Peak Hour					
		Storage (ft)	95th (ft)	95th (ft)					
4. N Springbrook Road at OR-99W									
	EB LT Lane	350	155	190					
	EB Th Lanes	-	455	395					
	EB RT Lane	340	145	45					
	WB LT Lanes	450	225	395					
	WB Th Lanes	-	240	495					
2024 Future Conditions	WB RT Lane	335	0	240					
2024 Future Conditions	NB LT Lanes	245	255	285					
	NB Th Lane	-	370	265					
	NB RT Lane	260	380	235					
	SB LT Lanes	115	230	195					
	SB Th Lane	-	170	220					
	SB RT Lane	125	70	145					

Table Notes: **BOLDED** text indicates queue length exceeds avaiable storage.

Based on the intersection queuing analysis, the projected 95th percentile queues at the following turning movements are projected to exceed their respective available striped lane storage:

- 3. N Springbrook Road at Haworth Avenue (with Traffic Signal Installed)
 - a. Northbound left-turn Lane 130-foot maximum queue
- 4. N Springbrook Road at OR-99W
 - a. Northbound left-turn lanes 285-foot maximum queue
 - b. Northbound right-turn lane 380-foot maximum queue
 - c. Southbound left-turn lanes 230-foot maximum queue
 - d. Southbound right-turn lane 145-foot maximum queue

N Springbrook Road at Haworth Avenue

At the intersection of N Springbrook Road at Haworth Avenue with a traffic signal installed, the northbound left-turn lane is projected to have a maximum queue length of 130 feet by year 2024 buildout conditions. The existing striping of the turn lane allows for approximately 90 feet of storage whereby approximately 40 feet of the 95th percentile queue will extend beyond this space. Although not striped as storage space, there is an additional 50 feet of space beyond the striped queue area that could accommodate this queue without obstructing northbound through traffic at the intersection. Therefore, no queuing related mitigation is necessary at the intersection to accommodate this queue.

Note that all other extended queues that are projected at the intersection when operating under all-way stop-controls are expected to be mitigated following installation of traffic signal. No additional mitigation is necessary or recommended as part of the proposed development application.



N Springbrook Road at OR-99W

At the intersection of N Springbrook Road at OR-99W the northbound/southbound left-turn and right-turn lanes experienced 95th percentile queues in excess of available striped lane storages under the 2029 planning year.

For the northbound left-turn lanes, the maximum queue length of 285 feet exceeds the available striped queue storage of 245 feet by approximately 40 feet. Beyond this striped storage area there is approximately 80 feet of additional storage space for both left-turn lanes that could accommodate this excess queue. Note that the proposed development is not expected to add any trips to the northbound left-turn movement at the intersection. Therefore, no queuing related mitigation is necessary at the intersection to accommodate this queue.

For the northbound right-turn lane, the maximum queue length of 380 feet exceeds the available striped queue storage of 260 feet by approximately 120 feet. Beyond this striped storage area there is approximately 60 feet of additional storage space for the right turn lane prior to extending into a nearby right-in/right-out shopping center intersection along N Springbrook Road. The remaining 60 feet of storage space (which can be equated to the approximate length of 2-3 queued vehicles) can be accommodated within the northbound through lane without significant impact to the through moving traffic or having the total northbound queue extend back to the intersection of N Springbrook Road at Hayes Street. Note that the proposed development is not expected to add any trips to the northbound right-turn movement at the intersection. Therefore, no queuing related mitigation is necessary at the intersection to accommodate this queue.

For the southbound left-turn lanes, the maximum queue length of 230 feet exceeds the available striped queue storage of 115 feet by approximately 115 feet. Beyond this striped storage area there is approximately 50 feet of additional storage space for both left-turn lanes and approximately 90 additional feet of storage for a single left-turn vehicle queue without having queues obstruct the southbound through movement at the intersection. The effective remaining excess queue length is 40 feet which can be equated to a queue of approximately 2 vehicles. This excess 40 feet can be accommodated by the southbound through movement without significant impact to the through moving traffic or having total southbound queues extend back to the adjacent intersection of N Springbrook Road at Haworth Avenue. No queuing related mitigation is necessary at the intersection to accommodate this queue.

For the southbound right-turn lane, the maximum queue length of 145 feet exceeds the available striped queue storage of 125 feet by approximately 20 feet. Beyond this striped storage area there is approximately 50 feet of additional storage space for the right-turn lane before the queue extends into the southbound through lane. Accordingly, this excess 20 feet can be accommodated without impact to the southbound through movement; however, the right-turn queue may partially obstruct the southbound bicycle lane for a short period of time during the evening peak hour under year 2029 conditions. No queuing related mitigation is necessary at the intersection to accommodate this queue.



Analysis Summary

Based on the above review of 95th percentile queues at the study intersections, no queuing related mitigations are recommended at the intersections of N Springbrook Road at Haworth Avenue and N Springbrook Road at OR-99W which are projected to experience occasional 95th percentile queues which exceed available lane storages. All other study intersections and their respective turning movements are provided adequate vehicle storage space. No intersection queuing related mitigation is necessary or recommended as part of the proposed development project.

Turning Movements at Site Access

Based on the queuing analysis, adequate spacing between the proposed site access intersection and the intersection of Haworth Avenue at N Springbrook Road is available to allow un-restricted turning movements at the site access intersection without creating safety issues (i.e. approximately 5 to 10 feet of space will be available between the access intersection and the longest 95th percentile queue).

It should be noted that from a site circulation and safety perspective, allowing un-restricted turning movements at an access point is preferable when only a single driveway serves a land use(s) for the following reasons:

- If served by a single restricted access, significant out of direction travel for vehicles entering and exiting the site will potentially be created. This out of direction travel may increase turning movement volumes at nearby intersections along Haworth Avenue, OR-99W, Deborah Road, and N Springbrook Road.
- Emergency vehicle access to/from the site will be limited, where emergency vehicles would either need to enter/exit the site in the eastbound direction of travel along Haworth Avenue or would be required to make U-turns along Haworth Avenue (U-turn would potentially require multiple forward and backward motions for larger vehicles like a fire truck). This could potentially create extended emergency response times and subsequently unsafe conditions for tenants living in the apartment complex if an emergency incident were to occur.

Given sufficient space between the site access and the 95th percentile eastbound queues at the N Springbrook Road at Haworth Avenue intersection are available and the potential for circulation/safety issues which could occur with a single restricted access point to the site, it is recommended that the proposed apartment complex be allowed an unrestricted full movement access onto Haworth Avenue.



Conclusions

No significant trends or crash patterns were identified at any of the study intersections that are indicative of safety concerns with the exception of the intersection of N Springbrook Road at Haworth Avenue which exhibits a crash rate in excess of 1.00 CMEV. Following installation of a traffic signal at the intersection once sufficient proportionate share contributions have been collected (TSP project I09), it is expected the crash rate will decrease to levels below 1.00 CMEV. Accordingly, no other safety mitigation is recommended per the crash data analysis.

Adequate sight distance is available to the east of the proposed site access intersection to allow safe operation along Haworth Avenue. To the west of the access intersection, sight distances are limited by trees which act as a barrier delineating the property line between the project site and the adjacent shopping center to the west. Provided this obstructing foliage is removed, adequate intersection sight distance of 240 feet or greater can be obtained to the west. No other sight distance related mitigation is necessary or recommended at the access intersection.

Left-turn lane warrants are not projected to be met for the site access intersection along Haworth Avenue under any analysis scenario through year 2029. Accordingly, no new turn lanes are necessary or recommended.

Traffic signal warrants are not projected to be met at any of the unsignalized study intersections by the 2029 planning year based on a review of traffic volumes. Specific to the intersection of N Springbrook Road at Haworth Avenue, Warrant 7 is triggered due to the number of recurring crashes at the intersection that could be mitigated by the installation of a traffic signal. Per the City of Newberg's TSP project 109, a traffic signal is planned for installation at the intersection after sufficient proportionate share contributions have been collected. No other traffic signals are necessary or warranted.

All study intersections are currently operating acceptably per jurisdictional standards and are projected to continue operating acceptably through the 2024 site buildout year and the future 2029 planning year, with the exception of the N Springbrook Road at Haworth Avenue intersection under existing all-way stop-controls. Once a traffic signal is installed at the intersection, City of Newberg mobility targets will be met for the intersection. No additional operational mitigation is necessary or recommended at the study intersections.

No queuing related mitigations are recommended at the intersections of N Springbrook Road at Haworth Avenue and N Springbrook Road at OR-99W which are projected to experience occasional 95th percentile queues which exceed available lane storages. All other study intersections and their respective turning movements are provided adequate vehicle storage space. Accordingly, no intersection queuing related mitigation is necessary or recommended as part of the proposed development project.

Given sufficient space between the site access and the 95th percentile eastbound queues at the N Springbrook Road at Haworth Avenue intersection are available and the potential for circulation/safety issues which could occur with a single restricted access point to the site, it is recommended that the proposed apartment complex be allowed an unrestricted full movement access onto Haworth Avenue.

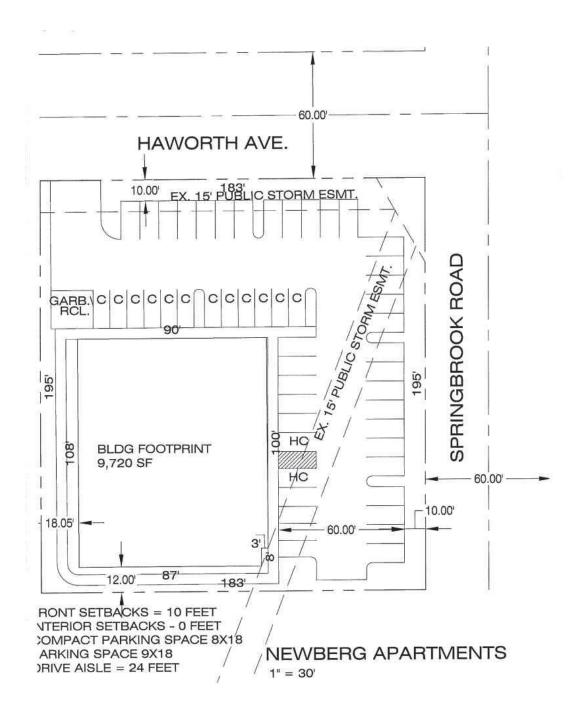


Appendix A

Site Plan



Site Plan



TUALATIN VALLEY FIRE & RESCUE COMMENTS:

Appendix B

Trip Generation Calculations





TRIP GENERATION CALCULATIONS Source: Trip Generation Manual, 11th Edition

Land Use: Multifamily Housing (Low-Rise)

Land Use Code: 220

Land Use Subcategory: Not Close to Rail Transit

Setting/Location General Urban/Suburban

Variable: Dwelling Units

Trip Type: Vehicle

Variable Quantity: 30

AM PEAK HOUR

Trip Rate: 0.4

Enter Exit Total Directional Split 24% 76% Trip Ends 3 9 12

PM PEAK HOUR

Trip Rate: 0.51

	Enter	Exit	Total
Directional Split	63%	37%	
Trip Ends	9	6	15

WEEKDAY

Trip Rate: 6.74

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	101	101	202

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Trip Rate: 4.55

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	68	68	136

Caution: Small Sample Size

Appendix C

Traffic Counts

In-Process Development Trips





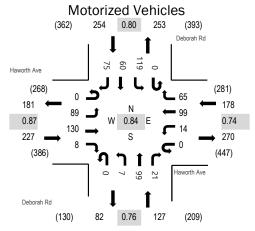
(303) 216-2439 www.alltrafficdata.net Location: 1 Deborah Rd & Haworth Ave AM

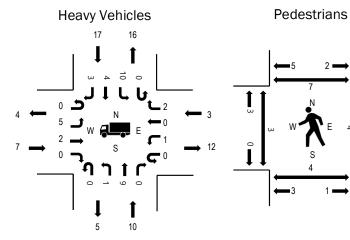
Date: Tuesday, April 19, 2022

Peak Hour: 07:45 AM - 08:45 AM

Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour





Note: Total study counts contained in parentheses.

	HV%	PHF
EB	3.1%	0.87
WB	1.7%	0.74
NB	7.9%	0.76
SB	6.7%	0.80
All	4.7%	0.84

Traffic Counts - Motorized Vehicles

Interval			orth Ave				orth Ave bound			Deboi North	ah Rd bound				rah Rd nbound			Rolling
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour
7:00 AM	0	2	6	0	0	0	4	2	0	0	0	0	0	6	0	1	21	505
7:05 AM	0	3	8	0	0	0	3	3	0	0	9	2	0	2	1	1	32	552
7:10 AM	0	3	10	0	0	0	5	3	0	0	3	2	0	2	2	1	31	587
7:15 AM	0	3	5	3	0	2	6	4	0	0	5	3	0	1	4	1	37	607
7:20 AM	0	0	11	1	0	0	4	4	0	1	5	1	0	1	3	2	33	612
7:25 AM	0	6	6	2	0	0	4	5	0	0	5	1	0	6	1	0	36	637
7:30 AM	0	2	11	0	0	1	5	4	0	0	2	1	0	1	3	3	33	675
7:35 AM	0	10	8	1	0	1	6	1	0	0	10	0	0	6	3	0	46	720
7:40 AM	0	4	14	0	0	1	3	4	0	2	6	2	0	2	3	4	45	752
7:45 AM	0	11	9	1	0	1	6	7	0	0	7	1	0	8	2	2	55	786
7:50 AM	0	7	6	0	0	0	5	4	0	0	7	4	0	17	6	7	63	784
7:55 AM	0	9	7	1	0	2	3	8	0	1	10	4	0	14	7	7	73	764
8:00 AM	0	10	12	1	0	1	7	6	0	0	6	3	0	8	5	9	68	733
8:05 AM	0	6	16	0	0	1	7	4	0	0	6	0	0	14	5	8	67	
8:10 AM	0	4	11	2	0	0	8	6	0	1	7	1	0	3	2	6	51	
8:15 AM	0	3	11	1	0	1	8	2	0	1	6	0	0	3	3	3	42	
8:20 AM	0	11	5	1	0	2	8	6	0	1	7	2	0	7	2	6	58	
8:25 AM	0	5	18	1	0	0	11	4	0	1	13	2	0	9	6	4	74	
8:30 AM	0	10	16	0	0	1	13	4	0	2	11	1	0	10	5	5	78	
8:35 AM	0	5	7	0	0	2	11	6	0	0	10	2	0	18	6	11	78	
8:40 AM	0	8	12	0	0	3	12	8	0	0	9	1	0	8	11	7	79	
8:45 AM	0	1	15	1	0	0	8	2	0	2	5	2	0	5	8	4	53	
8:50 AM	0	4	11	0	0	0	5	5	0	0	3	0	0	8	3	4	43	
8:55 AM	0	3	5	0	0	2	4	2	0	0	7	3	0	10	2	4	42	
Count Total	0	130	240	16	0	21	156	104	0	12	159	38	0	169	93	100	1,238	_
Peak Hour	0	89	130	8	0	14	99	65	0	7	99	21	0	119	60	75	786	_

Location: 1 Deborah Rd & Haworth Ave AM

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval		Hea	avy Vehicle	es	•	Interval		Bicycle	s on Road	lway		Interval	Ped	destrians/E	Bicycles on	Crosswa	lk
Start Time	EB	NB	WB	SB	Total	Start Time	EB	NB	WB	SB	Total	Start Time	EB	NB	WB	SB	Total
7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	0	1	1	0	2	7:15 AM	0	0	0	0	0	7:15 AM	0	1	0	1	2
7:20 AM	1	0	0	1	2	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	0	0	1	0	1	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	0	1	1	0	2	7:30 AM	0	0	0	1	1	7:30 AM	0	0	0	0	0
7:35 AM	1	1	0	0	2	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	1	1
7:40 AM	0	1	0	2	3	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	1	1	0	2	4	7:45 AM	0	0	0	0	0	7:45 AM	2	0	0	0	2
7:50 AM	0	0	0	1	1	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	3	3
7:55 AM	0	1	1	0	2	7:55 AM	0	0	0	0	0	7:55 AM	2	0	0	0	2
8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0	8:00 AM	0	1	0	1	2
8:05 AM	0	1	0	1	2	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	1	1
8:10 AM	0	1	0	0	1	8:10 AM	0	0	0	0	0	8:10 AM	0	0	2	1	3
8:15 AM	2	1	0	0	3	8:15 AM	0	0	0	0	0	8:15 AM	0	2	1	0	3
8:20 AM	2	2	0	1	5	8:20 AM	0	0	0	0	0	8:20 AM	0	1	0	0	1
8:25 AM	0	2	1	1	4	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	1	1
8:30 AM	0	1	0	4	5	8:30 AM	0	0	0	0	0	8:30 AM	0	0	1	0	1
8:35 AM	0	0	1	4	5	8:35 AM	0	0	0	0	0	8:35 AM	1	0	0	0	1
8:40 AM	2	0	0	3	5	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	0	0	0	1	1	8:50 AM	0	0	0	0	0	8:50 AM	0	0	1	0	1
8:55 AM	0	1	0	1	2	8:55 AM	0	0	0	0	0	8:55 AM	0	0	2	0	2
Count Total	9	15	6	22	52	Count Total	0	0	0	1	1	Count Total	5	5	7	9	26
Peak Hour	7	10	3	17	37	Peak Hour	0	0	0	0	0	Peak Hour	5	4	4	7	20

Location: 2 N Springbrook Rd & Haworth Ave AM



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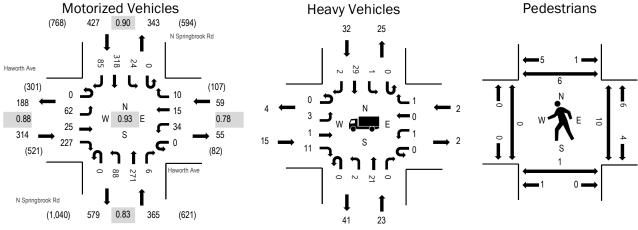
Location: 2 N Springbrook Rd & Haworth Ave AM

Date: Tuesday, April 19, 2022

Peak Hour: 07:45 AM - 08:45 AM

Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	4.8%	0.88
WB	3.4%	0.78
NB	6.3%	0.83
SB	7.5%	0.90
All	6.2%	0.93

Traffic Counts - Motorized Vehicles

mamo odanio	141000	IIZCU	VOITIC	,,,,,														
Interval			orth Ave				orth Ave bound				brook Ro bound	I			brook Rd bound			Rolling
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour
7:00 AM	0	0	0	5	0	1	1	0	0	4	9	0	0	1	19	6	46	943
7:05 AM	0	6	0	14	0	1	1	0	0	1	12	0	0	1	21	0	57	990
7:10 AM	0	3	0	20	0	2	1	2	0	5	19	0	0	2	21	11	86	1,027
7:15 AM	0	3	0	8	0	4	1	0	0	3	12	0	0	1	21	4	57	1,023
7:20 AM	0	2	0	18	0	0	2	1	0	6	13	0	0	1	23	6	72	1,064
7:25 AM	0	4	0	13	0	4	0	0	0	12	26	0	0	0	27	1	87	1,081
7:30 AM	0	2	1	16	0	3	0	1	0	1	19	0	0	0	21	8	72	1,087
7:35 AM	0	4	1	14	0	0	1	0	0	4	20	0	0	0	28	4	76	1,119
7:40 AM	0	5	1	12	0	2	2	0	0	5	25	0	0	1	33	2	88	1,147
7:45 AM	0	3	0	16	0	1	1	0	0	5	30	1	0	0	24	8	89	1,165
7:50 AM	0	5	2	25	0	2	0	0	0	11	33	0	0	2	24	8	112	1,152
7:55 AM	0	7	2	20	0	5	1	2	0	8	20	0	0	2	32	2	101	1,115
8:00 AM	0	5	1	22	0	3	0	0	0	5	22	1	0	0	27	7	93	1,074
8:05 AM	0	2	2	20	0	1	1	1	0	6	18	1	0	1	30	11	94	
8:10 AM	0	6	2	18	0	3	1	1	0	9	20	0	0	1	19	2	82	
8:15 AM	0	8	2	11	0	1	1	1	0	7	25	0	0	6	29	7	98	
8:20 AM	0	4	1	16	0	2	2	2	0	4	28	0	0	3	18	9	89	
8:25 AM	0	6	6	14	0	3	2	1	0	4	21	0	0	4	23	9	93	
8:30 AM	0	4	2	23	0	4	1	0	0	10	18	1	0	3	34	4	104	
8:35 AM	0	6	1	24	0	5	3	2	0	11	18	0	0	0	28	6	104	
8:40 AM	0	6	4	18	0	4	2	0	0	8	18	2	0	2	30	12	106	
8:45 AM	0	4	2	12	0	4	1	1	0	3	18	1	0	2	26	2	76	
8:50 AM	0	5	3	15	0	3	0	5	0	5	16	0	0	2	18	3	75	
8:55 AM	0	3	3	8	0	3	1	0	0	4	11	2	0	2	21	2	60	
Count Total	0	103	36	382	0	61	26	20	0	141	471	9	0	37	597	134	2,017	
Peak Hour	0	62	25	227	0	34	15	10	0	88	271	6	0	24	318	85	1,165	<u> </u>

Location: 2 N Springbrook Rd & Haworth Ave AM

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval		Hea	avy Vehicle	es	•	Interval	•	Bicycle	es on Road	dway		Interval	Ped	destrians/E	Bicycles on	Crosswa	lk
Start Time	EB	NB	WB	SB	Total	Start Time	EB	NB	WB	SB	Total	Start Time	EB	NB	WB	SB	Total
7:00 AM	0	2	0	0	2	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	0	3	0	2	5	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	0	0	0	1	1	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	1	1
7:20 AM	0	1	0	2	3	7:20 AM	0	0	0	0	0	7:20 AM	1	0	0	0	1
7:25 AM	0	4	0	1	5	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	1	3	1	0	5	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	0	1	0	0	1	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	1	1	1	2	5	7:40 AM	0	0	0	0	0	7:40 AM	0	1	0	0	1
7:45 AM	0	4	0	0	4	7:45 AM	0	0	0	0	0	7:45 AM	0	0	4	2	6
7:50 AM	1	0	0	2	3	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	1	1
7:55 AM	0	3	0	1	4	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	2	1	0	1	4	8:00 AM	0	0	0	0	0	8:00 AM	0	1	0	0	1
8:05 AM	0	4	0	1	5	8:05 AM	0	0	0	0	0	8:05 AM	0	0	1	0	1
8:10 AM	2	2	0	1	5	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	0	1	0	4	5	8:15 AM	0	0	0	0	0	8:15 AM	0	0	1	1	2
8:20 AM	1	4	0	1	6	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	3	2	1	5	11	8:25 AM	0	0	0	0	0	8:25 AM	0	0	2	0	2
8:30 AM	1	2	1	8	12	8:30 AM	0	0	0	0	0	8:30 AM	0	0	2	0	2
8:35 AM	5	0	0	3	8	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	1	1
8:40 AM	0	0	0	5	5	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	1	1
8:45 AM	0	0	1	2	3	8:45 AM	0	0	0	0	0	8:45 AM	0	0	1	0	1
8:50 AM	1	2	0	1	4	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	0	1	0	2	3	8:55 AM	0	0	0	0	0		0	1	1	0	2
Count Total	18	41	5	45	109	Count Total	0	0	0	0	0	Count Total	1	3	12	7	23
Peak Hour	15	23	2	32	72	Peak Hour	0	0	0	0	0	Peak Hour	0	1	10	6	17



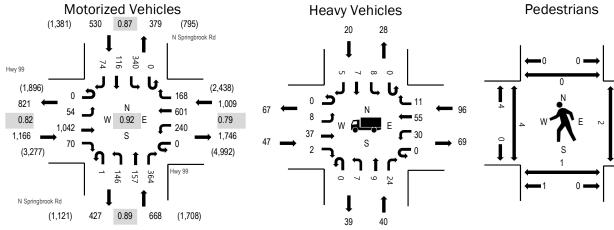
(303) 216-2439 www.alltrafficdata.net **Location:** 1 N Springbrook Rd & Hwy 99 AM

Date: Tuesday, April 19, 2022

Peak Hour: 07:25 AM - 08:25 AM

Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	4.0%	0.82
WB	9.5%	0.79
NB	6.0%	0.89
SB	3.8%	0.87
All	6.0%	0.92

Traffic Counts - Motorized Vehicles

Interval			yy 99 oound				y 99 bound				brook Rd		I		brook Rd			Rolling
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour
6:00 AM	0	1	55	0	0	15	13	3	0	3	3	16	0	21	7	1	138	2,423
6:05 AM	0	0	97	0	0	9	18	2	0	3	2	14	0	19	0	2	166	2,487
6:10 AM	0	0	57	1	0	10	11	1	0	2	2	25	0	25	6	2	142	2,563
6:15 AM	0	0	99	1	0	15	15	4	0	3	3	24	0	16	1	1	182	2,684
6:20 AM	0	2	76	2	0	7	8	4	0	3	5	28	0	15	2	2	154	2,752
6:25 AM	0	1	125	5	0	15	22	6	0	4	7	31	0	17	6	2	241	2,828
6:30 AM	0	0	82	1	0	16	25	7	0	3	8	35	0	29	6	0	212	2,863
6:35 AM	0	0	124	3	0	14	28	3	0	0	7	40	0	19	8	1	247	2,928
6:40 AM	0	0	112	4	0	13	23	5	0	5	4	38	0	33	7	1	245	2,967
6:45 AM	0	0	122	2	0	16	28	4	0	5	5	29	0	21	10	4	246	3,015
6:50 AM	0	3	76	3	0	22	28	4	0	4	9	30	0	19	8	3	209	3,086
6:55 AM	0	2	95	2	0	16	56	7	0	4	6	24	0	19	7	3	241	3,168
7:00 AM	0	1	59	1	0	30	29	3	0	5	11	32	0	26	5	0	202	3,240
7:05 AM	0	1	103	3	0	22	38	5	0	8	5	24	0	25	5	3	242	3,289
7:10 AM	0	3	78	2	0	22	38	11	0	7	15	43	0	31	10	3	263	3,327
7:15 AM	0	1	105	7	0	18	46	11	0	7	6	17	0	25	4	3	250	3,325
7:20 AM	0	0	62	1	0	18	49	7	0	2	11	34	0	33	9	4	230	3,338
7:25 AM	0	3	107	7	0	19	36	24	0	9	12	23	0	22	9	5	276	3,373
7:30 AM	0	1	93	9	0	22	37	6	0	8	16	44	0	30	6	5	277	3,355
7:35 AM	0	5	105	5	0	22	57	8	0	11	4	34	0	23	4	8	286	3,353
7:40 AM	0	4	83	3	0	29	41	10	0	12	21	42	0	28	11	9	293	3,327
7:45 AM	0	5	92	5	0	14	75	22	0	16	11	28	0	35	9	5	317	3,288
7:50 AM	0	8	64	4	0	27	61	21	0	15	18	32	0	23	13	5	291	3,261
7:55 AM	0	5	97	4	0	27	62	15	0	12	11	25	0	33	13	9	313	3,218
8:00 AM	0	4	53	6	0	15	44	17	0	18	13	32	0	32	9	8	251	3,141
8:05 AM	0	5	88	10	0	26	40	11	1	6	9	30	0	28	19	7	280	
8:10 AM	0	3	88	10	0	9	39	15	0	13	13	31	0	32	5	3	261	
8:15 AM	0	6	68	3	0	20	51	10	0	14	12	27	0	33	12	7	263	

Location: 1 N Springbrook Rd & Hwy 99 AM

				-													
8:20 AM	0	5	104	4	0	10	58	9	0	12	17	16	0	21	6	3	265
8:25 AM	0	6	62	6	0	23	41	11	0	10	26	36	0	27	8	2	258
8:30 AM	0	5	82	5	0	20	56	12	0	20	5	20	0	25	20	5	275
8:35 AM	0	3	53	2	0	24	54	6	0	4	20	28	0	38	21	7	260
8:40 AM	0	6	82	4	0	19	52	12	0	12	10	12	0	30	8	7	254
8:45 AM	0	4	63	7	0	20	65	8	0	15	19	36	0	29	20	4	290
8:50 AM	0	3	67	5	0	23	59	13	0	13	7	27	0	16	7	8	248
8:55 AM	0	3	59	4	0	22	46	3	0	13	23	23	0	27	9	4	236
Count Total	0	99	3,037	141	0	669	1,449	320	1	301	376	1,030	0	925	310	146	8,804
Peak Hour	0	54	1,042	70	0	240	601	168	1	146	157	364	0	340	116	74	3,373

Location: 1 N Springbrook Rd & Hwy 99 AM

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval		Hea	avy Vehicle	es		Interval	•	Bicycle	es on Road	dway		Interval	Ped	destrians/l	Bicycles on	Crosswa	lk
Start Time	EB	NB	WB	SB	Total	Start Time	EB	NB	WB	SB	Total	Start Time	EB	NB	WB	SB	Total
6:00 AM	1	1	0	0	2	6:00 AM	0	0	0	0	0	6:00 AM	0	0	0	0	0
6:05 AM	1	0	1	0	2	6:05 AM	0	0	0	0	0	6:05 AM	0	0	0	0	0
6:10 AM	2	1	0	1	4	6:10 AM	0	0	0	0	0	6:10 AM	1	0	0	0	1
6:15 AM	2	0	3	0	5	6:15 AM	0	0	0	0	0	6:15 AM	0	0	0	0	0
6:20 AM	0	2	2	2	6	6:20 AM	0	0	0	0	0	6:20 AM	0	0	0	0	0
6:25 AM	4	1	3	0	8	6:25 AM	0	0	0	0	0	6:25 AM	0	0	0	0	0
6:30 AM	4	1	7	0	12	6:30 AM	0	0	0	0	0	6:30 AM	0	0	0	0	0
6:35 AM	3	2	4	1	10	6:35 AM	0	0	0	0	0	6:35 AM	0	0	0	0	0
6:40 AM	1	1	5	2	9	6:40 AM	0	0	0	0	0	6:40 AM	0	0	0	0	0
6:45 AM	2	1	3	0	6	6:45 AM	0	0	0	0	0	6:45 AM	0	0	0	0	0
6:50 AM	1	2	2	1	6	6:50 AM	0	0	0	0	0	6:50 AM	0	0	0	0	0
6:55 AM	2	6	6	0	14	6:55 AM	0	0	0	0	0	6:55 AM	0	0	0	0	0
7:00 AM	4	5	5	2	16	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	2	0	8	2	12	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	2	2	5	0	9	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	1	0	10	0	11	7:15 AM	0	0	0	0	0	7:15 AM	0	1	0	0	1
7:20 AM	1	1	6	2	10	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	5	3	10	0	18	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	1	5	7	1	14	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	5	2	7	1	15	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	1	1	11	4	17	7:40 AM	0	0	0	0	0	7:40 AM	2	0	1	0	3
7:45 AM	7	5	7	0	19	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	4	4	6	2	16	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	3	1	7	1	12	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	0	2	8	1	11	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	1	5	12	2	20	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	7	4	7	2	20	8:10 AM	0	0	0	0	0	8:10 AM	1	1	1	0	3
8:15 AM	5	6	4	4	19	8:15 AM	0	0	0	0	0	8:15 AM	1	0	0	0	1
8:20 AM	8	2	10	2	22	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	5	1	5	2	13	8:25 AM	0	0	0	0	0	8:25 AM	1	0	0	0	1
8:30 AM	5	1	4	9	19	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	2	1	11	9	23	8:35 AM	0	0	0	0	0	8:35 AM	1	0	0	0	1
8:40 AM	5	1	6	5	17	8:40 AM	0	0	0	0	0	8:40 AM	1	0	1	0	2
8:45 AM	4	1	5	3	13	8:45 AM	0	0	0	0	0	8:45 AM	1	0	0	0	1
8:50 AM	4	2	4	2	12	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	1	5	7	2	15	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	106	78	208	65	457	Count Total	0	0	0	0	0	Count Total	9	2	3	0	14
Peak Hour	47	40	96	20	203	Peak Hour	0	0	0	0	0	Peak Hour	4	1	2	0	7



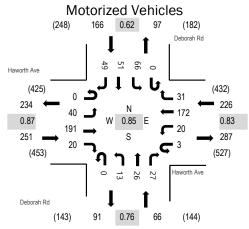
(303) 216-2439 www.alltrafficdata.net Location: 1 Deborah Rd & Haworth Ave PM

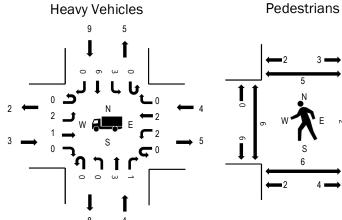
Date: Tuesday, April 19, 2022

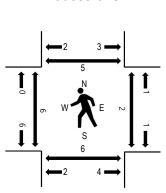
Peak Hour: 04:00 PM - 05:00 PM

Peak 15-Minutes: 04:00 PM - 04:15 PM

Peak Hour







Note: Total study counts contained in parentheses.

	HV%	PHF
EB	1.2%	0.87
WB	1.8%	0.83
NB	6.1%	0.76
SB	5.4%	0.62
All	2.8%	0.85

Traffic Counts - Motorized Vehicles

Interval			orth Ave				orth Ave bound				rah Rd nbound			Debor South	ah Rd bound			Rolling
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour
4:00 PM	0	6	17	3	0	1	12	4	0	1	1	2	0	9	13	11	80	709
4:05 PM	0	4	13	3	0	2	16	3	0	2	2	3	0	10	3	5	66	668
4:10 PM	0	1	16	0	3	1	21	0	0	3	0	1	0	5	3	8	62	647
4:15 PM	0	2	17	1	0	1	17	3	0	1	1	5	0	7	2	3	60	640
4:20 PM	0	2	11	2	0	1	12	0	0	1	2	2	0	5	7	3	48	621
4:25 PM	0	6	16	2	0	1	17	2	0	0	6	0	0	7	4	2	63	616
4:30 PM	0	4	12	2	0	2	14	9	0	1	4	2	0	4	5	3	62	594
4:35 PM	0	2	17	1	0	2	20	1	0	1	1	2	0	8	1	4	60	574
4:40 PM	0	3	14	2	0	4	9	1	0	1	2	1	0	3	2	1	43	575
4:45 PM	0	4	18	4	0	4	10	3	0	1	3	2	0	5	1	1	56	587
4:50 PM	0	6	19	0	0	1	13	2	0	0	4	5	0	0	4	4	58	581
4:55 PM	0	0	21	0	0	0	11	3	0	1	0	2	0	3	6	4	51	576
5:00 PM	0	5	6	2	0	1	12	1	0	0	3	3	0	2	1	3	39	568
5:05 PM	0	0	12	0	0	4	13	2	0	3	4	3	0	0	2	2	45	
5:10 PM	0	1	16	0	0	0	19	2	0	1	3	7	0	5	0	1	55	
5:15 PM	0	3	20	0	0	2	10	0	0	0	1	2	0	1	1	1	41	
5:20 PM	0	1	14	0	0	0	15	3	0	0	5	1	0	2	1	1	43	
5:25 PM	0	1	14	0	0	1	14	1	0	1	3	2	0	2	1	1	41	
5:30 PM	0	1	10	0	0	1	9	4	0	1	2	6	0	6	2	0	42	
5:35 PM	0	1	20	0	0	3	10	3	0	1	4	2	0	6	7	4	61	
5:40 PM	0	1	8	2	0	4	20	4	0	0	4	2	0	5	4	1	55	
5:45 PM	0	2	19	2	0	1	11	4	0	1	3	0	0	1	1	5	50	
5:50 PM	0	4	20	2	0	3	15	1	0	0	3	1	0	2	2	0	53	
5:55 PM	0	0	15	0	0	1	10	2	0	3	3	0	0	5	1	3	43	
Count Total	0	60	365	28	3	41	330	58	0	24	64	56	0	103	74	71	1,277	
Peak Hour	0	40	191	20	3	20	172	31	0	13	26	27	0	66	51	49	709	

Location: 1 Deborah Rd & Haworth Ave PM

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval		Hea	avy Vehicle	es	•	Interval		Bicycle	es on Road	lway		Interval	Ped	destrians/E	Bicycles on	Crosswa	lk
Start Time	EB	NB	WB	SB	Total	Start Time	EB	NB	WB	SB	Total	Start Time	EB	NB	WB	SB	Total
4:00 PM	1	0	0	5	6	4:00 PM	0	0	0	0	0	4:00 PM	1	2	0	0	3
4:05 PM	0	1	1	1	3	4:05 PM	0	0	0	0	0	4:05 PM	2	0	1	1	4
4:10 PM	0	0	0	2	2	4:10 PM	1	0	0	0	1	4:10 PM	0	0	0	0	0
4:15 PM	0	0	1	0	1	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	1	1
4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0	4:20 PM	1	2	1	0	4
4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	1	0	0	1	4:30 PM	0	0	1	0	1	4:30 PM	0	0	0	0	0
4:35 PM	0	0	1	1	2	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0	4:40 PM	2	2	0	1	5
4:45 PM	2	1	0	0	3	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	2	2
4:50 PM	0	1	1	0	2	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0	5:00 PM	0	0	1	0	1
5:05 PM	0	0	0	1	1	5:05 PM	0	0	0	0	0	5:05 PM	1	0	1	0	2
5:10 PM	0	0	1	0	1	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0	5:25 PM	0	2	0	0	2
5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0	5:30 PM	0	1	0	0	1
5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0	5:35 PM	0	0	1	1	2
5:40 PM	0	0	0	0	0	5:40 PM	0	1	0	0	1	5:40 PM	0	2	0	0	2
5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0	5:45 PM	0	0	2	0	2
5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0	5:50 PM	1	0	0	0	1
5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	3	4	5	10	22	Count Total	1	1	1	0	3	Count Total	8	11	7	6	32
Peak Hour	3	4	4	9	20	Peak Hour	1	0	1	0	2	Peak Hour	6	6	2	5	19

Location: 2 N Springbrook Rd & Haworth Ave PM



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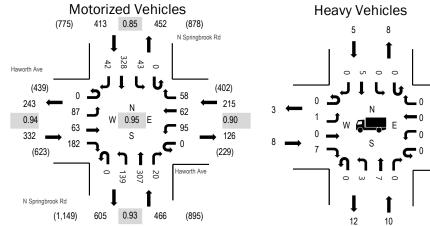
Location: 2 N Springbrook Rd & Haworth Ave PM

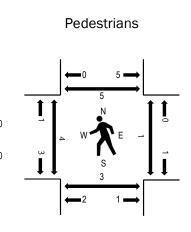
Date: Tuesday, April 19, 2022

Peak Hour: 04:00 PM - 05:00 PM

Peak 15-Minutes: 04:05 PM - 04:20 PM

Peak Hour





Note: Total study counts contained in parentheses.

	HV%	PHF
EB	2.4%	0.94
WB	0.0%	0.90
NB	2.1%	0.93
SB	1.2%	0.85
All	1.6%	0.95

Traffic Counts - Motorized Vehicles

Interval		Eastb		-		Westl	orth Ave			North	brook Rd bound			South	brook Rd bound			Rolling
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour
4:00 PM	0	8	2	23	0	14	6	2	0	14	23	1	0	3	26	3	125	1,426
4:05 PM	0	8	7	20	0	9	9	0	0	17	29	0	0	0	32	2	133	1,402
4:10 PM	0	3	5	10	0	6	5	7	0	11	25	0	0	4	37	2	115	1,378
4:15 PM	0	5	3	20	0	8	5	6	0	11	28	4	0	1	31	5	127	1,380
4:20 PM	0	4	6	17	0	2	5	4	0	9	18	2	0	5	29	8	109	1,372
4:25 PM	0	3	7	13	0	4	3	6	0	19	21	2	0	3	27	2	110	1,361
4:30 PM	0	9	11	18	0	10	5	5	0	12	28	1	0	4	28	5	136	1,349
4:35 PM	0	10	4	11	0	7	6	4	0	7	26	2	0	5	24	7	113	1,330
4:40 PM	0	8	4	9	0	5	8	5	0	6	32	3	0	5	23	2	110	1,331
4:45 PM	0	13	3	16	0	11	5	5	0	14	26	3	0	4	25	2	127	1,328
4:50 PM	0	11	3	10	0	7	0	6	0	11	24	1	0	6	23	2	104	1,299
4:55 PM	0	5	8	15	0	12	5	8	0	8	27	1	0	3	23	2	117	1,292
5:00 PM	0	8	4	12	0	10	1	4	0	12	24	1	0	3	20	2	101	1,269
5:05 PM	0	8	2	10	0	7	7	6	0	9	22	5	0	4	26	3	109	
5:10 PM	0	7	8	18	0	6	4	3	0	12	25	2	0	3	26	3	117	
5:15 PM	0	3	4	19	0	8	4	2	0	9	26	0	0	1	39	4	119	
5:20 PM	0	7	1	13	0	8	4	3	0	7	26	2	0	1	25	1	98	
5:25 PM	0	6	2	13	0	8	5	4	0	6	27	2	0	4	15	6	98	
5:30 PM	0	10	4	16	0	11	4	7	0	10	24	3	0	3	22	3	117	
5:35 PM	0	6	5	14	0	5	5	8	0	9	26	1	0	2	31	2	114	
5:40 PM	0	3	4	10	0	8	7	3	0	13	22	1	0	2	30	4	107	
5:45 PM	0	6	6	13	0	7	4	4	0	7	24	1	0	4	21	1	98	
5:50 PM	0	4	4	19	0	2	2	3	1	9	26	1	0	5	15	6	97	
5:55 PM	0	5	6	11	0	6	4	3	0	3	31	0	0	2	19	4	94	
Count Total	0	160	113	350	0	181	113	108	1	245	610	39	0	77	617	81	2,695	_
Peak Hour	0	87	63	182	0	95	62	58	0	139	307	20	0	43	328	42	1,426	_

Location: 2 N Springbrook Rd & Haworth Ave PM

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval		Hea	avy Vehicle	es	-	Interval		Bicycle	s on Road	dway		Interval	Pe	destrians/E	Bicycles on	Crosswa	lk
Start Time	EB	NB	WB	SB	Total	Start Time	EB	NB	WB	SB	Total	Start Time	EB	NB	WB	SB	Total
4:00 PM	1	3	0	1	5	4:00 PM	0	0	0	0	0	4:00 PM	1	0	0	0	1
4:05 PM	0	1	0	0	1	4:05 PM	1	0	0	0	1	4:05 PM	0	0	0	0	0
4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	1	1
4:15 PM	1	1	0	0	2	4:15 PM	0	0	0	2	2	4:15 PM	1	1	1	1	4
4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	2	0	2	4	4:25 PM	0	1	0	0	1	4:25 PM	0	0	0	1	1
4:30 PM	1	1	0	0	2	4:30 PM	0	0	0	0	0	4:30 PM	1	0	0	0	1
4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0	4:40 PM	0	1	0	0	1
4:45 PM	2	1	0	0	3	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	1	1
4:50 PM	1	1	0	0	2	4:50 PM	0	0	0	0	0	4:50 PM	1	1	0	0	2
4:55 PM	2	0	0	2	4	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	1	1
5:00 PM	0	1	0	0	1	5:00 PM	1	0	0	0	1	5:00 PM	0	1	0	1	2
5:05 PM	0	1	0	2	3	5:05 PM	0	0	0	0	0	5:05 PM	1	0	0	1	2
5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	2	0	1	3	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	1	0	1	2	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	1	1	5:25 PM	0	0	0	1	1
5:30 PM	0	1	0	0	1	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	1	1
5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0	5:35 PM	2	0	0	0	2
5:40 PM	0	1	0	1	2	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	1	0	0	1	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	2	2
5:50 PM	0	1	0	0	1	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0	5:55 PM	0	1	1	0	2
Count Total	8	19	0	10	37	Count Total	2	1	0	3	6	Count Total	7	5	2	11	25
Peak Hour	8	10	0	5	23	Peak Hour	1	1	0	2	4	Peak Hour	4	3	1	5	13



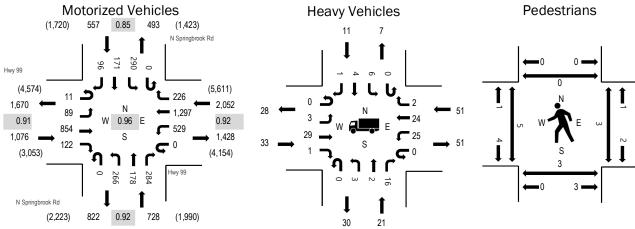
(303) 216-2439 www.alltrafficdata.net Location: 1 N Springbrook Rd & Hwy 99 PM

Date: Tuesday, April 19, 2022

Peak Hour: 04:15 PM - 05:15 PM

Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	3.1%	0.91
WB	2.5%	0.92
NB	2.9%	0.92
SB	2.0%	0.85
All	2.6%	0.96

Traffic Counts - Motorized Vehicles

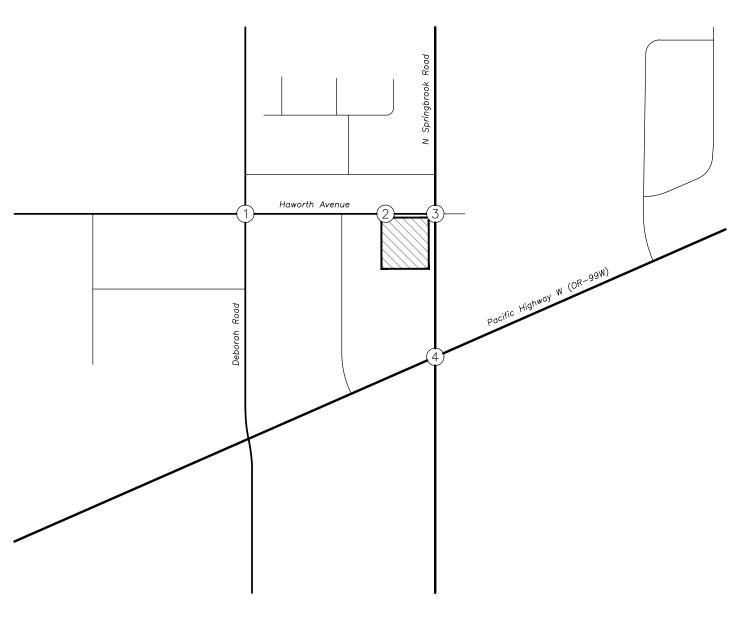
Interval			y 99 oound				y 99 bound				brook Rd		I		brook Rd bound			Rolling
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour
3:00 PM	0	5	71	9	0	23	69	12	0	24	8	18	0	41	13	4	297	3,846
3:05 PM	2	9	69	7	0	31	79	24	0	18	10	21	0	28	12	3	313	3,923
3:10 PM	0	2	92	12	0	30	106	16	0	12	13	18	0	22	4	5	332	3,943
3:15 PM	0	9	76	4	0	39	94	17	0	18	9	9	0	20	10	12	317	3,983
3:20 PM	0	5	50	9	0	27	85	16	0	17	8	16	0	22	6	8	269	4,068
3:25 PM	0	9	53	5	0	24	97	17	0	17	19	25	0	16	11	6	299	4,131
3:30 PM	0	9	70	11	0	36	68	11	0	24	14	20	0	30	16	9	318	4,186
3:35 PM	1	6	61	6	0	42	89	18	0	20	11	22	0	38	14	8	336	4,251
3:40 PM	0	13	65	8	0	34	84	21	0	24	13	19	0	26	9	6	322	4,278
3:45 PM	0	10	62	9	0	32	100	16	0	19	7	23	0	20	17	7	322	4,291
3:50 PM	0	4	69	8	0	46	103	23	0	27	18	19	0	28	11	14	370	4,331
3:55 PM	0	7	67	13	0	40	95	29	0	14	12	16	0	26	19	13	351	4,330
4:00 PM	0	8	73	8	0	42	101	21	0	18	12	30	0	31	15	15	374	4,338
4:05 PM	0	11	59	9	0	46	72	27	0	20	12	20	0	26	23	8	333	4,368
4:10 PM	1	10	66	7	0	43	102	22	0	24	13	19	0	39	17	9	372	4,394
4:15 PM	0	12	65	3	0	60	103	25	0	26	13	25	0	39	22	9	402	4,413
4:20 PM	0	7	73	10	0	36	104	18	0	13	7	16	0	30	13	5	332	4,350
4:25 PM	3	9	59	11	0	47	102	20	0	21	13	27	0	21	19	2	354	4,371
4:30 PM	2	9	81	8	0	45	115	21	0	22	16	19	0	24	11	10	383	4,359
4:35 PM	0	5	77	11	0	38	107	17	0	16	22	30	0	19	12	9	363	4,323
4:40 PM	0	9	53	7	0	32	96	15	0	30	17	26	0	18	21	11	335	4,294
4:45 PM	0	4	76	11	0	53	82	20	0	23	14	22	0	37	13	7	362	4,338
4:50 PM	1	13	60	13	0	57	104	16	0	25	16	28	0	20	10	6	369	4,301
4:55 PM	0	7	68	10	0	35	129	17	0	21	15	19	0	23	8	7	359	4,227
5:00 PM	0	5	87	11	0	56	123	19	0	24	12	22	0	23	12	10	404	4,190
5:05 PM	0	2	76	15	0	36	115	14	0	21	18	17	0	20	14	11	359	
5:10 PM	5	7	79	12	0	34	117	24	0	24	15	33	0	16	16	9	391	
5:15 PM	0	8	57	12	0	36	87	21	0	23	13	22	0	32	18	10	339	

Location:	1 N Sprin	gbrook	Rd & F	lwy 99	PM													
5:20 PM	0	9	67	6	0	37	109	15	0	24	12	19	0	35	13	7	353	
5:25 PM	0	12	64	7	0	49	89	16	0	23	13	19	0	21	19	10	342	
5:30 PM	0	8	80	10	0	45	107	15	0	11	13	25	0	16	14	3	347	
5:35 PM	0	9	71	10	0	28	113	18	0	15	8	22	0	23	14	3	334	
5:40 PM	1	4	87	3	0	52	105	19	0	18	18	19	0	30	14	9	379	
5:45 PM	0	4	46	9	0	44	98	17	1	16	15	21	0	23	16	15	325	
5:50 PM	0	8	51	7	0	24	91	20	0	25	13	19	0	27	6	4	295	
5:55 PM	0	8	61	9	0	32	89	14	0	23	14	28	0	30	9	5	322	
Count Total	16	276	2,441	320	0	1,411	3,529	671	1	740	476	773	0	940	491	289	12,374	
Peak Hour	11	89	854	122	0	529	1,297	226	0	266	178	284	0	290	171	96	4,413	

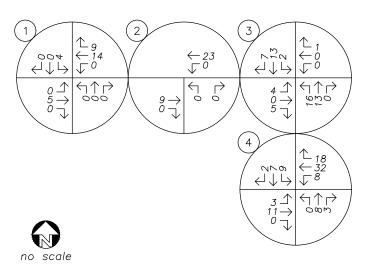
Location: 1 N Springbrook Rd & Hwy 99 PM

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

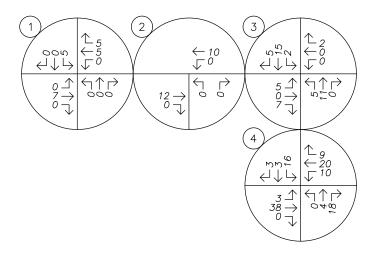
Interval		Hea	avy Vehicle	es	-	Interval	·	Bicycle	es on Road	dway		Interval	Ped	destrians/l	Bicycles on	Crosswa	lk
Start Time	EB	NB	WB	SB	Total	Start Time	EB	NB	WB	SB	Total	Start Time	EB	NB	WB	SB	Total
3:00 PM	4	0	5	3	12	3:00 PM	0	0	0	0	0	3:00 PM	0	0	1	0	1
3:05 PM	1	4	8	2	15	3:05 PM	0	0	0	0	0	3:05 PM	0	0	0	0	0
3:10 PM	5	0	4	1	10	3:10 PM	0	0	0	0	0	3:10 PM	0	0	0	0	0
3:15 PM	2	1	5	1	9	3:15 PM	0	0	0	0	0	3:15 PM	0	0	0	0	0
3:20 PM	2	0	10	2	14	3:20 PM	0	0	0	0	0	3:20 PM	0	0	0	0	0
3:25 PM	2	1	4	2	9	3:25 PM	0	0	0	0	0	3:25 PM	0	0	1	0	1
3:30 PM	4	1	8	3	16	3:30 PM	0	0	0	0	0	3:30 PM	0	0	0	0	0
3:35 PM	3	1	4	2	10	3:35 PM	0	0	0	0	0	3:35 PM	1	2	0	0	3
3:40 PM	4	3	2	3	12	3:40 PM	0	0	0	0	0	3:40 PM	0	0	0	0	0
3:45 PM	5	4	6	1	16	3:45 PM	0	0	0	0	0	3:45 PM	1	0	0	0	1
3:50 PM	3	1	8	0	12	3:50 PM	0	0	0	0	0	3:50 PM	0	0	1	0	1
3:55 PM	4	3	8	1	16	3:55 PM	0	0	0	0	0	3:55 PM	1	0	2	0	3
4:00 PM	4	1	5	3	13	4:00 PM	0	0	0	0	0	4:00 PM	2	0	0	0	2
4:05 PM	2	1	6	0	9	4:05 PM	0	0	0	0	0	4:05 PM	1	2	0	0	3
4:10 PM	2	1	5	0	8	4:10 PM	0	0	0	0	0	4:10 PM	0	1	1	0	2
4:15 PM	3	6	7	1	17	4:15 PM	0	0	0	0	0	4:15 PM	2	2	0	0	4
4:20 PM	4	0	2	0	6	4:20 PM	0	0	0	0	0	4:20 PM	0	1	1	0	2
4:25 PM	0	1	7	2	10	4:25 PM	0	0	1	0	1	4:25 PM	0	0	0	0	0
4:30 PM	4	0	9	0	13	4:30 PM	0	0	0	0	0	4:30 PM	1	0	0	0	1
4:35 PM	0	2	6	1	9	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	5	2	3	0	10	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	4	1	3	2	10	4:45 PM	0	0	0	0	0	4:45 PM	1	0	0	0	1
4:50 PM	3	4	4	0	11	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	2	5	1	8	4:55 PM	0	0	0	0	0	4:55 PM	0	0	1	0	1
5:00 PM	5	1	2	3	11	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	1	1	1	1	4	5:05 PM	0	0	0	0	0	5:05 PM	0	0	1	0	1
5:10 PM	4	1	2	0	7	5:10 PM	0	0	0	0	0	5:10 PM	1	0	0	0	1
5:15 PM	4	1	3	0	8	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	1	1	1	3	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	0	3	1	4	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	2	1	0	3	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	1	0	2	0	3	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	2	2
5:40 PM	1	1	1	1	4	5:40 PM	0	0	0	0	0	5:40 PM	0	0	1	0	1
5:45 PM	2	1	2	0	5	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	1	2	3	0	6	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	1	1	0	2	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	89	52	156	38	335	Count Total	0	0	1	0	1	Count Total	11	8	10	2	31
Peak Hour	33	21	51	11	116	Peak Hour	0	0	1	0	1	Peak Hour	5	3	3	0	11







PM PEAK HOUR





Appendix D

Crash History Data



URBAN NON-SYSTEM CRASH LISTING

CITY OF NEWBERG, YAMHILL COUNTY

HAWORTH AVE and DEBORAH ST, City of Newberg, Yamhill County, 01/01/2016 to 12/31/2020

1 - 4 of 7 Crash records shown.

S D M																				
SER# P R J S	W DATE CLASS	s (CITY STREET		INT-TYPE					SPCL USE										
INVEST E A U I C	O DAY DIST	' 1	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE			A	S					
RD DPT E L G N H	R TIME FROM		SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E L	ICNS	PED			
UNLOC? D C S V L			LRS	LOCTN	(#LANES)		DRVWY	LIGHT	SVRTY	V# TYPE	ТО	P# TYPE	SVRTY	Z E	X R	ES	LOC	ERROR	ACT EVENT	CAUSE
00163 N N N N	N 02/23/2017	17	DEBORAH ST	INTER	CROSS	N	N	RAIN	ANGL-OTH	01 NONE 0	STRGHT									02
CITY	TH 0	1	HAWORTH AVE	CN		STOP SIGN	N	WET	ANGL	PRVTE	E -W								000	00
N	6P			02	0		N	DLIT	INJ	PSNGR CAR		01 DRVR	NONE	21	M N	-VAL		028	000	02
N	45 18 28.74 -122 59.39														0	R<25				
	39.39	9								02 NONE 0	STRGHT									
										PRVTE	S -N								015	00
										PSNGR CAR		01 DRVR	INJC	36		R-Y R<25		000	000	00
										02 NONE 0 PRVTE	STRGHT S -N								015	00
										PSNGR CAR	2 -N	02 PSNG	INJC	13	М			000	000	00
00784 N N N N	08/14/2019	17	DEBORAH ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01 NONE 9	STRGHT									03,02
NONE	WE 0	1	HAWORTH AVE	CN		STOP SIGN	N	DRY	TURN	N/A	E -W								000	00
N	2P			01	0		N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk U	NK		000	000	00
N	45 18 28.75 -122 59.38														U	NK				
	39.30	o .								02 NONE 9	TURN-L									
										N/A	S -W								015	00
										PSNGR CAR		01 DRVR	NONE	00		NK NK		000	000	00
00118 N N N	02/10/2020	17	DEBORAH ST	INTER	CROSS	N	N	CLR	BIKE	01 NONE	TURN-L									03,02
CITY	MO 0		HAWORTH AVE	CN		STOP SIGN	N	DRY	ANGL	PRVTE	E -S								015	00
		•	inworth hvb			BIOI BION					1 5									
N N	4P 45 18 28.74 -122	5.6		03	0		N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	33		R-Y R<25		000	000	00
14	59.39														O	1(\25				
											_									
											STRGHT	01 BIKE	INJB	18	M		I XWLK	021,028	035	03,02
											W E									
00211 N N Y Y	03/01/2017	17	DEBORAH ST	ALLEY		N	N	CLD	ANGL-OTH	01 NONE 9	TURN-R									32,08
CITY	WE 577	1	HAWORTH AVE	N	(NONE)	UNKNOWN	N	WET	TURN	N/A	E -N								018	00
N	9A			08			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk U	NK		000	000	00
N	45 18 34.55 -122				(02)										U	NK				
	59.33	3								02 NONE 9	STOP									
										N/A	N -S								012	00
										PSNGR CAR		01 DRVR	NONE	00		NK NK		000	000	00
01449 N N N	11/30/2016	17	HAWORTH AVE	ALLEY		N	N	UNK	ANGL-OTH	01 NONE 9	TURN-L									02
NONE	WE 195	1	DEBORAH ST	E	(NONE)	UNKNOWN	N	UNK	TURN	N/A	S -W								000	00
N	10A			08			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk U	NK		000	000	00
N	45 18 28.75 -122 56.42				(02)										U	NK				

TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT URBAN NON-SYSTEM CRASH LISTING

CITY OF NEWBERG, YAMHILL COUNTY

HAWORTH AVE and DEBORAH ST, City of Newberg, Yamhill County, 01/01/2016 to 12/31/2020

5 - 7 of 7 Crash records shown.

S D M																		
SER# P R J S	W DATE	CLASS	CITY STREET		INT-TYPE					SPCL USE								
INVEST E A U I C	O DAY	DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE			A S				
RD DPT E L G N H	R TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G E LI	CNS PED			
UNLOC? D C S V L	K LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V# TYPE	TO	P# TYPE	SVRTY	E X RE	S LOC	ERROR	ACT EVENT	CAUSE
										02 NONE 9	STRGHT						000	0.0
										N/A	E -W	01 DDID	NONE	0.0 171- 1737	-	000	000	0.0
										PSNGR CAR		01 DRVR	NONE	00 Unk UN UN		000	000	00
00477 N N N	05 /11 /0010	1.0	DEDODAH OF	CMD CITE			7.7	GI D	DDIZD MIZ	01 NONE 9	CMD CITM			011			000	05
004// N N N	05/11/2018	18	DEBORAH ST	STRGHT		N	Y	CLR	PRKD MV	UI NONE 9	STRGHT						092	05
CITY	FR	138	HAWORTH AVE	S	(NONE)	UNKNOWN	N	DRY	SS-O	N/A	N -S						000	00
Y	3P			08			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00 Unk UN	Χ	000	000	00
N	45 18 27.0				(02)									UN	Χ			
		59.38								02 NONE 9	CMD CITM							
										N/A	STRGHT S -N						007	00
										PSNGR CAR	<i>B</i> 10	01 DRVR	NONE	00 Unk UN	ζ	000	000	00
														UN				
00252 N N N Y	03/04/2016	5 17	DEBORAH ST	STRGHT		N	N	CLR	PED	01 NONE 0	STRGHT							02
NONE	FR	745	HAWORTH AVE	S	(NONE)	UNKNOWN	N	DRY	PED	PRVTE	S -N						000	00
N	3P			07			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	75 F OR	V	029	000	02
N	45 18 38.1	7 -122 56		0 /	(02)		IN	DAI	INU	PSNGR CAR		UI DRVR	NONE		-1 <25	029	000	02
14	13 10 30.1	59.35			(02)									OIC	~25			
											-	0.1		0.5			005	
											STRGHT	01 PED	INJB	07 M	MDBLK XWK	000	037	00
											W E							

of 29 Crash records shown.

URBAN NON-SYSTEM CRASH LISTING

CITY OF NEWBERG, YAMHILL COUNTY HAWORTH AVE and SPRINGBROOK RD, City of Newberg, Yamhill County, 01/01/2016 to 12/31/2020

S D M SER# P R J S W DATE CLASS CITY STREET INT-TYPE SPCL USE INVEST E A U I C O DAY DIST FIRST STREET RD CHAR (MEDIAN) INT-REL OFFRD WTHR CRASH TRLR QTY MOVE Α S SECOND STREET DIRECT G E LICNS PED RD DPT E L G N H R TIME FROM LEGS TRAF-RNDBT SURF COLL OWNER FROM PRTC INJ ACT EVENT CAUSE UNLOC? D C S V L K LAT LONG LRS LOCTN (#LANES) CONTL DRVWY LIGHT SVRTY V# TYPE TO P# TYPE SVRTY E X RES LOC ERROR 01443 N N N 11/28/2016 16 HAWORTH AVE INTER 3-LEG Y CLR ANGL-OTH 01 NONE TURN-L 08 NONE MO SPRINGBROOK RD STOP SIGN DRY TURN PRVTE M - N000 00 бP 05 0 N DLIT INJ PSNGR CAR 01 DRVR INJC 17 F OR-Y 001,080,024 000 08 45 18 28.73 -122 56 OR<25 48.98 02 NONE 0 STRGHT PRVTE S -N 006 00 PSNGR CAR 01 DRVR NONE 64 F OR-Y 000 000 00 OR<25 00708 N N N N N 06/27/2016 16 HAWORTH AVE INTER 3-LEG N N CLR BIKE 01 NONE 0 STRGHT 02 MO 0 SPRINGBROOK RD STOP SIGN DRY 015 00 CITY S N ANGL PRVTE N -S 10A 05 INJ PSNGR CAR 01 DRVR NONE 30 M OR-Y 000 000 00 DAY 45 18 28.73 -122 56 OR<25 48.98 01 BIKE INJB 00 M 035 02 STRGHT I XWLK 055,028 E 06/01/2016 CLR 01 NONE 10 00608 N N N 16 HAWORTH AVE INTER 3-LEG N N O-1STOP BACK 000 NONE WE: Ω SPRINGBROOK RD STOP SIGN N DRY BACK N/A N-S 00 06 000 000 00 8 A Ω N 01 DRVR NONE 00 Unk UNK DAY PDO IINKNOWN 45 18 28.73 -122 56 UNK 48.98 02 NONE STOP 011 00 N/A S -N PSNGR CAR 01 DRVR NONE 00 Unk UNK 000 000 00 UNK N N 02/11/2016 HAWORTH AVE TURN-L 08 00165 N N N 16 INTER 3-LEG CLD ANGL-OTH 01 NONE PRVTE CITY TH0 SPRINGBROOK RD STOP SIGN N WET TURN S -W 000 00 7P 06 DARK INJ PSNGR CAR 01 DRVR NONE 44 OR-Y 007,002 000 80 45 18 28.73 -122 56 OR<25 48.98 02 NONE 0 STOP PRVTE W -E 011 00 PSNGR CAR 29 F 000 000 00 01 DRVR INJB OR-Y OR<25 N N 04/24/2016 03 00469 N N N 16 HAWORTH AVE INTER 3-LEG Ν Ν CLR ANGL-OTH 01 NONE 9 TURN-L STOP SIGN 000 0 SPRINGBROOK RD CN 0.0 CITY SU N DRY TURN M - NN/A 7P 03 000 000 00 DUSK DUd PSNGR CAR 01 DRVR NONE 00 Unk UNK 45 18 28.73 -122 56 UNK 48.98 02 NONE STRGHT 000 00 N/A N -S

PSNGR CAR

01 DRVR NONE 00 Unk UNK

UNK

000

000

00

URBAN NON-SYSTEM CRASH LISTING

CITY OF NEWBERG, YAMHILL COUNTY HAWORTH AVE and SPRINGBROOK RD, City of Newberg, Yamhill County, 01/01/2016 to 12/31/2020

of 29 Crash records shown.

S D M												
ER# P R J S	S W DATE	CLASS	CITY STREET		INT-TYPE					SPCL USE		
NVEST E A U I C	C O DAY	DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE	A S
D DPT E L G N H	H R TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC INJ G E LICNS PED
NLOC? D C S V I		LONG	LRS	LOCTN	(#LANES)		DRVWY			V# TYPE	TO	P# TYPE SVRTY E X RES LOC ERROR ACT EVENT CAUSE
0563 N N N N	N N 05/21/2016	5 17	HAWORTH AVE	INTER	3-LEG	N	N	CLD	O-1 L-TUR	N 01 NONE 9	STRGHT	02
!ITY	SA	0	SPRINGBROOK RD	CN		STOP SIGN	N	DRY	TURN	N/A	N -S	000 00
ī ī	12P 45 18 28.7	73 -122 56 48.98		01	0		N	DAY	PDO	PSNGR CAR		01 DRVR NONE 00 Unk UNK 000 000 00 UNK
		40.90								02 NONE 9	TURN-L	
										N/A	S -W	000 00
										PSNGR CAR		01 DRVR NONE 00 Unk UNK 000 000 00 UNK
1381 N N N	11/14/2016	16	HAWORTH AVE	INTER	3-LEG	N	N	RAIN	ANGL-OTH	01 NONE 9	STRGHT	03
ITY	MO	0	SPRINGBROOK RD	CN		UNKNOWN	N	WET	ANGL	N/A	S -N	000 00
	5P 45 18 28.7	73 -122 56 48.98		04	0		Y	DLIT	PDO	PSNGR CAR		01 DRVR NONE 00 Unk UNK 000 000 00 UNK
		48.98								02 NONE 9	STRGHT	
										N/A	W -E	015 00
										PSNGR CAR		01 DRVR NONE 00 Unk UNK 000 000 00 UNK
0866 N N N	08/15/2017	16	HAWORTH AVE	INTER	3-LEG	N	N	CLR	ANGL-OTH	01 NONE 0	STRGHT	03
O RPT	TU	0	SPRINGBROOK RD	CN		STOP SIGN	N	DRY	TURN	PRVTE	N -S	000 00
	4P 45 18 28.7	73 -122 56 48.98		03	0		N	DAY	INJ	PSNGR CAR		01 DRVR NONE 55 M OR-Y 021 000 03 OR>25
		40.90								02 NONE 0	TURN-L	
										PRVTE	W -N	000 00
										PSNGR CAR		01 DRVR INJC 67 F OR-Y 000 000 00 OR<25
0889 N N N	08/20/2017	16	HAWORTH AVE	INTER	3-LEG	N	N	CLR	ANGL-OTH	01 NONE 0	TURN-R	013 03
TY	SU	0	SPRINGBROOK RD	CN		STOP SIGN	N	DRY	TURN	PRVTE	E -N	018 00
	8P 45 18 28.7	73 -122 56 48.98		02	0		Y	DUSK	INJ	PSNGR CAR		01 DRVR NONE 25 F OTH-Y 000 000 00 N-RES
		40.50								02 NONE 0	STRGHT	
										PRVTE	S -N	000 013 00
										PSNGR CAR		01 DRVR INJB 23 F NONE 021 000 03 OR>25
										02 NONE 0	STRGHT	
										PRVTE	S -N	000 013 00
										PSNGR CAR		02 PSNG INJA 26 F 000 000 00
										03 NONE 0	STOP	
										PRVTE PSNGR CAR	W -E	022 00 01 DRVR NONE 46 F OR-Y 000 000 00
										FBINGK CAR		01 DRVR NONE 46 F OR-1 000 000 000 00 00 00 00 00 00 00 00 00

URBAN NON-SYSTEM CRASH LISTING

CITY OF NEWBERG, YAMHILL COUNTY

HAWORTH AVE and SPRINGBROOK RD, City of Newberg, Yamhill County, 01/01/2016 to 12/31/2020

10 - 12 of 29 Crash records shown.

S I	D M																			
	R J S W DATE	CLASS	CITY STREET		INT-TYPE					SPCL USE										
INVEST E A U		DIST	FIRST STREET	RD CHAR		INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE			А	S					
RD DPT E L (FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ		E LIC	CNS	PED			
UNLOC? D C S	S V L K LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V# TYPE	TO	P# TYPE	SVRTY	E	X RES	3	LOC	ERROR	ACT EVENT	CAUSE
00983 Y N S	Y N N 09/12/2017	16	HAWORTH AVE	INTER	3-LEG	N	N	CLR	O-1 L-TUR	RN 01 NONE 0	STRGHT									02,30
CITY	TU	0	SPRINGBROOK RD	CN		STOP SIGN	N	DRY	TURN	PRVTE	N -S								000	00
N	6P			01	0		N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	34	M OR-	-Y		028,050	000	02,30
N	45 18 28.7	'3 -122 56 48.98													OR>	25				
										02 NONE 0	TURN-L									
										PRVTE	S -W	01 5575		F.0				000	000	00
										PSNGR CAR		01 DRVR	INJB	58	M OR- OR<			000	000	00
00188 N N I	N 02/24/2017	16	HAWORTH AVE	INTER	3-LEG	N	N	RAIN	ANGL-OTH	01 NONE 9	STRGHT									03
NONE	FR	0	SPRINGBROOK RD	CN		STOP SIGN	N	WET	TURN	N/A	N -S								000	00
N	12P			03	0		N	DAY	PDO	UNKNOWN		01 DRVR	NONE	00	Unk UNK	5		000	000	00
N	45 18 28.7	73 -122 56 48.98													UNK	7				
		40.90								02 NONE 9	TURN-R									
										N/A	W -S								015	00
										PSNGR CAR		01 DRVR	NONE	00	Unk UNK UNK			000	000	00
00599 N N 1	N 06/16/2017	16	HAWORTH AVE	INTER	3-LEG	N	N	CLR	ANGL-OTH	01 NONE 9	STRGHT									02
NONE	FR	0	SPRINGBROOK RD	CN		STOP SIGN	N	DRY	ANGL	N/A	S -N								000	00
N	10A			04	0		N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk UNK			000	000	00
N	45 18 28.7	73 -122 56 48.98													UNK	ζ				
										02 NONE 9	STRGHT									
										N/A	W -E								000	00
										PSNGR CAR		01 DRVR	NONE	00	Unk UNK UNK			000	000	00
00098 N N 1	N N 01/19/2018	16	HAWORTH AVE	INTER	3-LEG	N	N	CLD	O-1 L-TUR	RN 01 NONE 0	STRGHT									33,03,27
CITY	FR	0	SPRINGBROOK RD	CN		STOP SIGN	N	WET	TURN	PRVTE	S -N								000	00
N N	7p 45 18 28.7	/3 -122 56		02	0		N	DLIT	INJ	PSNGR CAR		01 DRVR	INJC	17	M OTH			051,021,016	038	33,03,27
	15 15 10.7	48.98													2. 1.					
										01 NONE 0	STRGHT								0.00	0.0
										PRVTE PSNGR CAR	S -N	02 PSNG	TMTD	16	_C			000	000	00 00
												DNG 20	TIM D	10	r			000	000	00
										01 NONE 0 PRVTE	STRGHT S -N								000	00
										PSNGR CAR		03 PSNG	INJB	16	F			000	000	00
										01 NONE 0	STRGHT								0.00	0.0
										PRVTE	S -N	04 Dava	TNITO	1.0	M			000	000	0.0
										PSNGR CAR		04 PSNG	TNJR	ТΩ	IvI			000	000	00

URBAN NON-SYSTEM CRASH LISTING

CITY OF NEWBERG, YAMHILL COUNTY

HAWORTH AVE and SPRINGBROOK RD, City of Newberg, Yamhill County, 01/01/2016 to 12/31/2020

13 - 17 of 29 Crash records shown.

:	S D M																			
ER# 1	P R J S	S W DATE	CLASS	CITY STREET		INT-TYPE					SPCL USE									
NVEST 1	EAUIC	C O DAY	DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE			A					
D DPT 1	ELGNH	H R TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E LI	CNS PED			
NLOC? I	D C S V L	L K LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V# TYPE	TO TUDN I	P# TYPE	SVRTY	E	X RE	S LOC	ERROR	ACT EVENT	CAUSE
											02 NONE 0 PRVTE	TURN-L N -E							015	00
											PSNGR CAR	1, 2	01 DRVR	INJB	21 F	OR	-Y	000	000	00
																OR	<25			
146 1	N N N	N N 02/03/2018	16	HAWORTH AVE	INTER	3-LEG	N	N	CLR	ANGL-OTH	01 NONE 0	STRGHT								02
TY		SA	0	SPRINGBROOK RD	CN		STOP SIGN	N	DRY	ANGL	PRVTE	N -S							015	00
		10P			01	0		N	DLIT	INJ	PSNGR CAR		01 DRVR	INJC	51 F	OR	-Y	028	000	02
		45 18 28.73	3 -122 56														<25			
			48.98								02 NONE 0	STRGHT								
											PRVTE	E -W							015	00
											PSNGR CAR	2 "	01 DRVR	NONE	33 F	ot:	H-Y	000	000	00
																OR	<25			
)538 1	N N N	05/30/2018	16	HAWORTH AVE	INTER	3-LEG	N	N	CLR	ANGL-OTH	01 NONE 0	STRGHT								02
NE		WE	0	SPRINGBROOK RD	CN		STOP SIGN	N	DRY	ANGL	PRVTE	N -S							000	00
		3P			01	0		Y	DAY	INJ	PSNGR CAR		01 DRVR	NONE	30 M	M OR	-Y	000	000	00
		45 18 28.73														OR	<25			
			48.98								02 NONE 0	STRGHT								
											PRVTE	E -W							018	00
											PSNGR CAR		01 DRVR	INJC	60 M	TO N	H-Y	028	000	02
																N-	RES			
											02 NONE 0	STRGHT							0.1.0	0.0
											PRVTE PSNGR CAR	E -W	02 PSNG	TNIC	E2 T	7		000	018 000	00 00
											PSNGR CAR		UZ PSNG	INJC	53 F	,		000	000	00
838 1	N N N	08/17/2018	16	SPRINGBROOK RD	INTER	3-LEG	N	N	CLR	ANGL-OTH	01 NONE 9	STRGHT								02
ONE		FR	0	HAWORTH AVE	CN		STOP SIGN	N	DRY	ANGL	N/A	E -W							000	00
		10A			01	0		Y	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00 T	Jnk UN	K	000	000	00
		45 18 28.8	-122 56 49	9												UN	K			
											02 NONE 9	STRGHT								
											N/A	S -N							000	00
											PSNGR CAR		01 DRVR	NONE	00 t	Jnk UN: UN:		000	000	00
194 1	N N N	11/20/2018	16	HAWORTH AVE	INTER	CROSS	N	N	CLR	ANGL-OTH	01 NONE 9	STRGHT				UIN.	K.			03
	14 14 14	TU				CICODD						N -S							000	00
ONE			U	SPRINGBROOK RD	CN		STOP SIGN	N	DRY	ANGL	N/A	IN -9								
		7P	7 _122 E6 A4	۵	03	0		N	DLIT	PDO	PSNGR CAR		01 DRVR	NONE	00 T			000	000	00
		45 18 28.77	-122 50 49	2							02 NONE 9	TURN-L				UN	I.			
											N/A	W -N							015	00
											PSNGR CAR		01 DRVR	NONE	00 t	Jnk UN	K	000	000	00
																UN				

URBAN NON-SYSTEM CRASH LISTING

CITY OF NEWBERG, YAMHILL COUNTY

HAWORTH AVE and SPRINGBROOK RD, City of Newberg, Yamhill County, 01/01/2016 to 12/31/2020

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18 - 22 of 29 Crash records shown.

S D I	M																	
SER# P R d	J S W DATE	CLASS	CITY STREET		INT-TYPE					SPCL USE								
INVEST E A U	I C O DAY	DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE			A S				
RD DPT E L G 1	N H R TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G E LICNS	PED			
UNLOC? D C S V		LONG	LRS	LOCTN	(#LANES)		DRVWY	LIGHT	SVRTY	V# TYPE	TO	P# TYPE	SVRTY	E X RES	LOC	ERROR	ACT EVENT	CAUSE
01259 N N N	12/06/201	.8 17	HAWORTH AVE	INTER	CROSS	N	N	CLR	ANGL-OTH	01 NONE 9	STRGHT							02
NO RPT	TH	0	SPRINGBROOK RD	CN		STOP SIGN	N	DRY	ANGL	N/A	S -N						000	00
N N	6P 45 18 28.	76 -122 56 48.96		04	0		N	DLIT	PDO	PSNGR CAR		01 DRVR	NONE	00 Unk UNK UNK		000	000	00
										02 NONE 9	STRGHT							
										N/A	M -E	01 227		00 1		000	015	00
										PSNGR CAR		01 DRVR	NONE	00 Unk UNK UNK		000	000	00
01330 N N N	12/25/201	.8 16	HAWORTH AVE	INTER	CROSS	N	N	RAIN	ANGL-OTH	01 NONE 9	STRGHT							02
NONE	TU	0	SPRINGBROOK RD	CN		STOP SIGN	N	WET	ANGL	N/A	E -W						015	00
N N	5P 45 18 28.	73 -122 56		01	0		N	DLIT	PDO	PSNGR CAR		01 DRVR	NONE	00 Unk UNK UNK		000	000	00
		48.98								02 NONE 9	STRGHT							
										N/A	N -S						015	00
										PSNGR CAR		01 DRVR	NONE	00 Unk UNK UNK		000	000	00
00401 N N N	05/02/201	.9 16	HAWORTH AVE	INTER	3-LEG	N	N	CLR	ANGL-OTH	01 NONE	STRGHT							02
NONE	TH	0	SPRINGBROOK RD	CN		STOP SIGN	N	DRY	ANGL	PRVTE	S -N						015	00
N N	2P 45 18 28.	73 -122 56		04	0		N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	79 M OR-Y OR<25		028	000	02
		48.98								02 NONE	STRGHT							
										PRVTE	M -E						000	00
										PSNGR CAR		01 DRVR	INJC	55 F OR-Y OR<25		000	000	00
90218 N N N	N 04/05/201	.9 16	HAWORTH AVE	INTER	3-LEG	N	N	RAIN	O-1 L-TUR	N 01 NONE 9	STRGHT							02
CITY	FR	0	SPRINGBROOK RD	CN		STOP SIGN	N	WET	TURN	N/A	N -S						015	00
Ŋ	11A			01	0		N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00 Unk UNK		000	000	00
N	45 18 28.	74 -122 56 4	19							0.0 170177				UNK				
										02 NONE 9 N/A	TURN-L S -W						000	00
										PSNGR CAR	5 -W	01 DRVR	NONE	00 Unk UNK		000	000	00
														UNK				
00750 N N N	N N 08/07/201	.9 16	HAWORTH AVE	INTER	CROSS	N	N	CLR	ANGL-OTH	01 NONE 9	STRGHT							03
CITY	WE	0	SPRINGBROOK RD	CN		STOP SIGN	N	DRY	ANGL	N/A	W -E						000	00
N N	10A 45 18 28.	73 -122 56 4	19	03	0		N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00 Unk UNK UNK		000	000	00
										02 NONE 9	STRGHT							
										N/A	N -S						000	00
										PSNGR CAR		01 DRVR	NONE	00 Unk UNK		000	000	00
														UNK				

URBAN NON-SYSTEM CRASH LISTING

CITY OF NEWBERG, YAMHILL COUNTY

HAWORTH AVE and SPRINGBROOK RD, City of Newberg, Yamhill County, 01/01/2016 to 12/31/2020

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23 - 27 of 29 Crash records shown.

S D M																					
SER# P R J	S W DATE	CLASS	CITY STREET		INT-TYPE	1				SPCL USE											
INVEST E A U I	C O DAY	DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE				A	S					
RD DPT E L G N	H R TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	! IN	J	G	E LIC	NS PE	D.			
UNLOC? D C S V		LONG	LRS	LOCTN	(#LANES)		DRVWY			V# TYPE	TO	P# TYPE	SV	RTY	E	X RES	LO	C	ERROR	ACT EVENT	CAUSE
00775 N N N	N 08/13/2019	9 16	HAWORTH AVE	INTER	3-LEG	N	N	CLR	ANGL-OTH	01 NONE 9	TURN-R										02
CITY	TU	0	SPRINGBROOK RD	CN		STOP SIGN	N	DRY	TURN	N/A	N -M									000	00
N N	10A 45 18 28.	73 -122 56 4	19	01	0		N	DAY	PDO	SEMI TOW		01 DRVR	. NO	NE	00 t	nk UNK UNK			000	000	00
										02 NONE 9	STRGHT										
										N/A	E -W	0.0								000	00
										PSNGR CAR		01 DRVR	. NO	NE	00 t	Ink UNK UNK			000	000	00
00726 N N N	N 09/22/202	0 17	HAWORTH AVE	INTER	3-LEG	N	N	CLR	ANGL-OTH	01 NONE	STRGHT										03,02
NONE	TU	0	SPRINGBROOK RD	CN		STOP SIGN	N	DRY	ANGL	PRVTE	S -N									000	00
N N	12P 45 18 28.	73 -122 56		04	0		Y	DAY	INJ	PSNGR CAR		01 DRVR	. NO	NE	68 F	OR-Y			028	000	03,02
		48.99								0.2 NIONTE	Cunciim										
										02 NONE PRVTE	STRGHT W -E									000	00
										PSNGR CAR	W E	01 DRVR	. IN	JC	80 F	OR-1			000	000	00
01014 N N N	12/20/2020	0 16	HAWORTH AVE	INTER	3-LEG	N	N	RAIN	ANGL-OTH	01 NONE	STRGHT										02
NONE	SU	0	SPRINGBROOK RD	CN		STOP SIGN	N	WET	ANGL	PRVTE	E -W									018	00
N	10A			01	0		Y	DAY	INJ	PSNGR CAR		01 DRVR	. IN	JC	49 F	OR-Y	ď		000,097	000	02
N	45 18 28.	73 -122 56 48.99														OR<2	25				
										02 NONE	STRGHT										
										PRVTE	N -S	01 22			40 -		_		000 000	000	00
										PSNGR CAR		01 DRVR	L IN	J.C	49 F	OR-1			000,097	000	02
00407 N N N	Y 04/25/201	7 16	SPRINGBROOK RD	ALLEY		N	N	RAIN	S-STRGHT	01 NONE 9	STRGHT										29
NONE	TU	168	HAWORTH AVE	S	(RSDMD)	UNKNOWN	N	WET	REAR	N/A	S -N									000	00
N N	9P 45 18 26.8	81 -122 56		08	(02)		N	DARK	PDO	PSNGR CAR		01 DRVR	. NO	NE	00 T	nk UNK UNK			000	000	00
		48.97								02 NONE 9	minn p										
										N/A	TURN-R S -E									019	00
										PSNGR CAR	5 5	01 DRVR	. NO	NE	00 τ	nk UNK			000	000	00
																UNK					
00549 N N N	05/06/201	6 17	HAWORTH AVE	ALLEY		N	N	CLR	ANGL-OTH	01 NONE 9	TURN-R										32,02,08
CITY	FR	342	SPRINGBROOK RD	W	(NONE)	NONE	N	DRY	TURN	N/A	W -S									019	00
N	9A 45 19 20 '	75 -122 56		08	(02)		N	DAY	PDO	PSNGR CAR		01 DRVR	. NO	NE	00 T	nk UNK UNK			000	000	00
N	45 18 28.	54.23			(∪∠)											ONK					
										02 NONE 9	TURN-L										
										N/A	S -W	01			0.0	1. ***			000	018	00
										SCHL BUS		01 DRVR	. NO	NE	UU T				000	000	00
																UNK					

URBAN NON-SYSTEM CRASH LISTING

CITY OF NEWBERG, YAMHILL COUNTY

HAWORTH AVE and SPRINGBROOK RD, City of Newberg, Yamhill County, 01/01/2016 to 12/31/2020

28 - 29 of 29 Crash records shown.

S D	M																		
SER# P R	J S W DATE	CLASS	CITY STREET		INT-TYPE					SPCL USE									
INVEST E A U	I C O DAY	DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE			A	S				
RD DPT E L G	N H R TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E LICNS	PED			
UNLOC? D C S	V L K LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V# TYPE	TO	P# TYPE	SVRTY	E	X RES	LOC	ERROR	ACT EVENT	CAUSE
01221 N N N	N N 11/03/2017	16	SPRINGBROOK RD	STRGHT		N	N	CLD	S-1STOP	01 NONE 0	STRGHT								07
CITY	FR	150	HAWORTH AVE	N	(NONE)	NONE	N	WET	REAR	PRVTE	N -S							000	00
N	7A			08			N	DAY	INJ	PSNGR CAR		01 DRVR	INJC	53 F	OR-Y		043	000	07
N	45 18 30.4				(02)										OR<25				
		48.97								02 NONE 0	STOP								
										PRVTE	N -S							011	00
										PSNGR CAR		01 DRVR	INJC	53 F	OR-Y		000	000	00
															OR<25				
00401 N N N	N N 04/19/2018	16	SPRINGBROOK RD	STRGHT		Y	N	CLR	S-STRGHT	01 NONE 0	STRGHT								13,50
CITY	TH	200	HAWORTH AVE	N	(NONE)	L-TURN REF	N	DRY	SS-O	PRVTE	N -S							000	00
N	5P			08			N	DUSK	INJ	PSNGR CAR		01 DRVR	INJC	59 F	OTH-Y		045	000	13,50
N	45 18 30.9	-122 56 48.97			(03)										N-RES				
		40.97								02 NONE 0	STRGHT								
										PRVTE	N -S							000	00
										PSNGR CAR		01 DRVR	NONE	23 F	OR-Y OR<25		000	000	50

URBAN NON-SYSTEM CRASH LISTING

CITY OF NEWBERG, YAMHILL COUNTY SPRINGBROOK RD and PACIFIC HY 99W, City of Newberg, Yamhill County, 01/01/2016 to 12/31/2020

1 - 4 of 77 Crash records shown.

S D M															
SER# P R J	S W DATE CLASS	CITY STREET		INT-TYPE	:				SPCL USE						
INVEST E A U I	C O DAY DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE		A S			
RD DPT E L G N	H R TIME FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC INJ	G E LICNS PED			
UNLOC? D C S V	L K LAT LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V# TYPE	TO	P# TYPE SVRTY	E X RES LOC	ERROR	ACT EVENT	CAUSE
85544 N N N	10/22/2019 14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 9	TURN-R					08
NONE	TU	SPRINGBROOK RD	N		TRF SIGNAL	N	DRY	SS-O	N/A	N -SW				000	00
N	7A		06	2		N	DAY	PDO	SEMI TOW		01 DRVR NONE 0		000	000	00
N	45 18 23.12 -122 56 48.94	009100100S00										UNK			
									02 NONE 9	STOP				0.5.5	
									N/A PSNGR CAR	N -S	01 DRVR NONE 0	ח וואל וואני	000	011 000	00
									PSNGR CAR		OI DRVR NONE O	UNK	000	000	00
01319 N N N	11/02/2016 16	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1TURN	01 NONE 9	STRGHT					29
NONE	WE 0	SPRINGBROOK RD	N		TRF SIGNAL	N	DRY	REAR	N/A	N -S				000	00
N	8A		06	2		N	DAWN	PDO	PSNGR CAR		01 DRVR NONE 0	0 Unk UNK	000	000	00
N	45 18 23.12 -122 56 48.94											UNK			
									02 NONE 9	TURN-R					
									N/A	N -SW	04	0 1		000	00
									PSNGR CAR		01 DRVR NONE 0	UNK UNK	000	000	00
01434 N N N	12/31/2017 14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 0	STRGHT					29
NO RPT	SU	SPRINGBROOK RD	NE		TRF SIGNAL	N	DRY	REAR	PRVTE	NE-SW				000	00
N	4P 45 18 23.12 -122 56 48.94	009100100s00	06	2		N	DAY	INJ	PSNGR CAR		01 DRVR NONE 4	5 F OR-Y OR<25	026	000	29
	10.71								02 NONE 0	STOP					
									PRVTE	NE-SW				011	00
									PSNGR CAR		01 DRVR NONE 3	8 M OR-Y OR<25	000	000	00
									02 NONE 0	STOP					
									PRVTE	NE-SW				011	00
									PSNGR CAR		02 PSNG INJC 4	1 F	000	000	00
									02 NONE 0	STOP					
									PRVTE	NE-SW				011	00
									PSNGR CAR		03 PSNG INJC 0	5 F	000	000	00
00010 N N N	Y 01/04/2017 14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 9	TURN-R					29
NONE	WE	SPRINGBROOK RD	NE		TRF SIGNAL	N	DRY	REAR	N/A	NE-N				000	00
N N	5P 45 18 23.12 -122 56	009100100s00	09	2		N	DLIT	PDO	PSNGR CAR		01 DRVR NONE 0	0 Unk UNK UNK	000	000	00
	48.94								02 NONE 9	STOP					
									N/A	NE-N				011	00
									PSNGR CAR	1411 -114	01 DRVR NONE 0	0 Unk UNK	000	000	00
											-	UNK			

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URBAN NON-SYSTEM CRASH LISTING

CITY OF NEWBERG, YAMHILL COUNTY

SPRINGBROOK RD and PACIFIC HY 99W, City of Newberg, Yamhill County, 01/01/2016 to 12/31/2020

of 77 Crash records shown.

S D M																			
SER# P R J	S W DATE	CLASS	CITY STREET		INT-TYPE					SPCL USE									
INVEST E A U I	C O DAY	DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE			A	S				
RD DPT E L G N	H R TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E LI	CNS PED			
UNLOC? D C S V	L K LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V# TYPE	TO	P# TYPE	SVRT	Y E	X RE	S LOC	ERROR	ACT EVENT	CAUSE
01203 N N N	10/21/2017	14	PACIFIC HY 99W	INTER	CROSS	N	N	RAIN	S-1STOP	01 NONE 9	STRGHT								29
NONE	SA		SPRINGBROOK RD	NE		TRF SIGNAL	N	WET	REAR	N/A	NE-SW							000	00
N	1P			06	2		N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk UN	K	000	000	00
N	45 18 23.12	-122 56 48.94	009100100S00												UN	K			
										02 NONE 9	STOP								
										N/A PSNGR CAR	NE-SW	01 DRVR	NONE	00	IInk IIN	к	000	011 000	00 00
										FONGIC CAIC		OI DIVIC	NONE		UN				
00198 N N N	02/16/2018	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 0	STRGHT								29
NONE	FR		SPRINGBROOK RD	NE		TRF SIGNAL	N	WET	REAR	PRVTE	NE-SW							000	00
N	6A			06	2		N	DLIT	INJ	PSNGR CAR		01 DRVR	NONE	39	M OT	H-Y	026	000	29
N	45 18 23.12	-122 56 48.94	009100100S00												N-	RES			
		10.91								02 NONE 0	STOP								
										PRVTE	NE-SW							011	00
										PSNGR CAR		01 DRVR	INJC	34		-Y <25	000	000	00
00772 N N N	N N 08/04/2018	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE	STRGHT								07,29
CITY	SA		SPRINGBROOK RD	NE		TRF SIGNAL	N	DRY	REAR	PRVTE	NE-SW							000	00
N	9P			06	2		N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	28	M OR	-Y	043	000	07,29
N	45 18 23.12		009100100S00												OR	<25			
		48.94								02 NONE	STOP								
										PRVTE	NE-SW							011	00
										PSNGR CAR		01 DRVR	INJC	25		-Y <25	000	000	00
00802 N N N	N N 08/09/2018	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE	STRGHT				- OR	<25		013	32,27,29
CITY	TH		SPRINGBROOK RD	NE		TRF SIGNAL	N	DRY	REAR	PRVTE	NE-SW							000	00
N	6P			06	0		N	DAY	TNT	DONOD CAD		01 DRVR	MONTE	20	M OD	v	052 026	038	22 27 20
N	45 18 23.12		009100100s00	06	U		IN	DAI	INU	PSNGR CAR		UI DRVR	NONE	20		-1 <25	052,026	030	32,27,29
		48.94								02 NONE	STOP								
										PRVTE	NE-SW							011 013	00
										PSNGR CAR		01 DRVR	INJB	56			000	000	00
										03 NONE	STOP				OR	<25			
										PRVTE	NE-SW							011	00
										PSNGR CAR		01 DRVR	NONE	28			000	000	00
00941 N N N	09/12/2018	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE	STRGHT				N-	RES			29
NONE	WE		SPRINGBROOK RD	NE		TRF SIGNAL		DRY	REAR	PRVTE	NE-SW							000	00
					0							01 227	NONT	F.C.		37	026		
N N	10A 45 18 23.12	-122 56	009100100s00	06	0		N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	56		-Y >25	026	000	29
-·		48.94	13710010000												Oic				

URBAN NON-SYSTEM CRASH LISTING

CITY OF NEWBERG, YAMHILL COUNTY

SPRINGBROOK RD and PACIFIC HY 99W, City of Newberg, Yamhill County, 01/01/2016 to 12/31/2020

9 - 12 of 77 Crash records shown.

	S D M																			
SER#	P R J S	W DATE	CLASS	CITY STREET		INT-TYPE					SPCL USE									
INVEST	E A U I C	O DAY	DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE			А	S				
RD DPT	E L G N H	R TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E LICNS	PED			
UNLOC?	D C S V L	K LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V# TYPE	TO	P# TYPE	SVRTY	E	X RES	LOC	ERROR	ACT EVENT	CAUS
											02 NONE	STOP							0.4.4	
											PRVTE	NE-SW	01 DDID	T11.T.C	40 =	OD 11		000	011	00
											PSNGR CAR		01 DRVR	INJC	42 F	OR-Y OR>25		000	000	00
1136	N N N	11/05/2018	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	PED	01 NONE	TURN-R								02
CITY		MO		SPRINGBROOK RD	NE		TRF SIGNAL	N	DRY	PED	PRVTE	S -NE							000	00
N		5P 45 18 23.13	-122 56 48.94	009100100500	05	0		N	DLIT	INJ	PSNGR CAR		01 DRVR	NONE	25 F	OR-Y OR<25		029	000	02
												-								
												STRGHT	01 CONV	INJB	16 M		I XWLF	000	035	00
												S N								
00028	N N N	01/10/2019	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE	STRGHT							013	07,2
CITY		TH		SPRINGBROOK RD	NE		TRF SIGNAL	N	DRY	REAR	PRVTE	NE-SW							088	00
1		6P 45 18 23.14	-122 56 48.95	009100100s00	06	0		N	DLIT	INJ	PSNGR CAR		01 DRVR	INJB	45 F	OR-Y OR<25		043,026	088	07,2
											02 NONE	STOP								
											PRVTE	NE-SW							012 013	00
											PSNGR CAR		01 DRVR	INJC	47 F	OR-Y OR<25		000	000	00
											03 NONE	STOP								
											PRVTE	NE-SW							012 013	00
											PSNGR CAR		01 DRVR	INJC	34 F	OR-Y OR>25		000	000	00
											04 NONE	STOP				UR>25				
											PRVTE	NE-SW							012	0.0
											PSNGR CAR		01 DRVR	NONE	28 M	OTH-Y		000	000	0.0
																OR>25				
)1167	N N N	11/21/2019	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE	STRGHT								29,2
CITY		TH		SPRINGBROOK RD	E		TRF SIGNAL	N	DRY	REAR	PRVTE	E -W							000	00
N N		1P 45 18 23.72	-122 56 47.2	009100100s00	06	2		N	DAY	INJ	PSNGR CAR		01 DRVR	INJB	78 F	OR-Y OR<25		026	000	29,2
											02 NONE	STOP								
											PRVTE	E -W							012	00
											PSNGR CAR		01 DRVR	NONE	71 M	OR-Y OR<25		000	000	00
											02 NONE	STOP								
											PRVTE	E -W							012	00
											PSNGR CAR		02 PSNG						000	00

URBAN NON-SYSTEM CRASH LISTING

13 - 16 of 77 Crash records shown.

CITY OF NEWBERG, YAMHILL COUNTY SPRINGBROOK RD and PACIFIC HY 99W, City of Newberg, Yamhill County, 01/01/2016 to 12/31/2020

48.94

!!	S D M																	
SER#	P RJS		CLASS	CITY STREET FIRST STREET	RD CHAR	INT-TYPE		OFFDD	MTHID	CD A CII	SPCL USE	MOVE			A S			
	ELGNE		DIST FROM	SECOND STREET	DIRECT	(MEDIAN) LEGS	TRAF-	OFFRD RNDBT	WTHR SURF	CRASH COLL	TRLR QTY OWNER	MOVE FROM	PRTC	INJ	G E LICNS F	IED.		
	DCSVI		LONG	LRS	LOCTN	(#LANES)			LIGHT		V# TYPE	TO	P# TYPE			OC ERROR	ACT EVENT	CAUSE
00050		N 01/12/2017	16	PACIFIC HY 99W	INTER	CROSS	N	N DRVWI	CLR	S-1STOP	01 NONE 9	STRGHT	Ιπ ΙΙΙΔ	BVICII	E A REO I	ERROR	ACI EVENI	07
																	0.00	
CITY		TH		SPRINGBROOK RD	S		TRF SIGNAL	N	DRY	REAR	N/A	S -N					000	00
N N		1P 45 18 23.12		003900100s00	06	2		N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00 Unk UNK UNK	000	000	00
			48.94								02 NONE 9	STOP						
											N/A	S -N					011	00
											PSNGR CAR		01 DRVR	NONE	00 Unk UNK UNK	000	000	00
00877	N N N	08/29/2018	16	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE	STRGHT						27,29
CITY		WE		SPRINGBROOK RD	S		TRF SIGNAL	N	DRY	REAR	PRVTE	S -N					000	00
N N		8P 45 18 23.13	-122 56 48.94	003900100s00	06	0		N	DUSK	INJ	PSNGR CAR		01 DRVR	NONE	33 M SUSP OR<25	026	038	27,29
			40.94								02 NONE	STOP						
											PRVTE	S -N					011	00
											PSNGR CAR		01 DRVR	NONE	39 M NONE OR<25	000	000	00
											02 NONE	STOP			011.25			
											PRVTE	S -N					011	00
											PSNGR CAR		02 PSNG	INJC	38 F	000	000	00
00748	N N N	08/02/2019	16	PACIFIC HY 99W	INTER	2-LEG	N	N	CLR	S-1STOP	01 NONE 9	STRGHT						07
NONE		FR		SPRINGBROOK RD	S		TRF SIGNAL	N	DRY	REAR	N/A	S -N					000	00
N N		7A 45 18 22.09	-122 56	003900100s00	06	2		N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00 Unk UNK UNK	000	000	00
			49.06								02 NONE 9	STOP						
											N/A	S -N					012	00
											PSNGR CAR		01 DRVR	NONE	00 Unk UNK UNK	000	000	00
00877	Y N N 1	09/09/2019	16	PACIFIC HY 99W	INTER	CROSS	N	N	RAIN	S-1STOP	01 NONE 9	STRGHT						01,07
NONE		MO		SPRINGBROOK RD	S		TRF SIGNAL	N	WET	REAR	N/A	S -N					000	00
N N		11A 45 18 22.1	-122 56 49.06	003900100s00	06	2		N	DAY	PDO	TRUCK		01 DRVR	NONE	00 Unk UNK UNK	000	000	00
			19.00								02 NONE 9 N/A PSNGR CAR	STOP S -N	01 DRVR	NONE	00 Unk UNK UNK	000	012 000	00 00
00753	N N N	08/08/2019	16	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 9	STRGHT						29
NONE		TH		SPRINGBROOK RD	S		TRF SIGNAL	N	DRY	REAR	N/A	S -N					000	00
N		UNK			06	2		N	DAY	PDO	PSNGR CAR		9V9U 10	NONE:	00 Unk UNK	000	000	00
N		45 18 23.12	-122 56 48.94	003900100S00		_		- :			223311 3311		- 2		UNK	300		

URBAN NON-SYSTEM CRASH LISTING

CITY OF NEWBERG, YAMHILL COUNTY

SPRINGBROOK RD and PACIFIC HY 99W, City of Newberg, Yamhill County, 01/01/2016 to 12/31/2020

17 - 20 of 77 Crash records shown.

SER# P R																		
	RJSW		CLASS	CITY STREET		INT-TYPE					SPCL USE							
NVEST E A U			DIST	FIRST STREET	RD CHAR	(MEDIAN)		OFFRD		CRASH	TRLR QTY	MOVE			A S			
D DPT E L G			FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G E LICNS PED			
NLOC? D C S	SVLK	LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V# TYPE 02 NONE 9	TO STOP	P# TYPE	SVRTY	E X RES LOC	ERROR	ACT EVENT	CAUS
											N/A	S -N					011	00
											PSNGR CAR	-	01 DRVR	NONE	00 Unk UNK	000	000	00
															UNK			
670 N N N	I N	09/05/2020	16	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE	STRGHT						29,0
NE		SA		SPRINGBROOK RD	S		L-GRN-SIG	N	DRY	REAR	PRVTE	S -N					000	00
		9P			06	2		N	DLIT	INJ	PSNGR CAR		01 DRVR	NONE	58 M OR-Y	000,026	000	29,0
		45 18 22.62		003900100S00											OR<25			
			48.99								02 NONE	STOP						
											PRVTE	S -N					012	00
											PSNGR CAR		01 DRVR	INJC	62 F OR-Y	000	000	00
															OR<25			
											02 NONE	STOP						
											PRVTE	S -N	00 5070		05 7	000	012	00
											PSNGR CAR		02 PSNG	INJC	U5 F	000	000	00
											02 NONE	STOP						
											PRVTE	S -N					012	00
											PSNGR CAR		03 PSNG	INJC	66 F	000	000	00
											0.0 NONE	GEOD.						
											02 NONE PRVTE	STOP S -N					012	00
											PSNGR CAR	2 -11	04 PSNG	INJC	07 ਵ	000	000	00
											I DIVOIT OF ILL		01 101.0	22100	V , 1	000		
										G 1 GEOD	0.1 270277 0							
085 N N N	l N N	N 01/19/2016	16	PACIFIC HY 99W	INTER	CROSS	N	N	RAIN	S-1STOP	01 NONE 9	STRGHT						29,1
	I N N	N 01/19/2016	16	PACIFIC HY 99W SPRINGBROOK RD	INTER S	CROSS	N TRF SIGNAL	N N	WET	S-ISTOP REAR	N/A	STRGHT S -N					000	29,1 00
ITY	1 N N	TU			S	CROSS 2		N	WET	REAR	N/A		01 DRVR	NONE	00 Unk UNK	000		00
ITY	1 N N		0 -122 56										01 DRVR	NONE	00 Unk UNK UNK	000	000	
ITY	1 N N	TU 2P	0		S			N	WET	REAR	N/A SCHL BUS	S-N	01 DRVR	NONE		000		00
ITY	л и и	TU 2P	0 -122 56		S			N	WET	REAR	N/A SCHL BUS 02 NONE 9	S -N	01 DRVR	NONE		000	000	00
ITY	1 N N	TU 2P	0 -122 56		S			N	WET	REAR	N/A SCHL BUS 02 NONE 9 N/A	S-N				000		00
ITY	1 N N	TU 2P	0 -122 56		S			N	WET	REAR	N/A SCHL BUS 02 NONE 9	S -N			UNK		000	00
ITY		TU 2P	0 -122 56 48.94	SPRINGBROOK RD	S			N	WET	REAR	N/A SCHL BUS 02 NONE 9 N/A	S -N			UNK 00 Unk UNK		000	00
0085 N N N ITY 1558 N N N		TU 2P 45 18 23.12	0 -122 56 48.94	SPRINGBROOK RD	S 06	2	TRF SIGNAL	N N	WET	REAR PDO	N/A SCHL BUS 02 NONE 9 N/A PSNGR CAR	S -N STOP S -N			UNK 00 Unk UNK		000	00
1558 N N N O RPT		TU 2P 45 18 23.12 12/21/2016 WE UNK	0 -122 56 48.94	SPRINGBROOK RD PACIFIC HY 99W	S 06 INTER	2	TRF SIGNAL	N N	WET DAY	REAR PDO S-1STOP	N/A SCHL BUS 02 NONE 9 N/A PSNGR CAR	S -N STOP S -N	01 DRVR	NONE	UNK 00 Unk UNK UNK 00 Unk UNK		000 011 000	00 00 00 00
1558 N N N O RPT		TU 2P 45 18 23.12 12/21/2016 WE	0 -122 56 48.94	SPRINGBROOK RD PACIFIC HY 99W	S 06 INTER S	2 CROSS	TRF SIGNAL	N N N	WET DAY CLR DRY	REAR PDO S-1STOP REAR	N/A SCHL BUS 02 NONE 9 N/A PSNGR CAR 01 NONE 9 N/A PSNGR CAR	S -N STOP S -N STRGHT S -N	01 DRVR	NONE	UNK 00 Unk UNK UNK	000	000 011 000	00 00 00 00 00 29
1558 N N N O RPT		TU 2P 45 18 23.12 12/21/2016 WE UNK	0 -122 56 48.94 14 0	SPRINGBROOK RD PACIFIC HY 99W	S 06 INTER S	2 CROSS	TRF SIGNAL	N N N	WET DAY CLR DRY	REAR PDO S-1STOP REAR	N/A SCHL BUS 02 NONE 9 N/A PSNGR CAR 01 NONE 9 N/A PSNGR CAR	S -N STOP S -N STRGHT S -N	01 DRVR	NONE	UNK 00 Unk UNK UNK 00 Unk UNK	000	000 011 000 000	00 00 00 00 29 00
1TY 1558 N N N		TU 2P 45 18 23.12 12/21/2016 WE UNK	0 -122 56 48.94 14 0	SPRINGBROOK RD PACIFIC HY 99W	S 06 INTER S	2 CROSS	TRF SIGNAL	N N N	WET DAY CLR DRY	REAR PDO S-1STOP REAR	N/A SCHL BUS 02 NONE 9 N/A PSNGR CAR 01 NONE 9 N/A PSNGR CAR	S -N STOP S -N STRGHT S -N	01 DRVR	NONE	UNK 00 Unk UNK UNK 00 Unk UNK	000	000 011 000	00 00 00 00 29

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URBAN NON-SYSTEM CRASH LISTING

CITY OF NEWBERG, YAMHILL COUNTY SPRINGBROOK RD and PACIFIC HY 99W, City of Newberg, Yamhill County, 01/01/2016 to 12/31/2020

21 - 24 of 77 Crash records shown.

S D	М																	
SER# P R	J S W DATE CLASS	CITY STREET		INT-TYPE					SPCL USE									
INVEST E A U	I C O DAY DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE			A	S				
RD DPT E L G	N H R TIME FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E LICNS	PED			
UNLOC? D C S		LRS	LOCTN	(#LANES)		DRVWY	LIGHT		V# TYPE	TO	P# TYPE	SVRT	E	X RES	LOC	ERROR	ACT EVENT	CAUSE
00907 N N N	09/05/2018 14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE	STRGHT								07,29
NONE	WE	SPRINGBROOK RD	SW		TRF SIGNAL	N	DRY	REAR	PRVTE	SW-NE							000	00
N	12P 45 18 23.12 -122 56 48.94	009100100s00	06	0		N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	24 M	OR-Y OR<25		026,014	000	07,29
									02 NONE PRVTE PSNGR CAR	STOP SW-NE	01 DRVR	INJC	57 F	OR-Y OR<25		000	011 000	0 0 0 0
00007 N N N	N 01/03/2019 14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 9	STRGHT				OIC 123				07
NONE	TH	SPRINGBROOK RD	SW		TRF SIGNAL	N	DRY	REAR	N/A	SW-NE							000	00
N N	10P 45 18 22.8 -122 56 50.21	009100100s00	06	2		N	DLIT	PDO	PSNGR CAR		01 DRVR	NONE	00 U	nk UNK UNK		000	000	00
									02 NONE 9 N/A PSNGR CAR	STOP SW-NE	01 DRVR	NONE	00 U	nk UNK UNK		000	011 000	00 00
00107 Y N N	02/05/2020 14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE	STRGHT							013	32,01,27
CITY	WE	SPRINGBROOK RD	SW		TRF SIGNAL	N	DRY	REAR	PRVTE	SW-NE							000	00
N N	5P 45 18 22.77 -122 56 50.24	009100100s00	06	2		N	DUSK	INJ	PSNGR CAR		01 DRVR	NONE	53 M	OR-Y OR>25	i	026	000	32,01,27
	30.21								02 NONE PRVTE PSNGR CAR	STOP SW-NE	01 DRVR	INJB	33 M	OR-Y OR<25	i	000	011 013 000	00 00
									03 NONE PRVTE PSNGR CAR	STOP SW-NE	01 DRVR	NONE	29 M	OR-Y OR<25	;	000	011 000	00 00
00689 N N N	N N 09/12/2020 16	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE	STRGHT								07
CITY	SA	SPRINGBROOK RD	SW		YIELD	N	DRY	REAR	PRVTE	N -S							000	00
N	1P 45 18 22.1 -122 56 49.05	003900100s00	09	2		N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	20 F	OR-Y OR<25	i	043	000	07
	49.05								02 NONE PRVTE PSNGR CAR	STOP N -S	01 DRVR	INJC	59 F	OR-Y OR<25		000	012 000	00 00
00926 N N N	09/23/2019 14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE	STRGHT								07
NONE	MO	SPRINGBROOK RD	W		TRF SIGNAL	N	DRY	REAR	PRVTE	W -E							000	00
N N	1P 45 18 22.71 -122 56 50.36	009100100s00	06	0		N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	26 F	OR-Y OR>25		026	000	07

URBAN NON-SYSTEM CRASH LISTING

CITY OF NEWBERG, YAMHILL COUNTY

SPRINGBROOK RD and PACIFIC HY 99W, City of Newberg, Yamhill County, 01/01/2016 to 12/31/2020

25 - 27 of 77 Crash records shown.

	S D M																			
		S W DATE	CLASS	CITY STREET		INT-TYPE					SPCL USE									
		C O DAY	DIST	FIRST STREET	RD CHAR	(MEDIAN)		OFFRD	WTHR	CRASH	TRLR QTY	MOVE			A S					
		H R TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC			LICNS				
NLOC? I	D C S V	L K LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V# TYPE 02 NONE	TO STOP	P# TYPE	SVRTY	Ε Σ	RES	LOC	ERROR	ACT EVENT	CAUSE
											PRVTE	W -E							012	00
											PSNGR CAR		01 DRVR	INJC	37 M	OR-Y		000	000	00
																OR<25				
0673 1	N N N	N N 06/19/2016	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	ANGL-OTH	01 NONE 9	STRGHT								04,40
ITY		SU		SPRINGBROOK RD	CN		TRF SIGNAL	N	DRY	ANGL	N/A	SW-NE							000	00
		5P			03	2		N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00 IIn	k IINK		000	000	00
		45 18 23.1	2 -122 56	009100100S00	03	2		14	DAI	100	I BNOK CAR		OI DRVR	NONE	00 01	UNK		000	000	00
			48.94								00 270277	a=== a=								
											02 NONE 9 N/A	STRGHT N -S							000	00
											PSNGR CAR	IV -B	01 DRVR	NONE	00 Un	k UNK		000	000	00
																UNK				
0140 1	N N N	Y 02/15/2017	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLD	ANGL-OTH	01 NONE 0	STRGHT			'					04
ITY		WE		SPRINGBROOK RD	CN		TRF SIGNAL	N	SNO	TURN	PRVTE	NE-SW							000	00
		5A			01	2		N	DLIT	INJ	PSNGR CAR		01 DRVR	NONE	46 M	OR-V		020	000	04
		45 18 23.1	2 -122 56	009100100S00	01	2		14	DHII	1110	I BNOK CAR		OI DRVR	NONE	10 11	OR < 25		020	000	01
			48.94																	
											02 NONE 0 PRVTE	TURN-L							000	00
											PRVIE PSNGR CAR	N -NE	01 DRVR	TNJC	63 F	OR-Y		000	000	00
											I DIVOIT GIET		01 211111	22.00	00 1	OR<25				
0608 1	N N N	06/17/2018	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	ANGL-OTH	01 NONE 0	STRGHT								04
) RPT		SU		SPRINGBROOK RD	CN		TRF SIGNAL	N	DRY	ANGL	PRVTE	N -S							000	00
		6A			01	2		N	DAWN	INJ	PSNGR CAR		01 DRVR	TNTC	40 M	OR-Y		000	000	00
		45 18 23.1	2 -122 56	009100100S00	01	2		IN	DAWN	INO	FBNGK CAR		OI DRVR	INCC	45 M	OR<25		000	000	00
			48.94																	
											01 NONE 0 PRVTE	STRGHT N -S							000	00
											PSNGR CAR	N -2	02 PSNG	INJC	41 F			000	000	00
											01 NONE 0	STRGHT								
											PRVTE	N -S							000	00
											PSNGR CAR		03 PSNG	INJC	15 F			000	000	00
											01 NONE 0	STRGHT								
											PRVTE	N -S							000	00
											PSNGR CAR		04 PSNG	INJC	18 F			000	000	00
											00 NONE 0	OMP CITE								
											02 NONE 0 PRVTE	STRGHT NE-SW							000	00
											PSNGR CAR	IND DW	01 DRVR	NONE	57 M	OR-Y		020	000	04
																OR>25				
											02 NONE 0	STRGHT								
											PRVTE	NE-SW	00 5027		45 =			000	000	00
											PSNGR CAR		02 PSNG	INJA	45 F			000	000	00

URBAN NON-SYSTEM CRASH LISTING

CITY OF NEWBERG, YAMHILL COUNTY

SPRINGBROOK RD and PACIFIC HY 99W, City of Newberg, Yamhill County, 01/01/2016 to 12/31/2020

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28 - 32 of 77 Crash records shown.

S	D M																		
SER# P	R J S W DATE	CLASS	CITY STREET		INT-TYPE					SPCL USE									
	U I C O DAY	DIST	FIRST STREET	RD CHAR		INT-REL	OFFRD		CRASH	TRLR QTY	MOVE			A					
	G N H R TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC			E LICNS				
NLOC? D C	S V L K LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V# TYPE 02 NONE 0	TO STRGHT	P# TYPE	SVRT	Y E	X RES	LOC	ERROR	ACT EVENT	CAUSE
										PRVTE	NE-SW							000	00
										PSNGR CAR		03 PSNG	INJC	91 F			000	000	00
00499 N N	N 05/17/201	8 14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	ANGL-STP	01 NONE 1	TURN-L								08
ITY	TH		SPRINGBROOK RD	CN		TRF SIGNAL	N	DRY	TURN	N/A	SW-N							000	00
	2P			03	2		N	DAY	PDO	TRUCK		01 DRVR	NONE	0.0 11	nk IINK		000	000	00
		14 -122 56	009100100S00	03	2		14	DAI	100	inoch		OI DRVI	NONE	00 0	UNK		000	000	00
		48.95																	
										02 NONE 9	STOP N -NE							013	00
										N/A PSNGR CAR	N -NE	01 DRVR	NONE	00 11	nk IINK		000	000	00
										I BNOIC CAIC		OI DRVI	NONE	00 0	UNK		000	000	00
0299 N N	N 04/04/201	9 14	PACIFIC HY 99W	INTER	CROSS	N	N	CLD	S-1STOP	01 NONE	TURN-R								07,29
TY	TH		SPRINGBROOK RD	CN		TRF SIGNAL	N	DRY	REAR	PRVTE	S -NE							013	00
	1P			04	2		N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	63 M	OR-Y		043,026	000	07,29
		15 -122 56 48.94	009100100S00	01	2		IV	DAI	1110	I BNOK CAR		OI DIVIN	NONE	05 11	OR > 25		013,020	000	07,23
		40.94								02 NONE	TURN-R								
										PRVTE	S -NE							000	00
										PSNGR CAR		01 DRVR	INJC	63 F			000	000	00
															N-RES	3			
0303 N N	N 04/05/201	9 14	PACIFIC HY 99W	INTER	CROSS	N	N	RAIN	PED	01 NONE	TURN-L								02,32
TY	FR		SPRINGBROOK RD	CN		TRF SIGNAL	N	WET	PED	PRVTE	S -SW							000	00
	10P			01	2		N	DLIT	INJ	PSNGR CAR		01 DRVR	NONE	19 M	OR-Y		029,052	000	02,32
	45 18 23.	12 -122 56 48.94	009100100S00												OR<25	5			
											_								
											STRGHT	01 PED	INJC	34 M		I XWLK	000	000	00
											S N								
687 N N	N 07/21/201	9 14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE	STRGHT								07,29
) RPT	SU		SPRINGBROOK RD	CN		TRF SIGNAL	N	DRY	REAR	PRVTE	S -N							000	00
	12P			06	2		N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	70 M	OR-Y		026	000	07,29
	45 18 23.	12 -122 56	009100100S00												OR>25	5			
		48.94								02 NONE 0	STOP								
										PRVTE	S -N							011	00
										PSNGR CAR		01 DRVR	INJC	29 F	OR-Y		000	000	00
															OR>25	•			
)396 N N	N N N 05/01/201	9 14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 9	TURN-L								07
TY	WE		SPRINGBROOK RD	CN		TRF SIGNAL	N	DRY	REAR	N/A	NE-S							000	00
	9P			04	2		N	DLIT	PDO	PSNGR CAR		01 DRVR	NONE	00 U	nk UNK		000	000	00
	45 18 23.	35 -122 56	009100100S00												UNK				

URBAN NON-SYSTEM CRASH LISTING

CITY OF NEWBERG, YAMHILL COUNTY

SPRINGBROOK RD and PACIFIC HY 99W, City of Newberg, Yamhill County, 01/01/2016 to 12/31/2020

33 - 37 of 77 Crash records shown.

Part	S I	D M																
March Marc	SER# P	R J S W DATE CLASS	CITY STREET		INT-TYPE	1				SPCL USE								
Marcha	INVEST E A	U I C O DAY DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE			A S				
Control Cont	RD DPT E L (G N H R TIME FROM	SECOND STREET				RNDBT	SURF	COLL						PED			
	UNLOC? D C	S V L K LAT LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY			P# TYPE	SVRTY	Y E X RES	LOC	ERROR	ACT EVENT	CAUSE
																	013	00
March Marc										PSNGR CAR		01 DRVR	NONE			000	000	00
State Stat														UNK				
Paris Pari	00828 N N I	N N N 10/19/2020 1	4 PACIFIC HY 99W	INTER	CROSS	N	N	CLD	ANGL-OTH	01 NONE 9	STRGHT							04,02
This image	CITY	MO	SPRINGBROOK RD	CN		TRF SIGNAL	N	DRY	TURN	N/A	SW-NE						000	00
Part	N	1P		04	2		N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00 Unk UNK		000	000	00
	N		66 009100100S00											UNK				
Column C		48.95								02 NONE 9	TURN-R							
										N/A							088	00
1										PSNGR CAR		01 DRVR	NONE			000	000	00
Column C	00100 27 27	77 77 02 /06 /0000 1	4						g 1gmgp	01 27027	CORD CLUT			UNK				00.05.05
N	00129 N N I	N N N 03/06/2020 1	4 PACIFIC HY 99W	ALLEY		N	N	CLR	S-ISTOP	01 NONE	STRGHT							29,07,27
	CITY	FR	SPRINGBROOK RD	SW	(RSDMD)	UNKNOWN	N	WET	REAR	PRVTE	NE-SW						000	00
The column Column	N	1P		03			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	20 F OR-Y		026	000	29,07,27
Control Cont	N		66 009100100S00		(04)									OR<25	5			
Part		51.52								02 NONE	STOP							
This											NE-SW							
STATE STAT										PSNGR CAR		01 DRVR	INJC			000	000	00
Clif Fig. Section	01134 N N I	N N N 10/18/2017 1	4 DACTETC HV 99W	Δτ.τ.ψ		N	N	FOG		N 01 NONE 9	STRCHT			OR VZ)			02 08
Name					(MONTE)												0.00	
N	CITY	ME	SPRINGBROOK RD	W	(NONE)	UNKNOWN	N	DRY	TURN	N/A	F: -M						000	00
Since Sinc				04			N	DLIT	PDO	PSNGR CAR		01 DRVR	NONE			000	000	00
N N N O O O O O O O O	N		6 009100100S00		(04)									UNK				
State Stat																		
N N N N N N N N N N N N N N N N N N N											M -N	01 DRVR	NONE:	00 link link		000		
NOME THE SPRINGBROOK RD N (NOME) UNKNOWN N DRY REAR N/A N-S										I BIVOIC CITE		OI DICVIC	NONE			000	000	
N	00502 N N I	N 05/17/2018 1	4 PACIFIC HY 99W	STRGHT	'	N	N	CLR	S-STRGHT	01 NONE 9	STRGHT							07,29
N 45 18 25.55 -122 56 41.12 90 001010000	NONE	TH	SPRINGBROOK RD	N	(NONE)	UNKNOWN	N	DRY	REAR	N/A	N -S						000	00
11.12	N	5P		03			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00 Unk UNK		000	000	00
N N N N N N N N N N	N				(04)									UNK				
N N N N N N N N N N		41.12								02 NONE 9	STRGHT							
CITY 12P																	000	00
01199 N N N N 11/21/2018 14 PACIFIC HY 99W STRGHT N N N CLD S-STRGHT 01 NONE 9 STRGHT CITY WE SPRINGBROOK RD N (NONE) TRF SIGNAL N WET REAR N/A N -S N 12P 03 03 N N DAY PDO PSNGR CAR 01 DRVR NONE 00 UNK UNK 000 000 000 N 45 18 23.97 -122 56 009100100S00 (04)										PSNGR CAR		01 DRVR	NONE			000	000	00
CITY WE SPRINGBROOK RD N (NONE) TRF SIGNAL N WET REAR N/A N -S	01100 27 27	11 /01 /0010 1	4	Omp dram					2 CMD CITE	01 270277	amp aven			UNK			115	0.5.05
N 12P 03 N DAY PDO PSNGR CAR 01 DRVR NONE 00 Unk UNK 000 00 00 N 45 18 23.97 -122 56 009100100S00 (04)																		
N 45 18 23.97 -122 56 009100100S00 (04)	CITY	WE	SPRINGBROOK RD		(NONE)	TRF SIGNAL	N	WET	REAR	N/A	N -S							00
			000100100-00	03	(0.4)		N	DAY	PDO	PSNGR CAR		01 DRVR	NONE			000	000	00
	IA				(U4)									UNK				

URBAN NON-SYSTEM CRASH LISTING

CITY OF NEWBERG, YAMHILL COUNTY

SPRINGBROOK RD and PACIFIC HY 99W, City of Newberg, Yamhill County, 01/01/2016 to 12/31/2020

38 - 42 of 77 Crash records shown.

S D M																		
SER# P R J S	W DATE	CLASS	CITY STREET		INT-TYPE					SPCL USE								
INVEST E A U I C		DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE			A S				
RD DPT E L G N H	R TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G E	LICNS PED)		
UNLOC? D C S V L	K LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V# TYPE	TO STOP	P# TYPE	SVRTY	E X	RES LOC	ERROR	ACT EVENT	CAUSE
										02 NONE 9 N/A	N -S						012	00
										PSNGR CAR	1. 5	01 DRVR	NONE	00 Unk	UNK	000	000	00
															UNK			
01222 N N N	11/28/2018	14	PACIFIC HY 99W	STRGHT		Y	N	RAIN	S-1STOP	01 NONE 9	STRGHT							07,29
NONE	WE		SPRINGBROOK RD	N	(NONE)	TRF SIGNAL	N	WET	REAR	N/A	N -S						000	00
N.	1P			03			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00 Unk	IINK	000	000	00
ī	45 18 23.68		009100100S00	V S	(04)		14	DIII	150	I BNOIC CINC		or bittie	NONE		UNK	000		00
		47.22								02 NONE 9	STOP							
										N/A	N -S						011	00
										PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000	00
															UNK			
00622 N N N	06/28/2019	14	PACIFIC HY 99W	STRGHT		N	N	CLR	S-1STOP	01 NONE	STRGHT							29,27,07
IONE	FR		SPRINGBROOK RD	N	(NONE)	TRF SIGNAL	N	DRY	REAR	PRVTE	N -S						000	00
Ī	5P			08			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	20 M	OR-Y	026	000	29,27,0
ī	45 18 24.22		009100100S00		(04)										OR<25			
		45.48								02 NONE	STOP							
										PRVTE	N -S						011	00
										PSNGR CAR		01 DRVR	NONE	20 M	OR-Y	000	000	00
															OR<25			
										02 NONE	STOP						0.4.4	
										PRVTE PSNGR CAR	N -S	02 PSNG	TNIC	21 ₽		000	011 000	00 00
										PSNGR CAR		UZ PSNG	INOC	ZI F		000	000	00
00278 N N N	03/09/2018	16	SPRINGBROOK RD	STRGHT		Y	N	CLR	S-1STOP	01 NONE 9	STRGHT							07,29
IO RPT	FR	29	PACIFIC HY 99W	N	(NONE)	TRF SIGNAL	N	DRY	REAR	N/A	M -E						000	00
1	4P			06			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000	00
I	45 18 24.05				(03)										UNK			
		48.95								0.0 MONTE 0	CMD CITIM							
										02 NONE 9 N/A	STRGHT W -E						012	00
										PSNGR CAR	2	01 DRVR	NONE	00 Unk	UNK	000	000	00
															UNK			
00350 N N N	04/07/2017	16	SPRINGBROOK RD	STRGHT		Y	N	CLR	S-1STOP	01 NONE 9	STRGHT							29
IONE	FR	50	PACIFIC HY 99W	N	(RSDMD)	L-GRN-SIG	N	DRY	REAR	N/A	N -S						000	00
N	9A			06			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000	00
ī	45 18 24.24				(03)										UNK			
		48.95								02 NONE 9	STOP							
										N/A	N -S						012	00
										PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000	00
															UNK			

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URBAN NON-SYSTEM CRASH LISTING

CITY OF NEWBERG, YAMHILL COUNTY

SPRINGBROOK RD and PACIFIC HY 99W, City of Newberg, Yamhill County, 01/01/2016 to 12/31/2020

43 - 45 of 77 Crash records shown.

S D M																			
SER# P R J	S W DATE CLASS	CITY STREET		INT-TYPE]				SPCL USE										
INVEST E A U I	C O DAY DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE				A S	5				
RD DPT E L G N	H R TIME FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	! IN	J	G I	E LICNS	PED			
UNLOC? D C S V	L K LAT LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V# TYPE	TO	P# TYPE	SV	RTY	E 2	K RES	LOC	ERROR	ACT EVENT	CAUSE
00841 N N N	08/19/2018 16	SPRINGBROOK RD	STRGHT		Y	N	CLR	S-1STOP	01 NONE	STRGHT									29
NONE	SU 100	PACIFIC HY 99W	N	(NONE)	UNKNOWN	N	DRY	REAR	PRVTE	N -S								000	00
N N	4P 45 18 24.83 -122 5 48.95	6	06	(02)		N	DAY	INJ	PSNGR CAR		01 DRVR	. NO	NE	26 F	OTH-Y N-RES		026	000	29
									02 NONE	STOP									
									PRVTE	N -S								011	00
									PSNGR CAR		01 DRVR	l IN	JC	25 M	OR-Y OR>25		000	000	00
									02 NONE	STOP									
									PRVTE PSNGR CAR	N -S	02 PSNG	Th.	та	00 17			000	011 000	00 00
											UZ PSNG	r IIV	JC	00 F			000	000	00
									02 NONE	STOP								011	0.0
									PRVTE PSNGR CAR	N -S	03 PSNG	t TNI	TC.	п 00			000	011 000	00 00
									I DIVOIT CITE		05 15110		00	00 1			000		00
									02 NONE	STOP									
									PRVTE	N -S								011	00
									PSNGR CAR		04 PSNG	; IN	JC	M 00			000	000	00
00867 N N N	08/27/2018 16	5 SPRINGBROOK RD	STRGHT		N	N	CLR	S-1STOP	01 NONE	STRGHT									13
NO RPT	MO 100	PACIFIC HY 99W	N	(NONE)	UNKNOWN	N	DRY	REAR	PRVTE	N -S								000	00
N	2P		08			N	DAY	INJ	PSNGR CAR		01 DRVR	NO:	NE	30 M	OR-Y		000	000	00
И	45 18 24.81 -122 5 48.95	6		(02)											OR>25				
									02 NONE	STOP								011	00
									PRVTE PSNGR CAR	N -S	01 DRVR	TN	TC	37 M	OR-Y		045,009	011 000	13
															OR>25				
01136 N N N	09/24/2016 14		STRGHT		Y	N	CLR	S-1STOP	01 NONE 0	STRGHT									29
NONE	SA	SPRINGBROOK RD	NE	(NONE)	UNKNOWN	N	DRY	REAR	PRVTE	N -S								006	00
N	11A		04			N	DAY	INJ	PSNGR CAR		01 DRVR	NO.	NE	63 M	OTH-Y	-	026	000	29
N	45 18 28.98 -122 5 30.07	6 009100100S00		(04)											N-RES				
									02 NONE 0	STOP								011	0.0
									PRVTE PSNGR CAR	N -S	01 DRVR	TN	TC	24 🗜	OB_V		000	011 000	00 00
									FONGR CAR		OI DRVR	. III		47 F	OR-1				
01436 N N N	Y 11/28/2016 14	PACIFIC HY 99W	STRGHT		Y	N	UNK	S-1STOP	01 NONE 0	STRGHT								013	32,29,27
CITY	МО	SPRINGBROOK RD	NE	(RSDMD)	UNKNOWN	N	WET	REAR	PRVTE	NE-SW								000	00
N	6P		03			N	DLIT	INJ	PSNGR CAR		01 DRVR	. NO	NE	21 M			052,026,016	000	32,29,27
N	45 18 23.67 -122 5 47.21	6 009100100800		(04)											OR<25				

URBAN NON-SYSTEM CRASH LISTING

CITY OF NEWBERG, YAMHILL COUNTY

SPRINGBROOK RD and PACIFIC HY 99W, City of Newberg, Yamhill County, 01/01/2016 to 12/31/2020

46 - 50 of 77 Crash records shown.

	S D M																				
SER#	Р КЈ	S W DATE	CLASS	CITY STREET		INT-TYPE					SPCL USE										
INVEST	EAUI	C O DAY	DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE			P	A S					
RD DPT	ELGNI	H R TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED			
UNLOC?	DCSVI	L K LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V# TYPE	TO	P# TYPE	SVRTY	Z E	E X	RES	LOC	ERROR	ACT EVENT	CAUSE
								-			02 NONE 0	STOP									
											PRVTE PSNGR CAR	NE-SW	01 DRVR	TNITC	42) 1 _M	NONE		000	011 013 000	00
											PSNGR CAR		UI DKVK	INUC	42	. IVI	OR<25		000	000	00
											03 NONE 0	STOP									
											PRVTE	NE-SW								022	00
											PSNGR CAR		01 DRVR	NONE	17	F	OR-Y		000	000	00
																	OR<25				
01518	N N N	12/14/2016	14	PACIFIC HY 99W	STRGHT		Y	N	SNOW	S-1STOP	01 NONE 0	STRGHT									32,29,27
CITY		WE		SPRINGBROOK RD	NE	(RSDMD)	NONE	N	SNO	REAR	PRVTE	NE-SW								000	00
		0.D			0.4			3.7	D311	T	DOMOD GAD		01 DDID	NONE	4.4	_	0D 11		050 006 016	000	20 00 07
N N		2P 45 18 25.2	2 _122 56	009100100S00	04	(04)		N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	44	F	OR-Y OR<25		052,026,016	000	32,29,27
IN		45 10 25.2	42.01	009100100500		(04)											ORVES				
											02 NONE 0	STOP									
											PRVTE	NE-SW	01 pprm	a	0.5	_			0.00	011	00
											PSNGR CAR		01 DRVR	INJC	25	F	OR-Y OR<25		000	000	00
00042	YNNI	N N 01/10/2016	14	PACIFIC HY 99W	STRGHT		Y	N	CLD	S-1STOP	01 NONE 9	STRGHT					ORVES				01,22
a		077		annann ao nn		(2022)					27 / 2									000	0.0
CITY		SU		SPRINGBROOK RD	NE	(RSDMD)	UNKNOWN	N	DRY	REAR	N/A	NE-SW								000	00
N		3P			06			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK		000	000	00
N		45 18 23.4	-122 56 48.08	009100100S00		(04)											UNK				
			40.00								02 NONE 9	STOP									
											N/A	NE-SW								011	00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK		000	000	00
																	UNK				
00845	N N N	07/25/2016	14	PACIFIC HY 99W	STRGHT		Y	N	CLR	S-1STOP	01 NONE 9	STRGHT									29,27
NONE		MO		SPRINGBROOK RD	NE	(RSDMD)	UNKNOWN	N	DRY	REAR	N/A	NE-SW								000	00
N		11A			08			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	0.0	l IInk	IINK		000	000	00
N		45 18 23.6	7 -122 56	009100100S00		(04)			2111	120	T DIVOIT OTHE		01 211111	1,01,2	0.0	01111	UNK				
			47.21																		
											02 NONE 9	STOP								011	0.0
											N/A PSNGR CAR	NE-SW	01 DRVR	NONE	0.0	I IInk	TINTE		000	011 000	00 00
											FBNGK CAR		OI DRVR	NOINE	00	OIIN	UNK		000	000	00
01239	N N N	10/09/2016	14	PACIFIC HY 99W	STRGHT		N	N	RAIN	S-1STOP	01 NONE 9	STRGHT									07,16
CITY		SU		SPRINGBROOK RD	NE	(RSDMD)	UNKNOWN	N	WET	REAR	N/A	NE-SW								000	00
CIII		50		SEKTINGDROOK KD	TAE	(Madea)	OTATATAOMIA	IA	AA TO I	NAUN.	14 / W	™C-DM								500	00
N		7P			03			N	DLIT	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk			000	000	00
N		45 18 23.9		009100100S00		(04)											UNK				
			46.35								02 NONE 9	STOP									
											N/A	NE-SW								011	00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK		000	000	00

URBAN NON-SYSTEM CRASH LISTING

CITY OF NEWBERG, YAMHILL COUNTY

SPRINGBROOK RD and PACIFIC HY 99W, City of Newberg, Yamhill County, 01/01/2016 to 12/31/2020

51 - 53 of 77 Crash records shown.

S D M																		
SER# P R J		CITY STREET		INT-TYPE					SPCL USE									
INVEST E A U I		FIRST STREET	RD CHAR		INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE			А	S				
RD DPT E L G N		SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ		E LICNS	משם ב			
UNLOC? D C S V		LRS	LOCTN	(#LANES)		DRVWY	LIGHT		V# TYPE	TO	P# TYPE	SVRTY			LOC	ERROR	ACT EVENT	CAUSE
01348 N N N	11/08/2016 14	PACIFIC HY 99W	STRGHT	(ELIVED)	N	N	CLR	S-1STOP	01 NONE 9	STRGHT	1 11111	BVICIT		TI RED	100	Entron	THE HABIT	29
NONE	TU	SPRINGBROOK RD	NE	(RSDMD)	UNKNOWN	N	WET	REAR	N/A	SW-NE							000	00
N	7A		05	,		N	DAWN	PDO	PSNGR CAR		01 DRVR	NONE	00 11	mle IINIZ		000	000	00
N	45 18 24.82 -122 56	009100100S00	05	(04)		IN	DAWN	PDO	PSNGR CAR		UI DRVR	NONE	00 0.	UNK		000	000	00
	43.5			,														
									02 NONE 9 N/A	STOP SW-NE							011	00
									PSNGR CAR	SW-NE	01 DRVR	NONE	00 U:	nk UNK		000	000	00
														UNK				
00189 N N N	02/26/2017 14	PACIFIC HY 99W	STRGHT		N	N	CLD	S-STRGHT	01 NONE 0	STRGHT							044	13
IO RPT	SU	SPRINGBROOK RD	NE	(RSDMD)	UNKNOWN	N	SNO	SS-O	PRVTE	NE-SW							000	00
1	4P		08			N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	52 F	OR-Y		045	000	13
4	45 18 25.66 -122 56	009100100S00		(04)			2111	2110	1 Divoit Grat		01 211111	1,01,2	J2 1	OR<25		0.13		13
	40.77								02 NONE 0	STRGHT								
									PRVTE	NE-SW							029 044	00
									PSNGR CAR		01 DRVR	INJC	45 F	OR-Y OR<25		000	000	00
									02 NONE 0	STRGHT				OKZ	,			
									PRVTE	NE-SW							029 044	00
									PSNGR CAR		02 PSNG	INJC	22 F			000	000	00
00261 N N N	Y 03/14/2017 14	PACIFIC HY 99W	STRGHT		Y	N	RAIN	S-1STOP	01 NONE 0	STRGHT							013	07
	Y 03/14/2017 14	PACIFIC HY 99W SPRINGBROOK RD	STRGHT NE	(RSDMD)	Y UNKNOWN	N N	RAIN WET	S-1STOP REAR	01 NONE 0	STRGHT NE-SW							013	07
CITY	TU		NE	(RSDMD)		N	WET	REAR	PRVTE		01 DRVR	NONE:	46 F	OR-Y		043	000	00
CITY 1	TU 6P 45 18 23.94 -122 56			(RSDMD)							01 DRVR	NONE	46 F	OR-Y OR<25		043		
ITY	TU 6P	SPRINGBROOK RD	NE			N	WET	REAR	PRVTE PSNGR CAR	NE-SW	01 DRVR	NONE	46 F			043	000	00
CITY	TU 6P 45 18 23.94 -122 56	SPRINGBROOK RD	NE			N	WET	REAR	PRVTE PSNGR CAR 02 NONE 0	NE-SW	01 DRVR	NONE	46 F			043	000	00 07
ITY	TU 6P 45 18 23.94 -122 56	SPRINGBROOK RD	NE			N	WET	REAR	PRVTE PSNGR CAR	NE-SW	01 DRVR			OR<25		043	000	00
ITY	TU 6P 45 18 23.94 -122 56	SPRINGBROOK RD	NE			N	WET	REAR	PRVTE PSNGR CAR 02 NONE 0 PRVTE PSNGR CAR	NE-SW STOP NE-SW				OR<25	5		000 000 011 013	00 07 00
ITY	TU 6P 45 18 23.94 -122 56	SPRINGBROOK RD	NE			N	WET	REAR	PRVTE PSNGR CAR 02 NONE 0 PRVTE PSNGR CAR 03 NONE 0	NE-SW STOP NE-SW				OR<25	5		000 000 011 013 000	00 07 00 00
ITY	TU 6P 45 18 23.94 -122 56	SPRINGBROOK RD	NE			N	WET	REAR	PRVTE PSNGR CAR 102 NONE 0 PRVTE PSNGR CAR 103 NONE 0 PRVTE	NE-SW STOP NE-SW	01 DRVR	INJC	29 F	OR<25 EXP OR<25	5	000	000 000 011 013 000	00 07 00 00
ITY	TU 6P 45 18 23.94 -122 56	SPRINGBROOK RD	NE			N	WET	REAR	PRVTE PSNGR CAR 02 NONE 0 PRVTE PSNGR CAR 03 NONE 0	NE-SW STOP NE-SW		INJC	29 F	OR<25 EXP OR<25	5		000 000 011 013 000	00 07 00 00
ZITY I	TU 6P 45 18 23.94 -122 56	SPRINGBROOK RD	NE			N	WET	REAR	PRVTE PSNGR CAR 102 NONE 0 PRVTE PSNGR CAR 103 NONE 0 PRVTE PSNGR CAR 104 NONE 0	NE-SW STOP NE-SW STOP NE-SW	01 DRVR	INJC	29 F	OR<25 EXP OR<25 OR-Y	5	000	000 000 011 013 000 022 013	00 07 00 00
CITY	TU 6P 45 18 23.94 -122 56	SPRINGBROOK RD	NE			N	WET	REAR	PRVTE PSNGR CAR 102 NONE 0 PRVTE PSNGR CAR 103 NONE 0 PRVTE PSNGR CAR 104 NONE 0 PRVTE	NE-SW STOP NE-SW STOP NE-SW	01 DRVR 01 DRVR	INJC	29 F	OR<25 EXP OR<25 OR-Y OR<25	5	000	000 000 011 013 000 022 013 000	00 07 00 00 00
CITY 1	TU 6P 45 18 23.94 -122 56	SPRINGBROOK RD	NE			N	WET	REAR	PRVTE PSNGR CAR 102 NONE 0 PRVTE PSNGR CAR 103 NONE 0 PRVTE PSNGR CAR 104 NONE 0	NE-SW STOP NE-SW STOP NE-SW	01 DRVR	INJC	29 F	OR<25 EXP OR<25 OR-Y OR<25	5	000	000 000 011 013 000 022 013	00 07 00 00
CITY	TU 6P 45 18 23.94 -122 56	SPRINGBROOK RD	NE			N	WET	REAR	PRVTE PSNGR CAR 102 NONE 0 PRVTE PSNGR CAR 103 NONE 0 PRVTE PSNGR CAR 104 NONE 0 PRVTE	NE-SW STOP NE-SW STOP NE-SW	01 DRVR 01 DRVR	INJC	29 F	OR<25 EXP OR<25 OR-Y OR<25	5	000	000 000 011 013 000 022 013 000	00 07 00 00 00
O0261 N N N CITY N	TU 6P 45 18 23.94 -122 56	SPRINGBROOK RD	NE			N	WET	REAR	PRVTE PSNGR CAR 02 NONE 0 PRVTE PSNGR CAR 03 NONE 0 PRVTE PSNGR CAR 04 NONE 0 PRVTE PSNGR CAR	NE-SW STOP NE-SW STOP NE-SW	01 DRVR 01 DRVR	INJC NONE	29 F 69 F 45 F	OR<25 EXP OR<25 OR-Y OR<25 OR-Y OR<25	5	000	000 000 011 013 000 022 013 000	00 07 00 00 00

URBAN NON-SYSTEM CRASH LISTING

CITY OF NEWBERG, YAMHILL COUNTY

SPRINGBROOK RD and PACIFIC HY 99W, City of Newberg, Yamhill County, 01/01/2016 to 12/31/2020

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54 - 58 of 77 Crash records shown.

S D 1	M																			
SER# P R	J S W DATE CLAS	SS	CITY STREET		INT-TYPE					SPCL USE										
INVEST E A U	I C O DAY DIST	Т	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE				A S					
RD DPT E L G	N H R TIME FROM	M	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ		G E	LICNS	PED			
UNLOC? D C S	V L K LAT LONG	G	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V# TYPE	TO	P# TYPE	SVRT	Ϋ́	E X	RES	LOC	ERROR	ACT EVENT	CAUSE
01336 N N N	N N 12/15/2017	14	PACIFIC HY 99W	STRGHT		N	N	CLD	S-1STOP	01 NONE 0	STRGHT									27,29,32
CITY	FR		SPRINGBROOK RD	NE	(RSDMD)	UNKNOWN	N	DRY	REAR	PRVTE	NE-SW								000	00
N N	4P 45 18 23.94 -122	2 56	009100100s00	03	(04)		N	DUSK	INJ	PSNGR CAR		01 DRVR	NONE	4		OR-Y OR>25		016,026,052	038	27,29,32
	46.3	35								02 NONE 0	STOP									
										PRVTE	NE-SW								011	00
										PSNGR CAR		01 DRVR	INJC	5		OR-Y OR<25		000	000	00
00801 N N N	08/01/2017	14	PACIFIC HY 99W	STRGHT		Y	N	CLR	S-STRGHT	01 NONE 9	STRGHT									13
NONE	TU		SPRINGBROOK RD	NE	(RSDMD)	UNKNOWN	N	DRY	SS-O	N/A	NE-SW								000	00
N	8P		000000000000000000000000000000000000000	03	(0.5)		N	DUSK	PDO	PSNGR CAR		01 DRVR	NONE	0	0 Unk			000	000	00
N	45 18 23.67 -122 47.2		009100100S00		(04)											UNK				
	17.11									02 NONE 9	STRGHT									
										N/A	NE-SW								006	00
										PSNGR CAR		01 DRVR	NONE	0		UNK UNK		000	000	00
00835 N N N	Y 08/10/2017	14	PACIFIC HY 99W	STRGHT		Y	N	CLR	S-1STOP	01 NONE 9	STRGHT									29,27
CITY	TH		SPRINGBROOK RD	NE	(RSDMD)	UNKNOWN	N	DRY	REAR	N/A	NE-SW								006	00
N	12P	0.56	000100100000	03	(0.4)		N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	0				000	000	00
N	45 18 24.52 -122 44.4		009100100S00		(04)											UNK				
										02 NONE 9	STOP								011	0.0
										N/A PSNGR CAR	NE-SW	01 DRVR	NONE	۰ ،	0 IInk	IINK		000	011 000	00 00
										I BNOK CAR		OI DRVR	NOINE			UNK				
00857 N N N	08/14/2017	14	PACIFIC HY 99W	STRGHT		N	N	CLR	S-1STOP	01 NONE 9	STRGHT									29
NONE	MO		SPRINGBROOK RD	NE	(RSDMD)	UNKNOWN	N	DRY	REAR	N/A	SW-NE								000	00
N	5P			05			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	0				000	000	00
N	45 18 23.67 -122 47.2		009100100S00		(04)											UNK				
										02 NONE 9	STOP									
										N/A	SW-NE								011	00
										PSNGR CAR		01 DRVR	NONE	0		UNK UNK		000	000	00
00540 N N N	N N 06/07/2019	14	PACIFIC HY 99W	STRGHT		N	N	CLR	S-1STOP	01 NONE 9	STRGHT									07
CITY	FR		SPRINGBROOK RD	NE	(DIVMD)	UNKNOWN	N	DRY	REAR	N/A	NE-SW								000	00
N	2P			04			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	0				000	000	00
N	45 18 24.21 -122 45.6		009100100S00		(04)											UNK				
										02 NONE 9	STOP									
										N/A	NE-SW	01 ====	***		0 1			0.00	011	00
										PSNGR CAR		01 DRVR	NONE	: 0		UNK UNK		000	000	00
																OINIV				

URBAN NON-SYSTEM CRASH LISTING

CITY OF NEWBERG, YAMHILL COUNTY

SPRINGBROOK RD and PACIFIC HY 99W, City of Newberg, Yamhill County, 01/01/2016 to 12/31/2020

59 - 61 of 77 Crash records shown.

S D M																					
SER# P R J S	W DATE CL	LASS	CITY STREET		INT-TYPE					SPCL USE											
INVEST E A U I C	O DAY DI	IST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE				A	S					
RD DPT E L G N H	R TIME FR	ROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ		G	E LI	CNS	PED			
UNLOC? D C S V L	K LAT LO	ONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V# TYPE	TO	P# TYPE	SVR	TY	E	X RE	S	LOC	ERROR	ACT EVENT	CAUSE
00999 N N N N	N 10/11/2019	14	PACIFIC HY 99W	STRGHT		N	N	CLR	S-1STOP	01 NONE	STRGHT										07
CITY	FR		SPRINGBROOK RD	NE	(DIVMD)	UNKNOWN	N	DRY	REAR	PRVTE	SW-NE									000	00
N	4P			05			N	DAY	INJ	PSNGR CAR		01 DRVR	NON	E 1	.8 M	OR	-Y		043	000	07
N	45 18 25.22 -1		009100100S00		(04)											OR	>25				
	42	2.31								01 NONE	STRGHT										
										PRVTE	SW-NE									000	00
										PSNGR CAR		02 PSNG	INJ	C 1	.8 F				000	000	00
										02 NONE	STOP										
										PRVTE	SW-NE									011	00
										PSNGR CAR		01 DRVR	INJ	C 5	1 M	TO	H-Y		000	000	00
																N-	RES				
00980 N N N N	12/14/2020	14	PACIFIC HY 99W	STRGHT		N	N	CLR	S-1STOP	01 NONE	STRGHT									013	07
NO RPT	MO		SPRINGBROOK RD	NE	(RSDMD)	UNKNOWN	N	DRY	REAR	PRVTE	NE-SW									000	00
N	5P			04			N	DLIT	INJ	PSNGR CAR		01 DRVR	NON	E 4	9 M				026	000	07
N	45 18 23.98 -1 46	L22 56 5.31	009100100S00		(04)											OR	<25				
	10									02 NONE	STOP										
										PRVTE	NE-SW									011 013	00
										PSNGR CAR		01 DRVR	INJ	C 5	5 M		Y .<25		000	000	00
										03 NONE	STOP										
										PRVTE	NE-SW									011 013	00
										PSNGR CAR		01 DRVR	NON	E 5	2 F		Y .<25		000	000	00
										04 NONE	STOP					OI	.~23				
										PRVTE	NE-SW									022	00
										PSNGR CAR		01 DRVR	NON	E 2	7 M		H-Y		000	000	00
00040 37 37 37	10/02/0000	1.4	D107770 177 0011	CERT CLUE				GT D	g 1 gmon	0.1 270277	amp arm					N-	RES				0.7
00949 N N N	12/03/2020	14	PACIFIC HY 99W	STRGHT		Y	N	CLR	S-1STOP	01 NONE 9	STRGHT										07
NONE	TH		SPRINGBROOK RD	NE	(RSDMD)	UNKNOWN	N	DRY	REAR	N/A	NE-SW									088	00
N	UNK			04			N	UNK	PDO	PSNGR CAR		01 DRVR	NON	E C	0 U1				000	000	00
N	45 18 23.97 -1	L22 56 5.29	009100100S00		(04)											UN	K				
	10									02 NONE 9	STOP										
										N/A	NE-SW									011	00
										PSNGR CAR		01 DRVR	NON	E C	10 U1	nk UN UN			000	000	00
00804 N N N	08/09/2018	14	PACIFIC HY 99W	STRGHT		N	N	CLR	S-STRGHT	01 NONE 9	STRGHT										07,29
NONE	ТН		SPRINGBROOK RD	E	(NONE)	UNKNOWN	N	DRY	REAR	N/A	W -E									000	00
N	11P			05			N	DLIT	PDO	PSNGR CAR		01 DRVR	NON	E. C	ידז חו	nk IIN	к		000	000	00
N	45 18 23.69 -1		009100100S00		(04)			2211		2 22.31. 62.11.		OI DIVIN	21011	_	5 01	UN					. .
	47	7.24																			

URBAN NON-SYSTEM CRASH LISTING

CITY OF NEWBERG, YAMHILL COUNTY

SPRINGBROOK RD and PACIFIC HY 99W, City of Newberg, Yamhill County, 01/01/2016 to 12/31/2020

62 - 66 of 77 Crash records shown.

	S D M																			
	P RJS		CLASS	CITY STREET		INT-TYPE					SPCL USE									
	EAUIC		DIST	FIRST STREET	RD CHAR		INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE			A 5					
	ELGNHI		FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC			E LICNS				
UNLOC?	DCSVLI	LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V# TYPE 02 NONE 9	TO STRGHT	P# TYPE	SVRTY	E 2	RES	LOC	ERROR	ACT EVENT	CAUSE
											N/A	W -E							006	00
											PSNGR CAR		01 DRVR	NONE	00 Ur	ık UNK UNK		000	000	00
00974	N N N	09/21/2018	14	PACIFIC HY 99W	STRGHT		Y	N	CLR	S-1STOP	01 NONE 9	STRGHT								07,29
NONE		FR		SPRINGBROOK RD	S	(NONE)	TRF SIGNAL	N	DRY	REAR	N/A	S -N							000	00
N N		5P 45 18 22.71	-122 56 50.36	009100100s00	06	(04)		N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00 Ur	ık UNK UNK		000	000	00
											02 NONE 9	STOP								
											N/A	S -N	01 DDID	MONTE	0.0 17-	1		000	011	00
											PSNGR CAR		01 DRVR	NONE	00 Ur	UNK		000	000	00
00154	Y N N	02/21/2020	16	SPRINGBROOK RD	STRGHT		N	N	CLR	S-1STOP	01 NONE 9	STRGHT								07,01
NONE		FR		PACIFIC HY 99W	S	(NONE)	UNKNOWN	N	DRY	REAR	N/A	N -S							088	00
1 1		3P 45 18 19.5		003900100s00	03	(02)		N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00 Ur	ık UNK UNK		000	000	00
			49.07								02 NONE 9	STOP								
											N/A	N -S							011	00
											PSNGR CAR		01 DRVR	NONE	00 Ur	ık UNK UNK		000	000	00
00793	N N N	07/14/2016	14	PACIFIC HY 99W	STRGHT		Y	N	CLR	S-1STOP	01 NONE 0	STRGHT								29
CITY		TH		SPRINGBROOK RD	SW	(RSDMD)	NONE	N	DRY	REAR	PRVTE	SW-NE							000	00
N N		11A 45 18 22.51		009100100s00	06	(04)		N	DAY	INJ	PSNGR CAR		01 DRVR	INJC	16 F	OR-Y OR<25		026	000	29
			51.05								02 NONE 0	STOP								
											PRVTE	SW-NE							011	00
											PSNGR CAR		01 DRVR	INJC	38 F	OR-Y OR<25		000	000	00
01157	Y N N	09/30/2016	14	PACIFIC HY 99W	STRGHT		Υ	N	CLR	S-1STOP	01 NONE 0	STRGHT								32,29,27
CITY		FR		SPRINGBROOK RD	SW	(RSDMD)	UNKNOWN	N	DRY	REAR	PRVTE	SW-NE							006	00
N N		10A 45 18 22.51	-122 56 51.05	009100100s00	06	(04)		N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	61 F	OR-Y OR<25		052,016,026	038	32,29,27
			J±.UJ								02 NONE 0	STOP								
											PRVTE	SW-NE							011	00
											PSNGR CAR		01 DRVR	INJC	61 M	OR-Y OR<25		000	000	00
00034	N N N	01/10/2017	14	PACIFIC HY 99W	STRGHT		Y	N	RAIN	S-1STOP	01 NONE 0	STRGHT							013	29
NONE		TU		SPRINGBROOK RD	SW	(RSDMD)	UNKNOWN	N	WET	REAR	PRVTE	SW-NE							000	00
N N		5A 45 18 22.51	-122 56 51.05	009100100S00	08	(04)		N	DLIT	INJ	PSNGR CAR		01 DRVR	NONE	34 M	OR-Y OR<25		026	000	29

URBAN NON-SYSTEM CRASH LISTING

CITY OF NEWBERG, YAMHILL COUNTY

SPRINGBROOK RD and PACIFIC HY 99W, City of Newberg, Yamhill County, 01/01/2016 to 12/31/2020

67 - 69 of 77 Crash records shown.

	-																		
	D M	GT 3 GG	G.T. G.							an at 110n									
	P R J S W DATE	CLASS	CITY STREET		INT-TYPE		OHEDD	T-IIII IID	CD A CII	SPCL USE	MOVE			n 0					
	E A U I C O DAY	DIST	FIRST STREET	RD CHAR		INT-REL	OFFRD		CRASH	TRLR QTY	MOVE	DDMG 1	T. N.T. T.	A S		, DED			
	E L G N H R TIME	FROM LONG	SECOND STREET LRS	DIRECT LOCTN	LEGS (#LANES)	TRAF-	RNDBT DRVWY		COLL SVRTY	OWNER V# TYPE	FROM TO		INJ			S PED	EDDOD	A COT DIVENTO	CAUSE
ONLOC: D	OCSVLKLAT	LONG	СЛЦ	LOCIN	(#LANES)	CONTL	DRVWI	LIGHT	SVKII	02 NONE 0	STOP	P# IIPE S	SVRTY	E X	. KES	LOC	ERROR	ACT EVENT	CAUSE
										PRVTE	SW-NE							011 013	00
										PSNGR CAR		01 DRVR N	NONE	00 M			000	000	00
										0.2 MONTH 0	GEO.D				UNK				
										03 NONE 0 PRVTE	STOP SW-NE							022	00
										PSNGR CAR	SW NE	01 DRVR I	INJC	47 M	OR-Y		000	000	00
															OR<2!	5			
00400 N	N N N N 04/23/2017	7 14	PACIFIC HY 99W	STRGHT		Y	N	CLR	S-1STOP	01 NONE 0	STRGHT								32,27,29
CITY	SU		SPRINGBROOK RD	SW	(RSDMD)	UNKNOWN	N	DRY	REAR	PRVTE	NE-SW							006	00
N	11A			04			N	DAY	INJ	PSNGR CAR		01 DRVR N	NONE	23 M	OR-Y		052,016,026	038	32,27,29
N	45 18 22.7		009100100S00		(04)										OR<2	5	, , , , , ,		, , ,
		50.35								02 NONE 0	STOP								
										PRVTE	NE-SW							011	00
										PSNGR CAR		01 DRVR I	INJC	30 F	OR-Y		000	000	00
															OR>2!	5			
										02 NONE 0 PRVTE	STOP NE-SW							011	00
										PSNGR CAR	NE-5W	02 PSNG I	INJC	46 F			000	000	00
										02 NONE 0	STOP								
										PRVTE	NE-SW	0.2 David T		42 =			000	011	00
										PSNGR CAR		03 PSNG I	LNJC	43 F			000	000	00
00947 N	N N N 09/05/2017	7 14	PACIFIC HY 99W	STRGHT		Y	N	CLR	S-STRGHT	01 NONE 0	STRGHT								13
NONE	TU		SPRINGBROOK RD	SW	(RSDMD)	L-GRN-SIG	N	DRY	SS-O	UNKN	SW-NE							000	00
N	11A			05			N	DAY	INJ	PSNGR CAR		01 DRVR I	INTC	22 M	OR-V		045	000	13
N	45 18 22.3	3 -122 56	009100100S00	03	(05)			DIII	1110	1 BNOIC CINC		of blevie 1	1110 C	33 11	OR>2!	5	013		13
		51.76								01 NOVE 0	CEED CLIE								
										01 NONE 0 UNKN	STRGHT SW-NE							000	00
										PSNGR CAR	SW NE	02 PSNG I	INJC	10 M			000	000	00
										01 NONE 0	STRGHT								
										UNKN PSNGR CAR	SW-NE	03 PSNG I	TNTC	06 M			000	000	00 00
										PSNGR CAR		US PSNG I	INUC	06 M			000	000	00
										01 NONE 0	STRGHT								
										UNKN	SW-NE							000	00
										PSNGR CAR		04 PSNG I	TNLTC						0.0
										r bivoit Crit			LINUC	50 F			000	000	00
											STRGHT		INOC	50 F			000	000	00
										02 NONE 0 PRVTE	STRGHT SW-NE		LINGC	50 F			000	000	00
										02 NONE 0		01 DRVR N			OR-Y OR<2!		000		

URBAN NON-SYSTEM CRASH LISTING

CITY OF NEWBERG, YAMHILL COUNTY

SPRINGBROOK RD and PACIFIC HY 99W, City of Newberg, Yamhill County, 01/01/2016 to 12/31/2020

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70 - 74 of 77 Crash records shown.

S D M																			
SER# P R J	S W DATE	CLASS	CITY STREET		INT-TYPE					SPCL USE									
INVEST E A U I	C O DAY	DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE				A S				
RD DPT E L G N	H R TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ		G E LI	CNS PED			
UNLOC? D C S V	L K LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V# TYPE	ТО	P# TYPE	SVR'	TY	E X RE	S LOC	ERROR	ACT EVENT	CAUSE
83662 N N N	06/19/2017	14	PACIFIC HY 99W	STRGHT		N	N	CLR	O-OTHER	01 NONE 9	BACK								10
NO RPT	MO		SPRINGBROOK RD	SW	(NONE)	UNKNOWN	N	DRY	BACK	N/A	SW-NE							000	00
N N	1P 45 18 22.1	1 -122 56	009100100s00	03	(04)		N	DAY	PDO	SEMI TOW		01 DRVR	NON:	E (00 Unk UN UN		000	000	00
		52.38								02 NONE 9	STRGHT								
										N/A	NE-SW							000	00
										PSNGR CAR		01 DRVR	NON:	E (00 Unk UN UN		000	000	00
00082 N N N	01/25/2017	14	PACIFIC HY 99W	STRGHT		N	N	RAIN	S-STRGHT	01 NONE 9	STRGHT								13
NONE	WE		SPRINGBROOK RD	SW	(RSDMD)	UNKNOWN	N	WET	SS-O	N/A	SW-NE							000	00
N N	7A 45 18 22.7	1 -122 56	009100100s00	06	(04)		N	DAWN	PDO	PSNGR CAR		01 DRVR	NON:	E (00 Unk UN UN		000	000	00
		50.35								02 NONE 9	STRGHT								
										N/A	SW-NE							000	00
										PSNGR CAR	211 212	01 DRVR	NON:	E (00 Unk UN UN		000	000	00
00956 N N N	N N 09/17/2018	14	PACIFIC HY 99W	STRGHT		N	N	CLR	S-1STOP	01 NONE	STRGHT								07,29
CITY	MO		SPRINGBROOK RD	SW	(RSDMD)	NONE	N	DRY	REAR	PRVTE	NE-SW							000	00
N	9A			03			N	DAY	INJ	PSNGR CAR		01 DRVR	NON:	E :	20 M OR		043	000	07,29
N	45 18 21.92	2 -122 56 5	3 009100100S00		(04)					02 NONE	STOP				OR	<25			
										PRVTE	NE-SW							011	00
										PSNGR CAR		01 DRVR	INJ	C :		-Y <25	000	000	00
										02 NONE	STOP								
										PRVTE	NE-SW							011	00
										PSNGR CAR		02 PSNG	INJ	C .	18 M		000	000	00
01130 N N N	N N 10/25/2018	14	PACIFIC HY 99W	STRGHT		Y	N	RAIN	S-STRGHT	01 NONE 9	STRGHT								27,07
CITY	TH		SPRINGBROOK RD	SW	(RSDMD)	TRF SIGNAL	N	WET	REAR	N/A	SW-NE							000	00
N N	5P 45 18 22.7		009100100s00	09	(04)		N	DAY	PDO	PSNGR CAR		01 DRVR	NON	E (00 Unk UN UN		000	000	00
		50.36								02 NONE 9	STRGHT								
										N/A	SW-NE							006	00
										PSNGR CAR		01 DRVR	NON:	E (00 Unk UN UN		000	000	00
00199 N N N	N N 03/06/2020	14	PACIFIC HY 99W	STRGHT		N	Y	CLD	FIX OBJ	01 NONE 0	STRGHT							062	10
CITY	FR		SPRINGBROOK RD	SW	(RSDMD)	NONE	N	WET	FIX	PRVTE	SW-NE							000 062	00
Y	9A 45 18 22.3	6 -122 56 51.54	009100100S00	08	(04)		N	DAY	INJ	PSNGR CAR		01 DRVR	INJ.	A i	83 M OR OR	-Y <25	081	000	10

URBAN NON-SYSTEM CRASH LISTING

CITY OF NEWBERG, YAMHILL COUNTY

SPRINGBROOK RD and PACIFIC HY 99W, City of Newberg, Yamhill County, 01/01/2016 to 12/31/2020

75 - 77 of 77 Crash records shown.

S D M																			
SER# P R J	S W DATE CL	LASS	CITY STREET		INT-TYPE					SPCL USE									
INVEST E A U I	C O DAY DI	IST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE			A S					
RD DPT E L G N :	H R TIME FR	ROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G E	LICNS	PED			
UNLOC? D C S V	L K LAT LC	ONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V# TYPE	TO	P# TYPE	SVRTY	E X	RES	LOC	ERROR	ACT EVENT	CAUSE
00886 N N N	N 11/06/2020	14	PACIFIC HY 99W	STRGHT		N	N	UNK	S-1STOP	01 NONE	STRGHT								07
NONE	FR		SPRINGBROOK RD	SW	(RSDMD)	UNKNOWN	N	WET	REAR	PRVTE	SW-NE							000	00
N	12P			06			N	DAY	INJ	PSNGR CAR		01 DRVR	TNJC	72 F	OR-Y		026	000	07
N	45 18 22.19 -1	122 56 2.16	009100100S00	00	(04)		14	DAI	1140	I BIVOIC CAIC		OI DICVIC	INOC		OR<25		020	000	07
	52	2.10								01 NONE	STRGHT								
										PRVTE	SW-NE							000	00
										PSNGR CAR		02 PSNG	INJC	53 F			000	000	00
										02 NONE	STOP								
										PRVTE	SW-NE							011	00
										PSNGR CAR		01 DRVR	NONE		OR-Y		000	000	00
															OR<25				
00358 N N N	05/23/2020	14	PACIFIC HY 99W	STRGHT		Y	N	CLR	S-STRGHT	01 NONE 9	STRGHT								06,13
NONE	SA		SPRINGBROOK RD	SW	(RSDMD)	L-GRN-SIG	N	DRY	SS-0	N/A	SW-NE							052	00
N	10A			05			N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00 Unk	UNK		000	000	00
N	45 18 22.19 -1	122 56 2.16	009100100S00		(04)										UNK				
	32	2.10								02 NONE 9	STRGHT								
										N/A	SW-NE							000	00
										PSNGR CAR		01 DRVR	NONE	00 Unk	UNK UNK		000	000	00
00415 N N N	06/18/2020	14	PACIFIC HY 99W	STRGHT		N	N	CLR	O-STRGHT	01 NONE	STRGHT							044	15,10
CITY	TH		SPRINGBROOK RD	SW	(RSDMD)	UNKNOWN	N	DRY	HEAD	PRVTE	NE-SW							029	00
N	10A			04			N	DAY	INJ	PSNGR CAR		01 DRVR	INJB	26 M	OR-Y		039	017	15,10
N	45 18 22.19 -1 52	122 56 2.21	009100100S00		(04)										OR<25				
	32									02 NONE	STRGHT								
										PRVTE	SW-NE							000	00
										PSNGR CAR		01 DRVR	INJA		OR-Y		000	000	00
															OR<25				

Appendix E

Left-turn Lane Warrant Calculations

Traffic Signal Warrant Calculations



Left-Turn Lane Warrant Analysis



Project: Haworth Avenue Apartments
Intersection: 2. Site Access at Haworth Avenue

Date: 5/12/2022

Scenario: 2029 Future Conditions - AM Peak Hour (WB)

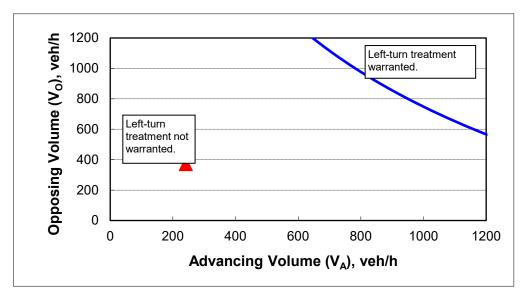
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	25
Percent of left-turns in advancing volume (V _A), %:	1%
Advancing volume (V _A), veh/h:	241
Opposing volume (V _O), veh/h:	371

OUTPUT

Variable	Value
Limiting advancing volume (V _A), veh/h:	1471
Guidance for determining the need for a major-road left-turn bay	/ :
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis



Project: Haworth Avenue Apartments
Intersection: 2. Site Access at Haworth Avenue

Date: 5/12/2022

Scenario: 2029 Future Conditions - PM Peak Hour (WB)

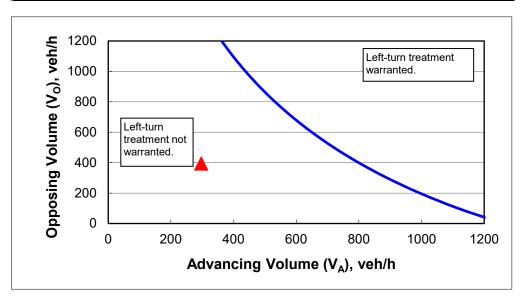
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	25
Percent of left-turns in advancing volume (V _A), %:	3%
Advancing volume (V _A), veh/h:	297
Opposing volume (V_O), veh/h:	394

OUTPUT

Variable	Value	
Limiting advancing volume (V _A), veh/h:	804	
Guidance for determining the need for a major-road left-turn bay:		
Left-turn treatment NOT warranted.		



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Traffic Signal Warrant Analysis

Haworth Avenue Apartments Project:

5/12/2022 Date:

2029 Future Conditions Scenario:

N Deborah Road Major Street: Haworth Avenue Minor Street:

Number of Lanes: 1 Number of Lanes: 1

PM Peak PM Peak

564 182 Hour Volumes: Hour Volumes:

Warrant Used:

Χ 100 percent of standard warrants used 70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number o	of Lanes for Moving	ADT on	Major St.	ADT on	Minor St.
Traffic o	n Each Approach:	(total of both	approaches)	(higher-volur	ne approach)
WARRANT 1, CO	ONDITION A	100%	70%	100%	70%
<u>Major St.</u>	Minor St.	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CO	ONDITION B				
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
Condition A: Minimum Vehicular	Volume		
Major Street	5,640	8,850	
Minor Street*	1,820	2,650	No
Condition B: Interruption of Contil	nuous Traffic		
Major Street	5,640	13,300	
Minor Street*	1,820	1,350	No
Combination Warrant			
Major Street	5,640	10,640	
Minor Street*	1,820	2,120	No

^{*} Minor street right-turning traffic volumes reduced by 25%



Traffic Signal Warrant Analysis

Project: Haworth Avenue Apartments

Date: 5/12/2022

Scenario: 2029 Future Conditions

Major Street: Haworth Avenue Minor Street: Site Access

Number of Lanes: 1 Number of Lanes: 1

PM Peak PM Peak

Hour Volumes: 7

Warrant Used:

X 100 percent of standard warrants used
70 percent of standard warrants used due to 85th percentile speed in excess

of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving		ADT on Major St.		ADT on Minor St.	
Traffic or	n Each Approach:	(total of both	approaches)	(higher-volun	ne approach)
WARRANT 1, CC	NDITION A	100%	70%	100%	70%
<u>Major St.</u>	Minor St.	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CC	NDITION B				
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1	Volumes	volunies	vvairant iviet:
Condition A: Minimum Vehicular Volum	ne		
Major Street	6,910	8,850	
Minor Street*	70	2,650	No
Condition B: Interruption of Continuous	Traffic		
Major Street	6,910	13,300	
Minor Street*	70	1,350	No
Combination Warrant			
Major Street	6,910	10,640	
Minor Street*	70	2,120	No

^{*} Minor street right-turning traffic volumes reduced by 25%



Traffic Signal Warrant Analysis

Project: Haworth Avenue Apartments

Date: 5/12/2022

Scenario: 2029 Future Conditions

Major Street: N Springbrook Road Minor Street: Haworth Avenue

Number of Lanes: 2 Number of Lanes: 2

PM Peak PM Peak

Hour Volumes: 1056 Hour Volumes: 343

Warrant Used:

X 100 percent of standard warrants used
70 percent of standard warrants used due to 85th percentile speed in excess
of 40 mph or isolated community with population less than 10,000.

Number o	f Lanes for Moving	ADT on	Major St.	ADT on	Minor St.
Traffic o	n Each Approach:	(total of both	approaches)	(higher-volur	ne approach)
WARRANT 1, CO	ONDITION A	100%	70%	100%	70%
Major St.	Minor St.	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CO	ONDITION B				
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach	Minimum	ls Signal
	Volumes	Volumes	Warrant Met?
Warrant 1			
Condition A: Minimum Vehicular Volur	ne		
Major Street	10,560	10,600	
Minor Street*	3,430	3,550	No
Condition B: Interruption of Continuous	s Traffic		
Major Street	10,560	15,900	
Minor Street*	3,430	1,750	No
Combination Warrant			
Major Street	10,560	12,720	
Minor Street*	3,430	2,840	No

^{*} Minor street right-turning traffic volumes reduced by 25%



Appendix F

Level of Service Descriptions

Capacity Reports

Queuing Reports





Level of Service Definitions

Level of service is used to describe the quality of traffic flow. Levels of service A to C are considered good, and rural roads are usually designed for level of service C. Urban streets and signalized intersections are typically designed for level of service D. Level of service E is considered to be the limit of acceptable delay. For unsignalized intersections, level of service E is generally considered acceptable. Here is a more complete description of levels of service:

- Level of service A: Very low delay at intersections, with all traffic signal cycles clearing and no vehicles waiting through more than one signal cycle. On highways, low volume and high speeds, with speeds not restricted by other vehicles.
- Level of service B: Operating speeds beginning to be affected by other traffic; short traffic delays at intersections. Higher average intersection delay than for level of service A resulting from more vehicles stopping.
- Level of service C: Operating speeds and maneuverability closely controlled by other traffic; higher delays at intersections than for level of service B due to a significant number of vehicles stopping. Not all signal cycles clear the waiting vehicles. This is the recommended design standard for rural highways.
- Level of service D: Tolerable operating speeds; long traffic delays occur at intersections. The influence of congestion is noticeable. At traffic signals many vehicles stop, and the proportion of vehicles not stopping declines. The number of signal cycle failures, for which vehicles must wait through more than one signal cycle, are noticeable. This is typically the design level for urban signalized intersections.
- Level of service E: Restricted speeds, very long traffic delays at traffic signals, and traffic volumes near capacity. Flow is unstable so that any interruption, no matter how minor, will cause queues to form and service to deteriorate to level of service F. Traffic signal cycle failures are frequent occurrences. For unsignalized intersections, level of service E or better is generally considered acceptable.
- Level of service F: Extreme delays, resulting in long queues which may interfere with other traffic movements. There may be stoppages of long duration, and speeds may drop to zero. There may be frequent signal cycle failures. Level of service F will typically result when vehicle arrival rates are greater than capacity. It is considered unacceptable by most drivers.



Level of Service Criteria For Signalized Intersections

Level of Service (LOS)	Control Delay per Vehicle (Seconds)
А	<10
В	10-20
С	20-35
D	35-55
E	55-80
F	>80

Level of Service Criteria For Unsignalized Intersections

Level of Service (LOS)	Control Delay per Vehicle (Seconds)
А	<10
В	10-15
С	15-25
D	25-35
E	35-50
F	>50

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	89	130	8	14	99	65	7	99	21	119	60	75
Future Vol, veh/h	89	130	8	14	99	65	7	99	21	119	60	75
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	3	3	3	2	2	2	8	8	8	7	7	7
Mvmt Flow	106	155	10	17	118	77	8	118	25	142	71	89
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	12.9			11.2			10.9			13.5		
HCM LOS	В			В			В			В		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %	6%	39%	8%	47%	
Vol Thru, %	78%	57%	56%	24%	
Vol Right, %	17%	4%	37%	30%	
Sign Control	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	127	227	178	254	
LT Vol	7	89	14	119	
Through Vol	99	130	99	60	
RT Vol	21	8	65	75	
Lane Flow Rate	151	270	212	302	
Geometry Grp	1	1	1	1	
Degree of Util (X)	0.246	0.426	0.325	0.468	
Departure Headway (Hd)	5.863	5.679	5.519	5.573	
Convergence, Y/N	Yes	Yes	Yes	Yes	
Сар	609	632	648	644	
Service Time	3.93	3.738	3.582	3.631	
HCM Lane V/C Ratio	0.248	0.427	0.327	0.469	
HCM Control Delay	10.9	12.9	11.2	13.5	
HCM Lane LOS	В	В	В	В	
HCM 95th-tile Q	1	2.1	1.4	2.5	

Intersection						
Intersection Delay, s/	veh19.9					
Intersection LOS	С					

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4	7		4		*	f)		*	ĥ		
Traffic Vol, veh/h	62	25	227	34	15	10	88	271	6	24	318	85	
Future Vol, veh/h	62	25	227	34	15	10	88	271	6	24	318	85	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Heavy Vehicles, %	2	2	2	2	2	2	7	7	7	6	6	6	
Mvmt Flow	67	27	244	37	16	11	95	291	6	26	342	91	
Number of Lanes	0	1	1	0	1	0	1	1	0	1	1	0	
Approach	EB			WB			NB			SB			
Opposing Approach	WB			EB			SB			NB			
Opposing Lanes	1			2			2			2			
Conflicting Approach Le	eft SB			NB			EB			WB			
Conflicting Lanes Left	2			2			2			1			
Conflicting Approach Ri	igh t NB			SB			WB			EB			
Conflicting Lanes Right	2			2			1			2			
HCM Control Delay	13.8			12.4			16.4			28.4			
HCM LOS	В			В			С			D			

Lane	NBLn1	NBLn2	EBLn1	EBLn2V	VBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	71%	0%	58%	100%	0%
Vol Thru, %	0%	98%	29%	0%	25%	0%	79%
Vol Right, %	0%	2%	0%	100%	17%	0%	21%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	88	277	87	227	59	24	403
LT Vol	88	0	62	0	34	24	0
Through Vol	0	271	25	0	15	0	318
RT Vol	0	6	0	227	10	0	85
Lane Flow Rate	95	298	94	244	63	26	433
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.192	0.561	0.198	0.442	0.142	0.052	0.789
Departure Headway (Hd)	7.305	6.779	7.605	6.525	8.046	7.214	6.553
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	491	533	472	552	445	499	555
Service Time	5.048	4.521	5.35	4.27	6.111	4.914	4.253
HCM Lane V/C Ratio	0.193	0.559	0.199	0.442	0.142	0.052	0.78
HCM Control Delay	11.8	17.9	12.2	14.4	12.4	10.3	29.5
HCM Lane LOS	В	С	В	В	В	В	D
HCM 95th-tile Q	0.7	3.4	0.7	2.2	0.5	0.2	7.4

	۶	→	•	•	←	•	•	†	<u> </u>	>	ļ	✓	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ķ	^	7	14.54	^	7	1,1	↑	7	1/1	†	7	
Traffic Volume (veh/h)	54	1098	70	240	633	168	147	157	364	340	116	74	
Future Volume (veh/h)	54	1098	70	240	633	168	147	157	364	340	116	74	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approac		No			No			No			No		
Adj Sat Flow, veh/h/ln	1695	1695	1695	1614	1614	1614	1668	1668	1668	1695	1695	1695	
Adj Flow Rate, veh/h	59	1193	0	261	688	0	160	171	341	370	126	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	
Percent Heavy Veh, %	4	4	4	10	10	10	6	6	6	4	4	4	
Cap, veh/h	74	1361		330	1495		220	285	396	437	406	344	
Arrive On Green	0.05	0.42	0.00	0.11	0.49	0.00	0.07	0.17	0.17	0.14	0.24	0.00	
Sat Flow, veh/h	1615	3221	1437	2981	3066	1367	3082	1668	1404	3132	1695	1437	
Grp Volume(v), veh/h	59	1193	0	261	688	0	160	171	341	370	126	0	
Grp Sat Flow(s), veh/h/lr	n1615	1611	1437	1491	1533	1367	1541	1668	1404	1566	1695	1437	
Q Serve(g_s), s	3.7	34.8	0.0	8.7	15.2	0.0	5.2	9.7	17.5	11.8	6.3	0.0	
Cycle Q Clear(g_c), s	3.7	34.8	0.0	8.7	15.2	0.0	5.2	9.7	17.5	11.8	6.3	0.0	
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	
Lane Grp Cap(c), veh/h		1361		330	1495		220	285	396	437	406	344	
V/C Ratio(X)	0.80	0.88		0.79	0.46		0.73	0.60	0.86	0.85	0.31	0.00	
Avail Cap(c_a), veh/h	166	1542		585	1755		346	285	396	532	406	344	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	
Uniform Delay (d), s/vel		27.1	0.0	44.4	17.3	0.0	46.6	39.2	34.9	43.0	32.0	0.0	
Incr Delay (d2), s/veh	17.8	5.5	0.0	4.3	0.2	0.0	4.6	3.5	17.2	10.3	0.4	0.0	
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),vel		13.7	0.0	3.4	5.1	0.0	2.1	4.2	9.7	5.2	2.6	0.0	
Unsig. Movement Delay													
LnGrp Delay(d),s/veh	66.2	32.6	0.0	48.6	17.6	0.0	51.1	42.7	52.1	53.3	32.4	0.0	
LnGrp LOS	<u>E</u>	С		D	В		D	D	D	D	С	A	
Approach Vol, veh/h		1252	Α		949	Α		672			496		
Approach Delay, s/veh		34.2			26.1			49.4			48.0		
Approach LOS		С			С			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc)), \$ 8.3	21.5	15.3	47.3	11.3	28.5	8.7	53.9					
Change Period (Y+Rc),		4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Max Green Setting (Gm		17.5	20.1	49.0	11.5	23.4	10.5	58.6					
Max Q Clear Time (g_c	, ,	19.5	10.7	36.8	7.2	8.3	5.7	17.2					
Green Ext Time (p_c), s		0.0	0.6	6.5	0.2	0.5	0.0	5.3					
Intersection Summary													
HCM 6th Ctrl Delay			37.0										
HCM 6th LOS			D										

User approved pedestrian interval to be less than phase max green.
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	40	191	20	20	172	31	13	26	27	66	51	49
Future Vol, veh/h	40	191	20	20	172	31	13	26	27	66	51	49
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	1	1	1	2	2	2	6	6	6	5	5	5
Mvmt Flow	47	225	24	24	202	36	15	31	32	78	60	58
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	11.6			11			9.4			10.8		
HCM LOS	В			В			Α			В		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %	20%	16%	9%	40%	
Vol Thru, %	39%	76%	77%	31%	
Vol Right, %	41%	8%	14%	30%	
Sign Control	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	66	251	223	166	
LT Vol	13	40	20	66	
Through Vol	26	191	172	51	
RT Vol	27	20	31	49	
Lane Flow Rate	78	295	262	195	
Geometry Grp	1	1	1	1	
Degree of Util (X)	0.12	0.416	0.369	0.295	
Departure Headway (Hd)	5.574	5.077	5.064	5.442	
Convergence, Y/N	Yes	Yes	Yes	Yes	
Cap	642	715	711	660	
Service Time	3.617	3.077	3.093	3.479	
HCM Lane V/C Ratio	0.121	0.413	0.368	0.295	
HCM Control Delay	9.4	11.6	11	10.8	
HCM Lane LOS	Α	В	В	В	
HCM 95th-tile Q	0.4	2.1	1.7	1.2	

Intersection														
Intersection Delay, s/	veh26.6													
Intersection LOS	D													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		र्स	7		4		7	f)		7	f)		
Traffic Vol, veh/h	87	63	182	95	62	58	139	307	20	43	328	42	
Future Vol, veh/h	87	63	182	95	62	58	139	307	20	43	328	42	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Heavy Vehicles, %	1	1	1	1	1	1	2	2	2	1	1	1	
Mvmt Flow	92	66	192	100	65	61	146	323	21	45	345	44	
Number of Lanes	0	1	1	0	1	0	1	1	0	1	1	0	
Approach	EB			WB			NB			SB			
Opposing Approach	WB			EB			SB			NB			
Opposing Lanes	1			2			2			2			
Conflicting Approach Le	eft SB			NB			EB			WB			
Conflicting Lanes Left	2			2			2			1			
Conflicting Approach R	igh N B			SB			WB			EB			
Conflicting Lanes Right	2			2			1			2			
HCM Control Delay	16.2			21.7			26.3			38			
HCM LOS	С			С			D			Е			

Lane	NBLn11	NBLn2	EBLn1	EBLn2V	VBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	58%	0%	44%	100%	0%
Vol Thru, %	0%	94%	42%	0%	29%	0%	89%
Vol Right, %	0%	6%	0%	100%	27%	0%	11%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	139	327	150	182	215	43	370
LT Vol	139	0	87	0	95	43	0
Through Vol	0	307	63	0	62	0	328
RT Vol	0	20	0	182	58	0	42
Lane Flow Rate	146	344	158	192	226	45	389
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.342	0.752	0.382	0.409	0.545	0.106	0.848
Departure Headway (Hd)	8.425	7.864	8.716	7.691	8.675	8.436	7.837
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Сар	427	461	414	467	416	425	463
Service Time	6.174	5.612	6.466	5.441	6.73	6.183	5.584
HCM Lane V/C Ratio	0.342	0.746	0.382	0.411	0.543	0.106	0.84
HCM Control Delay	15.5	30.9	16.8	15.7	21.7	12.2	41
HCM Lane LOS	С	D	С	С	С	В	Е
HCM 95th-tile Q	1.5	6.3	1.8	2	3.2	0.4	8.5

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ች	^	7	ሻሻ	^	7	ሻሻ	†	7	ሻሻ	†	7	
Traffic Volume (veh/h)	100	900	122	529	1367	226	266	178	284	290	171	96	
Future Volume (veh/h)	100	900	122	529	1367	226	266	178	284	290	171	96	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00	U	0.99	1.00	· ·	0.99	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approac		No	1.00	1.00	No	1.00	1.00	No	1.00	1.00	No	1.00	
Adj Sat Flow, veh/h/ln	1709	1709	1709	1709	1709	1709	1709	1709	1709	1723	1723	1723	
Adj Flow Rate, veh/h	104	938	0	551	1424	0	277	185	270	302	178	3	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	2	2	2	
Cap, veh/h	127	1206	J	622	1592	J	337	290	529	364	305	256	
Arrive On Green	0.08	0.37	0.00	0.20	0.49	0.00	0.11	0.17	0.17	0.11	0.18	0.18	
	1628	3247	1448	3158	3247	1448	3158	1709	1436	3183	1723	1448	
Sat Flow, veh/h													
Grp Volume(v), veh/h	104	938	0	551	1424	0	277	185	270	302	178	3	
Grp Sat Flow(s),veh/h/l		1624	1448	1579	1624	1448	1579	1709	1436	1591	1723	1448	
Q Serve(g_s), s	6.8	27.6	0.0	18.4	43.1	0.0	9.3	10.9	15.9	10.1	10.3	0.2	
Cycle Q Clear(g_c), s	6.8	27.6	0.0	18.4	43.1	0.0	9.3	10.9	15.9	10.1	10.3	0.2	
Prop In Lane	1.00	1000	1.00	1.00	4=00	1.00	1.00	222	1.00	1.00		1.00	
Lane Grp Cap(c), veh/h		1206		622	1592		337	290	529	364	305	256	
V/C Ratio(X)	0.82	0.78		0.89	0.89		0.82	0.64	0.51	0.83	0.58	0.01	
Avail Cap(c_a), veh/h	165	1320		729	1740		408	316	550	441	334	281	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/ve		30.1	0.0	42.3	25.0	0.0	47.3	41.9	26.8	46.9	40.9	36.7	
Incr Delay (d2), s/veh	21.0	2.8	0.0	11.3	6.1	0.0	10.8	3.8	0.8	10.7	2.2	0.0	
Initial Q Delay(d3),s/vel	h 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),ve	h/ln8.5	10.9	0.0	8.0	16.8	0.0	4.1	4.8	5.4	4.5	4.6	0.1	
Unsig. Movement Delay	y, s/veh												
LnGrp Delay(d),s/veh	70.2	32.8	0.0	53.6	31.1	0.0	58.1	45.6	27.5	57.7	43.1	36.8	
LnGrp LOS	Е	С		D	С		Ε	D	С	Е	D	D	
Approach Vol, veh/h		1042	Α		1975	Α		732			483		
Approach Delay, s/veh		36.6			37.4			43.7			52.2		
Approach LOS		D			D			D			D		
Timer - Assigned Phs	1	2	3	4		6	7	8					
	1 16 1	22.3		44.2	15.6	23.2	12.5	57.1					
Phs Duration (G+Y+Rc			25.3		15.6								
Change Period (Y+Rc)		4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Max Green Setting (Gn	, .	20.0	25.0	44.0	14.0	21.0	11.0	58.0					
Max Q Clear Time (g_c		17.9	20.4	29.6	11.3	12.3	8.8	45.1					
Green Ext Time (p_c),	s 0.3	0.5	0.9	5.5	0.3	0.6	0.0	8.0					
Intersection Summary													
HCM 6th Ctrl Delay			40.0										
HCM 6th LOS			D										
Notes													

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection		
Intersection Delay, s/veh	13.6	
Intersection LOS	В	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	93	140	8	15	117	77	7	103	22	128	62	78
Future Vol, veh/h	93	140	8	15	117	77	7	103	22	128	62	78
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	3	3	3	2	2	2	8	8	8	7	7	7
Mvmt Flow	111	167	10	18	139	92	8	123	26	152	74	93
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	14.1			12.5			11.5			14.9		
HCM LOS	В			В			В			В		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %	5%	39%	7%	48%	
Vol Thru, %	78%	58%	56%	23%	
Vol Right, %	17%	3%	37%	29%	
Sign Control	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	132	241	209	268	
LT Vol	7	93	15	128	
Through Vol	103	140	117	62	
RT Vol	22	8	77	78	
Lane Flow Rate	157	287	249	319	
Geometry Grp	1	1	1	1	
Degree of Util (X)	0.267	0.468	0.393	0.513	
Departure Headway (Hd)	6.123	5.876	5.685	5.793	
Convergence, Y/N	Yes	Yes	Yes	Yes	
Сар	581	608	627	619	
Service Time	4.219	3.957	3.769	3.871	
HCM Lane V/C Ratio	0.27	0.472	0.397	0.515	
HCM Control Delay	11.5	14.1	12.5	14.9	
HCM Lane LOS	В	В	В	В	
HCM 95th-tile Q	1.1	2.5	1.9	2.9	

Intersection					
Intersection Delay, s/v	eh25.7				
Intersection LOS	D				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4	7		4		*	f)		*	ĥ		
Traffic Vol, veh/h	69	26	241	35	16	11	108	295	6	27	344	95	
Future Vol, veh/h	69	26	241	35	16	11	108	295	6	27	344	95	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Heavy Vehicles, %	2	2	2	2	2	2	7	7	7	6	6	6	
Mvmt Flow	74	28	259	38	17	12	116	317	6	29	370	102	
Number of Lanes	0	1	1	0	1	0	1	1	0	1	1	0	
Approach	EB			WB			NB			SB			
Opposing Approach	WB			EB			SB			NB			
Opposing Lanes	1			2			2			2			
Conflicting Approach Le	eft SB			NB			EB			WB			
Conflicting Lanes Left	2			2			2			1			
Conflicting Approach Ri	igh N B			SB			WB			EB			
Conflicting Lanes Right	2			2			1			2			
HCM Control Delay	15.2			13.2			19.1			40.7			
HCM LOS	С			В			С			Е			

Lane	NBLn1	NBLn2	EBLn1	EBLn2\	VBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	73%	0%	56%	100%	0%
Vol Thru, %	0%	98%	27%	0%	26%	0%	78%
Vol Right, %	0%	2%	0%	100%	18%	0%	22%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	108	301	95	241	62	27	439
LT Vol	108	0	69	0	35	27	0
Through Vol	0	295	26	0	16	0	344
RT Vol	0	6	0	241	11	0	95
Lane Flow Rate	116	324	102	259	67	29	472
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.245	0.634	0.225	0.492	0.158	0.06	0.889
Departure Headway (Hd)	7.582	7.055	7.924	6.834	8.511	7.446	6.779
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	474	511	453	526	420	481	533
Service Time	5.335	4.807	5.674	4.583	6.589	5.194	4.527
HCM Lane V/C Ratio	0.245	0.634	0.225	0.492	0.16	0.06	0.886
HCM Control Delay	12.8	21.3	13	16.1	13.2	10.7	42.5
HCM Lane LOS	В	С	В	С	В	В	Е
HCM 95th-tile Q	1	4.4	0.9	2.7	0.6	0.2	10.1

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ች	^	7	ሻሻ	^	1	ሻሻ	^	7	ሻሻ		7	
Traffic Volume (veh/h)	59	1109	73	258	665	193	153	171	382	363	128	79	
Future Volume (veh/h)	59	1109	73	258	665	193	153	171	382	363	128	79	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approac		No			No			No			No		
Adj Sat Flow, veh/h/ln	1695	1695	1695	1614	1614	1614	1668	1668	1668	1695	1695	1695	
Adj Flow Rate, veh/h	64	1205	0	280	723	0	166	186	361	395	139	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	
Percent Heavy Veh, %	4	4	4	10	10	10	6	6	6	4	4	4	
Cap, veh/h	80	1344		348	1485		225	283	403	455	411	348	
Arrive On Green	0.05	0.42	0.00	0.12	0.48	0.00	0.07	0.17	0.17	0.15	0.24	0.00	
Sat Flow, veh/h	1615	3221	1437	2981	3066	1367	3082	1668	1404	3132	1695	1437	
Grp Volume(v), veh/h	64	1205	0	280	723	0	166	186	361	395	139	0	
Grp Sat Flow(s), veh/h/li		1611	1437	1491	1533	1367	1541	1668	1404	1566	1695	1437	
Q Serve(g_s), s	4.2	36.9	0.0	9.7	16.9	0.0	5.6	11.0	18.0	13.1	7.2	0.0	
Cycle Q Clear(g_c), s	4.2	36.9	0.0	9.7	16.9	0.0	5.6	11.0	18.0	13.1	7.2	0.0	
Prop In Lane	1.00	30.3	1.00	1.00	10.5	1.00	1.00	11.0	1.00	1.00	1.2	1.00	
Lane Grp Cap(c), veh/h		1344	1.00	348	1485	1.00	225	283	403	455	411	348	
V/C Ratio(X)	0.80	0.90		0.81	0.49		0.74	0.66	0.90	0.87	0.34	0.00	
Avail Cap(c_a), veh/h	165	1460		591	1684		352	283	403	503	411	348	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	
Uniform Delay (d), s/vel		28.7	0.0	45.6	18.4	0.00	48.1	41.1	36.3	44.3	33.1	0.00	
Incr Delay (d2), s/veh	16.4	7.3	0.0	4.4	0.2	0.0	4.7	5.4	21.8	14.0	0.5	0.0	
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),vel		14.9	0.0	3.7	5.8	0.0	2.3	4.9	11.1	6.0	3.0	0.0	
Unsig. Movement Delay			0.0	0.1	5.0	0.0	2.0	٦.٥	11.1	0.0	0.0	0.0	
LnGrp Delay(d),s/veh	66.2	36.0	0.0	50.0	18.7	0.0	52.8	46.5	58.1	58.3	33.6	0.0	
LnGrp LOS	00.2 E	30.0 D	0.0	50.0 D	10.7 B	0.0	52.6 D	40.5 D	56.1 E	36.3 E	33.0 C	0.0 A	
			۸	U	1003	А	U	713			534		
Approach Vol, veh/h		1269 37.5	Α			А		53.8					
Approach Delay, s/veh					27.4						51.9		
Approach LOS		D			С			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc)		22.0	16.4	48.2	11.7	29.7	9.3	55.3					
Change Period (Y+Rc),		4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Max Green Setting (Gm		18.0	21.0	48.0	12.1	22.9	10.8	58.2					
Max Q Clear Time (g_c	, .	20.0	11.7	38.9	7.6	9.2	6.2	18.9					
Green Ext Time (p_c), s	0.3	0.0	0.7	5.3	0.2	0.6	0.0	5.7					
Intersection Summary													
HCM 6th Ctrl Delay			40.1										
HCM 6th LOS			D										
Notos													

User approved pedestrian interval to be less than phase max green.
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	ĵ∍			4		ሻ	₽		ሻ	₽	
Traffic Volume (veh/h)	69	26	241	35	16	11	108	295	6	27	344	95
Future Volume (veh/h)	69	26	241	35	16	11	108	295	6	27	344	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98	4.00	0.98	0.99	4.00	0.98	0.99	4.00	0.99	0.99	4.00	0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	4070	No	4070	4070	No	4070	4700	No	4700	1011	No	1011
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1796	1796	1796	1811	1811	1811
Adj Flow Rate, veh/h	74	28	86	38	17	4	116	317	5	29	370	86
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	7	7	7	6	6	6
Cap, veh/h	438	60	186	248	86	12	499	756	12	574	521	121
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.10	0.43	0.43	0.04	0.37	0.37
Sat Flow, veh/h	1370	398	1223	525	569	80	1711	1763	28	1725	1417	329
Grp Volume(v), veh/h	74	0	114	59	0	0	116	0	322	29	0	456
Grp Sat Flow(s),veh/h/ln	1370	0	1621	1173	0	0	1711	0	1791	1725	0	1746
Q Serve(g_s), s	0.0	0.0	2.3	0.1	0.0	0.0	1.4	0.0	4.4	0.4	0.0	7.9
Cycle Q Clear(g_c), s	1.3	0.0	2.3	2.3	0.0	0.0	1.4	0.0	4.4	0.4	0.0	7.9
Prop In Lane	1.00	•	0.75	0.64	•	0.07	1.00	•	0.02	1.00	•	0.19
Lane Grp Cap(c), veh/h	438	0	246	346	0	0	499	0	768	574	0	642
V/C Ratio(X)	0.17	0.00	0.46	0.17	0.00	0.00	0.23	0.00	0.42	0.05	0.00	0.71
Avail Cap(c_a), veh/h	936	0	835	859	0	0	602	0	1187	764	0	1138
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.2	0.0	13.6	13.1	0.0	0.0	6.4	0.0	7.0	6.4	0.0	9.5
Incr Delay (d2), s/veh	0.2	0.0	1.4	0.2	0.0	0.0	0.2	0.0	0.4	0.0	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.8	0.4	0.0	0.0	0.3	0.0	1.2	0.1	0.0	2.4
Unsig. Movement Delay, s/veh		0.0	45.0	40.0	0.0	0.0	C 7	0.0	7.0	С Г	0.0	44.0
LnGrp Delay(d),s/veh	13.4	0.0	15.0	13.3	0.0	0.0	6.7	0.0	7.3	6.5	0.0	11.0
LnGrp LOS	В	A 400	В	В	A	A	A	A 420	A	A	A	B
Approach Vol, veh/h		188			59			438			485	
Approach LOS		14.3			13.3			7.2			10.7	
Approach LOS		В			В			Α			В	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.7	19.6		9.8	7.9	17.4		9.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	23.3		18.1	5.5	22.9		18.1				
Max Q Clear Time (g_c+l1), s	2.4	6.4		4.3	3.4	9.9		4.3				
Green Ext Time (p_c), s	0.0	1.8		0.7	0.1	2.5		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			10.1									
HCM 6th LOS			В									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	42	206	21	21	184	37	14	27	28	74	53	51
Future Vol, veh/h	42	206	21	21	184	37	14	27	28	74	53	51
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	1	1	1	2	2	2	6	6	6	5	5	5
Mvmt Flow	49	242	25	25	216	44	16	32	33	87	62	60
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	12.5			11.8			9.7			11.3		
HCM LOS	R			R			Δ			R		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %	20%	16%	9%	42%	
Vol Thru, %	39%	77%	76%	30%	
Vol Right, %	41%	8%	15%	29%	
Sign Control	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	69	269	242	178	
LT Vol	14	42	21	74	
Through Vol	27	206	184	53	
RT Vol	28	21	37	51	
Lane Flow Rate	81	316	285	209	
Geometry Grp	1	1	1	1	
Degree of Util (X)	0.13	0.454	0.409	0.326	
Departure Headway (Hd)	5.763	5.169	5.174	5.599	
Convergence, Y/N	Yes	Yes	Yes	Yes	
Cap	620	696	695	641	
Service Time	3.813	3.204	3.21	3.64	
HCM Lane V/C Ratio	0.131	0.454	0.41	0.326	
HCM Control Delay	9.7	12.5	11.8	11.3	
HCM Lane LOS	Α	В	В	В	
HCM 95th-tile Q	0.4	2.4	2	1.4	

Intersection						
Intersection Delay, s/v	eh37.6					
Intersection LOS	Е					

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4	7		4		7	ĵ,		*	ĵ,		
Traffic Vol, veh/h	96	66	196	99	65	62	150	330	21	47	356	49	
Future Vol, veh/h	96	66	196	99	65	62	150	330	21	47	356	49	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Heavy Vehicles, %	1	1	1	1	1	1	2	2	2	1	1	1	
Mvmt Flow	101	69	206	104	68	65	158	347	22	49	375	52	
Number of Lanes	0	1	1	0	1	0	1	1	0	1	1	0	
Approach	EB			WB			NB			SB			
Opposing Approach	WB			EB			SB			NB			
Opposing Lanes	1			2			2			2			
Conflicting Approach L	eft SB			NB			EB			WB			
Conflicting Lanes Left	2			2			2			1			
Conflicting Approach R	lightNB			SB			WB			EB			
Conflicting Lanes Righ	t 2			2			1			2			
HCM Control Delay	18.4			25.8			36			60.6			
HCM LOS	С			D			Е			F			

Lane	NBLn1	NBLn2	EBLn1	EBLn2\	VBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	59%	0%	44%	100%	0%
Vol Thru, %	0%	94%	41%	0%	29%	0%	88%
Vol Right, %	0%	6%	0%	100%	27%	0%	12%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	150	351	162	196	226	47	405
LT Vol	150	0	96	0	99	47	0
Through Vol	0	330	66	0	65	0	356
RT Vol	0	21	0	196	62	0	49
Lane Flow Rate	158	369	171	206	238	49	426
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.39	0.855	0.436	0.468	0.61	0.122	0.976
Departure Headway (Hd)	8.89	8.326	9.194	8.158	9.229	8.848	8.24
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Сар	404	436	391	442	390	405	439
Service Time	6.661	6.097	6.964	5.927	7.31	6.614	6.006
HCM Lane V/C Ratio	0.391	0.846	0.437	0.466	0.61	0.121	0.97
HCM Control Delay	17.3	44	18.9	18	25.8	12.8	66.2
HCM Lane LOS	С	Е	С	С	D	В	F
HCM 95th-tile Q	1.8	8.5	2.2	2.4	3.9	0.4	12

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ች	^	7	ሻሻ	^	7	ሻሻ		7	ሻሻ	↑	1	
Traffic Volume (veh/h)	107	938	127	560	1387	244	277	189	313	318	181	103	
Future Volume (veh/h)	107	938	127	560	1387	244	277	189	313	318	181	103	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approac		No			No			No		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	No		
Adj Sat Flow, veh/h/ln	1709	1709	1709	1709	1709	1709	1709	1709	1709	1723	1723	1723	
Adj Flow Rate, veh/h	111	977	0	583	1445	0	289	197	300	331	189	9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	2	2	2	
Cap, veh/h	135	1184		651	1584		346	281	534	390	305	256	
Arrive On Green	0.08	0.36	0.00	0.21	0.49	0.00	0.11	0.16	0.16	0.12	0.18	0.18	
Sat Flow, veh/h	1628	3247	1448	3158	3247	1448	3158	1709	1435	3183	1723	1448	
Grp Volume(v), veh/h	111	977	0	583	1445	0	289	197	300	331	189	9	
Grp Sat Flow(s), veh/h/l		1624	1448	1579	1624	1448	1579	1709	1435	1591	1723	1448	
Q Serve(g_s), s	7.5	30.6	0.0	20.1	46.0	0.0	10.1	12.2	18.4	11.4	11.4	0.6	
Cycle Q Clear(g_c), s	7.5	30.6	0.0	20.1	46.0	0.0	10.1	12.2	18.4	11.4	11.4	0.6	
Prop In Lane	1.00	00.0	1.00	1.00	₹0.0	1.00	1.00	12.2	1.00	1.00	11.7	1.00	
Lane Grp Cap(c), veh/h		1184	1.00	651	1584	1.00	346	281	534	390	305	256	
V/C Ratio(X)	0.82	0.83		0.90	0.91		0.84	0.70	0.56	0.85	0.62	0.04	
Avail Cap(c_a), veh/h	171	1258		744	1681		403	281	534	449	306	257	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/ve		32.4	0.0	43.3	26.5	0.0	48.9	44.2	28.1	48.2	42.6	38.2	
Incr Delay (d2), s/veh	22.0	4.4	0.0	12.4	7.7	0.0	12.5	7.6	1.3	12.9	3.8	0.1	
Initial Q Delay(d3),s/vel		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),ve		12.4	0.0	8.8	18.4	0.0	4.5	5.7	6.4	5.3	5.2	0.0	
Unsig. Movement Dela			0.0	0.0	10.4	0.0	4.5	5.1	0.4	0.0	J.Z	0.2	
LnGrp Delay(d),s/veh	72.6	36.8	0.0	55.7	34.2	0.0	61.4	51.9	29.4	61.1	46.4	38.2	
LnGrp LOS	72.0 E	D	0.0	55.7 E	C	0.0	61. 4	D D	23.4 C	E	40.4 D	D	
			A		2028	A					529	U	
Approach Vol, veh/h		1088	А			А		786					
Approach Delay, s/veh		40.4			40.4			46.8			55.4		
Approach LOS		D			D			D			Е		
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), \$7.7	22.4	27.1	44.9	16.3	23.8	13.3	58.7					
Change Period (Y+Rc)		4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Max Green Setting (Gn		18.4	26.4	43.4	14.3	19.9	11.8	58.0					
Max Q Clear Time (g_c		20.4	22.1	32.6	12.1	13.4	9.5	48.0					
Green Ext Time (p_c),	, .	0.0	1.0	4.9	0.2	0.5	0.0	6.7					
Intersection Summary													
HCM 6th Ctrl Delay			43.3										
HCM 6th LOS			D										
Notes													

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	₽			4		ሻ	f)		ሻ	₽	
Traffic Volume (veh/h)	96	66	196	99	65	62	150	330	21	47	356	49
Future Volume (veh/h)	96	66	196	99	65	62	150	330	21	47	356	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.99	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	101	69	72	104	68	44	158	347	19	49	375	45
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	1	1	1
Cap, veh/h	499	197	205	254	139	66	479	644	35	493	519	62
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.10	0.37	0.37	0.05	0.32	0.32
Sat Flow, veh/h	1283	830	866	500	586	278	1781	1754	96	1795	1645	197
Grp Volume(v), veh/h	101	0	141	216	0	0	158	0	366	49	0	420
Grp Sat Flow(s),veh/h/ln	1283	0	1696	1363	0	0	1781	0	1850	1795	0	1843
Q Serve(g_s), s	0.0	0.0	2.7	3.2	0.0	0.0	2.2	0.0	6.1	0.7	0.0	7.9
Cycle Q Clear(g_c), s	2.4	0.0	2.7	6.0	0.0	0.0	2.2	0.0	6.1	0.7	0.0	7.9
Prop In Lane	1.00	_	0.51	0.48		0.20	1.00		0.05	1.00	_	0.11
Lane Grp Cap(c), veh/h	499	0	402	458	0	0	479	0	680	493	0	582
V/C Ratio(X)	0.20	0.00	0.35	0.47	0.00	0.00	0.33	0.00	0.54	0.10	0.00	0.72
Avail Cap(c_a), veh/h	798	0	797	801	0	0	541	0	1077	631	0	1054
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.4	0.0	12.5	13.7	0.0	0.0	8.2	0.0	9.8	8.3	0.0	11.9
Incr Delay (d2), s/veh	0.2	0.0	0.5	0.8	0.0	0.0	0.4	0.0	0.7	0.1	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.9	1.6	0.0	0.0	0.7	0.0	2.1	0.2	0.0	2.9
Unsig. Movement Delay, s/veh		0.0	40.0	44.5	0.0	0.0	0.0	0.0	40.5	0.4	0.0	40.7
LnGrp Delay(d),s/veh	12.6	0.0	13.0	14.5	0.0	0.0	8.6	0.0	10.5	8.4	0.0	13.7
LnGrp LOS	В	A	В	В	A	Α	A	A	В	A	A	В
Approach Vol, veh/h		242			216			524			469	
Approach Delay, s/veh		12.8			14.5			9.9			13.1	
Approach LOS		В			В			Α			В	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	19.0		13.8	8.6	16.9		13.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	22.9		18.5	5.5	22.5		18.5				
Max Q Clear Time (g_c+I1), s	2.7	8.1		4.7	4.2	9.9		8.0				
Green Ext Time (p_c), s	0.0	2.0		1.0	0.1	2.2		0.9				
Intersection Summary												
HCM 6th Ctrl Delay			12.1									
HCM 6th LOS			В									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	93	140	8	15	118	77	7	103	22	129	62	78
Future Vol, veh/h	93	140	8	15	118	77	7	103	22	129	62	78
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	3	3	3	2	2	2	8	8	8	7	7	7
Mvmt Flow	111	167	10	18	140	92	8	123	26	154	74	93
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	14.1			12.5			11.5			15		
HCM LOS	В			В			В			В		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %	5%	39%	7%	48%	
Vol Thru, %	78%	58%	56%	23%	
Vol Right, %	17%	3%	37%	29%	
Sign Control	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	132	241	210	269	
LT Vol	7	93	15	129	
Through Vol	103	140	118	62	
RT Vol	22	8	77	78	
Lane Flow Rate	157	287	250	320	
Geometry Grp	1	1	1	1	
Degree of Util (X)	0.268	0.469	0.395	0.516	
Departure Headway (Hd)	6.13	5.883	5.69	5.798	
Convergence, Y/N	Yes	Yes	Yes	Yes	
Сар	580	608	628	618	
Service Time	4.229	3.968	3.779	3.879	
HCM Lane V/C Ratio	0.271	0.472	0.398	0.518	
HCM Control Delay	11.5	14.1	12.5	15	
HCM Lane LOS	В	В	В	В	
HCM 95th-tile Q	1.1	2.5	1.9	3	

Intersection						
Int Delay, s/veh	0.2					
		EDD	MDI	MOT	ND	NDD
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	\$	4	^	4	¥	0
Traffic Vol, veh/h	336	1	2	219	1	8
Future Vol, veh/h	336	1	2	219	1	8
Conflicting Peds, #/hr	_ 0	_ 0	_ 0	_ 0	0	0
0	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-		-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage,		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	365	1	2	238	1	9
Major/Minor M	ajor1	ı	Major2		Minor1	
	<u>ajui i</u> 0	0	366	0	608	366
Conflicting Flow All			300			
Stage 1	-	-	-	-	366	-
Stage 2	-	-	1 10	-	242	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-		2.218	-	0.0.0	
Pot Cap-1 Maneuver	-	-	1193	-	459	679
Stage 1	-	-	-	-	702	-
Stage 2	-	-	-	-	798	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1193	-	458	679
Mov Cap-2 Maneuver	-	-	-	-	458	-
Stage 1	-	-	-	-	702	-
Stage 2	-	-	-	-	796	-
A mara a a b	ED		WD		ND	
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.1		10.7	
HCM LOS					В	
Minor Lane/Major Mvmt	1	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)		644			1193	-
HCM Lane V/C Ratio		0.015	_		0.002	_
HCM Control Delay (s)		10.7	_	_	8	0
HCM Lane LOS		В	_	<u> </u>	A	A
HCM 95th %tile Q(veh)		0	-	-	0	- -
HOW SOUT MILE Q(VEII)		U	-	-	U	-

Intersection		
Intersection Delay, s/veh	26.1	
Intersection LOS	D	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ર્ન	7		4		,	f)		¥	f)	
Traffic Vol, veh/h	70	26	248	35	16	11	110	295	6	27	344	95
Future Vol, veh/h	70	26	248	35	16	11	110	295	6	27	344	95
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	7	7	7	6	6	6
Mvmt Flow	75	28	267	38	17	12	118	317	6	29	370	102
Number of Lanes	0	1	1	0	1	0	1	1	0	1	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			2			2			2		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	2			2			2			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	2			2			1			2		
HCM Control Delay	15.5			13.3			19.3			41.7		
HCM LOS	С			В			С			Е		

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	73%	0%	56%	100%	0%
Vol Thru, %	0%	98%	27%	0%	26%	0%	78%
Vol Right, %	0%	2%	0%	100%	18%	0%	22%
Sign Control	Stop						
Traffic Vol by Lane	110	301	96	248	62	27	439
LT Vol	110	0	70	0	35	27	0
Through Vol	0	295	26	0	16	0	344
RT Vol	0	6	0	248	11	0	95
Lane Flow Rate	118	324	103	267	67	29	472
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.251	0.638	0.228	0.508	0.159	0.06	0.895
Departure Headway (Hd)	7.626	7.099	7.944	6.852	8.563	7.491	6.824
Convergence, Y/N	Yes						
Cap	471	508	452	525	417	478	529
Service Time	5.38	4.852	5.695	4.603	6.643	5.239	4.572
HCM Lane V/C Ratio	0.251	0.638	0.228	0.509	0.161	0.061	0.892
HCM Control Delay	12.9	21.6	13	16.5	13.3	10.7	43.6
HCM Lane LOS	В	С	В	С	В	В	Е
HCM 95th-tile Q	1	4.4	0.9	2.8	0.6	0.2	10.3

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ሻ	^	7	14	^	7	1/1	↑	7	ሻሻ	†	7	
Traffic Volume (veh/h)	60	1109	73	258	665	194	153	171	382	366	130	81	
Future Volume (veh/h)	60	1109	73	258	665	194	153	171	382	366	130	81	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approac		No			No			No			No		
	1695	1695	1695	1614	1614	1614	1668	1668	1668	1695	1695	1695	
Adj Flow Rate, veh/h	65	1205	0	280	723	0	166	186	360	398	141	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	
Percent Heavy Veh, %	4	4	4	10	10	10	6	6	6	4	4	4	
Cap, veh/h	81	1351		349	1490		225	271	394	463	402	341	
Arrive On Green	0.05	0.42	0.00	0.12	0.49	0.00	0.07	0.16	0.16	0.15	0.24	0.00	
Sat Flow, veh/h	1615	3221	1437	2981	3066	1367	3082	1668	1403	3132	1695	1437	
Grp Volume(v), veh/h	65	1205	0	280	723	0	166	186	360	398	141	0	
Grp Sat Flow(s), veh/h/lr		1611	1437	1491	1533	1367	1541	1668	1403	1566	1695	1437	
Q Serve(g_s), s	4.2	36.2	0.0	9.6	16.6	0.0	5.5	11.0	17.0	13.0	7.2	0.0	
Cycle Q Clear(g_c), s	4.2	36.2	0.0	9.6	16.6	0.0	5.5	11.0	17.0	13.0	7.2	0.0	
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	
Lane Grp Cap(c), veh/h		1351		349	1490		225	271	394	463	402	341	
V/C Ratio(X)	0.80	0.89		0.80	0.49		0.74	0.69	0.91	0.86	0.35	0.00	
Avail Cap(c_a), veh/h	168	1480		599	1705		357	271	394	540	402	341	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	
Uniform Delay (d), s/vel		28.1	0.0	45.0	18.1	0.0	47.4	41.2	36.5	43.5	33.2	0.0	
Incr Delay (d2), s/veh	16.2	6.8	0.0	4.3	0.2	0.0	4.6	7.0	25.5	11.8	0.5	0.0	
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),vel		14.5	0.0	3.7	5.6	0.0	2.2	5.0	11.4	5.8	3.1	0.0	
Unsig. Movement Delay													
LnGrp Delay(d),s/veh	65.3	34.9	0.0	49.3	18.3	0.0	52.1	48.2	62.0	55.3	33.7	0.0	
LnGrp LOS	<u>E</u>	С		D	В		D	D	E	E	С	Α	
Approach Vol, veh/h		1270	Α		1003	Α		712			539		
Approach Delay, s/veh		36.5			27.0			56.1			49.7		
Approach LOS		D			С			Е			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc)		21.0	16.2	47.8	11.6	28.8	9.3	54.8					
Change Period (Y+Rc),	s 4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Max Green Setting (Gm		17.0	21.0	48.0	12.1	22.9	10.9	58.1					
Max Q Clear Time (g_c-	+1115),Os	19.0	11.6	38.2	7.5	9.2	6.2	18.6					
Green Ext Time (p_c), s	0.5	0.0	0.7	5.6	0.2	0.6	0.0	5.7					
Intersection Summary													
HCM 6th Ctrl Delay			39.7										
HCM 6th LOS			D										

User approved pedestrian interval to be less than phase max green.
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	₽			4		7	₽		7	f)	
Traffic Volume (veh/h)	70	26	248	35	16	11	110	295	6	27	344	95
Future Volume (veh/h)	70	26	248	35	16	11	110	295	6	27	344	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1796	1796	1796	1811	1811	1811
Adj Flow Rate, veh/h	75	28	89	38	17	4	118	317	5	29	370	86
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	7	7	7	6	6	6
Cap, veh/h	440	59	188	247	86	12	499	757	12	574	520	121
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.10	0.43	0.43	0.04	0.37	0.37
Sat Flow, veh/h	1370	388	1232	516	562	78	1711	1763	28	1725	1417	329
Grp Volume(v), veh/h	75	0	117	59	0	0	118	0	322	29	0	456
Grp Sat Flow(s),veh/h/ln	1370	0	1620	1156	0	0	1711	0	1791	1725	0	1746
Q Serve(g_s), s	0.0	0.0	2.3	0.1	0.0	0.0	1.4	0.0	4.4	0.4	0.0	7.9
Cycle Q Clear(g_c), s	1.3	0.0	2.3	2.4	0.0	0.0	1.4	0.0	4.4	0.4	0.0	7.9
Prop In Lane	1.00		0.76	0.64		0.07	1.00		0.02	1.00		0.19
Lane Grp Cap(c), veh/h	440	0	248	345	0	0	499	0	769	574	0	641
V/C Ratio(X)	0.17	0.00	0.47	0.17	0.00	0.00	0.24	0.00	0.42	0.05	0.00	0.71
Avail Cap(c_a), veh/h	933	0	831	852	0	0	599	0	1183	763	0	1134
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.2	0.0	13.6	13.1	0.0	0.0	6.5	0.0	7.0	6.5	0.0	9.6
Incr Delay (d2), s/veh	0.2	0.0	1.4	0.2	0.0	0.0	0.2	0.0	0.4	0.0	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.8	0.4	0.0	0.0	0.4	0.0	1.2	0.1	0.0	2.5
Unsig. Movement Delay, s/veh		0.0	45.0	40.0	0.0	0.0	0.7	0.0	7.4	٥.	0.0	44.0
LnGrp Delay(d),s/veh	13.4	0.0	15.0	13.3	0.0	0.0	6.7	0.0	7.4	6.5	0.0	11.0
LnGrp LOS	В	A	В	В	A	A	A	A	Α	Α	A	B
Approach Vol, veh/h		192			59			440			485	
Approach Delay, s/veh		14.4			13.3			7.2			10.8	
Approach LOS		В			В			Α			В	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.7	19.6		9.9	7.9	17.5		9.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	23.3		18.1	5.5	22.9		18.1				
Max Q Clear Time (g_c+l1), s	2.4	6.4		4.3	3.4	9.9		4.4				
Green Ext Time (p_c), s	0.0	1.8		0.7	0.1	2.5		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			10.1									
HCM 6th LOS			В									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	42	207	21	21	185	37	14	27	28	74	53	51
Future Vol, veh/h	42	207	21	21	185	37	14	27	28	74	53	51
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	1	1	1	2	2	2	6	6	6	5	5	5
Mvmt Flow	49	244	25	25	218	44	16	32	33	87	62	60
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	12.5			11.8			9.7			11.4		
HCM LOS	R			R			Α			R		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %	20%	16%	9%	42%	
Vol Thru, %	39%	77%	76%	30%	
Vol Right, %	41%	8%	15%	29%	
Sign Control	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	69	270	243	178	
LT Vol	14	42	21	74	
Through Vol	27	207	185	53	
RT Vol	28	21	37	51	
Lane Flow Rate	81	318	286	209	
Geometry Grp	1	1	1	1	
Degree of Util (X)	0.13	0.456	0.411	0.326	
Departure Headway (Hd)	5.771	5.171	5.177	5.606	
Convergence, Y/N	Yes	Yes	Yes	Yes	
Сар	619	696	695	641	
Service Time	3.82	3.207	3.213	3.647	
HCM Lane V/C Ratio	0.131	0.457	0.412	0.326	
HCM Control Delay	9.7	12.5	11.8	11.4	
HCM Lane LOS	Α	В	В	В	
HCM 95th-tile Q	0.4	2.4	2	1.4	

Interpostion						
Intersection	0.2					
Int Delay, s/veh	U.Z					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	ĵ.			र्स	W	
Traffic Vol, veh/h	358	1	8	264	1	5
Future Vol, veh/h	358	1	8	264	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0
	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	# 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mymt Flow	389	1	9	287	1	5
	300			_01	1	
	ajor1		Major2		Minor1	
Conflicting Flow All	0	0	390	0	695	390
Stage 1	-	-	-	-	390	-
Stage 2	-	-	-	-	305	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	0 = 40	3.318
Pot Cap-1 Maneuver	-	-	1169	-	408	658
Stage 1	-	_	-	-	684	-
Stage 2	_	_	_	_	748	-
Platoon blocked, %	_	<u>-</u>		_	. 13	
Mov Cap-1 Maneuver	_	_	1169	_	404	658
Mov Cap-1 Maneuver		_	- 1103	_	404	- 000
Stage 1		-	_		684	-
		_		-	741	_
Stage 2	-	-	-	_	741	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		11.1	
HCM LOS					В	
		.D				14/5-
Minor Lane/Major Mvmt	N	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)		596	-		1169	-
HCM Lane V/C Ratio		0.011	_	-	0.007	-
HCM Control Delay (s)		11.1	-	-	8.1	0
			-	-	8.1 A	0 A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ર્ન	7		4		Ĭ	f.		7	ĵ.	
Traffic Vol, veh/h	97	66	200	99	65	62	157	330	21	47	356	50
Future Vol, veh/h	97	66	200	99	65	62	157	330	21	47	356	50
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	1	1	1	1	1	1	2	2	2	1	1	1
Mvmt Flow	102	69	211	104	68	65	165	347	22	49	375	53
Number of Lanes	0	1	1	0	1	0	1	1	0	1	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			2			2			2		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	2			2			2			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	2			2			1			2		
HCM Control Delay	18.7			26.1			36.3			62.4		
HCM LOS	С			D			Ε			F		

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2	
Vol Left, %	100%	0%	60%	0%	44%	100%	0%	
Vol Thru, %	0%	94%	40%	0%	29%	0%	88%	
Vol Right, %	0%	6%	0%	100%	27%	0%	12%	
Sign Control	Stop							
Traffic Vol by Lane	157	351	163	200	226	47	406	
LT Vol	157	0	97	0	99	47	0	
Through Vol	0	330	66	0	65	0	356	
RT Vol	0	21	0	200	62	0	50	
Lane Flow Rate	165	369	172	211	238	49	427	
Geometry Grp	7	7	7	7	6	7	7	
Degree of Util (X)	0.41	0.858	0.44	0.479	0.613	0.122	0.983	
Departure Headway (Hd)	8.925	8.362	9.224	8.186	9.275	8.889	8.28	
Convergence, Y/N	Yes							
Cap	403	432	389	440	388	403	436	
Service Time	6.698	6.133	6.994	5.955	7.356	6.654	6.044	
HCM Lane V/C Ratio	0.409	0.854	0.442	0.48	0.613	0.122	0.979	
HCM Control Delay	17.8	44.6	19.1	18.3	26.1	12.9	68.1	
HCM Lane LOS	С	Е	С	С	D	В	F	
HCM 95th-tile Q	2	8.5	2.2	2.5	3.9	0.4	12.2	

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		^	7	ሻሻ	^	7	ሻሻ	†	7	ሻሻ	†	7	
Traffic Volume (veh/h)	110	938	127	560	1387	247	277	190	313	320	182	104	
Future Volume (veh/h)	110	938	127	560	1387	247	277	190	313	320	182	104	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approac		No	1.00	1.00	No	1.00	1.00	No	1.00	1.00	No	1.00	
Adj Sat Flow, veh/h/ln	1709	1709	1709	1709	1709	1709	1709	1709	1709	1723	1723	1723	
Adj Flow Rate, veh/h	115	977	0	583	1445	0	289	198	300	333	190	9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	2	2	2	
Cap, veh/h	139	1193		651	1585	U	346	275	529	391	300	252	
Arrive On Green	0.09	0.37	0.00	0.21	0.49	0.00	0.11	0.16	0.16	0.12	0.17	0.17	
Sat Flow, veh/h	1628	3247	1448	3158	3247	1448	3158	1709	1435	3183	1723	1447	
Grp Volume(v), veh/h	115	977	0	583	1445	0	289	198	300	333	190	9	
Grp Volume(v), ven/n Grp Sat Flow(s),veh/h/l		1624	1448	1579	1624	1448	1579	1709	1435	1591	1723	1447	
Q Serve(g_s), s	7.8	30.5	0.0	20.1	46.0	0.0	10.0	12.3	18.0	11.5	11.5	0.6	
	7.8	30.5	0.0	20.1	46.0	0.0	10.0	12.3	18.0	11.5	11.5	0.6	
Cycle Q Clear(g_c), s Prop In Lane	1.00	30.5	1.00	1.00	40.0	1.00	1.00	12.3		1.00	11.5	1.00	
•		1193	1.00	651	1585	1.00		275	1.00 529	391	300	252	
Lane Grp Cap(c), veh/h		0.82					346					0.04	
V/C Ratio(X)	0.83			0.90	0.91		0.84	0.72	0.57	0.85	0.63		
Avail Cap(c_a), veh/h	177	1270	1.00	744	1681	1.00	403	275	529	449	300	252	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/ve		32.1	0.0	43.3	26.4	0.0	48.9	44.6	28.4	48.1	42.9	38.4	
Incr Delay (d2), s/veh	21.7	4.2	0.0	12.4	7.7	0.0	12.5	8.9	1.4	13.1	4.3	0.1	
Initial Q Delay(d3),s/ve		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),ve		12.3	0.0	8.8	18.4	0.0	4.5	5.8	6.5	5.3	5.3	0.2	
Unsig. Movement Dela	•		0.0	-	0.4.4	0.0	04.4	F0 F	00.0	04.0	47.0	20.5	
LnGrp Delay(d),s/veh	72.2	36.2	0.0	55.7	34.1	0.0	61.4	53.5	29.8	61.2	47.2	38.5	
LnGrp LOS	<u>E</u>	D		<u>E</u>	С		<u>E</u>	D	С	<u>E</u>	D	D	
Approach Vol, veh/h		1092	Α		2028	Α		787			532		
Approach Delay, s/veh		40.0			40.3			47.4			55.8		
Approach LOS		D			D			D			Е		
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Ro	3), \$7.8	22.0	27.1	45.1	16.3	23.5	13.6	58.7					
Change Period (Y+Rc)		4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Max Green Setting (Gr		18.0	26.4	43.8	14.3	19.5	12.2	58.0					
Max Q Clear Time (g_c	, ,	20.0	22.1	32.5	12.0	13.5	9.8	48.0					
Green Ext Time (p_c),		0.0	1.0	5.0	0.2	0.5	0.1	6.7					
Intersection Summary	0.0	0.0	1.0	0.0	J.L	5.0	J. 1	5.1					
			43.3										
HCM 6th Ctrl Delay													
HCM 6th LOS			D										
Notes													

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	f.			4		7	₽		7	₽	
Traffic Volume (veh/h)	97	66	200	99	65	62	157	330	21	47	356	50
Future Volume (veh/h)	97	66	200	99	65	62	157	330	21	47	356	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.99	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	102	69	74	104	68	44	165	347	19	49	375	45
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	1	1	1
Cap, veh/h	498	194	208	253	139	66	480	646	35	494	518	62
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.11	0.37	0.37	0.05	0.32	0.32
Sat Flow, veh/h	1283	817	876	497	584	276	1781	1754	96	1795	1645	197
Grp Volume(v), veh/h	102	0	143	216	0	0	165	0	366	49	0	420
Grp Sat Flow(s),veh/h/ln	1283	0	1693	1357	0	0	1781	0	1850	1795	0	1843
Q Serve(g_s), s	0.0	0.0	2.8	3.2	0.0	0.0	2.3	0.0	6.2	0.7	0.0	8.0
Cycle Q Clear(g_c), s	2.5	0.0	2.8	6.0	0.0	0.0	2.3	0.0	6.2	0.7	0.0	8.0
Prop In Lane	1.00		0.52	0.48		0.20	1.00		0.05	1.00		0.11
Lane Grp Cap(c), veh/h	498	0	402	457	0	0	480	0	681	494	0	581
V/C Ratio(X)	0.21	0.00	0.36	0.47	0.00	0.00	0.34	0.00	0.54	0.10	0.00	0.72
Avail Cap(c_a), veh/h	794	0	793	795	0	0	539	0	1072	631	0	1049
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.4	0.0	12.5	13.8	0.0	0.0	8.3	0.0	9.8	8.3	0.0	12.0
Incr Delay (d2), s/veh	0.2	0.0	0.5	0.8	0.0	0.0	0.4	0.0	0.7	0.1	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	1.0	1.6	0.0	0.0	0.7	0.0	2.1	0.2	0.0	2.9
Unsig. Movement Delay, s/veh		0.0	40.4	445	0.0	0.0	0.7	0.0	10.5	0.4	0.0	40.7
LnGrp Delay(d),s/veh	12.6	0.0	13.1	14.5	0.0	0.0	8.7	0.0	10.5	8.4	0.0	13.7
LnGrp LOS	В	A	В	В	A	A	A	A = 2.1	В	A	A	<u>B</u>
Approach Vol, veh/h		245			216			531			469	
Approach Delay, s/veh		12.9			14.5			9.9			13.2	
Approach LOS		В			В			Α			В	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	19.1		13.9	8.7	17.0		13.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	22.9		18.5	5.5	22.5		18.5				
Max Q Clear Time (g_c+l1), s	2.7	8.2		4.8	4.3	10.0		8.0				
Green Ext Time (p_c), s	0.0	2.0		1.0	0.1	2.2		0.9				
Intersection Summary												
HCM 6th Ctrl Delay			12.2									
HCM 6th LOS			В									

Intersection		
ntersection Delay, s/veh	16.2	
Intersection LOS	С	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	102	154	9	16	129	84	8	114	24	142	69	86
Future Vol, veh/h	102	154	9	16	129	84	8	114	24	142	69	86
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	3	3	3	2	2	2	8	8	8	7	7	7
Mvmt Flow	121	183	11	19	154	100	10	136	29	169	82	102
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	16.9			14.5			12.8			18.5		
HCM LOS	С			В			В			С		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %	5%	38%	7%	48%	
Vol Thru, %	78%	58%	56%	23%	
Vol Right, %	16%	3%	37%	29%	
Sign Control	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	146	265	229	297	
LT Vol	8	102	16	142	
Through Vol	114	154	129	69	
RT Vol	24	9	84	86	
Lane Flow Rate	174	315	273	354	
Geometry Grp	1	1	1	1	
Degree of Util (X)	0.32	0.553	0.465	0.608	
Departure Headway (Hd)	6.629	6.306	6.141	6.194	
Convergence, Y/N	Yes	Yes	Yes	Yes	
Сар	541	571	586	580	
Service Time	4.693	4.357	4.196	4.247	
HCM Lane V/C Ratio	0.322	0.552	0.466	0.61	
HCM Control Delay	12.8	16.9	14.5	18.5	
HCM Lane LOS	В	С	В	С	
HCM 95th-tile Q	1.4	3.4	2.5	4.1	

Intersection						
Int Delay, s/veh	0.2					
		ED.5	14/51	14/57	NE	NES
	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	₽			4	Y	
Traffic Vol, veh/h	370	1	2	239	1	8
Future Vol, veh/h	370	1	2	239	1	8
Conflicting Peds, #/hr	0	0	0	0	0	0
	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	# 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	402	1	2	260	1	9
		_		_		
	ajor1		Major2		Minor1	
Conflicting Flow All	0	0	403	0	667	403
Stage 1	-	-	-	-	403	-
Stage 2	-	-	-	-	264	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-		3.318
Pot Cap-1 Maneuver	-	-	1156	-	424	647
Stage 1	_	_	-	_	675	-
Stage 2	_	_	_	_	780	_
Platoon blocked, %	_	<u>-</u>		_	100	
Mov Cap-1 Maneuver		_	1156	_	423	647
Mov Cap-1 Maneuver	_	_	-	_	423	- 047
Stage 1	_	-	_	-	675	-
		=	_			
Stage 2	-	-	-	-	778	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.1		11	
HCM LOS					В	
Minor Lane/Major Mvmt	١	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)		611	-	-	1156	-
HCM Lane V/C Ratio		0.016	-	-	0.002	-
HCM Control Delay (s)		11	-	-	8.1	0
HCM Lane LOS		В	-	-	Α	Α
HCM 95th %tile Q(veh)		0	-	-	0	-

Intersection	
Intersection Delay, s/veh	39.5
Intersection LOS	Е

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ર્ન	7		4		,	f)		¥	f)	
Traffic Vol, veh/h	76	29	273	39	17	12	119	324	7	30	378	105
Future Vol, veh/h	76	29	273	39	17	12	119	324	7	30	378	105
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	7	7	7	6	6	6
Mvmt Flow	82	31	294	42	18	13	128	348	8	32	406	113
Number of Lanes	0	1	1	0	1	0	1	1	0	1	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			2			2			2		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	2			2			2			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	2			2			1			2		
HCM Control Delay	17.8			14.3			23.9			72.6		
HCM LOS	С			В			С			F		

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2	
Vol Left, %	100%	0%	72%	0%	57%	100%	0%	
Vol Thru, %	0%	98%	28%	0%	25%	0%	78%	
Vol Right, %	0%	2%	0%	100%	18%	0%	22%	
Sign Control	Stop							
Traffic Vol by Lane	119	331	105	273	68	30	483	
LT Vol	119	0	76	0	39	30	0	
Through Vol	0	324	29	0	17	0	378	
RT Vol	0	7	0	273	12	0	105	
Lane Flow Rate	128	356	113	294	73	32	519	
Geometry Grp	7	7	7	7	6	7	7	
Degree of Util (X)	0.279	0.723	0.255	0.575	0.181	0.07	1.036	
Departure Headway (Hd)	8.059	7.529	8.358	7.263	9.246	7.848	7.179	
Convergence, Y/N	Yes							
Сар	449	484	432	499	390	459	509	
Service Time	5.759	5.229	6.058	4.963	7.246	5.548	4.879	
HCM Lane V/C Ratio	0.285	0.736	0.262	0.589	0.187	0.07	1.02	
HCM Control Delay	13.8	27.5	13.9	19.3	14.3	11.1	76.4	
HCM Lane LOS	В	D	В	С	В	В	F	
HCM 95th-tile Q	1.1	5.8	1	3.6	0.7	0.2	15.1	

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		^	7	ሻሻ	^	7	ሻሻ	†	7	ሻሻ	†	7	
Traffic Volume (veh/h)	66	1110	80	284	666	212	169	188	421	403	142	89	
Future Volume (veh/h)	66	1110	80	284	666	212	169	188	421	403	142	89	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00	•	1.00	1.00	•	1.00	1.00		0.99	1.00	•	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approac		No	1.00	1.00	No	1.00	1.00	No	1.00	1.00	No	1.00	
Adj Sat Flow, veh/h/ln	1695	1695	1695	1614	1614	1614	1668	1668	1668	1695	1695	1695	
Adj Flow Rate, veh/h	72	1207	0	309	724	0	184	204	404	438	154	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	
Percent Heavy Veh, %	4	4	4	10	10	10	6	6	6	4	4	4	
Cap, veh/h	90	1305	7	371	1453	10	241	284	415	490	422	357	
Arrive On Green	0.06	0.41	0.00	0.12	0.47	0.00	0.08	0.17	0.17	0.16	0.25	0.00	
Sat Flow, veh/h	1615	3221	1437	2981	3066	1367	3082	1668	1404	3132	1695	1437	
Grp Volume(v), veh/h	72	1207	0	309	724	0	184	204	404	438	154	0	
Grp Volume(v), ven/h Grp Sat Flow(s),veh/h/l		1611	1437	1491	1533	1367	1541	1668	1404	1566	1695	1437	
Q Serve(g_s), s	4.9	39.7	0.0	11.3	18.1	0.0	6.5	12.9	19.0	15.3	8.4	0.0	
,	4.9	39.7	0.0	11.3	18.1	0.0	6.5	12.9	19.0	15.3	8.4	0.0	
Cycle Q Clear(g_c), s	1.00	Jy.1	1.00	1.00	10.1	1.00	1.00	12.9		1.00	0.4	1.00	
Prop In Lane		1205	1.00		1150	1.00		201	1.00		400		
Lane Grp Cap(c), veh/h		1305		371	1453		241	284	415	490	422	357	
V/C Ratio(X)	0.80	0.92		0.83	0.50		0.76	0.72	0.97	0.89	0.37	0.00	
Avail Cap(c_a), veh/h	165	1358	4.00	535	1529	4.00	354	284	415	506	422	357	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	
Uniform Delay (d), s/ve		31.5	0.0	47.7	20.2	0.0	50.4	43.7	38.9	46.1	34.6	0.0	
Incr Delay (d2), s/veh	14.9	10.7	0.0	7.4	0.3	0.0	5.7	8.4	36.9	17.9	0.5	0.0	
Initial Q Delay(d3),s/ve		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),ve		16.7	0.0	4.5	6.3	0.0	2.7	5.9	14.9	7.2	3.6	0.0	
Unsig. Movement Dela	•		0.0	^	00 =		FO 4	FO 4	75.0	040	05.4	0.0	
LnGrp Delay(d),s/veh	66.9	42.2	0.0	55.0	20.5	0.0	56.1	52.1	75.8	64.0	35.1	0.0	
LnGrp LOS	E	D		<u>E</u>	С		E	D	E	<u>E</u>	D	A	
Approach Vol, veh/h		1279	Α		1033	Α		792			592		
Approach Delay, s/veh		43.6			30.8			65.1			56.5		
Approach LOS		D			С			Е			Е		
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Ro), 21.4	23.0	17.9	49.2	12.7	31.7	10.2	56.8					
Change Period (Y+Rc)		4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Max Green Setting (Gn		19.0	20.0	47.0	12.8	24.2	11.4	55.6					
Max Q Clear Time (g_c	, ,	21.0	13.3	41.7	8.5	10.4	6.9	20.1					
Green Ext Time (p_c),		0.0	0.6	3.4	0.2	0.6	0.0	5.6					
Intersection Summary	0.1	0.0	0.0	J.7	J.L	3.0	0.0	3.0					
			46.7										
HCM 6th Ctrl Delay													
HCM 6th LOS			D										
Notes													

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	₽			- ↔		ሻ	₽		*	₽	
Traffic Volume (veh/h)	76	29	273	39	17	12	119	324	7	30	378	105
Future Volume (veh/h)	76	29	273	39	17	12	119	324	7	30	378	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.98	0.99		0.98	1.00		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1796	1796	1796	1811	1811	1811
Adj Flow Rate, veh/h	82	31	72	42	18	3	128	348	7	32	406	98
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	7	7	7	6	6	6
Cap, veh/h	411	69	159	240	78	8	493	801	16	578	556	134
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.10	0.46	0.46	0.04	0.40	0.40
Sat Flow, veh/h	1369	492	1143	552	559	56	1711	1754	35	1725	1406	339
Grp Volume(v), veh/h	82	0	103	63	0	0	128	0	355	32	0	504
Grp Sat Flow(s),veh/h/ln	1369	0	1635	1166	0	0	1711	0	1789	1725	0	1745
Q Serve(g_s), s	0.0	0.0	2.1	0.3	0.0	0.0	1.5	0.0	5.0	0.4	0.0	9.1
Cycle Q Clear(g_c), s	1.6	0.0	2.1	2.4	0.0	0.0	1.5	0.0	5.0	0.4	0.0	9.1
Prop In Lane	1.00		0.70	0.67		0.05	1.00		0.02	1.00		0.19
Lane Grp Cap(c), veh/h	411	0	228	325	0	0	493	0	817	578	0	690
V/C Ratio(X)	0.20	0.00	0.45	0.19	0.00	0.00	0.26	0.00	0.43	0.06	0.00	0.73
Avail Cap(c_a), veh/h	722	0	599	646	0	0	616	0	1354	751	0	1263
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.3	0.0	14.6	14.3	0.0	0.0	6.4	0.0	6.8	6.1	0.0	9.5
Incr Delay (d2), s/veh	0.2	0.0	1.4	0.3	0.0	0.0	0.3	0.0	0.4	0.0	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.8	0.4	0.0	0.0	0.4	0.0	1.4	0.1	0.0	2.8
Unsig. Movement Delay, s/veh		0.0	0.0	• • • • • • • • • • • • • • • • • • • •	0.0	0.0	•	0.0		• • • • • • • • • • • • • • • • • • • •	0.0	
LnGrp Delay(d),s/veh	14.6	0.0	16.0	14.6	0.0	0.0	6.7	0.0	7.2	6.2	0.0	11.0
LnGrp LOS	В	A	В	В	A	A	A	A	A	A	A	В
Approach Vol, veh/h		185			63			483	, <u>, , </u>		536	
Approach Delay, s/veh		15.3			14.6			7.0			10.7	
Approach LOS		15.5 B			14.0 B			7.0 A			В	
Approach EOS		D			D						D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	21.3		9.6	8.2	19.1		9.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	27.9		13.5	6.3	26.7		13.5				
Max Q Clear Time (g_c+l1), s	2.4	7.0		4.1	3.5	11.1		4.4				
Green Ext Time (p_c), s	0.0	2.2		0.5	0.1	3.1		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			10.2									
HCM 6th LOS			В									
Notes												

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	46	227	23	23	204	41	15	30	31	81	59	56
Future Vol, veh/h	46	227	23	23	204	41	15	30	31	81	59	56
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	1	1	1	2	2	2	6	6	6	5	5	5
Mvmt Flow	54	267	27	27	240	48	18	35	36	95	69	66
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	14.1			13.1			10.2			12.4		
HCM LOS	В			В			В			В		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %	20%	16%	9%	41%	
Vol Thru, %	39%	77%	76%	30%	
Vol Right, %	41%	8%	15%	29%	
Sign Control	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	76	296	268	196	
LT Vol	15	46	23	81	
Through Vol	30	227	204	59	
RT Vol	31	23	41	56	
Lane Flow Rate	89	348	315	231	
Geometry Grp	1	1	1	1	
Degree of Util (X)	0.15	0.519	0.47	0.373	
Departure Headway (Hd)	6.048	5.363	5.372	5.831	
Convergence, Y/N	Yes	Yes	Yes	Yes	
Сар	589	672	668	616	
Service Time	4.123	3.412	3.424	3.891	
HCM Lane V/C Ratio	0.151	0.518	0.472	0.375	
HCM Control Delay	10.2	14.1	13.1	12.4	
HCM Lane LOS	В	В	В	В	
HCM 95th-tile Q	0.5	3	2.5	1.7	

Intersection						
Int Delay, s/veh	0.2					
		EDD	14/51	MOT	ND	NDD
	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	₽			4	¥	
Traffic Vol, veh/h	393	1	8	289	1	5
Future Vol, veh/h	393	1	8	289	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0
	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	# 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	427	1	9	314	1	5
			*			
				_		
	ajor1		Major2		Minor1	
Conflicting Flow All	0	0	428	0	760	428
Stage 1	-	-	-	-	428	-
Stage 2	-	-	-	-	332	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	_	1131	-	374	627
Stage 1	_	_	-	_	657	-
Stage 2	-	_	_	_	727	-
Platoon blocked, %	_	_		_		
Mov Cap-1 Maneuver	_	_	1131	_	370	627
Mov Cap-1 Maneuver		_	-	_	370	- 021
Stage 1	-	_	_	-	657	
	-	•	-	•	720	-
Stage 2	-	_	-	-	120	_
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		11.5	
HCM LOS					В	
Minor Lane/Major Mvmt	1	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)		562	-	-	1131	-
HCM Lane V/C Ratio		0.012	-	-	800.0	-
HCM Control Delay (s)		11.5	-	-	8.2	0
HCM Lane LOS		В	-	-	Α	Α
HCM 95th %tile Q(veh)		0	_	-	0	-

Intersection	
Intersection Delay, s/veh	57.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ર્ન	7		4		J.	Ą.		, j	Ą.	
Traffic Vol, veh/h	106	72	220	109	71	69	172	364	23	51	392	54
Future Vol, veh/h	106	72	220	109	71	69	172	364	23	51	392	54
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	1	1	1	1	1	1	2	2	2	1	1	1
Mvmt Flow	112	76	232	115	75	73	181	383	24	54	413	57
Number of Lanes	0	1	1	0	1	0	1	1	0	1	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			2			2			2		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	2			2			2			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	2			2			1			2		
HCM Control Delay	21.3			31.8			52.7			105.8		
HCM LOS	С			D			F			F		

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2	
Vol Left, %	100%	0%	60%	0%	44%	100%	0%	
Vol Thru, %	0%	94%	40%	0%	29%	0%	88%	
Vol Right, %	0%	6%	0%	100%	28%	0%	12%	
Sign Control	Stop							
Traffic Vol by Lane	172	387	178	220	249	51	446	
LT Vol	172	0	106	0	109	51	0	
Through Vol	0	364	72	0	71	0	392	
RT Vol	0	23	0	220	69	0	54	
Lane Flow Rate	181	407	187	232	262	54	469	
Geometry Grp	7	7	7	7	6	7	7	
Degree of Util (X)	0.458	0.968	0.484	0.538	0.681	0.139	1.138	
Departure Headway (Hd)	9.513	8.946	9.821	8.776	9.966	9.334	8.724	
Convergence, Y/N	Yes							
Сар	382	407	369	415	364	385	418	
Service Time	7.213	6.646	7.521	6.476	7.966	7.06	6.449	
HCM Lane V/C Ratio	0.474	1	0.507	0.559	0.72	0.14	1.122	
HCM Control Delay	20	67.3	21.4	21.2	31.8	13.6	116.3	
HCM Lane LOS	С	F	С	С	D	В	F	
HCM 95th-tile Q	2.3	11.3	2.5	3.1	4.8	0.5	17.3	

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ሻ	^	7	ሻሻ	^	7	ሻሻ	†	7	ሻሻ	↑	7	
Traffic Volume (veh/h)	121	939	140	618	1388	272	306	209	344	351	200	114	
Future Volume (veh/h)	121	939	140	618	1388	272	306	209	344	351	200	114	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00	•	1.00	1.00		0.99	1.00	•	0.99	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approac		No			No			No		,,,,,	No		
Adj Sat Flow, veh/h/ln	1709	1709	1709	1709	1709	1709	1709	1709	1709	1723	1723	1723	
Adj Flow Rate, veh/h	126	978	0	644	1446	0	319	218	332	366	208	21	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	2	2	2	
Cap, veh/h	150	1126	- U	699	1545	J	369	279	555	418	306	257	
Arrive On Green	0.09	0.35	0.00	0.22	0.48	0.00	0.12	0.16	0.16	0.13	0.18	0.18	
Sat Flow, veh/h	1628	3247	1448	3158	3247	1448	3158	1709	1435	3183	1723	1448	
Grp Volume(v), veh/h	126	978	0	644	1446	0	319	218	332	366	208	21	
Grp Sat Flow(s), veh/h/l		1624	1448	1579	1624	1448	1579	1709	1435	1591	1723	1448	
. ,	8.9	32.8	0.0	23.2	49.0	0.0	11.5	14.2	19.0	13.1	13.1	1.4	
Q Serve(g_s), s													
Cycle Q Clear(g_c), s	8.9	32.8	0.0	23.2	49.0	0.0	11.5	14.2	19.0	13.1	13.1	1.4	
Prop In Lane	1.00	4400	1.00	1.00	1515	1.00	1.00	070	1.00	1.00	200	1.00	
Lane Grp Cap(c), veh/h		1126		699	1545		369	279	555	418	306	257	
V/C Ratio(X)	0.84	0.87		0.92	0.94		0.86	0.78	0.60	0.88	0.68	0.08	
Avail Cap(c_a), veh/h	168	1172	4.00	733	1591	4.00	380	279	555	438	311	261	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/ve		35.5	0.0	44.3	28.8	0.0	50.5	46.7	28.7	49.6	44.7	39.9	
Incr Delay (d2), s/veh	27.9	7.0	0.0	16.7	10.6	0.0	17.9	13.3	1.8	17.3	5.8	0.1	
Initial Q Delay(d3),s/ve		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),ve		13.7	0.0	10.5	20.3	0.0	5.4	7.0	7.5	6.3	6.1	0.5	
Unsig. Movement Dela	y, s/veh												
LnGrp Delay(d),s/veh	79.8	42.5	0.0	61.0	39.4	0.0	68.4	60.0	30.4	66.9	50.5	40.1	
LnGrp LOS	Е	D		E	D		Ε	Е	С	Ε	D	D	
Approach Vol, veh/h		1104	Α		2090	Α		869			595		
Approach Delay, s/veh		46.8			46.1			51.8			60.2		
Approach LOS		D			D			D			Е		
	4		2	4		0	7						
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Ro		23.0	29.7	44.3	17.6	24.7	14.7	59.4					
Change Period (Y+Rc)		4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Max Green Setting (Gn		19.0	27.0	42.0	14.0	21.0	12.0	57.0					
Max Q Clear Time (g_c	, .	21.0	25.2	34.8	13.5	15.1	10.9	51.0					
Green Ext Time (p_c),	s 0.1	0.0	0.5	3.7	0.1	0.6	0.0	4.4					
Intersection Summary													
HCM 6th Ctrl Delay			49.1										
HCM 6th LOS			D										
Notes													

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	£			4		7	f)		ሻ	₽	
Traffic Volume (veh/h)	106	72	220	109	71	69	172	364	23	51	392	54
Future Volume (veh/h)	106	72	220	109	71	69	172	364	23	51	392	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.99	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	112	76	81	115	75	51	181	383	21	54	413	50
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	1	1	1
Cap, veh/h	504	211	225	259	146	73	476	679	37	493	552	67
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.11	0.39	0.39	0.06	0.34	0.34
Sat Flow, veh/h	1268	820	874	491	566	284	1781	1754	96	1795	1644	199
Grp Volume(v), veh/h	112	0	157	241	0	0	181	0	404	54	0	463
Grp Sat Flow(s),veh/h/ln	1268	0	1695	1341	0	0	1781	0	1850	1795	0	1843
Q Serve(g_s), s	0.0	0.0	3.0	3.9	0.0	0.0	2.5	0.0	6.9	0.8	0.0	9.0
Cycle Q Clear(g_c), s	2.9	0.0	3.0	6.9	0.0	0.0	2.5	0.0	6.9	8.0	0.0	9.0
Prop In Lane	1.00		0.52	0.48		0.21	1.00		0.05	1.00		0.11
Lane Grp Cap(c), veh/h	504	0	437	478	0	0	476	0	717	493	0	619
V/C Ratio(X)	0.22	0.00	0.36	0.50	0.00	0.00	0.38	0.00	0.56	0.11	0.00	0.75
Avail Cap(c_a), veh/h	777	0	801	791	0	0	594	0	1077	643	0	1009
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.2	0.0	12.2	13.7	0.0	0.0	8.1	0.0	9.6	8.0	0.0	11.8
Incr Delay (d2), s/veh	0.2	0.0	0.5	0.8	0.0	0.0	0.5	0.0	0.7	0.1	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	1.0	1.8	0.0	0.0	0.8	0.0	2.3	0.2	0.0	3.2
Unsig. Movement Delay, s/veh		0.0	40.7	445	0.0	0.0	0.0	0.0	40.0	0.4	0.0	40.7
LnGrp Delay(d),s/veh	12.4	0.0	12.7	14.5	0.0	0.0	8.6	0.0	10.3	8.1	0.0	13.7
LnGrp LOS	В	A	В	В	A	A	A	A	В	Α	A	B
Approach Vol, veh/h		269			241			585			517	
Approach Delay, s/veh		12.6			14.5			9.8			13.1	
Approach LOS		В			В			Α			В	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.3	19.6		14.4	8.3	17.5		14.4				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	5.6	23.4		19.0	7.0	22.0		19.0				
Max Q Clear Time (g_c+l1), s	2.8	8.9		5.0	4.5	11.0		8.9				
Green Ext Time (p_c), s	0.0	2.3		1.1	0.1	2.3		1.0				
Intersection Summary												
HCM 6th Ctrl Delay			12.0									
HCM 6th LOS			В									

3. N Springbrook Road at Haworth Avenue

Right Turns on Red
APM Section 13.4.2: RTOR
Equation: vRTOR=sRTOR*(r/C)

					AM Po	eak Hour							
		sRT	OR				r		C		vRT	r OR	
	EBR	WBR	NBR	SBR	EBR	WBR	NBR	SBR	C	EBR	WBR	NBR	SBR
2022 Existing Conditions	-	-	-	-	-	-	-	-	60	#VALUE!	#VALUE!	#VALUE!	#VALUE!
2024 Background Conditions	259	12	2	27	37.4	37.4	32.2	32.6	60	161	7	1	15
2024 Buildout Conditions	267	12	2	27	37.4	37.4	32.2	32.6	60	166	7	1	15
2029 Future Conditions	294	13	3	30	42	42	27.6	28.8	60	206	9	1	14

Intersection v/c

APM Section 13.4.4: Critical Intersection v/c ratio

Method: Determine Critical Movements in HCM 2000 reports & CMA Method

HCM 6th reports, detemine adjusted and sat flow rates

Adjust Flow/Sat Flow

Sum up Crit Movement Flow Rates

							AM Peak Ho	our						
					Adjust Flow			Saturated Flow			Adj/Sat Flows	C	ı	Vo
		Critcial Movement		EBTR	NBL	SBTR	EBTR	NBL	SBTR	EBTR	NBL SBTR Sum	C	L	λί
2024 Background Conditions				114	116	456	1621	1711	1746	0.070327	0.067797 0.261168 0.399292	60	12	0.50
2024 Buildout Conditions	EBTR	NBL	SBTR	117	118	456	1620	1711	1746	0.072222	0.068966 0.261168 0.402356	60	12	0.50
2029 Future Conditions				103	128	504	1635	1711	1745	0.062997	0.07481 0.288825 0.426632	60	12	0.53

4. N Springbrook Road at OR-99W

Right Turns on Red
APM Section 13.4.2: RTOR
Equation: vRTOR=sRTOR*(r/C)

					AM Po	eak Hour							
		sRT	OR			I	r		C		vRT	OR	
	EBR	WBR	NBR	SBR	EBR	WBR	NBR	SBR	C	EBR	WBR	NBR	SBR
2022 Existing Conditions	155	183	82	118	67	57.4	74.4	92.6	120	87	88	51	91
2024 Background Conditions	155	210	82	118	68	57.8	73	93.1	120	88	101	50	92
2024 Buildout Conditions	155	211	82	118	68	57.9	74	93.1	120	88	102	51	92
2029 Future Conditions	155	230	82	118	69	60.4	73	91.8	120	89	116	50	90

Intersection v/c

APM Section 13.4.4: Critical Intersection v/c ratio

Method: Determine Critical Movements in HCM 2000 reports & CMA Method

HCM 6th reports, detemine adjusted and sat flow rates

Adjust Flow/Sat Flow

Sum up Crit Movement Flow Rates

									AM Peak H	our										
						Adjust	Flow			Saturat	ted Flow			P	Adj/Sat Flov	/S		C	1	Vo
		Critcial M	ovement		EBT	WBL	NBT	SBL	EBT	WBL	NBT	SBL	EBT	WBL	NBT	SBL	Sum	C	L	Xc
2022 Existing Conditions					1193	261	171	370	3221	2981	1668	3132	0.370382	0.087555	0.102518	0.118135	0.67859	120	16	0.78
2024 Background Conditions	EBT	WBL	NBT	SBL	1205	280	186	395	3221	2981	1668	3132	0.374107	0.093928	0.111511	0.126117	0.705664	120	16	0.81
2024 Buildout Conditions	EDI	VVDL	INDI	SDL	1205	280	186	398	3221	2981	1668	3132	0.374107	0.093928	0.111511	0.127075	0.706622	120	16	0.82
2029 Future Conditions					1207	309	204	438	3221	2981	1668	3132	0.374728	0.103656	0.122302	0.139847	0.740534	120	16	0.85

3. N Springbrook Road at Haworth Avenue

Right Turns on Red
APM Section 13.4.2: RTOR
Equation: vRTOR=sRTOR*(r/C)

					PM Po	eak Hour							
		sRT	OR				r		C		vRT	OR	
	EBR	WBR	NBR	SBR	EBR	WBR	NBR	SBR	C	EBR	WBR	NBR	SBR
2022 Existing Conditions	-	-	-	-	-	-	-	-	60	#VALUE!	#VALUE!	#VALUE!	#VALUE!
2024 Background Conditions	206	33	6	13	37	37	32.6	33	60	127	20	3	7
2024 Buildout Conditions	211	33	6	14	37	37	32.6	33	60	130	20	3	8
2029 Future Conditions	232	34	6	13	37	37	32.6	34	60	143	21	3	7

Intersection v/c

APM Section 13.4.4: Critical Intersection v/c ratio

Method: Determine Critical Movements in HCM 2000 reports & CMA Method

HCM 6th reports, detemine adjusted and sat flow rates

Adjust Flow/Sat Flow

Sum up Crit Movement Flow Rates

					Р	M Peak Hour						
			Adjust	Flow		Saturate	d Flow		Adj/Sat Flows		1	Vo
	Critcial Movement		WBLTR	NBL	SBTR	WBLTR	NBL	SBTR	WBLTR NBL SBTR Sum	C	L	λί
2024 Background Conditions			216	158	420	1364	1781	1842	0.158358 0.088714 0.228013 0.475085	60	12	0.59
2024 Buildout Conditions	WBLTR NBL	SBTR	216	165	420	1357	1781	1842	0.159175 0.092645 0.228013 0.479832	60	12	0.60
2029 Future Conditions			241	181	463	1341	1781	1843	0.179717 0.101628 0.251221 0.532566	60	12	0.67

4. N Springbrook Road at OR-99W

Right Turns on Red

APM Section 13.4.2: RTOR Equation: vRTOR=sRTOR*(r/C)

					PM Pe	eak Hour							
		sRT	OR			ĺ	r		C		vRT	OR	
	EBR	WBR	NBR	SBR	EBR	WBR	NBR	SBR	C	EBR	WBR	NBR	SBR
2022 Existing Conditions	127	235	45	118	72	58	67	95	120	76	114	25	93
2024 Background Conditions	132	254	45	118	72.6	58	67.2	96.1	120	80	123	25	94
2024 Buildout Conditions	132	257	45	118	72.2	58	67.6	96.5	120	79	124	25	95
2029 Future Conditions	146	283	45	119	74	59	66	95	120	90	139	25	94

Intersection v/c

APM Section 13.4.4: Critical Intersection v/c ratio

Method: Determine Critical Movements in HCM 2000 reports & CMA Method

HCM 6th reports, detemine adjusted and sat flow rates

Adjust Flow/Sat Flow

Sum up Crit Movement Flow Rates

									PM Peak Ho	our										
						Adjust	Flow			Saturat	ted Flow			Α	Adj/Sat Flov	VS		C		٧c
		Critcial M	ovement		EBL	WBT	NBT	SBL	EBL	WBT	NBT	SBL	EBL	WBT	NBT	SBL	Sum	C	L	٨
2022 Existing Conditions					104	1424	185	302	1628	3247	1709	3183	0.063882	0.438559	0.10825	0.094879	0.70557	120	16	0.81
2024 Background Conditions	EBL	WBT	NDT	CDI	111	1445	197	331	1628	3247	1709	3183	0.068182	0.445026	0.115272	0.10399	0.73247	120	16	0.85
2024 Buildout Conditions	EBL	VVDI	NBT	SBL	115	1445	198	333	1628	3247	1709	3183	0.070639	0.445026	0.115857	0.104618	0.736141	120	16	0.85
2029 Future Conditions					126	1446	218	366	1628	3247	1709	3183	0.077396	0.445334	0.12756	0.114986	0.765276	120	16	0.88

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	114	91	90	128
Average Queue (ft)	55	43	46	64
95th Queue (ft)	90	72	76	103
Link Distance (ft)	719	674	772	717
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: N Springbrook Road & Haworth Avenue

		WB	NB	NB	SB	SB	
LT	R	LTR	L	TR	L	TR	
68	94	63	84	150	48	220	
34	53	29	35	68	15	100	
55	83	55	66	119	44	176	
	674	363		454		722	
150			140		100		
			0	0		10	
			0	0		2	
	68 34 55	68 94 34 53 55 83 674	68 94 63 34 53 29 55 83 55 674 363	68 94 63 84 34 53 29 35 55 83 55 66 674 363	68 94 63 84 150 34 53 29 35 68 55 83 55 66 119 674 363 454 150 140 0 0	68 94 63 84 150 48 34 53 29 35 68 15 55 83 55 66 119 44 674 363 454 150 140 100 0 0	68 94 63 84 150 48 220 34 53 29 35 68 15 100 55 83 55 66 119 44 176 674 363 454 722 150 140 0 0 10

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	Т	Т	R	L	L	Т	Т	L	L	Т	R
Maximum Queue (ft)	143	442	419	45	211	244	242	218	155	205	235	294
Average Queue (ft)	38	279	257	2	74	136	129	105	28	100	101	147
95th Queue (ft)	102	405	393	45	182	213	213	190	112	173	193	258
Link Distance (ft)		1106	1106				817	817			358	
Upstream Blk Time (%)										0	0	0
Queuing Penalty (veh)										0	0	0
Storage Bay Dist (ft)	400			350	500	500			300	300		300
Storage Blk Time (%)		1	2									1
Queuing Penalty (veh)		1	1									2

Intersection: 4: N Springbrook Road & OR-99W

Movement	SB	SB	SB	SB
Directions Served	L	L	T	R
Maximum Queue (ft)	189	202	163	74
Average Queue (ft)	107	125	73	25
95th Queue (ft)	168	185	137	54
Link Distance (ft)			454	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	220	220		125
Storage Blk Time (%)	0	0	3	
Queuing Penalty (veh)	0	0	11	

Network Summary

Network wide Queuing Penalty: 18

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	103	84	71	101
Average Queue (ft)	53	45	34	49
95th Queue (ft)	85	71	61	81
Link Distance (ft)	719	674	772	717
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: N Springbrook Road & Haworth Avenue

Movement	EB	EB	WB	NB	NB	SB	SB		
Directions Served	LT	R	LTR	L	TR	L	TR		
Maximum Queue (ft)	97	99	129	135	202	156	278		
Average Queue (ft)	49	51	65	47	88	33	114		
95th Queue (ft)	81	83	107	93	160	97	217		
Link Distance (ft)		674	363		454		722		
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	150			140		100			
Storage Blk Time (%)				0	2		19		
Queuing Penalty (veh)				0	3		8		

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	Т	T	R	L	L	Т	Т	R	L	L	T
Maximum Queue (ft)	179	369	349	44	321	401	509	535	335	232	287	247
Average Queue (ft)	84	242	220	2	186	236	306	306	27	111	173	111
95th Queue (ft)	156	337	315	44	285	349	460	462	199	230	258	204
Link Distance (ft)		1106	1106				817	817				358
Upstream Blk Time (%)								0				0
Queuing Penalty (veh)								0				0
Storage Bay Dist (ft)	400			350	500	500			350	300	300	
Storage Blk Time (%)		0	0				1	4		0	0	0
Queuing Penalty (veh)		0	0				3	10		0	1	0

Intersection: 4: N Springbrook Road & OR-99W

Movement	NB	SB	SB	SB	SB	
Directions Served	R	L	L	T	R	
Maximum Queue (ft)	259	180	204	217	150	
Average Queue (ft)	98	90	111	113	48	
95th Queue (ft)	196	148	169	188	104	
Link Distance (ft)				454		
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	300	220	220		125	
Storage Blk Time (%)	0	0	0	9	0	
Queuing Penalty (veh)	1	0	0	33	1	

Network Summary

Network wide Queuing Penalty: 61

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	126	86	100	132
Average Queue (ft)	58	46	48	66
95th Queue (ft)	94	74	83	105
Link Distance (ft)	719	674	772	717
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: N Springbrook Road & Haworth Avenue

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	L	TR	L	TR
Maximum Queue (ft)	71	109	63	83	156	96	268
Average Queue (ft)	35	58	30	36	73	22	112
95th Queue (ft)	58	91	57	67	127	70	206
Link Distance (ft)		674	363		454		722
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150			140		100	
Storage Blk Time (%)		0			1		14
Queuing Penalty (veh)		0			1		4

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	Т	T	R	L	L	T	Т	L	L	Т	R
Maximum Queue (ft)	96	463	434	90	202	227	239	228	158	257	304	338
Average Queue (ft)	37	298	271	6	76	139	141	115	27	103	123	178
95th Queue (ft)	79	429	404	93	183	215	224	201	113	193	249	312
Link Distance (ft)		1106	1106				817	817			358	
Upstream Blk Time (%)										0	1	0
Queuing Penalty (veh)										0	0	0
Storage Bay Dist (ft)	400			350	500	500			300	300		300
Storage Blk Time (%)		2	2							0	0	2
Queuing Penalty (veh)		1	2							0	2	8

Intersection: 4: N Springbrook Road & OR-99W

Movement	SB	SB	SB	SB
Directions Served	L	L	T	R
Maximum Queue (ft)	222	227	164	101
Average Queue (ft)	120	135	81	30
95th Queue (ft)	191	203	144	68
Link Distance (ft)			454	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	220	220		125
Storage Blk Time (%)	0	0	3	
Queuing Penalty (veh)	0	1	12	

Network Summary

Network wide Queuing Penalty: 31

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	L	TR	LTR	L	TR	L	TR
Maximum Queue (ft)	84	140	84	109	200	106	255
Average Queue (ft)	38	68	32	50	90	20	120
95th Queue (ft)	70	117	66	91	171	70	210
Link Distance (ft)		675	363		460		716
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150			140		100	
Storage Blk Time (%)		0		0	2	0	10
Queuing Penalty (veh)		0		0	2	0	3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	107	90	73	99
Average Queue (ft)	54	46	34	50
95th Queue (ft)	84	73	61	81
Link Distance (ft)	719	674	772	717
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: N Springbrook Road & Haworth Avenue

Movement	EB	EB	WB	NB	NB	SB	SB		
Directions Served	LT	R	LTR	L	TR	L	TR		
Maximum Queue (ft)	95	112	143	145	228	185	436		
Average Queue (ft)	50	53	69	49	110	61	193		
95th Queue (ft)	83	85	116	100	198	178	408		
Link Distance (ft)		674	363		454		722		
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	150			140		100			
Storage Blk Time (%)	0	0		0	6		45		
Queuing Penalty (veh)	0	0		0	9		21		

Movement	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	Т	L	L	T	T	R	L	L	T	R
Maximum Queue (ft)	184	405	382	332	428	495	491	314	251	294	242	267
Average Queue (ft)	78	262	245	196	244	303	300	27	134	184	126	114
95th Queue (ft)	149	365	347	295	350	444	444	199	238	264	219	215
Link Distance (ft)		1106	1106			817	817				358	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	400			500	500			350	300	300		300
Storage Blk Time (%)		0	1			0	4		0	0	0	0
Queuing Penalty (veh)		0	1			2	10		0	1	1	0

Intersection: 4: N Springbrook Road & OR-99W

Movement	SB	SB	SB	SB
Directions Served	L	L	T	R
Maximum Queue (ft)	186	193	209	178
Average Queue (ft)	105	124	114	54
95th Queue (ft)	159	175	188	120
Link Distance (ft)			454	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	220	220		125
Storage Blk Time (%)	0	0	10	0
Queuing Penalty (veh)	0	0	42	2

Network Summary

Network wide Queuing Penalty: 89

Directions Served L TR LTR L TR L TR Maximum Queue (ft) 113 137 212 178 230 119 224 Average Queue (ft) 46 68 91 65 106 28 116 95th Queue (ft) 84 113 168 124 189 72 195 Link Distance (ft) 675 363 460 716 Upstream Blk Time (%) Queuing Penalty (veh) 150 140 100 Storage Blk Time (%) 0 0 0 3 11 Queuing Penalty (veh) 0 0 4 5	Movement	EB	EB	WB	NB	NB	SB	SB	
Average Queue (ft)	Directions Served	L	TR	LTR	L	TR	L	TR	
95th Queue (ft) 84 113 168 124 189 72 195 Link Distance (ft) 675 363 460 716 Upstream Blk Time (%) Queuing Penalty (veh) Storage Bay Dist (ft) 150 140 100 Storage Blk Time (%) 0 0 0 3 11	Maximum Queue (ft)	113	137	212	178	230	119	224	
Link Distance (ft) 675 363 460 716 Upstream Blk Time (%) Queuing Penalty (veh) Storage Bay Dist (ft) 150 140 100 Storage Blk Time (%) 0 0 0 3 11	Average Queue (ft)	46	68	91	65	106	28	116	
Upstream Blk Time (%) Queuing Penalty (veh) Storage Bay Dist (ft) 150 140 100 Storage Blk Time (%) 0 0 3 11	95th Queue (ft)	84	113	168	124	189	72	195	
Queuing Penalty (veh) Storage Bay Dist (ft) 150 140 100 Storage Blk Time (%) 0 0 3 11	Link Distance (ft)		675	363		460		716	
Storage Bay Dist (ft) 150 140 100 Storage Blk Time (%) 0 0 3 11	Upstream Blk Time (%)								
Storage Blk Time (%) 0 0 0 3 11	Queuing Penalty (veh)								
	Storage Bay Dist (ft)	150			140		100		
Queuing Penalty (veh) 0 0 4 5	Storage Blk Time (%)	0	0		0	3		11	
	Queuing Penalty (veh)	0	0		0	4		5	

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	114	82	99	140
Average Queue (ft)	58	45	49	66
95th Queue (ft)	93	71	83	111
Link Distance (ft)	719	328	778	723
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Site Access & Haworth Avenue

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	9	33
Average Queue (ft)	0	8
95th Queue (ft)	5	30
Link Distance (ft)	290	267
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: N Springbrook Road & Haworth Avenue

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	L	TR	L	TR
Maximum Queue (ft)	70	120	63	82	162	133	337
Average Queue (ft)	37	59	32	37	74	25	129
95th Queue (ft)	61	97	57	65	131	89	257
Link Distance (ft)		290	363		454		722
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150			140		100	
Storage Blk Time (%)		0			1	0	20
Queuing Penalty (veh)		0			1	0	6

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	Т	Т	R	L	L	T	Т	L	L	Т	R
Maximum Queue (ft)	195	489	466	45	228	260	274	244	164	264	340	342
Average Queue (ft)	43	295	269	6	90	144	143	114	29	111	135	192
95th Queue (ft)	122	443	413	93	206	231	228	206	116	213	288	338
Link Distance (ft)		1106	1106				817	817			358	
Upstream Blk Time (%)										0	2	1
Queuing Penalty (veh)										0	0	0
Storage Bay Dist (ft)	400			350	500	500			300	300		300
Storage Blk Time (%)		2	3								0	5
Queuing Penalty (veh)		1	2								1	18

Intersection: 4: N Springbrook Road & OR-99W

Movement	SB	SB	SB	SB
Directions Served	L	L	T	R
Maximum Queue (ft)	210	226	205	84
Average Queue (ft)	122	138	83	27
95th Queue (ft)	190	205	159	61
Link Distance (ft)			454	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	220	220		125
Storage Blk Time (%)	0	1	4	
Queuing Penalty (veh)	0	2	16	

Network Summary

Network wide Queuing Penalty: 47

EB	EB	WB	NB	NB	SB	SB	
L	TR	LTR	L	TR	L	TR	
79	136	78	121	185	70	247	
33	69	32	49	88	19	119	
68	114	64	95	159	53	206	
	290	363		459		717	
150			140		100		
	0		0	1		10	
	0		0	1		3	
	L 79 33 68	L TR 79 136 33 69 68 114 290	L TR LTR 79 136 78 33 69 32 68 114 64 290 363	L TR LTR L 79 136 78 121 33 69 32 49 68 114 64 95 290 363 150 140 0 0	L TR LTR L TR 79 136 78 121 185 33 69 32 49 88 68 114 64 95 159 290 363 459 150 140 0 0 1	L TR LTR L TR L 79 136 78 121 185 70 33 69 32 49 88 19 68 114 64 95 159 53 290 363 459 150 140 100 0 0 1	L TR LTR L TR L TR 79 136 78 121 185 70 247 33 69 32 49 88 19 119 68 114 64 95 159 53 206 290 363 459 717

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	104	89	76	95
Average Queue (ft)	54	45	35	52
95th Queue (ft)	87	73	63	83
Link Distance (ft)	719	328	778	723
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Site Access & Haworth Avenue

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	44	31
Average Queue (ft)	4	6
95th Queue (ft)	23	26
Link Distance (ft)	290	267
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: N Springbrook Road & Haworth Avenue

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	L	TR	L	TR
Maximum Queue (ft)	106	121	159	168	254	200	418
Average Queue (ft)	52	57	72	55	109	58	183
95th Queue (ft)	85	96	127	118	203	173	383
Link Distance (ft)		290	363		454		722
Upstream Blk Time (%)							0
Queuing Penalty (veh)							0
Storage Bay Dist (ft)	150			140		100	
Storage Blk Time (%)	0	0		0	6		45
Queuing Penalty (veh)	0	0		0	9		21

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	Т	R	L	L	T	Т	R	L	L	T
Maximum Queue (ft)	185	400	388	45	346	386	514	509	335	236	293	256
Average Queue (ft)	79	264	245	2	197	243	304	303	21	119	176	133
95th Queue (ft)	154	370	347	45	299	345	438	446	175	226	253	232
Link Distance (ft)		1106	1106				817	817				358
Upstream Blk Time (%)											0	0
Queuing Penalty (veh)											0	0
Storage Bay Dist (ft)	400			350	500	500			350	300	300	
Storage Blk Time (%)		0	1				0	4		0	0	0
Queuing Penalty (veh)		0	1				1	11		0	1	2

Intersection: 4: N Springbrook Road & OR-99W

Movement	NB	SB	SB	SB	SB
Directions Served	R	L	L	T	R
Maximum Queue (ft)	274	184	221	256	198
Average Queue (ft)	118	106	127	129	58
95th Queue (ft)	224	163	193	225	133
Link Distance (ft)				454	
Upstream Blk Time (%)	0			0	
Queuing Penalty (veh)	0			0	
Storage Bay Dist (ft)	300	220	220		125
Storage Blk Time (%)	0	0	0	14	1
Queuing Penalty (veh)	1	0	1	58	3

Network Summary

Network wide Queuing Penalty: 109

Movement	EB	EB	WB	NB	NB	SB	SB	
Directions Served	L	TR	LTR	L	TR	L	TR	
Maximum Queue (ft)	117	171	227	182	272	84	234	
Average Queue (ft)	47	80	94	64	106	27	122	
95th Queue (ft)	88	141	177	127	197	67	197	
Link Distance (ft)		290	363		459		717	
Upstream Blk Time (%)			0		0			
Queuing Penalty (veh)			0		0			
Storage Bay Dist (ft)	150			140		100		
Storage Blk Time (%)	0	1		0	2		12	
Queuing Penalty (veh)	0	1		0	4		6	

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	140	107	99	151
Average Queue (ft)	63	50	50	72
95th Queue (ft)	105	86	82	119
Link Distance (ft)	719	328	778	723
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Site Access & Haworth Avenue

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	24	33
Average Queue (ft)	1	8
95th Queue (ft)	10	30
Link Distance (ft)	290	267
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: N Springbrook Road & Haworth Avenue

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	L	TR	L	TR
Maximum Queue (ft)	82	128	64	88	189	200	472
Average Queue (ft)	41	67	33	41	86	42	195
95th Queue (ft)	66	107	57	75	149	143	404
Link Distance (ft)		290	363		454		722
Upstream Blk Time (%)							0
Queuing Penalty (veh)							0
Storage Bay Dist (ft)	150			140		100	
Storage Blk Time (%)		0			1		42
Queuing Penalty (veh)		0			2		13

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Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	Т	R	L	L	T	T	L	L	Т	R
Maximum Queue (ft)	239	512	477	135	210	261	262	254	167	324	385	354
Average Queue (ft)	52	310	285	14	93	150	145	126	42	131	177	234
95th Queue (ft)	153	451	424	142	199	225	238	221	142	251	366	378
Link Distance (ft)		1106	1106				817	817			358	
Upstream Blk Time (%)										0	5	3
Queuing Penalty (veh)										0	0	0
Storage Bay Dist (ft)	400			350	500	500			300	300		300
Storage Blk Time (%)		3	4					0		0	0	13
Queuing Penalty (veh)		2	3					0		0	2	46

Intersection: 4: N Springbrook Road & OR-99W

Movement	SB	SB	SB	SB	
Directions Served	L	L	T	R	
Maximum Queue (ft)	246	254	215	97	
Average Queue (ft)	139	155	93	30	
95th Queue (ft)	212	228	166	68	
Link Distance (ft)			454		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	220	220		125	
Storage Blk Time (%)	0	1	4		
Queuing Penalty (veh)	1	3	20		

Network Summary

Network wide Queuing Penalty: 91

Movement	EB	EB	WB	NB	NB	SB	SB	
Directions Served	L	TR	LTR	L	TR	L	TR	
Maximum Queue (ft)	100	168	92	137	215	116	248	
Average Queue (ft)	38	79	37	55	93	20	125	
95th Queue (ft)	77	136	75	108	176	69	213	
Link Distance (ft)		290	363		459		717	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	150			140		100		
Storage Blk Time (%)	0	1		0	2		10	
Queuing Penalty (veh)	0	0		0	2		3	

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	116	95	79	103
Average Queue (ft)	59	45	34	54
95th Queue (ft)	93	74	61	85
Link Distance (ft)	719	328	778	723
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Site Access & Haworth Avenue

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	55	31
Average Queue (ft)	4	6
95th Queue (ft)	27	26
Link Distance (ft)	290	267
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: N Springbrook Road & Haworth Avenue

Movement	EB	EB	WB	NB	NB	SB	SB	
Directions Served	LT	R	LTR	L	TR	L	TR	
Maximum Queue (ft)	142	141	188	211	363	200	755	
Average Queue (ft)	63	65	83	75	148	144	541	
95th Queue (ft)	106	111	147	170	286	285	894	
Link Distance (ft)		290	363		454		722	
Upstream Blk Time (%)					0		35	
Queuing Penalty (veh)					2		0	
Storage Bay Dist (ft)	150			140		100		
Storage Blk Time (%)	0	1		1	16	0	93	
Queuing Penalty (veh)	1	1		2	27	0	47	

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Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	Т	R	L	L	Т	Т	R	L	L	T
Maximum Queue (ft)	234	414	393	45	359	443	536	567	449	238	321	316
Average Queue (ft)	98	284	265	2	222	271	325	333	36	140	195	141
95th Queue (ft)	188	394	374	45	329	393	467	492	236	244	284	262
Link Distance (ft)		1106	1106				817	817				358
Upstream Blk Time (%)							0	0			0	0
Queuing Penalty (veh)							0	0			0	0
Storage Bay Dist (ft)	400			350	500	500			350	300	300	
Storage Blk Time (%)		1	1				0	6			0	1
Queuing Penalty (veh)		1	2				3	16			2	5

Intersection: 4: N Springbrook Road & OR-99W

Movement	NB	SB	SB	SB	SB	
Directions Served	R	L	L	T	R	
Maximum Queue (ft)	296	182	221	256	204	
Average Queue (ft)	127	115	135	132	61	
95th Queue (ft)	235	169	195	219	143	
Link Distance (ft)				454		
Upstream Blk Time (%)	0					
Queuing Penalty (veh)	0					
Storage Bay Dist (ft)	300	220	220		125	
Storage Blk Time (%)	0	0	0	15	1	
Queuing Penalty (veh)	1	0	0	70	3	

Network Summary

Network wide Queuing Penalty: 184

Movement	EB	EB	WB	NB	NB	SB	SB	
Directions Served	L	TR	LTR	L	TR	L	TR	
Maximum Queue (ft)	128	177	277	189	257	159	288	
Average Queue (ft)	52	84	118	71	116	34	143	
95th Queue (ft)	98	143	224	125	195	95	234	
Link Distance (ft)		290	363		459		717	
Upstream Blk Time (%)			0					
Queuing Penalty (veh)			0					
Storage Bay Dist (ft)	150			140		100		
Storage Blk Time (%)	0	1		0	3	0	17	
Queuing Penalty (veh)	0	1		1	6	0	9	