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TRANSPORTATION IMPACT ANALYSIS

To

City of Hillsboro

For

Intel Ronler Acres
MPTF-1 and D1X Mod3

Dated

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Project Number

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I. INTRODUCTION

This Transportation Impact Analysis (TIA) has been prepared to address the proposed changes to approved development on the Intel Ronler Acres Campus identified as D1X Mod3 and MPTF-1. Figure 1 in Appendix A presents a vicinity map indicating the project location.

Project Description

The proposed project will expand the D1X building westward (Mod3) and replace an existing parking lot (approximately 650 spaces) on the west side of campus with MPTF-1, which will contain a new parking structure (Park4) and combined utilities building (CUB5). The D1X expansion will accommodate approximately 800 employees. MPTF-1 will provide approximately 2,200 spaces for a net parking gain of approximately 1,550 spaces. Figure 2 illustrates the location of the site improvements.

The two existing site accesses on NE Shute Road at RS4, RS5, and RS6 will be used for MPTF-1. Both accesses are proposed to remain as full-movement driveways.

The employees associated with the expansion will have similar shift schedules as the current overall campus. This analysis will not address temporary construction traffic impacts, which can be addressed in a separate analysis if required.

Overall Approach

In 2013, Intel was approved for an additional 5,360 employees associated with the impacts of RA4, D1X MOD2, MSB, and the RAP2E parking garage based on a TIA dated January 9, 2013. The TIA also noted that a sustaining level of 3,600 to 4,000 craft workers would be maintained on site. The project was conditioned with substantial transportation network improvements and required to provide quarterly monitoring of employment levels on the Ronler Acres campus until all conditioned improvements were completed.

Based on Ronler Blue Badge headcounts reported on March 3, 2013 and October 4, 2018, employment on the site has increased by 3,050 since the construction of RA4, D1X MOD2, MSB, and the RAP2E parking garage. Intel still has capacity to add 2,310 additional employees based on the 2013 analysis and approval.

Green Badge craft/contract worker headcounts have remained within the sustaining level assumed in the 2013 TIA.

This TIA assumes the 800 employees associated with D1X Mod3 are applied towards the approved site capacity. However, since MPTF-1 includes a new parking garage, the analysis examines how future demand would be affected by the shift in traffic associated with MPTF-1.

Scope of Report

This TIA has been prepared in accordance with the City of Hillsboro Community Development Code (CDC), Sections 12.70.200 and 12.70.220. The scoping process involved several meetings and phone calls with City staff that culminated in a scoping letter dated January 16, 2019. The scoping letter is attached in Appendix B.

Study Area

City CDC Section 12.70.220.D provides the criteria used to define the study area for a TIA. At minimum, the study area must include site accesses and intersections along the site frontage and extending 600 feet along streets fronting the site. Additionally, the study area should include road links “where traffic generated by the proposed development equals or exceeds 10% of the Background Traffic.”

The following intersections are included in the study area based on these criteria and discussion with City staff regarding intersections of concern around the campus:

- NE Evergreen Parkway and NE Brookwood Parkway
- NE Brookwood Parkway and NE Shute Road
- NE Shute Road and NE Airport Road/NE Butler Street
- NE Butler Street and NE Century Boulevard
- NE Evergreen Road and NE Century Boulevard
- 11 Campus Accesses

In addition, three key internal intersections that could affect the external network are evaluated.

Analysis Scenarios and Time Periods

The proposed project is anticipated to be completed with operations beginning in 2022. Therefore, the TIA will review the conditions at the study area intersections for the following scenarios:

- 2018 Existing;
- 2022 Approved Scenario with 2,310 additional employees and existing driveway distribution; and
- 2022 Proposed Scenario with 800 of the additional employees reassigned to MPTF-1 from the RAP2 and RAP3 parking structures.

II. EXISTING CONDITIONS

The existing conditions analysis is based on a December 2018 inventory of transportation facilities and traffic data.

Site Conditions

The Ronler Acres campus is bounded by NE Evergreen Parkway to the north, NE Shute Road to the west, NE Butler Street to the south, and NE Century Boulevard to the east. The campus has an internal road system with connections to the adjacent streets. Some sections of the network have restricted access; thus, not all parts of the campus are internally connected by roads accessible to all employees.

Transportation System Inventory

The system inventory addresses vehicular, non-motorized, and transit facilities in the study area.

Vehicular Transportation Facilities

Table 1 summarizes the existing roadway characteristics within the study area. Future roadway improvements are listed in the table notes. Figure 3 illustrates the existing lane configurations and traffic control for the study area.

Pedestrian Facilities

All collector and arterial streets have sidewalks or paths on both sides of the street.

Within the campus, sidewalks connect the public streets to the building entrances. Although some of the internal street network does not have sidewalks, a network of sidewalks and paths connect the buildings allowing pedestrians to circulate through the campus.

Bicycle Facilities

Most of the collector and arterial street network has bike lanes or paths except for two streets. NE Shute Road has a path on the west side of the street between NE Brookwood Parkway and NE Dawson Creek Drive but bicycles must otherwise share the road with motor vehicles. NE Dawson Creek Drive has no bike lanes or paths.

Within the campus, bicyclists must share the street network with motor vehicles.

Transit Facilities

The Ronler Acres campus is served by TriMet Bus Lines 46 and 47 and Metro's North Hillsboro Link. Bus Route 46 runs one-way southbound along the west side of the Ronler Acres campus on NE Shute Road but has few stops and peak period headways of approximately one hour. Bus Route 47 runs along the east side of campus with northbound and southbound stops along NE Century Boulevard and peak period headways of about 15 minutes. The North Hillsboro Link has one stop on NE Shute Road and peak period headways that vary from about 15 to 30 minutes. Transit maps and schedules are provided in Appendix C.

Additionally, Intel operates a shuttle bus system that circulates through the campus.

TABLE 1 – EXISTING ROADWAY CHARACTERISTICS

Roadway	Functional Classification	Posted Speed	Travel Lanes ¹	Pavement Width ²	Bicycle Facility	Pedestrian Facility
Washington County Jurisdiction						
NE Brookwood Pkwy	Arterial	55 mph	7	112-142 ft	Lanes	Sidewalks
N of NE Evergreen Rd	Arterial	45 mph	7	108-120 ft	Lanes	Sidewalks
S of NE Evergreen Rd	Arterial	45 mph	5	67-88 ft	Paths	Paths
S of NE Shute Rd	Arterial	45 mph	5	67-88 ft	Paths	Paths
NE Evergreen Rd	Arterial	45 mph	5	74-100 ft	Lanes	Sidewalks
NE Evergreen Pkwy	Arterial	45 mph	5	74-100 ft	Lanes	Sidewalks
City of Hillsboro Jurisdiction						
NE Shute Rd	Collector	45 mph	4-5	64-66 ft	Path – west	Path/Sidewalk
S of NE Brookwood Pkwy	Collector	45 mph	4-5	64-82 ft	Shared	Sidewalks
S of Dawson Creek	Collector	45 mph	4	45-52 ft	Shared	Sidewalks
S of NE Butler St	Collector	45 mph	4	45-52 ft	Shared	Sidewalks
NE Century Blvd	Collector	40 mph	3	50-60 ft	Lanes	Sidewalks
NE 59th Ave	Collector	40 mph	2	38 ft	Lanes	Sidewalks
NE Airport Rd	Collector	35 mph	3	38-46 ft	Lanes	Sidewalks
NE Butler St	Collector	35 mph	3	46-50 ft	Lanes	Sidewalks
NE Dawson Creek Dr	Collector	35 mph	3	42-52 ft	None	Sidewalks
NE Ronler Dr	Collector	40 mph	3-4	51-60 ft	Cycletrack	Sidewalks

Notes:

1. The number of travel lanes reflects the base cross section for the street. Additional turn lanes may be present at intersections.
2. Street widths measured using Google Earth.

Existing Traffic Counts

All traffic counts for the TIA were collected for four hours in the AM and PM peak periods on a mid-week day (i.e., Tuesday, Wednesday, or Thursday). Traffic counts at the site access locations were collected on November 7 and 15, 2018. Additional traffic counts were collected at off-site intersections on November 28, 2018. All November traffic counts were collected while Hillsboro schools were in session.

Figure 4 illustrates the existing AM and PM peak hour traffic volumes. The full traffic counts are provided in Appendix D.

Crash Analysis

Historical crash data reported for the study area intersections was evaluated for safety. Crash data between 2012 and 2016 was obtained from the ODOT crash database and used to estimate a historical five-year crash rate. The database indicates that 2017 data is preliminary and 2018 data is unavailable.

The crash data is summarized in Table 2 and raw crash data is provided in Appendix E. Note that only intersection-related crashes are included in the summary, while the raw data may include crashes at

nearby driveways or crashes that occurred near an intersection but were not related to the interaction of vehicles at the intersection (e.g., fixed object, sideswipes on curves, etc.).

TABLE 2 – INTERSECTION CRASH RATES

Intersection		Crash Severity					Total Crashes	Estimated ADT	Crash Rate	ODOT 90th % Rate
		Fatality	Serious Injury	Moderate Injury	Possible Injury	No Injury				
1	NE Evergreen Pkwy/ NE Brookwood Pkwy	0	0	5	21	31	57	48,500	0.64	0.860 (4SG)
2	NE Shute Rd/ NE Brookwood Pkwy	0	0	6	3	15	24	28,300	0.46	0.860 (4SG)
3	NE Shute Rd/ RS5 Access	0	0	2	0	1	3	14,000	0.12	0.293 (3ST)
4	NE Shute Rd/NE Dawson Creek Dr/RS6 Access	0	0	0	2	2	4	15,200	0.14	0.408 (4ST)
6	NE Shute Rd/ NE Tandem Way	0	0	0	3	0	3	12,600	0.13	0.408 (4ST)
7	NE Shute Rd/NE Airport Road/NE Butler St	0	0	2	0	5	7	15,000	0.26	0.860 (4SG)
9	NE Butler St/ NE 65th Ave	0	0	1	0	4	5	14,300	0.19	0.408 (4ST)
12	NE Century Blvd/ NE Butler St	0	0	4	3	6	13	19,000	0.37	0.860 (4SG)
14	NE Century Blvd/ NE Ronler Dr	0	0	1	5	3	9	17,400	0.28	0.860 (4SG)
15	NE Century Blvd/ RAP1 Access	0	0	0	2	1	3	13,200	0.12	0.860 (4SG)
16	NE Century Blvd/ RA1&2 Access	0	0	1	2	0	3	12,900	0.13	0.860 (4SG)
17	NE Evergreen Pkwy/ NE Century Blvd	0	2	10	20	17	49	26,100	1.03	0.860 (4SG)
18	NE Evergreen Pkwy/ RA1&2 North Access	0	0	2	1	0	3	18,100	0.09	0.860 (4SG)
19	NE Evergreen Pkwy/ NE 59th Ave	0	0	3	0	1	4	18,700	0.12	0.860 (4SG)
Total		0	2	37	62	86	187	-	-	-

Crash Data Summary

One hundred eighty-seven (187) crashes were reported at 14 study area intersections in the five-year analysis period. Two study area intersections had no reported crashes and data is not available within the campus.

No crashes resulted in a fatality, but two (2) crashes resulted in a severe or incapacitating injury. Both crashes occurred at the same intersection and both were collisions between a westbound vehicle turning

left onto NE Century Boulevard and an eastbound vehicle traveling through on NE Evergreen Parkway. One crash was reported in 2013 between 6:00 and 7:00 AM. The other crash was reported in 2015 between 8:00 and 9:00 AM. A review of the preliminary 2017 crash data shows another reported severe injury crash at this intersection with the same collision pattern occurring midday.

Although there were no fatal crashes reported at intersections during the five-year analysis period, two were reported on roadway segments. One was reported at 5:00 PM in 2012 on NE Century Boulevard approximately 800 feet south of NE Evergreen Parkway. This crash involved a single vehicle collision with a fixed object and the cause was reported as “driver drowsy/fatigued/sleepy.” The other was reported at 3:00 AM in 2014 on a curved section of NE Shute Road approximately 420 feet south of NE Brookwood Parkway. This crash also involved a single vehicle collision with a fixed object and the cause was reported as “driving in excess of posted speed.”

Intersection Crash Rates

When evaluating the relative safety of an intersection, consideration is given not only to the total number and types of crashes occurring, but also to the number of vehicles entering the intersection. This concept, referred to as a “crash rate”, is usually expressed in terms of the number of crashes occurring per one million entering vehicles (MEV) for the intersection per year. Intersections having a crash rate higher than 1.0 crashes/MEV should be reviewed for opportunities to improve safety.

The intersection crash rate is calculated by dividing the average number of crashes per year by the MEV per year. A daily traffic volume was estimated by dividing the PM peak-hour volume at each intersection by a peak-to-daily factor, or k-factor. A uniform k-factor of 0.10 was applied to all study area intersections.

Crash rates by intersection type were compared to ODOT’s 90th percentile statewide crash rates found in the “Intersection Crash Rates per MEV by Land Type and Traffic Control” table (Exhibit 4-1) of the *Analysis Procedures Manual, Version 2*. Crash rates are identified by the number of intersection approach legs (3 or 4) and the traffic control (SG for signal and ST for STOP control).

The intersection of NE Evergreen Parkway/NE Century Boulevard had a calculated crash rate above the 90th percentile threshold.

Washington County Safety Priority Index System List

Washington County maintains the Safety Priority Index (SPIS) list to “identify and rank potentially hazardous intersections” where the County has jurisdiction of at least one approach. The current list is based on 2013-2015 crash data.

Three study area intersections are currently included in the list: NE Evergreen Road/NE Century Boulevard with a SPIS Ranking of 34, NE Brookwood Parkway/NE Evergreen Road with a SPIS Ranking of 75, and NE Brookwood Parkway/NE Shute Road with a SPIS Ranking of 212. Table 3 summarizes the crashes at these three intersections by collision type.

TABLE 3 – WASHINGTON COUNTY SPIS LOCATIONS SUMMARIZED BY COLLISION TYPE

Intersection	Collision Type							Total
	Angle	Rear-End	Sideswipe	Turning	Fixed Object	Pedestrian	Bicycle	
NE Evergreen Pkwy/ NE Century Blvd	1	18	3	24	0	2	1	49
	2%	37%	6%	49%	0%	4%	2%	100%
NE Evergreen Pkwy/ NE Brookwood Pkwy	5	32	5	13	2	0	0	57
	9%	56%	9%	23%	4%	0%	0%	100%
NE Shute Rd/ NE Brookwood Pkwy	0	12	4	4	4	0	0	24
	0%	50%	17%	17%	17%	0%	0%	100%

The intersection of NE Evergreen Parkway/NE Century Boulevard had the highest SPIS Ranking. This intersection has a particularly high history of turning collisions. A review of the data indicates that 22 of the 24 turning collisions involved a westbound left-turning vehicle and an eastbound through vehicle. This turning movement is very high, nearly 600 vehicles in the AM peak hour, and includes a high percentage of traffic destined for the Ronler Acres campus.

At the NE Evergreen Parkway/NE Brookwood Parkway intersection, rear-end collisions were most common. More than half, 17 of 32, occurred between vehicles traveling in the southbound direction. This may be attributable to the higher posted speed (55 mph) on this approach with drivers misjudging the necessary stopping distance. Turning crashes, the next most common collision type, are more equally distributed in all directions.

At the NE Shute Road/NE Brookwood Parkway intersection, rear-end collisions were also most common. More than half, 8 of 12, occurred between vehicles traveling in the southbound direction. The posted speed drops to 45 mph south of NE Evergreen Road, but vehicles may still be traveling at higher speeds and have more difficulty judging stopping distance.

ODOT Safety Priority Index System

ODOT also maintains a SPIS database that ranks all intersections in the state. The NE Evergreen Road/NE Century Boulevard intersection was ranked in the worst 5% of intersections in the state in the 2016 SPIS database. No other study area intersection was ranked in the worst 10% of intersections.

Crashes Involving Bicycles and Pedestrians

Table 4 summarizes the study area intersections with reported crashes involving a bicycle or pedestrian. Five pedestrian crashes were reported at four intersections, with two reported at NE Evergreen Parkway/NE Century Boulevard. Five bicycle crashes were reported in the study area, all at different intersections. Note, the NE Evergreen Parkway/NE Century Boulevard intersection is the only signalized intersection with a history of both bicycle and pedestrian crashes.

TABLE 4 – CRASHES INVOLVING BICYCLES OR PEDESTRIANS			
Intersection	Pedestrian	Bicycle	Total
NE Shute Rd/NE Dawson Creek Dr/RS6 Access	1	0	1
NE Shute Rd/NE Tandem Way	1	1	2
NE Butler St/NE 65th Ave*	1	0	1
NE Century Blvd/NE Butler St	0	1	1
NE Evergreen Pkwy/NE Century Blvd	2	1	3
NE Evergreen Pkwy/RA1&2 North Access	0	1	1
NE Evergreen Pkwy/NE 59th Ave	0	1	1
Total	5	5	10

* The crash involving a pedestrian occurred before the installation of the roundabout.

III. APPROVED SCENARIO

The approved scenario estimates year 2022 traffic volume with the additional 2,310 employees that were approved under the 2013 TIA. This scenario adds background growth and in-process traffic to existing volumes, along with the approved traffic associated with the Ronler Acres campus, essentially updating the anticipated traffic volumes from the 2013 study.

Background Traffic Growth

Background traffic growth reflects the general growth in area traffic volumes that is anticipated due to increasing population and employment within the region. As proposed in the TIA scoping letter, a 2% annual growth rate was applied to the existing traffic volumes for four years. However, the background growth rate is not applied to existing traffic generated by the Ronler Acres Campus because this study is specifically addressing the approved growth of the site. To calculate the background traffic growth, traffic associated with the Ronler Acres campus is estimated for all study area intersections. Then, the 2.0% annual background growth rate is applied to the non-campus traffic only.

Figure 5 presents the background traffic growth from 2018 to 2022 during the AM and PM peak hours. The detailed calculations are provided in Appendix F.

In-Process Traffic

In-process traffic represents traffic for developments that have been approved but have not yet been constructed. In-process traffic volumes were provided for ten (10) developments:

- First Tech Corporate Office Building Phase 2
- Washington County Fairgrounds Event Center
- Staybridge Suites
- Hillsboro DFT OR 1 Data Center
- Majestic Subdivision (all constructed or approved phases of development)
- QTS Data Center
- Project Gutenberg
- Synopsys Master Plan
- Brookwood II (assuming approval occurs in January 2019)
- JSR Micro (assuming approval occurs in January 2019)

Figure 6 presents the in-process traffic volumes during the AM and PM peak hours. The detailed calculations are provided in Appendix G.

Planned Network Improvements

The Century Boulevard Extension is currently in the design stage with construction scheduled for completion by December 2022 according to the Washington County Capital Projects. This project will extend SE Century Boulevard northward to connect with NE Century Boulevard at E Main Street.

To understand how this project could affect study area traffic volumes, the base year (2015) transportation network was modeled without and with the extension. The model results (see Appendix H) show that shifts in demand on the routes near the Ronler Acres campus are very small relative to the

existing traffic volumes. Therefore, by agreement with City of Hillsboro staff, no volume adjustments were included in the future year analysis.

Intel has been investigating a variety of internal roadway infrastructure changes to improve on-site traffic flow. A westbound right-turn lane will be added on the internal circulation road at its intersection with the RA3/RA4 access (Intersection 11). This improvement will be constructed in the Spring of 2019. Other changes to traffic control and lane configurations are under investigation but have not been assumed in the future condition analysis.

Approved Site Trips

Site trip generation, trip distribution, and trip assignment has been updated from the assumptions in the 2013 TIA based on current site patterns and then used to forecast an approved scenario with the current parking conditions and 2,310 additional employees.

Trip Generation

To update trip generation for the 2,310 additional permanent employees that were already approved with the 2013 TIA, new trip rates based on current Campus traffic and employment figures have been developed. Traffic counts at the site access locations were collected on November 7 and 15, 2018 for four hours in the AM and PM periods. Table 5 summarizes the trip generation rates for the morning and afternoon periods.

TABLE 5 – TRIP GENERATION RATES						
Duration	Morning			Afternoon		
	In	Out	Total	In	Out	Total
Peak Hour	81%	19%	0.31/emp.	8%	92%	0.30/emp.
Peak 2 Hours	83%	17%	0.54/emp.	8%	92%	0.53/emp.

The traffic counts show the AM peak hour trip rate is 0.31 trips/employee and the PM peak hour rate is 0.30 trips/employee. These rates are very consistent with what was used in prior traffic analyses. The 2010 TIA prepared for the D1X plant used 0.31 trips/employee for the AM peak hour and 0.29 trips/employee for the PM peak hour. The 2013 TIA prepared for RA4, D1X MOD2, MSB, and the RAP2E parking garage used 0.30 trips/employee for the AM peak hour and 0.31 trips/employee for the PM peak hour.

Table 6 presents the estimated trip generation for the additional 2,310 employees that have already been approved for the Ronler Acres campus based on the 2013 TIA.

TABLE 6 – ESTIMATED TRIP GENERATION FOR 2,310 APPROVED EMPLOYEES						
Duration	Morning			Afternoon		
	In	Out	Total	In	Out	Total
Peak Hour	580	136	716	55	638	693
Peak 2 Hours	1,035	212	1,247	98	1,126	1,224

The approved employment is anticipated to generate 716 AM peak hour and 693 PM peak hour trips.

Trip Distribution

An overall trip distribution for the Ronler Acres campus has been developed from the traffic counts collected in November 2016 and compared with the assumptions from the 2013 TIA. This distribution is generally within 5% of the previous assumptions.

Within the campus, the trip distribution onto the adjacent transportation network depends on the location of the parking facilities and their access points. For the southern part of the campus where employee parking is primarily focused in the RAP2 and RAP3 parking garages, site traffic enters/exits the campus on NE Butler Street, NE Century Boulevard, and NE Shute Road. For the northwest parking areas serving RS4, RS5, and RS6, traffic can only enter/exit the campus on NE Shute Road. For the north and east parking areas, traffic primarily enters/exits the campus on NE Evergreen Parkway or NE Century Boulevard. Each of these subareas has a different distribution onto the adjacent network although the ultimate distribution of origins/destinations is the same.

The trips associated with the 2,310 approved employees are assumed to follow a distribution pattern like the existing arrivals/departures from the southern part of campus. Thus, traffic is anticipated to enter/exit the site at the following locations:

- 45% to/from NE Butler Street/NE 65th Avenue
- 9% to/from NE Butler Street/NE 60th Place
- 6% to/from NE Shute Road/NE Tandem Way
- 5% to/from NE Shute Road/D1X Access
- 23% to/from NE Century Boulevard/NE Ronler Drive
- 6% to/from NE Century Boulevard/RAP1 Access
- 6% to/from NE Century Boulevard/RA1 & RA2 Access

Traffic is anticipated to enter/exit the study area with the following pattern:

- 14% to/from the north on NE Brookwood Parkway
- 6% to/from the west on NE Evergreen Road
- 5% to/from the west on NE Airport Road
- 11% to/from the south on NE Shute Road
- 1% to/from the Orenco neighborhood
- 13% to/from the south on NE Century Boulevard
- 18% to/from the east on NE Butler Street
- 17% to/from the east on NE Ronler Drive
- 13% to/from the east on NE Evergreen Parkway
- 2% to/from the north on NE Century Boulevard

Trip Assignment

Figure 7 presents the trip assignment for the approved 2,310 employees during the AM and PM peak hours.

Approved Traffic Volumes

The approved traffic volumes are the sum of the existing traffic volumes, background traffic growth, in-process traffic volumes, and the approved site trips. Figure 8 presents the AM and PM peak hour year 2022 approved traffic volumes.

IV. PROPOSED SCENARIO

The proposed scenario estimates year 2022 traffic volumes with the additional 2,310 that were approved under the 2013 TIA, but assumes that 800 employees will shift from parking in the southern part of the campus to MPTF-1 located in the northwest part of campus, along NE Shute Road.

Project Description

The proposed project will replace an existing parking lot (approximately 650 spaces) on the west side of campus with MPTF-1, a parking structure and combined utilities building, and expand the D1X building westward. The D1X Mod3 expansion will accommodate approximately 800 employees. Figure 2 illustrates the location of the site improvements.

MPTF-1 will provide approximately 2,200 spaces, for a net parking gain of approximately 1,550 spaces. Two existing site accesses on NE Shute Road at RS4, RS5, and RS6 will serve MPFT-1. Both accesses are proposed to remain as full-movement driveways.

To accommodate other site infrastructure improvements while providing the desired parking capacity, MPTF-1 will straddle the access to NE Shute Road opposite NE Dawson Creek Drive. The access will feed directly into the garage with a one-way ramp system designed to minimize conflicts between entering and exiting vehicles. Storage on the access road will be shorter than current conditions (120 feet vs. 330 feet) because of the ramp configuration, but the ramps will be designed to accommodate two lanes of queuing within the structure with appropriate directional signage and striping.

The employees associated with the expansion will have similar shift schedules as the current overall campus. This analysis will not address temporary construction traffic impacts, which can be addressed in a separate analysis if required.

Approved Site Trips

With the proposed project, site trip generation remains the same, but the trip distribution and assignment will reflect the shift of 800 employees from parking in the southern part of campus to the northwest part of campus.

Trip Generation

Table 7 presents the breakdown of trip generation associated with the proposed project. Of the approved employment, D1X Mod3 (800 employees) is anticipated to generate 248 AM peak hour and 240 PM peak hour trips. As noted previously, these are not new trips but approved trips that will shift from parking in one part of campus to another. The remaining 1,510 employees are anticipated to generate 468 AM peak hour and 453 PM peak hour trips so that total site trip generation remains the same as the approved estimate.

TABLE 7 – ESTIMATED TRIP GENERATION WITH PROPOSED PROJECT						
Number of Employees	Morning			Afternoon		
	In	Out	Total	In	Out	Total
Peak Hour						
800	201	47	248	19	221	240
1,510	379	89	468	36	417	453
Total (2,310)	580	136	716	55	638	693
Peak 2 Hours						
800	201	47	248	19	221	240
1,510	834	165	999	79	905	984
Total (2,310)	1,035	212	1,247	98	1,126	1,224

Trip Distribution

The trip distribution for the 800 approved employees who will park at MPTF-1 are assumed to follow a distribution pattern like the existing arrivals/departures from the northwest part of campus. Thus, traffic is anticipated to enter/exit the site at the following locations:

- 20% to/20% from NE Shute Road/RS5 Access in the AM peak hour
- 80% to/80% from NE Shute Road/NE Dawson Creek Drive/MPTF-1 Access in the AM peak hour
- 20% to/12% from NE Shute Road/RS5 Access in the PM peak hour
- 80% to/88% from NE Shute Road/NE Dawson Creek Drive/MPTF-1 Access in the PM peak hour

Although the MPTF-1 garage will have an access on the north side of the building, the use of that access is anticipated to vary depending on the time of day and level of congestion.

Traffic is anticipated to enter/exit the study area with the following pattern:

- 35% to/from the north on NE Brookwood Parkway
- 6% to/from the west on NE Evergreen Road
- 3% to/from the west on NE Dawson Creek Drive
- 4% to/from the west on NE Airport Road
- 20% to/from the south on NE Shute Road
- 1% to/from the Orenco neighborhood
- 4% to/from the south on NE Century Boulevard
- 18% to/from the east on NE Butler Street
- 9% to/from the east on NE Evergreen Parkway

The trip distribution for the other 1,510 approved employees will remain the same as discussed for the approved scenario.

Trip Assignment

Figure 9 presents the trip assignment for the approved 1,510 employees during the AM and PM peak hours that will continue to park in the southern part of campus, while Figure 10 presents the trip assignment for the 800 employees who are shifting to park in the northwest part of campus.

Proposed Traffic Volumes

The proposed traffic volumes are the sum of the existing traffic volumes, background traffic growth, in-process traffic volumes, and the approved site trips with the proposed shift in traffic assignment. Figure 11 presents the AM and PM peak hour year 2022 proposed traffic volumes.

In general, volumes on the west side of campus (NE Shute Road and NE Brookwood Parkway) will be higher with the proposed scenario compared with the approved scenario, while volumes on the south and east sides (NE Butler Street, NE Ronler Drive, NE Century Boulevard) will be lower. On most of the network, the changes will be relatively small at about 2-3% up or down. The greatest change will be on NE Shute Road where MPTF-1 will be constructed.

V. OPERATIONAL ANALYSIS

The operational analysis addresses both intersection operations and queuing at the study area intersections.

Intersection Operation Analysis

Intersection capacity is generally characterized by three measures: volume-to-capacity (v/c) ratio, average delay (expressed in seconds), and level-of-service (LOS).

- V/C ratio is a measurement of capacity used by a given traffic movement or for an entire intersection. It is defined by the rate of traffic flow or traffic demand divided by the theoretical capacity.
- Delay is a measurement of the average vehicle delay resulting from the type of traffic control and the conflicting traffic volumes. An average delay can be expressed for a certain movement, a specific lane, a single approach, or for an entire intersection.
- LOS is an expression of the average control delay (in seconds) experienced by drivers as described by a letter on the scale from A to F. As defined in the HCM, LOS A represents optimum operating conditions and minimum delay, while LOS F indicates lengthy delays and often over-capacity conditions.

Performance Measures

All study area intersections are within the City of Hillsboro, but those located along NE Brookwood Parkway or NE Evergreen Parkway are operated and maintained by Washington County. The internal site intersections are not subject to City or County standards.

City of Hillsboro

City of Hillsboro standards are presented below.

- Signalized Intersections
 - The peak-hour v/c ratio for each lane group shall be no greater than 0.99.
 - The peak-hour intersection control delay by approach lane group shall be maintained at 80 seconds per vehicle or less using a signal cycle length not to exceed 120 seconds.
- Unsignalized Intersections
 - The peak-hour v/c ratio for each lane group shall be no greater than 0.99.
 - The peak-hour control delay by approach lane group shall be maintained at 50 seconds per vehicle or less.

Mitigation will be required if the intersection peak hour v/c ratio or approach delay will be degraded below standard by the project or the project will contribute toward the need for safety improvements at intersections or on the roadway system.

Washington County

Washington County has established a performance v/c target of 0.99 for urban areas during the first peak hour (either AM or PM). Washington County uses this performance standard to assess safety improvements. This target will be applied to all study area intersections for purposes of assessing safety improvements. Mitigation will be dependent on potential safety deficiencies.

Methodology

Intersection operations were analyzed with the use of Synchro software, which uses the *Highway Capacity Manual (HCM)* methodologies. Peak hour capacity results were reported for signalized intersections using HCM 2000 and unsignalized intersections using HCM 2010. The roundabout at the NE Butler Street/NE 65th Avenue intersection was also analyzed using the HCM 6th Edition but results were found to be very similar to the HCM 2010 outputs..

Signal timing information was obtained from the “Washington County Traffic Engineering Plans Online” website and is provided in Appendix I. Although traffic flow patterns are anticipated to change with both in-process and proposed developments, existing signal timing was initially assumed for all analysis scenarios at the request of City staff.

Findings

Table 8 and Table 9 summarize the AM and PM peak hour intersection operation results, respectively. For signalized intersections, the overall intersection performance (v/c ratio, LOS, delay) are reported along with the lane group with the maximum v/c ratio and the lane group with the maximum delay. For unsignalized sections, the lane group with the maximum v/c ratio and the lane group with the maximum delay are reported. (See Exhibit 1 for the numbering and location of intersections.) The Synchro output reports and summary tables of all lane groups are provided in Appendix J.

Within the table, lane group operations that do not meet the agency standard are shown in **bold** type. To demonstrate how the proposed project will affect operations, green and blue highlighting has been added to lane groups that do not meet agency standards. Green highlighting is used when the proposed project will improve operations compared to the approved scenario and blue highlighting indicates when operations will be worse.

2018 Existing Condition

All intersections currently meet the City and County standards during the AM and PM peak hours.

2022 Approved Scenario

One (1) intersection is anticipated to have a lane group that exceeds standards during the AM and PM peak hours. Although not subject to agency standards, one of the internal site intersections is anticipated to have operational concerns as well.

- At the MPTF-1 site access on NE Shute Road opposite NE Dawson Creek Drive, the eastbound left-turn movement from NE Dawson Creek Drive is anticipated to operate at LOS F with delays just over 60 seconds during the AM peak hour. During the PM peak hour, the westbound left-turn movement exiting the site is anticipated to operate at LOS F with delays approaching two (2) minutes. Operations on the public streets will meet standards.

- At the internal site intersection between the RAP2 and RAP3 parking garages, the southbound approach is anticipated to be over capacity, with delays exceeding 100 seconds. This condition will not affect the operations of the adjacent public street intersection but may cause drivers in the parking garages to route to other exits. This intersection is not subject to agency standards.

2022 Proposed Scenario

With the proposed project, volumes will be higher on the west side of campus and lower on the south and east sides due to MPTF-1. This shift affects the traffic operations with some intersections improving and others worsening. As noted above, green highlighting is used when the proposed project will improve operations compared to the approved scenario and blue highlighting indicates when operations will be worse.

One (1) intersection is anticipated to have a lane group that exceeds standards during the AM peak hour and two (2) intersections are anticipated to have a lane group that exceeds standards during the PM peak hour. Although not subject to agency standards, one of the internal site intersections is anticipated to have operational concerns as well.

- At the RS4&RS5 site access on NE Shute Road, the westbound left-turn exiting the site is anticipated to operate at LOS F with delays of more than 60 seconds during the AM peak hour. With the increased demand on this part of campus, operations for this driveway are worse than anticipated for the approved scenario; however, operations on the public streets will meet standards.
- At the MPTF-1 site access on NE Shute Road opposite NE Dawson Creek Drive, the eastbound left-turn movement from NE Dawson Creek Drive is anticipated to operate at LOS F with delays of more than 80 seconds during the AM peak hour. This delay reflects the overall increase in traffic demand at this intersection due to MPTF-1, although the volumes of the impacted movement are not anticipated to change. The westbound left-turn exiting the site is anticipated to have delays just over 50 seconds in the AM peak hour, but the movement will be over capacity with delays of several minutes in the PM peak hour. Operations on the public streets will meet standards.
- Operations at the internal site intersection between the RAP2 and RAP3 parking lots will improve under this scenario because demand is anticipated to be lower than the approved scenario, but the delays will still exceed 60 seconds on the southbound approach during the PM peak hour.



Exhibit 1. Intersection Locations

TABLE 8 – INTERSECTION OPERATIONS – AM PEAK HOUR

Intersection		Criteria	Analysis Results (V/C Ratio - LOS - Delay)		
			2018 Existing	2022 Approved	2022 Proposed
1	NE Evergreen Pkwy/ NE Brookwood Pkwy (Signalized)	Overall	0.47-C-24	0.59-C-25	0.60-C-24
		Max V/C	0.66 (EB L)	0.70 (EB L)	0.70 (EB L)
		Max LOS-Delay	E-55 (SB L)	D-54 (SB L)	D-54 (SB L)
2	NE Shute Rd/ NE Brookwood Pkwy (Signalized)	Overall	0.46-B-18	0.56-B-18	0.59-B-19
		Max V/C	0.64 (SB L)	0.62 (SB L)	0.64 (SB L)
		Max LOS-Delay	E-60 (WB LT)	E-60 (WB LT)	E-60 (WB LT)
3	NE Shute Rd/ RS4&RS5 Access (Unsignalized)	Max V/C	0.27 (EB LTR)	0.33 (EB LTR)	0.40 (EB LTR)
		Max LOS-Delay	D-28 (WB L)	D-33 (WB L)	E-40 (EB LTR)
4	NE Shute Rd/NE Dawson Creek Dr/ MPTF-1 Access (Unsignalized)	Max V/C	0.12 (NB L)	0.87 (WB L)	0.34 (WB L)
		Max LOS-Delay	E-48 (EB L)	F-69 (EB L)	F-95 (EB L)
5	NE Shute Rd/ D1X Access (Unsignalized)	Max V/C	0.03 (WB R)	0.06 (SB L)	0.06 (SB L)
		Max LOS-Delay	C-15 (WB L)	C-18 (WB L)	C-19 (WB L)
6	NE Shute Rd/ NE Tandem Way (Unsignalized)	Max V/C	0.14 (EB LTR)	0.17 (EB LTR)	0.18 (EB LTR)
		Max LOS-Delay	C-21 (WB LT)	D-26 (WB LT)	D-29 (WB LT)
7	NE Shute Rd/NE Airport Rd/ NE Butler St (Signalized)	Overall	0.33-B-14	0.36-B-17	0.37-B-17
		Max V/C	0.47 (EB TR)	0.42 (EB TR)	0.45 (NB TR)
		Max LOS-Delay	C-21 (EB TR)	C-22 (EB TR)	C-22 (EB TR)
8	NE Butler St/ NE 60th PI (Unsignalized)	Max V/C	0.11 (EB L)	0.15 (EB L)	0.14 (EB L)
		Max LOS-Delay	C-17 (SB L)	C-23 (NB LTR)	C-22 (SB L)
9	NE Butler St/ NE 65th Ave (Unsignalized)	Max V/C	0.43 (WB R)	0.58 (WB R)	0.56 (WB R)
		Max LOS-Delay	A-9 (WB R)	B-13 (WB R)	B-12 (WB R)
10	Internal Rd/NE 65th Ave/ RAP2&RAP3 Parking (Unsignalized)	Max V/C	0.62 (EB LT)	0.86 (NB LT)	0.78 (NB LT)
		Max LOS-Delay	C-19 (EB LT)	E-39 (NB LT)	D-29 (NB LT)
11	Internal Rd/RA3&RA4 Access/ Parking Lot (Unsignalized)	Max V/C	0.78 (WB TR)	0.79 (WB T)	0.69 (WB T)
		Max LOS-Delay	D-26 (WB TR)	D-32 (WB T)	C-24 (WB T)
12	NE Century Blvd/ NE Butler St (Signalized)	Overall	0.60-C-26	0.72-C-28	0.71-C-28
		Max V/C	0.79 (WB T)	0.83 (WB T)	0.83 (WB T)
		Max LOS-Delay	C-33 (WB T)	D-39 (WB T)	D-38 (WB T)
13	Internal Rd/ NE Ronler Dr (Unsignalized)	Max V/C	0.46 (WB L)	0.70 (WB L)	0.33 (WB L)
		Max LOS-Delay	C-16 (WB L)	C-25 (WB L)	C-20 (WB L)
14	NE Century Blvd/ NE Ronler Dr (Signalized)	Overall	0.68-C-26	0.76-C-32	0.74-C-31
		Max V/C	0.73 (WB TR)	0.82 (NB TR)	0.79 (NB TR)
		Max LOS-Delay	D-48 (EB L)	D-48 (EB L)	D-48 (EB L)

TABLE 8 – INTERSECTION OPERATIONS – AM PEAK HOUR

Intersection		Criteria	Analysis Results (V/C Ratio - LOS - Delay)		
			2018 Existing	2022 Approved	2022 Proposed
15	NE Century Blvd/ RAP1 Access (Signalized)	Overall	0.32-B-18	0.35-B-19	0.34-B-19
		Max V/C	0.41 (EB LT)	0.43 (EB LT)	0.42 (EB LT)
		Max LOS-Delay	D-46 (EB LT)	D-46 (EB LT)	D-46 (EB LT)
16	NE Century Blvd/ RA1&2 Access (Signalized)	Overall	0.34-A-9	0.41-A-9	0.39-A-9
		Max V/C	0.45 (EB L)	0.49 (EB L)	0.48 (EB L)
		Max LOS-Delay	D-46 (EB L)	D-47 (EB L)	D-47 (EB L)
17	NE Evergreen Pkwy/ NE Century Blvd (Signalized)	Overall	0.64-B-16	0.69-B-17	0.68-B-17
		Max V/C	0.68 (WB L)	0.73 (WB L)	0.72 (WB L)
		Max LOS-Delay	D-45 (SB TR)	D-44 (SB TR)	D-44 (SB TR)
18	NE Evergreen Pkwy/ RA1&2 North Access (Signalized)	Overall	0.26-A-7	0.31-A-7	0.31-A-7
		Max V/C	0.58 (NB L)	0.58 (NB L)	0.58 (NB L)
		Max LOS-Delay	E-60 (NB L)	E-60 (NB L)	E-60 (NB L)
19	NE Evergreen Pkwy/ NE 59th Ave (Signalized)	Overall	0.23-A-10	0.32-B-12	0.33-B-12
		Max V/C	0.26 (EB T)	0.40 (SB L)	0.40 (SB L)
		Max LOS-Delay	D-43 (NB L)	D-43 (NB L)	D-43 (NB L)

Acronyms: EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound, L = Left, T = Through, R = Right

TABLE 9 – INTERSECTION OPERATIONS – PM PEAK HOUR

Intersection		Movement	Analysis Results (V/C Ratio - LOS - Delay)		
			2018 Existing	2022 Approved	2022 Proposed
1	NE Evergreen Pkwy/ NE Brookwood Pkwy (Signalized)	Overall	0.75-D-36	0.88-D-46	0.90-D-47
		Max V/C	0.83 (EB L)	0.93 (EB L)	0.95 (NB TR)
		Max LOS-Delay	D-54 (SB L)	E-63 (EB L)	E-63 (EB L)
2	NE Shute Rd/ NE Brookwood Pkwy (Signalized)	Overall	0.63-B-17	0.72-C-20	0.74-C-22
		Max V/C	0.69 (NB TR)	0.74 (NB TR)	0.76 (NB TR)
		Max LOS-Delay	D-39 (EB LTR)	D-51 (EB LTR)	D-54 (EB LTR)
3	NE Shute Rd/ RS4&RS5 Access (Unsignalized)	Max V/C	0.42 (WB L)	0.53 (WB L)	0.65 (WB L)
		Max LOS-Delay	E-40 (WB L)	F-57 (WB L)	F-74 (WB L)
4	NE Shute Rd/NE Dawson Creek Dr/ MPTF-1 Access (Unsignalized)	Max V/C	0.77 (WB L)	1.03 (WB L)	1.80 (WB L)
		Max LOS-Delay	F-79 (WB L)	F-163 (WB L)	F-453 (WB L)
5	NE Shute Rd/ D1X Access (Unsignalized)	Max V/C	0.25 (WB R)	0.31 (WB R)	0.29 (WB R)
		Max LOS-Delay	C-19 (WB L)	C-22 (WB L)	C-23 (WB L)
6	NE Shute Rd/ NE Tandem Way (Unsignalized)	Max V/C	0.20 (WB R)	0.25 (WB R)	0.24 (WB R)
		Max LOS-Delay	C-21 (WB LT)	D-25 (WB LT)	D-27 (WB LT)

TABLE 9 – INTERSECTION OPERATIONS – PM PEAK HOUR

Intersection	Movement	Analysis Results (V/C Ratio - LOS - Delay)		
		2018 Existing	2022 Approved	2022 Proposed
7	Overall	0.55-C-21	0.65-C-22	0.65-C-23
	Max V/C	0.54 (WB TR)	0.67 (WB TR)	0.65 (WB TR)
	Max LOS-Delay	C-27 (NB TR)	C-28 (NB TR)	C-29 (NB TR)
8	Max V/C	0.26 (SB TR)	0.38 (SB TR)	0.34 (SB TR)
	Max LOS-Delay	C-21 (NB LTR)	D-29 (NB LTR)	D-28 (NB LTR)
9	Max V/C	0.47 (SB L)	0.63 (SB L)	0.58 (SB L)
	Max LOS-Delay	A-9 (SB L)	B-13 (SB L)	B-11 (SB L)
10	Max V/C	0.73 (SB LTR)	1.16 (SB LTR)	1.02 (SB LTR)
	Max LOS-Delay	D-28 (SB LTR)	F-130 (SB LTR)	F-77 (SB LTR)
11	Max V/C	0.57 (EB TR)	0.91 (EB TR)	0.80 (EB TR)
	Max LOS-Delay	C-16 (EB TR)	E-44 (EB TR)	C-21 (EB TR)
12	Overall	0.59-C-27	0.70-C-28	0.68-C-28
	Max V/C	0.80 (EB TR)	0.84 (EB TR)	0.83 (EB TR)
	Max LOS-Delay	D-45 (EB TR)	D-43 (EB TR)	D-43 (EB TR)
13	Max V/C	0.05 (WB L)	0.07 (WB L)	0.06 (WB L)
	Max LOS-Delay	B-10 (WB L)	B-11 (WB L)	B-11 (WB L)
14	Overall	0.56-C-23	0.63-C-25	0.61-C-24
	Max V/C	0.78 (EB TR)	0.83 (EB TR)	0.82 (EB TR)
	Max LOS-Delay	D-50 (EB TR)	D-50 (EB TR)	D-50 (EB TR)
15	Overall	0.49-C-22	0.54-C-23	0.53-C-22
	Max V/C	0.72 (EB LT)	0.75 (EB LT)	0.74 (EB LT)
	Max LOS-Delay	D-51 (WB L)	D-51 (WB L)	D-51 (WB L)
16	Overall	0.44-B-19	0.54-B-19	0.51-B-19
	Max V/C	0.75 (EB L)	0.79 (EB L)	0.77 (EB L)
	Max LOS-Delay	D-54 (EB L)	D-55 (EB L)	D-54 (EB L)
17	Overall	0.65-C-31	0.80-D-36	0.79-D-34
	Max V/C	0.90 (NB R)	0.97 (NB R)	0.95 (NB R)
	Max LOS-Delay	D-54 (NB T)	E-62 (NB R)	E-57 (NB R)
18	Overall	0.39-B-12	0.46-B-11	0.46-B-11
	Max V/C	0.63 (NB L)	0.70 (NB L)	0.70 (NB L)
	Max LOS-Delay	E-62 (SB L)	E-62 (SB L)	E-62 (SB L)
19	Overall	0.34-B-18	0.45-B-20	0.45-B-20
	Max V/C	0.43 (NB L)	0.53 (SB L)	0.53 (SB L)
	Max LOS-Delay	D-46 (SB L)	D-46 (NB L)	D-46 (NB L)

Acronyms: EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound, L = Left, T = Through, R = Right

Intersection Queueing Analysis

A queueing analysis was conducted for the study area intersections during the AM and PM peak hours to analyze any potential queue spillbacks. Per the City's CDC requirement listed in Section 12.70.200.D.3, the 50th and 95th percentile queues were calculated for the study area intersections.

Methodology

Queueing was evaluated using a peak two-hour volume profile divided into 15-minute increments with a 15-minute seeding period. This approach captures the peaking profiles of individual movements at each intersection and better represents traffic patterns than a one-hour analysis using each intersection peak. In the morning, the traffic simulation extends from 6:45 AM to 8:45 AM. In the afternoon, the traffic simulation extends from 4:00 to 6:00 PM. Traffic volume profiles in 15-minute increments are included in Appendix K.

The 50th and 95th percentile queues were estimated using SimTraffic microsimulation software. Queue demand results were rounded to the nearest 25 feet to represent average vehicle lengths. Because queues are based on an average of five traffic simulations using random arrivals, some fluctuation in results can be anticipated, particularly for movements that are near or over capacity.

Available queue storage lengths were estimated using Google Earth Pro software and were rounded to the nearest five feet. For some lane groups, two available storage values are stated: the first represents the striped storage or, in the absence of a stripe defining the storage lane, the distance to an upstream driveway; the second represents the effective storage, or the length physically available regardless of striping, such as a center-turn lane upstream of a striped left-turn lane at an intersection.

Findings

Table 10 presents the 50th and 95th percentile queueing analysis results for the AM and PM peak two-hour periods. Only lane groups that have queues exceeding the available storage have been shown in the table. (See Exhibit 1 for the numbering and location of intersections.) The SimTraffic output reports and summary tables of all lane groups are provided in Appendix L.

Within the table, queues that exceed available storage are shown in **bold** type. To demonstrate how the proposed project will affect queueing, green and blue highlighting has been added to lane groups where queues exceed available storage. Green highlighting is used when the proposed project will shorten queues by 25 feet (1 vehicle) or more compared to the approved scenario and blue highlighting indicates when queues will lengthen by 25 feet or more. Note that sometimes, queues may change due to the variability in simulations rather than a change in volumes.

TABLE 10 – PEAK TWO-HOUR QUEUING ANALYSIS

Intersection		Lane Group	Available Storage Striped/ Effective	Queues (AM/PM)					
				2018 Existing		2022 Approved		2022 Proposed	
				50th	95th	50th	95th	50th	95th
1	NE Evergreen Pkwy/ NE Brookwood Pkwy	EB L	445/540	150/375	225/575	175/500	250/ 725	175/475	250/ 725
		EB T	1650	125/200	200/525	125/925	225/ 2175	150/900	225/ 2125
		EB R	220/310	0/25	50/100	25/25	75/150	25/25	75/125
		WB L	190/360	75/150	150/250	75/175	150/325	75/175	175/300
		WB T	870/1900	100/200	175/300	125/225	200/425	125/225	200/350
		WB R	390/510	0/50	0/150	0/50	25/150	0/50	50/150
		NB L	300/440	50/100	100/175	50/275	100/600	50/275	100/ 625
		NB TR	870	125/300	225/425	175/725	300/ 1125	150/775	300/ 1125
		SB L	405/550	50/50	100/125	75/175	275/475	150/150	475/425
		SB T	970/2100	225/250	350/350	350/475	700/725	475/450	975/700
		SB R	345/400	50/25	125/100	100/125	325/450	150/125	450/450
2	NE Shute Rd/ NE Brookwood Pkwy	EB LTR	100	0/0	25/25	0/0	25/25	0/0	25/25
		WB LT	115	0/25	25/75	0/50	25/125	0/50	25/125
		WB R	490	50/75	75/150	50/225	75/ 625	50/250	75/ 550
		NB L	100/115	0/0	0/0	0/0	0/0	0/0	0/0
		NB TR	650	125/150	250/275	200/ 675	350/ 1525	225/ 700	350/ 1500
		SB L	300/875	175/50	325/100	150/50	275/125	150/50	400/125
3	NE Shute Rd/ RS4&RS5 Access	EB LTR	50	25/25	75/50	50/25	75/50	50/25	75/50
		WB L	55	50/50	50/ 150	25/ 75	50/ 175	25/ 100	50/ 225
		WB TR	55	50/ 75	50/ 175	25/ 100	50/ 200	25/ 125	50/ 250
		NB L	115/125	0/0	25/25	0/0	25/25	0/0	25/25
		SB L	110/125	50/0	100/25	50/0	100/25	50/0	100/50
4	NE Shute Rd/NE Dawson Creek Dr/ MPTF-1 Access	EB L	100/125	0/25	25/50	0/25	25/50	0/25	25/75
		EB TR	250	25/50	50/75	25/50	75/100	25/50	75/100
		WB L	Ex. 135/175 Prop. 120	25/75	50/150	25/75	50/ 200	25/ 275	50/ 625
		WB TR	Ex. 330 Prop. 120	0/75	50/250	25/125	50/ 375	25/ 275	50/ 600
		NB L	215/230	25/25	75/50	50/25	50/50	50/25	100/50
		SB L	205/220	25/0	50/25	25/0	50/0	50/0	75/25
7	NE Shute Rd/NE Airport Rd/ NE Butler St	WB L	125	0/0	25/25	0/25	25/50	0/0	25/50
		WB R	260	25/25	75/100	25/50	75/150	25/50	75/150
		SB L	195/240	0/0	50/25	25/0	75/25	25/0	50/25

TABLE 10 – PEAK TWO-HOUR QUEUING ANALYSIS

Intersection		Lane Group	Available Storage Striped/ Effective	Queues (AM/PM)					
				2018 Existing		2022 Approved		2022 Proposed	
				50th	95th	50th	95th	50th	95th
6	NE Shute Road/ NE Tandem Way (Unsignalized)	EB LTR	100	25/25	75/50	25/25	75/50	50/25	75/50
		WB LT	170/185	0/25	25/50	0/25	25/50	0/25	25/50
		WB R	330/1000	25/50	50/100	25/50	50/100	25/50	50/100
		NB L	105/175	0/25	25/50	0/25	25/50	0/25	25/50
		SB L	200/215	25/0	50/25	25/0	50/25	25/0	75/25
7	NE Shute Road/NE Airport Road/NE Butler Street (Signalized)	EB L	70/80	25/25	75/50	25/25	75/75	50/25	75/75
		EB TR	200	50/75	100/125	75/75	125/150	75/75	125/125
		WB L	90/165	25/75	75/150	25/100	75/175	25/100	75/200
		WB TR	250	50/150	100/275	50/175	100/375	75/200	125/400
		NB L	50/85	0/0	25/50	0/0	25/50	0/0	25/50
		NB TR	570	50/75	100/150	75/100	125/150	75/100	150/150
		SB L	85	50/75	100/125	50/75	100/150	50/100	100/150
		SB T	570	50/125	125/250	75/150	150/275	75/175	150/325
		SB R	570	25/25	50/50	25/25	50/50	25/25	50/75
8	NE Butler Street/ NE 60th Avenue (Unsignalized)	EB L	310	25/0	50/25	25/0	50/25	25/0	75/25
		WB L	225	0/0	0/0	0/0	0/0	0/0	0/0
		NB LTR	100	25/25	50/50	25/25	50/50	25/25	50/50
		SB L	100	0/25	25/75	0/25	25/125	0/0	25/75
		SB TR	100	25/50	50/125	25/75	50/150	25/75	50/125
9	NE Butler Street/ NE 65th Avenue (Unsignalized)	EB LT	125	25/50	75/75	50/50	100/100	25/50	75/100
		EB TR	740	0/25	50/75	25/50	50/75	0/50	50/75
		WB LTR	1200	75/25	150/75	150/25	425/75	150/25	475/100
		WB R	225/250	50/0	125/25	125/0	250/25	100/0	250/25
		NB LTR	135/1000	25/0	50/25	25/0	75/25	25/0	75/50
		SB L	200	0/25	25/75	0/50	25/75	0/50	50/75
		SB LTR	205	0/25	25/75	0/25	25/75	0/25	25/75

TABLE 10 – PEAK TWO-HOUR QUEUING ANALYSIS

Intersection		Lane Group	Available Storage Striped/ Effective	Queues (AM/PM)					
				2018 Existing		2022 Approved		2022 Proposed	
				50th	95th	50th	95th	50th	95th
10	Internal Rd/NE 65th Ave	EB LT	570	25/50	75/150	25/250	75/ 675	25/150	50/450
		EB R	225/250	25/100	50/200	25/225	50/ 450	25/150	50/ 350
		WB L	75/90	25/50	50/ 100	25/75	50/ 200	25/75	50/ 175
		WB LTR	250	50/75	75/150	50/125	100/250	50/125	100/250
		NB LT	200	50/25	100/50	75/25	150/50	75/25	150/50
		NB T	200	50/0	100/25	75/25	175/50	75/25	150/25
		NB R	105	25/0	75/0	50/0	150 /25	25/0	100/25
		SB LTR	75/250	25/175	75/ 375	50/ 375	75/ 500	50/ 325	75/ 525
11	Internal Rd/RA3&RA4 Access/Parking Lot	EB L	70/85	50/25	50/75	50/50	75/ 100	50/50	75/ 100
		EB TR	215	25/75	50/100	25/100	75/ 225	25/100	50/200
		WB L	115/115	0/0	50/25	0/0	25/25	0/0	50/0
		WB TR	215	125/50	250 /75	0/0	0/0	0/0	0/0
		WB T	215	0/0	0/0	125/25	325 /50	100/25	250 /50
		WB R	150/150	0/0	0/0	50/0	175 /25	50/0	150/0
		NB L	50	25/0	75 /25	50/0	75 /25	50/0	75 /25
		NB TR	50	25/0	50/25	25/0	75 /25	25/0	50/25
		SB L	175/190	50/50	75/75	50/50	75/100	50/50	75/100
		SB TR	270	25/25	50/50	50/50	75/75	25/50	75/75
12	NE Century Boulevard/ NE Butler Street (Signalized)	EB L	415/430	50/75	100/150	50/100	100/175	50/75	100/175
		EB TR	1150	50/200	100/300	50/225	100/350	50/250	100/350
		WB L	170/185	0/0	50/25	0/0	75/25	0/0	25/25
		WB T	840	250/75	425/150	400/100	750/175	350/100	600/175
		WB R	270/840	75/25	150/75	175/25	625/75	100/25	325/75
		NB L	150/220	75/25	150/50	100/25	225 /75	100/25	225 /50
		NB TR	700	150/50	300/125	250/75	600/175	200/75	475/150
		SB L	125/240	25/75	50/200	25/100	100/225	25/100	100/200
		SB TR	740	75/150	175/375	125/200	250/500	125/200	250/500
13	Internal Rd/RA3&RA4 Access/Parking Lot	WB L	185	125/25	200 /50	150/25	250 /50	150/25	225 /50
		WB R	370	25/0	100/0	50/0	225/25	50/0	200/25
		SB L	30	0/0	25/25	0/0	0/25	0/0	25/25

TABLE 10 – PEAK TWO-HOUR QUEUING ANALYSIS

Intersection		Lane Group	Available Storage Striped/ Effective	Queues (AM/PM)					
				2018 Existing		2022 Approved		2022 Proposed	
				50th	95th	50th	95th	50th	95th
14	NE Century Blvd/ NE Ronler Dr	EB L	300	0/25	25/75	25/50	50/75	0/25	25/75
		EB TR	550	25/175	75/250	50/200	125/250	50/200	100/250
		WB L	85/100	75/25	200/75	100/25	225/75	100/25	225/75
		WB TR	350/2000	225/25	450/50	350/25	700/75	300/25	600/75
		NB L	150/250	75/25	175/50	100/25	225/100	75/25	200/75
		NB TR	740	200/125	400/250	350/200	700/400	250/175	525/375
		SBL	135/240	25/100	75/225	25/125	100/ 250	25/125	100/ 250
		SB TR	750	75/225	150/550	125/375	275/ 775	100/350	225/750
15	NE Century Boulevard/ RAP1 Access (Signalized)	EB LT	250	50/175	100/ 275	50/175	100/ 300	50/175	100/ 300
		EB R	250	25/100	75/175	25/100	75/225	25/100	75/225
		WB L	50	0/0	0/0	0/0	0/0	0/0	0/0
		WB TR	50	0/0	0/0	0/0	0/0	0/0	0/0
		NB L	120/220	75/25	125/50	75/25	150/50	75/25	150/50
		NB TR	750	50/50	150/25	50/75	150/175	50/50	175/150
		SB L	100/175	0/0	0/0	0/0	0/0	0/0	0/0
		SB T	1170	25/150	100/325	50/200	125/550	50/225	150/650
		SB R	135/185	50/25	125/100	50/25	125/100	50/25	125/100
16	NE Century Boulevard/ RA1&2 Access (Signalized)	EB L	225	25/125	75/200	50/150	125/ 250	50/125	125/ 250
		EB TR	225	25/50	50/125	25/50	50/125	25/50	50/125
		WB L	50	25/25	50/50	25/25	50/50	25/25	50/50
		WB TR	50	25/25	50/50	25/25	50/50	25/25	50/50
		NB L	90/175	50/25	125/75	50/25	125/50	50/25	125/75
		NB TR	1160	50/100	125/125	50/125	125/275	50/125	125/250
		SB L	90/155	0/0	25/50	0/0	25/50	0/0	25/50
		SB T	1370	75/75	175/150	75/75	200/200	75/75	200/175
		SBR	135/185	25/0	25/50	50/0	125/25	50/0	125/50

TABLE 10 – PEAK TWO-HOUR QUEUING ANALYSIS

Intersection		Lane Group	Available Storage Striped/ Effective	Queues (AM/PM)					
				2018 Existing		2022 Approved		2022 Proposed	
				50th	95th	50th	95th	50th	95th
17	NE Evergreen Parkway/ NE Century Boulevard (Signalized)	EB L	100/115	0/25	25/75	0/25	50/75	0/25	50/75
		EB T	1020	100/200	175/375	125/300	250/550	125/300	225/600
		EB R	375/390	50/25	100/75	50/75	125/250	50/75	25/300
		WB L	245/270	200/75	375/150	300/100	450/175	250/100	425/175
		WB TR	585	150/75	500/175	450/100	1000/175	275/100	775/200
		NB L	135/150	50/75	100/150	50/100	125/ 175	50/100	125/200
		NB T	1350	50/50	100/225	50/125	125/500	50/175	100/650
		NB R	250/275	50/200	125/ 375	50/250	150/ 425	75/250	150/450
		SB L	100/225	50/125	100/225	50/125	100/ 250	50/125	100/ 250
		SB TR	225/600	25/100	75/325	25/125	75/350	25/150	75/375
18	NE Evergreen Parkway/ RA1&2 North Access (Signalized)	EB L	110/185	0/0	0/0	0/0	25/25	0/0	0/25
		EB TR	925	50/75	150/175	75/75	175/200	75/75	175/225
		WB L	195/270	50/0	100/25	50/0	125/25	50/0	100/25
		WB TR	1040	25/50	75/125	50/50	125/150	25/50	100/150
		NB L	250/500	25/75	75/175	25/75	75/175	25/75	75/150
		NB TR	250/500	25/50	50/100	25/50	75/100	25/50	75/100
		SB L	50	0/25	25/50	0/25	25/50	0/25	25/50
		SB TR	50	0/0	25/25	0/0	25/25	0/0	25/25
19	NE Evergreen Parkway/ NE 59th Avenue (Signalized)	EB L	285/340	25/0	75/50	50/0	75/25	50/0	75/50
		EB T	1900	50/75	150/200	75/125	175/275	75/125	175/275
		EB R	220/240	0/0	25/25	0/0	25/0	0/0	25/0
		WB L	265/450	0/0	50/0	0/0	25/25	25/0	50/25
		WB TR	925	25/75	100/200	75/125	175/300	75/100	175/250
		NB L	400	0/50	25/150	0/50	25/150	0/50	25/125
		NB LT	400	0/25	25/100	0/25	25/125	0/25	25/100
		NB R	350	25/75	50/225	25/75	50/200	0/75	50/225
		SB L	155/185	25/50	75/100	75/100	150/175	75/100	150/200
		SB TR	200/1300	25/50	75/75	25/50	75/125	25/50	75/125

Acronyms: EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound, L = Left, T = Through, R = Right

2018 Existing Condition

Although 50th percentile queues can be accommodated under existing conditions at all locations but one driveway approach, ten (10) intersections currently have 95th percentile queues that exceed available storage. Most of the queuing issues are on site or with traffic exiting site driveways, but four (4) intersections have existing queuing concerns that should be noted:

- At the NE Evergreen Parkway/NE Brookwood Parkway intersection, the 95th percentile queue in the eastbound left-turn lane spills into the adjacent through lane during the PM peak period. This spillover affects the queues in the through lane as well. The queuing reports indicate this condition is present approximately 6% of the PM peak hour.
- At the NE Shute Road/NE Airport Road/NE Butler Street intersection, the 95th percentile queues in the southbound left-turn lane group exceed available storage in both peak periods. The queuing reports indicate this condition is present less than 5% of either peak period. During the PM peak period, the westbound queue will occasionally extend past the first upstream intersection (NE 56th Avenue).
- At the NE Century Boulevard/NE Ronler Drive intersection, the 95th percentile queues for the westbound left-turn lane group are reported to exceed available storage in AM peak period, but this may be due in part to queuing in the adjacent through lane. The queuing reports indicate that queues in the westbound through travel lane into the Ronler Acres campus block access to the left-turn lane approximately 5% of the AM peak period. The turn lane does have a two-way, left-turn lane (TWLTL) with additional storage and some drivers may use the TWLTL to access the left-turn lane when long through queues are present.
- At the NE Evergreen Parkway/NE Century Boulevard intersection, the 95th percentile queue in the westbound left-turn lane spills into the adjacent through lane during the AM peak period. This spillover affects the queues in the through lane. The queuing reports indicate this condition is present approximately 15% of the AM peak period. During the PM peak hour, the reverse movement, northbound right, has 95th percentile queues that spill into the adjacent through lane. The queuing reports indicate this condition is present 10% of the PM peak period.

2022 Approved Scenario

Four (4) intersections are anticipated to have 50th percentile queues that exceed available storage, but some of the queuing concerns are located on site accesses with short driveway throats or internal road intersections. However, two major intersections will have average queues that exceed available storage: the northbound through-right lane group on NE Shute Road at NE Brookwood Parkway and the westbound left-turn and through lanes on NE Evergreen Parkway at NE Century Drive. The issues at these locations are detailed further with the 95th percentile queues.

Fourteen (14) intersections are anticipated to have 95th percentile queues that will exceed available storage. Many of the queuing issues are on site or with traffic exiting site driveways, but six (6) intersections have one or more lane groups with queues that exceed available storage:

- At the NE Evergreen Parkway/NE Brookwood Parkway intersection, the existing eastbound queueing will worsen with left-turn queues extending into the adjacent lane nearly 35% of the PM peak period. Additionally, the 95th percentile queue in the northbound lane will extend southward through the traffic signal with NE Shute Road. The queuing reports indicate this condition will be present approximately 15% of the PM peak period.

- At the NE Shute Road/NE Brookwood Parkway intersection, the northbound queues extending from NE Evergreen Parkway will significantly affect the queues on the northbound approach (NE Brookwood Parkway) and westbound (NE Shute Road) approaches. The queues on NE Shute Road will extend past the RS4&RS5 driveway.
- At the NE Shute Road/NE Airport Road/NE Butler Street intersection, the 95th percentile queues in the southbound left-turn lane group will exceed available storage 5% of the AM peak periods and more than 10% of the PM peak period. The westbound left-turn lane will exceed available storage approximately 10% of the PM peak period which will contribute to longer queues in the adjacent lane through-right lane. These queues will extend past the first upstream intersection (NE 56th Avenue).
- At the NE Century Boulevard/NE Butler Street intersection, the 95th percentile queues in the northbound left-turn lane group will exceed available storage more than 10% of the AM peak period.
- At the NE Century Boulevard/NE Ronler Drive intersection, the 95th percentile queues for the westbound lane groups will lengthen in AM peak period. Access to the westbound left-turn lane will be blocked approximately 45% of the AM peak period. The southbound through-right lane group will have queues that occasionally extend back to the upstream intersection and access to the southbound left-turn lane will be blocked approximately 25% of the PM peak period.
- At the NE Evergreen Parkway/NE Century Boulevard intersection, the 95th percentile queue in the westbound left-turn will worsen with queues extending into the adjacent through lane approximately 35% of the AM peak period. As a result, the westbound through lane group will have queues that extend through the intersection with NE Imbrie Drive approximately 25% of the AM peak period. During the PM peak period, the 95th percentile queues for the northbound right-turn lane group will worsen, with queues extending into the adjacent through lane approximately 20% of the period.

2022 Proposed Scenario

Five (5) intersections are anticipated to have 50th percentile queues that exceed available storage, but most of the queueing concerns are located on site accesses with short driveway throats or internal road intersections. Two major intersections will have average queues that exceed available storage under the proposed scenario. However, the northbound through-right lane group on NE Shute Road at NE Brookwood Parkway will worsen under the proposed scenario and affect the upstream intersection, while the westbound left-turn lane on NE Evergreen Parkway at NE Century Drive will improve under the proposed scenario. The issues at these locations are detailed further with the 95th percentile queues.

Fifteen (15) intersections are anticipated to have 95th percentile queues that will exceed available storage. Many of the queuing issues are on site or with traffic exiting site driveways. Six (6) intersections have one or more lane groups with queues that exceed available storage:

- At the NE Evergreen Parkway/NE Brookwood Parkway intersection queuing is expected to worsen with the proposed scenario as some traffic will shift to the network west of the campus. The eastbound queueing will worsen slightly with left-turn queues extending into the adjacent lane approximately 35% of the PM peak period. Additionally, the 95th percentile queue in the northbound lane will extend southward through the traffic signal with NE Shute Road. The queuing reports indicate this condition will be present approximately 15% of the PM peak period. The southbound right-turn lane shows queues that will exceed available storage, but this result

appears to reflect a condition where longer southbound through queues will occasionally block access to the turn lane.

- At the NE Shute Road/NE Brookwood Parkway intersection, the northbound queues extending from NE Evergreen Parkway will significantly affect the queues on the northbound approach. This condition worsens with the proposed scenario. The westbound approach on NE Shute Road will be impacted by queues on NE Brookwood Parkway as well and queues along NE Shute Road will likely block site driveways.
- At the NE Shute Road/NE Airport Road/NE Butler Street intersection, the 95th percentile queues in the southbound left-turn lane group will exceed available storage for 5% of the AM peak periods and more than 10% of the PM peak period. The westbound left-turn lane will exceed available storage approximately 10% of the PM peak period and the adjacent lane through-right lane will extend past the first upstream intersection (NE 56th Avenue). Although queues change by plus or minus one vehicle, the conditions are roughly the same for the approved and proposed scenarios.
- At the NE Century Boulevard/NE Butler Street intersection, the 95th percentile queues in the northbound left-turn lane group will exceed available storage more than 10% of the AM peak period. The results are the same as the approved scenario.
- At the NE Century Boulevard/NE Ronler Drive intersection, the 95th percentile queues for the southbound through-right lane group will shorten in AM peak period compared with the approved scenario, while the westbound and southbound left-turn queues will remain about the same as the approved scenario.
- At the NE Evergreen Parkway/NE Century Boulevard intersection, conditions will improve compared with the approved scenario. The 95th percentile queue in the westbound left-turn will have queues extending into the adjacent through lane approximately 30% of the AM peak period. The impact on the westbound through lane group is less with the proposed scenario and queues will extend to NE Imbrie Drive approximately 10% of the AM peak period. During the PM peak period, the 95th percentile queues for the northbound right-turn lane group will remain about the same with queues extending into the adjacent through lane 20-25 % of the period.

VI. RECOMMENDATIONS AND MITIGATION

The traffic analysis has identified some general concerns with the transportation system, changes that are anticipated to occur under the approved scenario, and changes that are precipitated by the proposed scenario. Issues and recommended actions are presented below.

Existing and Approved Transportation Issues

Evaluation of safety and operations identified several existing concerns. The approved scenario will exacerbate some of these concerns and create some additional issues.

NE Evergreen Road/NE Century Boulevard

The safety and operations analysis identified the following concerns at the NE Evergreen Road/NE Century Boulevard intersection:

- The intersection is ranked high in both the Washington County and ODOT safety databases and has dominant, identifiable crash patterns.
- Westbound left-turn queues on NE Evergreen Parkway at NE Century Boulevard currently exceed available storage in the AM peak period.
- Northbound right-turn queues on NE Century Boulevard at NE Evergreen Parkway currently exceed available storage in the PM peak period.
- Queuing conditions at the NE Evergreen Parkway/NE Century Boulevard intersection will worsen, especially in the AM peak period.

The crash pattern involving westbound left-turning vehicles does not appear to be specifically related to the morning peak period. The City of Hillsboro and Washington County should review signal timing to determine if changes, such as eliminating the flashing yellow arrow and a longer all-red period could help address the crash pattern. Enforcement measures, such as a red-light camera, may also be appropriate at this intersection.

The heavy westbound left-turn and northbound right-turn movements that have existing queuing issues are generally associated with traffic traveling between NE Cornelius Pass Road and the Ronler Acres campus. As part of the Transportation System Plan (TSP) update, the City of Hillsboro is investigating network connections that provide additional routes between NE Evergreen Road and NE Century Boulevard. The forecast volumes and operational analysis in this report support the need for these alternate routes.

NE Evergreen Road/NE Brookwood Parkway

The safety and operations analysis identified the following concerns at the NE Evergreen Road/NE Brookwood Parkway intersection:

- The intersection is ranked high in both the Washington County safety databases and has some dominant, identifiable crash patterns.
- Eastbound left-turn queues on NE Evergreen Road at NE Brookwood Parkway exceed available storage in PM peak period.

- Higher traffic volumes due to background growth, new developments, and increased Ronler Acres demand, will create queuing concerns on NE Brookwood Parkway northbound at NE Evergreen Parkway in PM peak period.

The crash pattern involving southbound rear-end collisions indicate a review of the posted speed on NE Brookwood Parkway might be warranted, especially as the area continues to develop over the next few years.

The existing and worsening queueing conditions at the intersection are partially related to the very high eastbound left-turn volumes in the PM peak hour. Options to mitigate the impacts of these volumes are limited; the intersection has already been improved to maximize capacity on most approaches. Therefore, long-term solutions to the capacity and queueing issues at this intersection need to focus on expanding the surrounding transportation network to serve adjacent lands and provide alternate routes between key traffic generators.

Both the City of Hillsboro and Washington County TSPs include network changes in North Hillsboro that may shift some traffic away from the NE Evergreen Road/NE Brookwood Parkway intersection. These improvements include the extension of NE Huffman Street westward from NE Starr Boulevard, and another north-south collector between NE Evergreen Road and NE Meek Road.

As part of their TSP update, the City of Hillsboro is also looking at other potential connections that could facilitate the use of the Jackson School Road interchange on Highway 26. These options could include more capacity on NE Evergreen Road between NW Jackson School Road and NE 15th Avenue and an extension of NE 25th Avenue to NW Jackson School Road.

NE Century Boulevard/NE Butler Street

The operations analysis identified queuing concerns on for the northbound left-turn movement from NE Century Boulevard to NE Butler Street in AM peak period with the approved scenario will worsen queuing conditions.

Some minor changes in signal timing may help to improve operations and reduce queuing for this movement and possibly reduce traffic diversions into the neighborhood south of NE Butler Street. The roundabout on NE Butler Street has the capacity to accommodate the increased demand if more traffic were to travel this route.

The proposed scenario will reduce some of the future queuing at this intersection compared with the approved scenario.

NE Century Boulevard/NE Ronler Drive

The operations analysis identified existing queuing concerns on westbound NE Ronler Drive at NE Century Boulevard are in AM peak period. Volume growth associated with the approved scenario will worsen queuing conditions.

The operations also identified growing queues on the southbound approach of NE Century Boulevard at NE Ronler Drive in the PM peak period. The proposed scenario will reduce these queues slightly as some demand will shift from the east to west side of campus.

Some minor changes in signal timing may help to improve operations and reduce queuing at this intersection. Increasing westbound through capacity in the morning may increase demand at this approach into campus. Thus, the internal network on the Ronler Acres campus may need to be modified to accept more inbound traffic. Intel is currently investigating changes to the intersection control where NE Ronler Drive intersects with the internal circulation network.

The proposed scenario will reduce some of the future queuing at this intersection compared with the approved scenario.

Internal Campus Circulation

Growing traffic demand, particularly at the RAP 2 and RAP 3 parking garages, will create on-site congestion during the morning and evening peak periods. All three internal site intersections examined in this TIA had queuing concerns, although none are anticipated to affect operations on the external street network.

In the morning, the westbound approach of NE Ronler Drive at the internal circulation road has queuing that exceeds the storage but is not anticipated to extend to NE Century Boulevard. Some drivers are already cutting through the surface parking lots to avoid congestion at this intersection as well as other internal locations. Intel is currently investigating changes to the intersection control where NE Ronler Drive intersects with the internal circulation network.

The intersection formed by the internal circulation road, the RA3 and RA4 Access Road, and the surface parking was observed to have existing queuing issues on the westbound approach. Drivers entering the site from NE Ronler Drive are cutting through the surface parking lot and the reentering the internal circulation road to avoid congestion on the westbound approach. Intel is currently will be constructing a westbound right-turn lane in the spring of 2019 to help relieve some congestion at this intersection.

The all-way, STOP-controlled intersection between the RAP2 and RAP3 parking garages was recently restriped to improve traffic flow into the site and reduce impacts to the external network, but the current configuration does have some congestion in the PM peak hour that will worsen with the approved scenario. Drivers are likely to exit the parking garages from different ramps and distribute on the street system at different points as congestion grows. However, Intel may wish to examine options to support different travel routes as well as options to increase the capacity of this intersection.

For all three intersections described above, the proposed scenario will generally reduce the future demand and queuing compared with the approved scenario.

Proposed Project-Related Issues and Mitigation

The proposed scenario will have the following affects compared with the existing condition and approved scenario:

- The access to MPTF-1 on NE Shute Road opposite NE Dawson Creek Drive will not have sufficient capacity to accommodate the forecast demand.
- The access to RS4&RS5 will have delay that exceeds the City standard for the westbound left-turn lane exiting the campus.
- The higher traffic volumes on the west side of campus will exacerbate the issues with the northbound queues on NE Brookwood Parkway at NE Evergreen Parkway.

- Conditions will generally improve on the east side of campus and the on-site congestion issues near the RAP2 and RAP3 parking garages will be reduced with the shifts in traffic to the west side of campus.

Two potential mitigation measures are evaluated to address these issues.

NE Shute Road/NE Dawson Creek Drive/MPTF-1 Access

To address the capacity and queuing issues at the MPTF-1 access to NE Shute Road, a traffic signal was evaluated for the proposed scenario. Preliminary evaluation of traffic signal warrants indicates that the intersection will meet the peak hour volume warrants for several hours of the day. (Copies of the warrant sheets are included in Appendix M.) Table 11 compares the intersection operations and Table 12 compares queues without and with the traffic signal. The analysis assumes protected/permitted left-turn phasing on NE Shute Road and protected left-turn phasing on NE Dawson Creek Drive and the site access.

As shown in Table 11, delays at the at the site access and on NE Dawson Creek Drive would be significantly reduced with the traffic signal and intersection operations would be well below agency standards. Queues would also be significantly shorter for the site access, as shown in Table 12.

TABLE 11 – OPERATIONS WITH TRAFFIC SIGNAL AT NE SHUTE ROAD/NE DAWSON CREEK DRIVE/MPTF-1				
Movement	Analysis Results (V/C Ratio - LOS – Delay in Seconds)			
	2022 Proposed without Traffic Signal		2022 Proposed with Traffic Signal	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Overall	N/A	N/A	0.33-B-11	0.52-C-21
EB L	0.05-F-95	0.29-E-45	0.13-C-29	0.59-D-45
EB TR	0.14-C-16	0.21-B-11	0.06-C-20	0.11-C-24
WB L	0.34-F-63	1.80-F-453	0.50-C-30	0.50-C-23
WB TR	0.05-B-13	0.49-C-16	0.02-B-19	0.20-B-14
NB L	0.16-A-9	0.06-A-8	0.32-A-7	0.20-B-14
NB TR	N/A	N/A	0.28-B-10	0.68-C-21
SB L	0.12-A-9	0.01-A-10	0.26-A-8	0.08-B-19
SB TR	N/A	N/A	0.41-B-12	0.33-B-20

TABLE 12 – QUEUES WITH TRAFFIC SIGNAL AT NE SHUTE ROAD/NE DAWSON CREEK DRIVE/MPTF-1

Lane Group	Available Storage Striped/ Effective	Queues (AM/PM)			
		2022 Proposed without Signal		2022 Proposed with Signal	
		50th	95th	50th	95th
EB L	100/125	0/25	25/75	0/25	25/75
EB TR	250	25/50	75/100	25/50	75/100
WB L	120+	25/ 275	50/ 625	25/100	75/200
WB TR	120+	25/ 275	50/ 600	25/25	50/175
NB L	215/230	50/25	100/50	50/25	125/75
NB TR	900	N/A	N/A	75/100	125/200
SB L	205/220	50/0	75/25	50/0	100/25
SB TR	220	N/A	N/A	75/75	200/150

The traffic signal at the NE Shute Road/NE Dawson Creek Drive intersection also has the added benefit of creating more gaps in the traffic stream that will enable the traffic to exit the unsignalized driveway to the north (RS4 & RS5) more easily. Table 13 summarizes the delays at these two intersections using the performance reports from the traffic simulation. This table shows the westbound left-turn delay would be reduced from about 90 seconds to under 40 seconds and the through-right delay from about 50 seconds to under 30 seconds. These results are below the City's delay threshold of 50 seconds.

TABLE 13 – DELAYS WITH TRAFFIC SIGNAL AT NE SHUTE ROAD/NE DAWSON CREEK DRIVE/MPTF-1

Intersection	Movement	Traffic Simulation Delays (Seconds)			
		2022 Proposed without Traffic Signal		2022 Proposed with Traffic Signal	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
NE Shute Road/ RS4&RS5 Access (Unsignalized)	EB LTR	16	28	16	10
	WB L	21	90	21	38
	WB TR	4	50	4	29
	NB L	4	2	6	2
	SB L	4	12	4	10
NE Shute Road/NE Dawson Creek Drive/MPTF-1 Access (Signalized)	EB L	17	15	25	24
	EB TR	8	9	8	8
	WB L	25	181	25	20
	WB TR	4	63	4	11
	NB L	6	2	10	14
	NB TR	N/A	N/A	8	14
	SB L	5	4	10	17
	SB TR	N/A	N/A	11	14

NE Evergreen Road/NE Brookwood Parkway

To address the queuing issues at the NE Evergreen Road/NE Brookwood Parkway intersection, two mitigation options were evaluated. The first option evaluates how optimizing signal timing during the PM peak hour might improve operations for the intersection. The second option adds capacity to the intersection by constructing a separate northbound right-turn lane. Table 14 compares the intersection operations.

As shown in Table 14, the signal retiming could potentially reduce the overall v/c ratio from 0.90 to 0.88 during the PM peak hour, with a reduction of the eastbound left-turn v/c ratio from 0.93 to 0.92 and northbound through-right v/c ratio from 0.95 to 0.89. The retiming would increase the v/c ratios of some movements, particularly for the westbound through and the southbound left turns. Overall delay would be reduced by about two (2) seconds per vehicle.

With the addition of the northbound right-turn lane and signal optimization, the overall v/c ratio would decrease from 0.90 to 0.84 during the PM peak hour, with a reduction of the eastbound left-turn v/c ratio from 0.93 to 0.89. Adding the northbound right-turn lane would reduce the demand in the three northbound through lanes and the v/c ratio for those lanes would decrease from 0.95 to 0.85. The retiming would still increase the v/c ratios of some movements, particularly for the westbound through and the southbound left turns. Overall delay would be reduced by about five (5) seconds per vehicle.

TABLE 14 –OPERATIONS WITH MITIGATION AT NE EVERGREEN PARKWAY/NE BROOKWOOD PARKWAY						
Movement	Analysis Results (V/C Ratio - LOS - Delay)					
	2022 Proposed without Mitigation		2022 Proposed with Signal Retiming		2022 Proposed with NB Right & Retiming	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Overall	0.60-C-24	0.90-D-47	No Change	0.88-D-45	0.59-C-24	0.84-D-42
EB L	0.70-D-54	0.93-E-63		0.92-E-62	0.69-D-53	0.89-E-57
EB T	0.59-D-44	0.44-C-33		0.44-C-33	0.59-D-43	0.42-D-31
EB R	0.10-A-0	0.08-A-0		0.08-A-0	0.10-A-0	0.08-A-0
WB L	0.56-D-54	0.64-E-60		0.67-E-62	0.56-D-54	0.67-E-60
WB T	0.54-D-46	0.75-D-54		0.79-E-57	0.54-D-46	0.75-D-53
WB R	0.08-A-0	0.12-A-0		0.12-A-0	0.08-A-0	0.12-A-0
NB L	0.42-D-41	0.37-D-50		0.43-D-53	0.43-D-41	0.48-D-54
NB TR	0.42-A-9	0.95-D-53		0.89-D-45	N/A	N/A
NB T	N/A	N/A		N/A	0.34-A-8	0.85-D-43
NB R	N/A	N/A		N/A	0.12-A-0	0.12-C-30
SB L	0.44-D-54	0.51-E-60		0.66-E-69	0.44-D-54	0.60-E-63
SB T	0.59-C-22	0.81-D-49		0.73-D-44	0.59-C-22	0.74-D-44
SB R	0.22-A-9	0.16-B-16		0.18-B-14	0.22-A-9	0.18-B-14

Table 15 summarizes the queues at the NE Evergreen Parkway/NE Brookwood Parkway intersection as well as two downstream intersections that benefit from the improved operations and reduced queuing.

As shown in Table 15, the signal optimization NE Evergreen Parkway/NE Brookwood Parkway would not significantly improve the eastbound queuing during the PM peak period, but would improve the northbound queues so that queues would only occasionally impact the upstream traffic signal at NE Shute Road.

The addition of the northbound right-turn lane on NE Brookwood Parkway at NE Evergreen Parkway would more significantly improve the queuing at the two downstream intersections. The 95th percentile queues northbound queues would drop from more than 1,100 feet to under 900 feet and would not extend into NE Shute Road. This change would have a significant effect on the northbound queuing of NE Brookwood Parkway (1,500 feet reduced to 650 feet) as well as the westbound queuing of NE Shute Road (550 feet reduced to 450 feet). The shorter queues on NE Shute Road also help with the unsignalized driveway for buildings RS4 and RS5.

TABLE 15 – QUEUES WITH MITIGATION AT NE EVERGREEN PARKWAY/NE BROOKWOOD PARKWAY

Intersection	Lane Group	Available Storage Striped/ Effective	PM Peak Period Queues					
			2022 Proposed without Mitigation		2022 Proposed with Signal Retiming		2022 Proposed with NB Right & Signal Retiming	
			50th	95th	50th	95th	50th	95th
NE Evergreen Parkway/ NE Brookwood Parkway (Signalized)	EB L	445/540	475	725	475	700	475	700
	EB T	1650	900	2125	750	1925	750	1925
	EB R	220/310	25	125	25	100	25	125
	WB L	190/360	175	300	250	450	225	400
	WB T	870/1900	225	350	325	700	250	425
	WB R	390/510	50	150	75	225	50	175
	NB L	300/440	275	625	225	550	175	425
	NB TR	870	775	1125	650	1075	N/A	N/A
	NB T	870	N/A	N/A	N/A	N/A	475	875
	NB R	400	N/A	N/A	N/A	N/A	150	500
	SB L	405/550	150	425	150	325	150	275
	SB T	970/2100	450	700	325	450	350	475
	SB R	345/400	125	450	50	125	50	150
NE Shute Road/ NE Brookwood Parkway (Signalized)	EB LTR	100		25	0	25	0	25
	WB LT	115	50	125	50	125	50	125
	WB R	490	250	550	250	575	225	450
	NB L	100/115	0	0	0	0	0	0
	NB TR	650	700	1500	525	1150	350	650
	SB L	300/875	50	125	75	150	50	150
	SB TR	875	150	375	225	525	200	500
NE Shute Road/ RS4&RS5 Access (Unsignalized)	EB LTR	50	25	50	25	75	25	50
	WB L	55	100	225	75	175	50	150
	WB TR	55	125	250	100	200	100	200
	NB L	115/125	0	25	0	50	0	25
	SB L	110/125	0	50	0	50	0	25

For the analysis, the northbound right-turn lane was assumed to have a storage length of 400 feet. The traffic simulations indicate an average queue of 150 in the PM peak period with a shorter queue during the AM peak hour. The 95th percentile queue was estimated at 500 feet during the PM peak hour. However, that calculation reflects blockage from the adjacent through lane and does not accurately reflect the storage need. Therefore, a storage length of 300 is recommended, which is twice the average and should accommodate random arrivals.

Construction of a northbound right-turn lane needs to consider the location of the retaining wall for the water reservoir and vaults along the east side of NE Brookwood Parkway. The retaining wall is estimated at 24-25 feet from the current curb and about 14 feet from the edge of sidewalk. The vaults are estimated at 19 feet from the curb and 9 feet from the edge of sidewalk. Adding a right-turn lane would require widening the roadway 14 feet to provide an adequate travel lane and curb clearance. To avoid impacting the retaining wall, sidewalks might need to be curb-tight along the right-turn lane. The vaults would likely be impacted by any widening.

Options for bicycle facility treatments with the right-turn lane on the northbound approach should also be considered. One option would be to transition the bike lane between the right-turn lane and the adjacent through lane. This treatment has been used on the other three approaches and it allows the bicyclist to traverse the intersection with the through traffic movement. An alternative configuration would transition the bike lane to a separated cycletrack outside the roadway. Bicyclists would have to use the crosswalk to cross the right-turn lane to continue northbound on NE Brookwood Parkway. This configuration may be more comfortable for less confident bicyclists but it would take longer to traverse the intersection.

Considering these construction issues as well as City of Hillsboro's larger planning efforts to improve the transportation network, investment in a northbound right-turn lane may not be the best long-term solution to address intersection congestion.

Recommendations

To address the impacts specific to the proposed project, the following improvements are recommended:

- A traffic signal should be constructed at the NE Shute Road/NE Dawson Creek Drive/MPTF-1 access with protected/permitted left-turn phasing on NE Shute Road and protected left-turn phasing on NE Dawson Creek Drive and the site access.
- Signal timing at the NE Evergreen Road/NE Brookwood Parkway should be reviewed to determine if minor timing changes could reduce queuing on the eastbound and northbound approaches during the PM peak period.
- A northbound right-turn lane should be considered on NE Brookwood Parkway at NE Evergreen Parkway. Constructability and benefits of this improvement should be evaluated against other plans to improve the overall North Hillsboro transportation network.

VII. APPENDIX

- Appendix A. Figures
- Appendix B. Scoping Material
- Appendix C. Transit Information
- Appendix D. Traffic Count Summaries
- Appendix E. Crash Data
- Appendix F. Background Traffic Estimates
- Appendix G. In-Process Traffic
- Appendix H. Model Plots for Century Boulevard Extension
- Appendix I. Signal Timings
- Appendix J. Operations Calculations
- Appendix K. Traffic Volume Profiles
- Appendix L. Queuing Analysis
- Appendix M. Signal Warrants

APPENDIX A.
FIGURES



Google Earth
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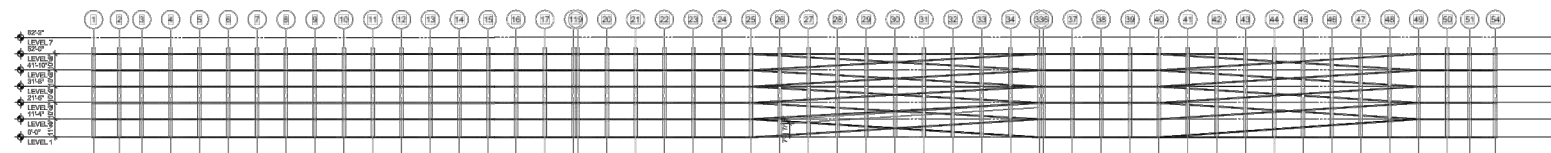
VICINITY MAP

**INTEL RONLER ACRES - LARK
HILLSBORO, OREGON**

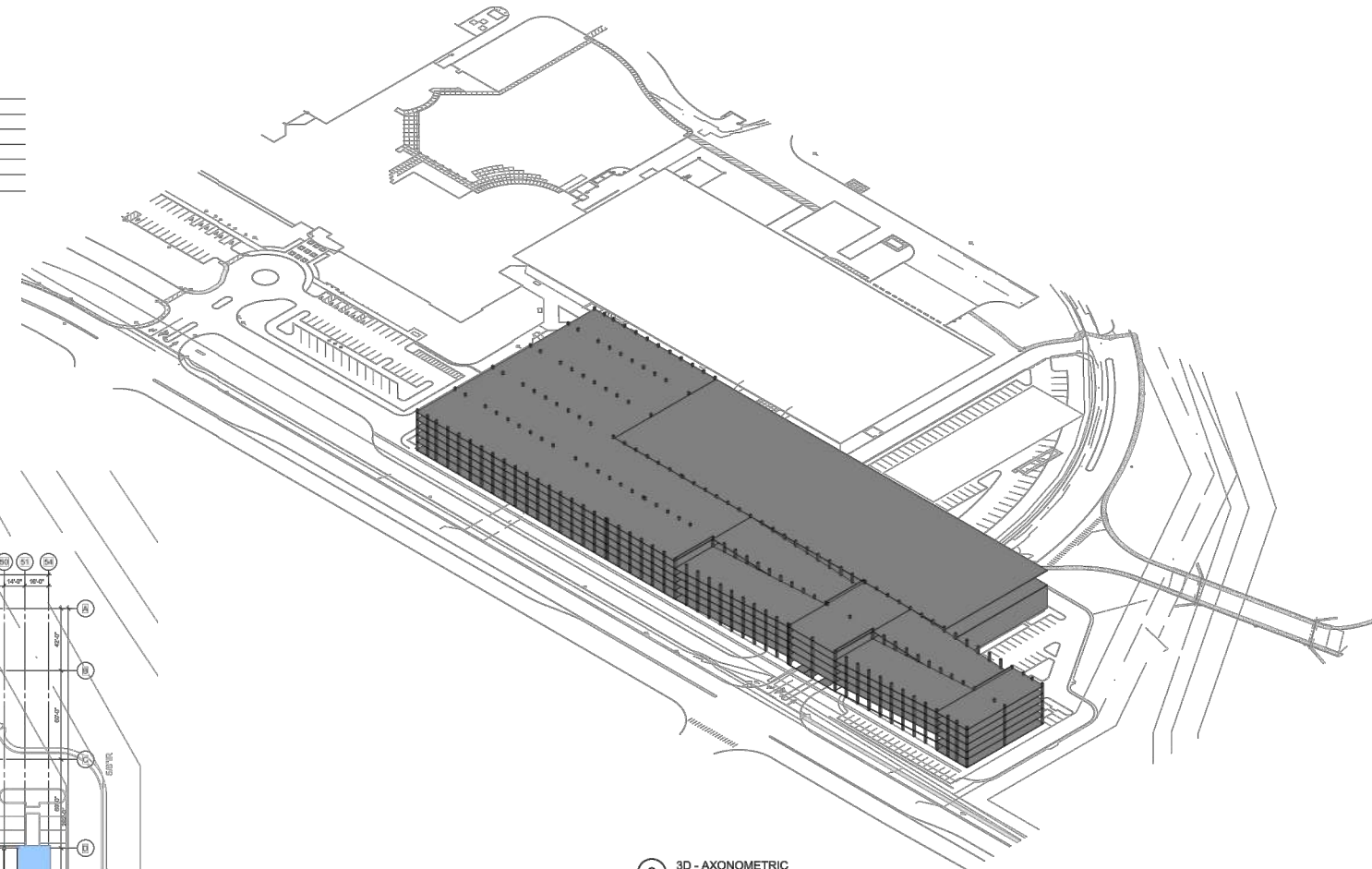
FIGURE

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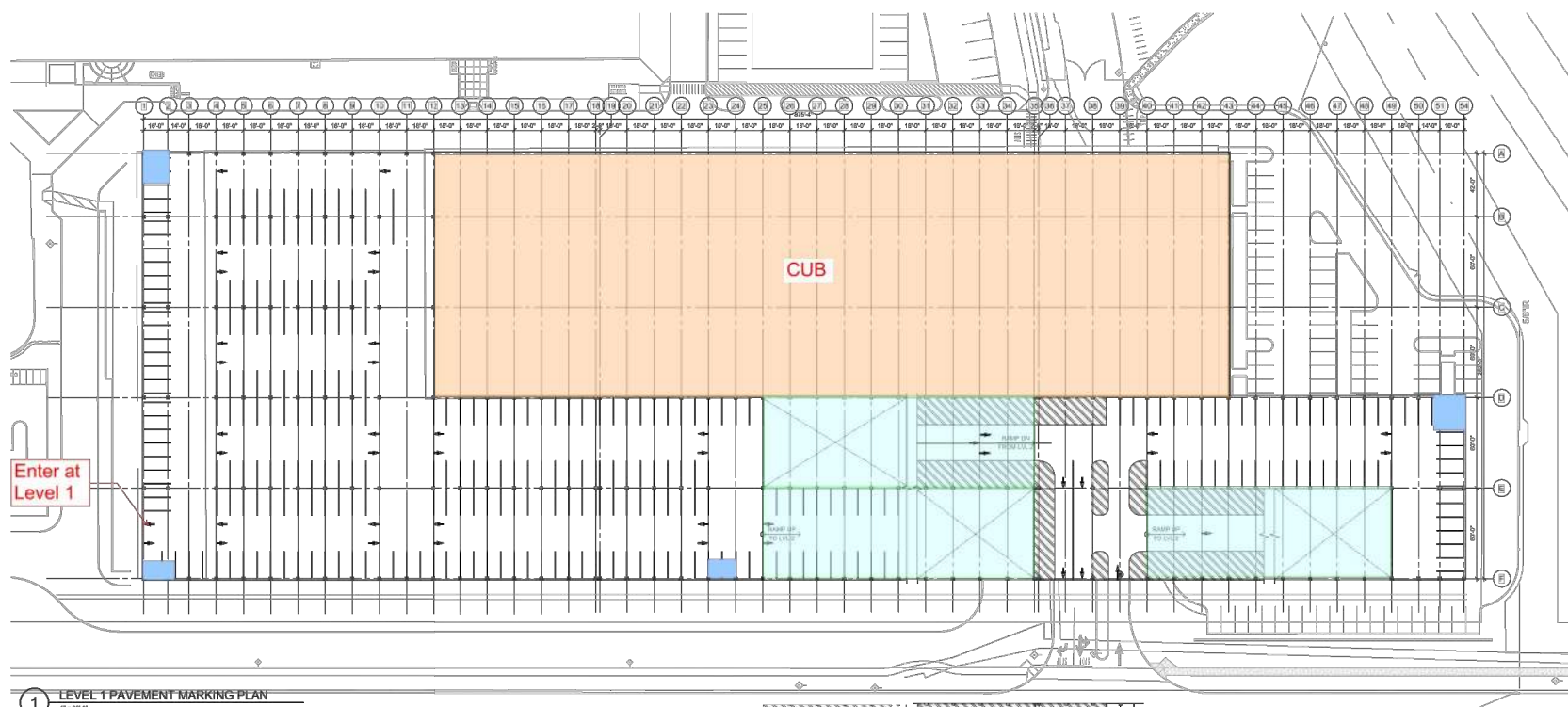
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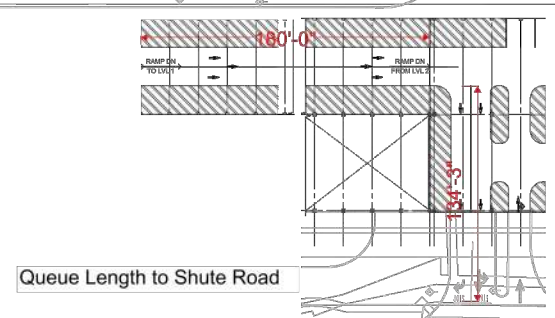
1 SOUTH ELEVATION
1"=30'-0"



2 3D - AXONOMETRIC



1 LEVEL 1 PAVEMENT MARKING PLAN
1"=30'-0"



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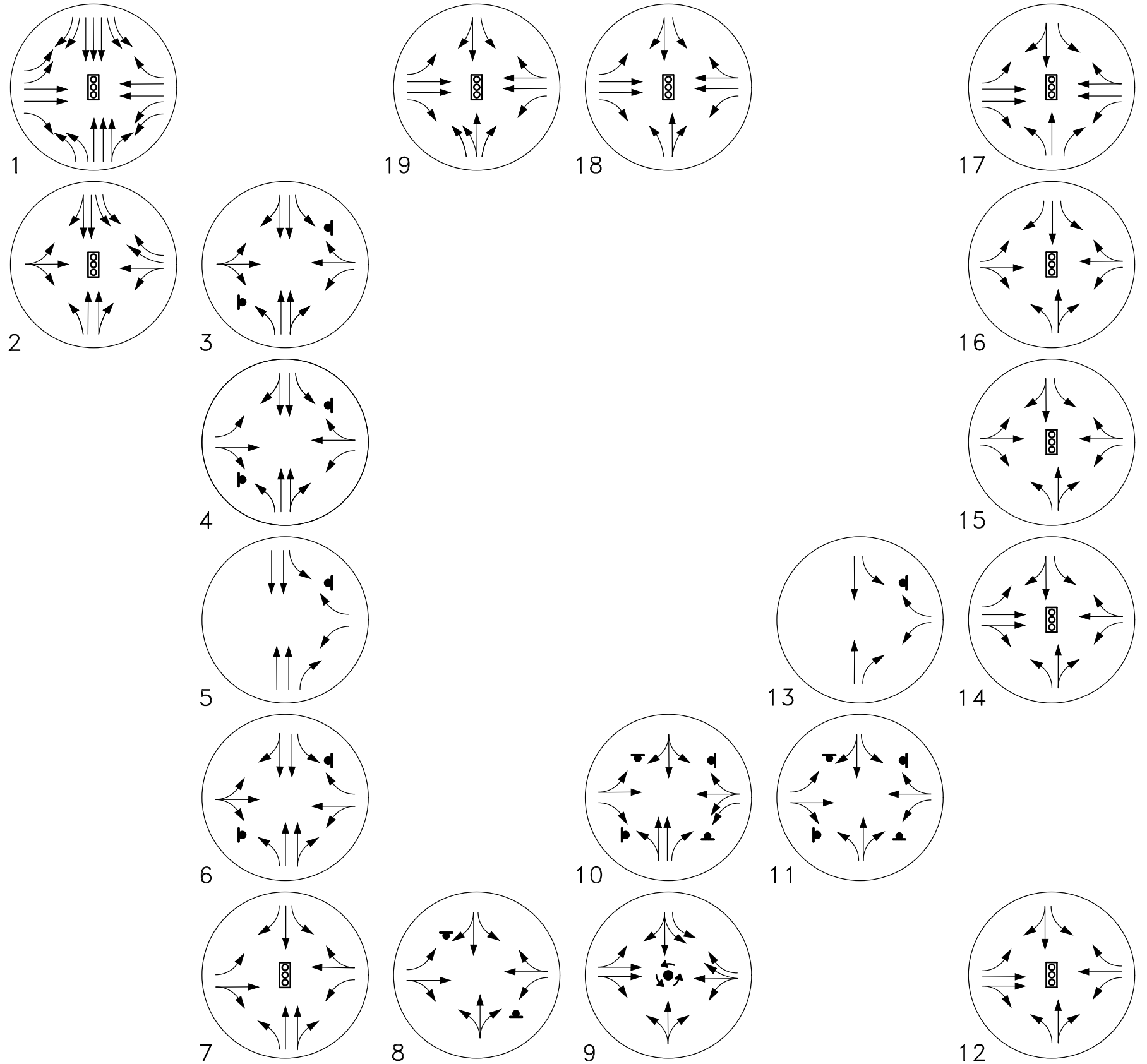
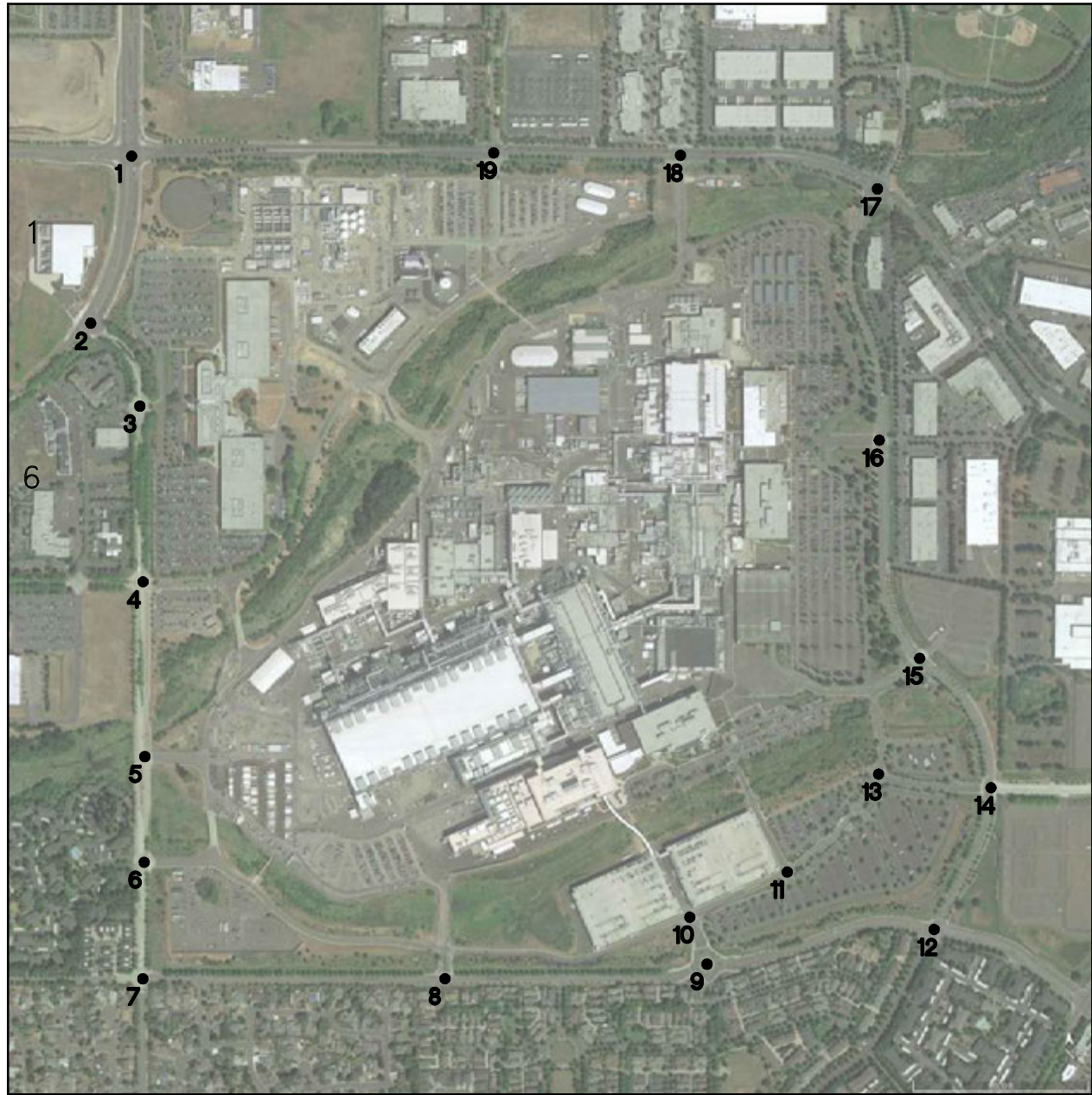
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PROPOSED SITE PLAN

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FIGURE
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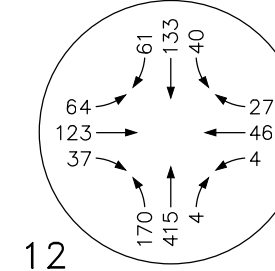
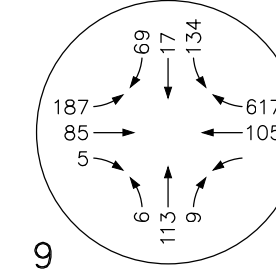
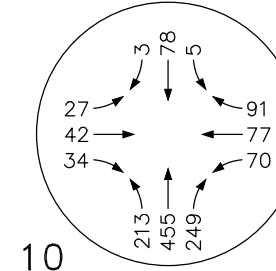
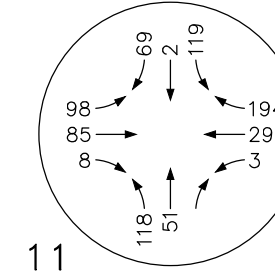
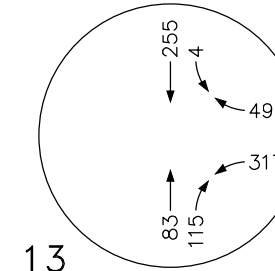
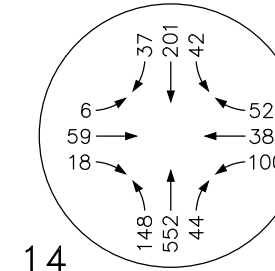
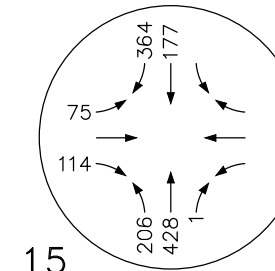
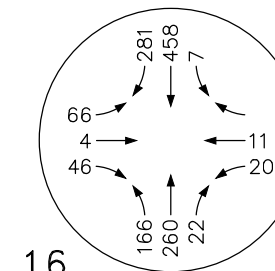
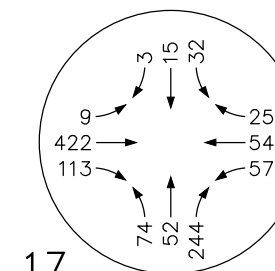
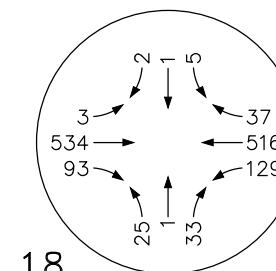
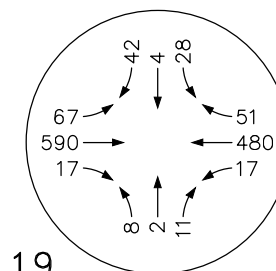
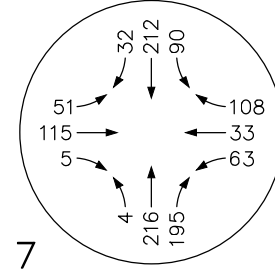
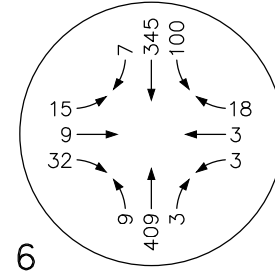
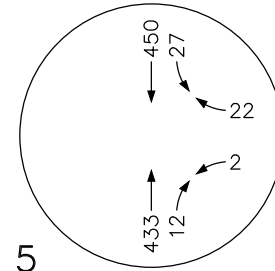
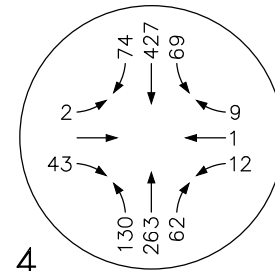
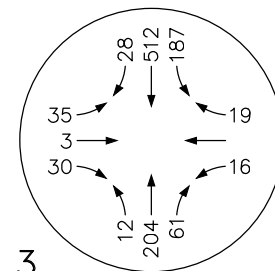
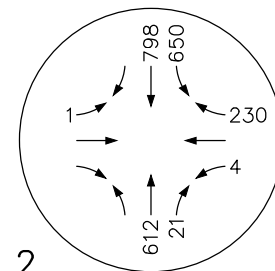
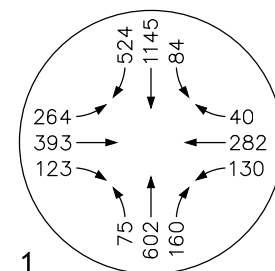
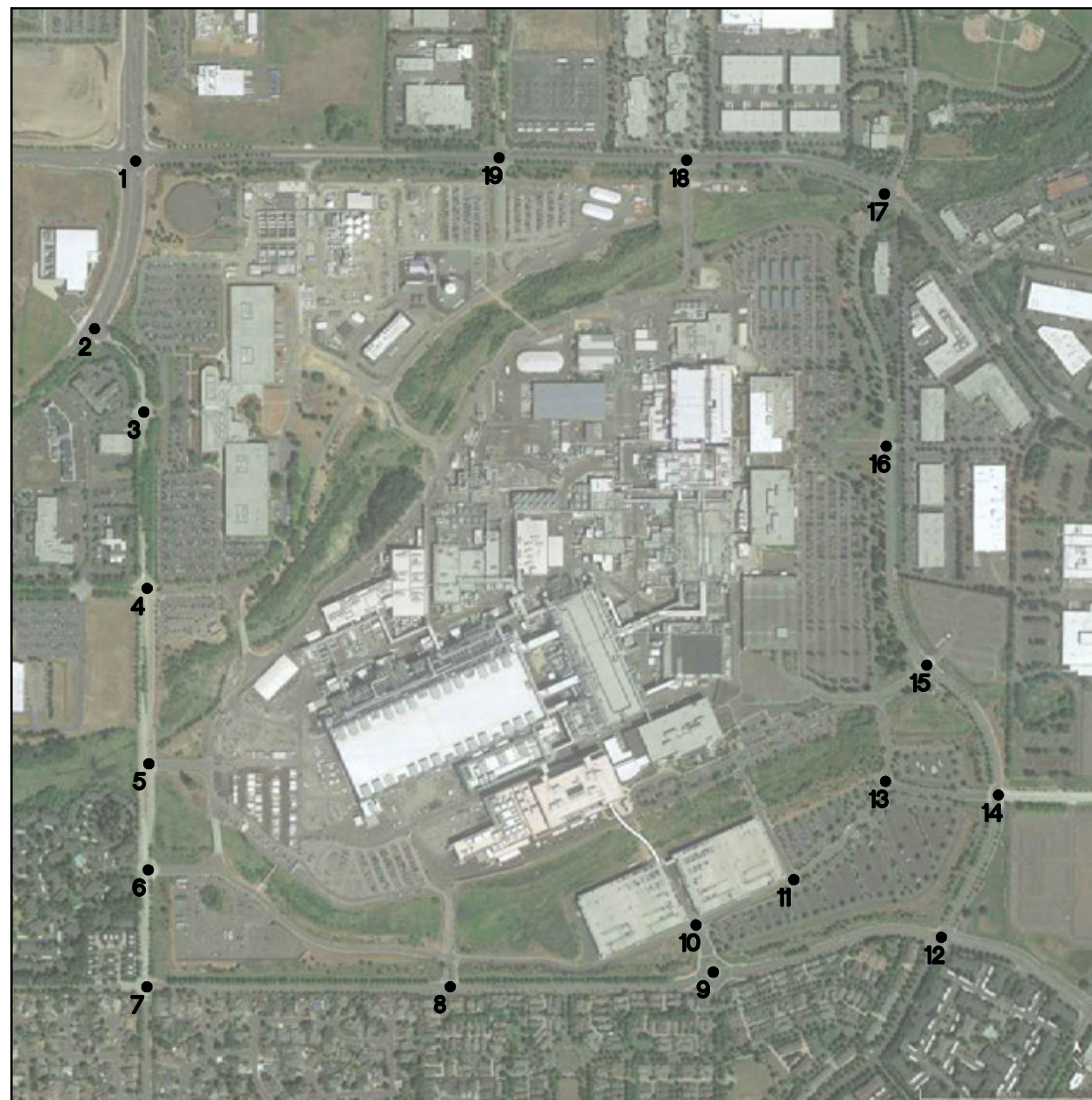
EXISTING TRAFFIC
CONTROL DEVICES +
LANE CONFIGURATIONS

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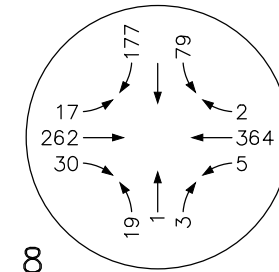
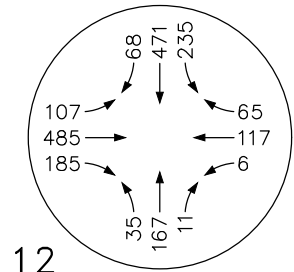
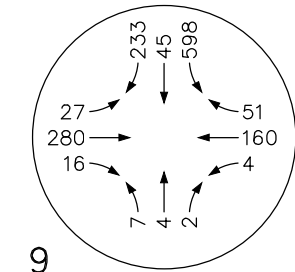
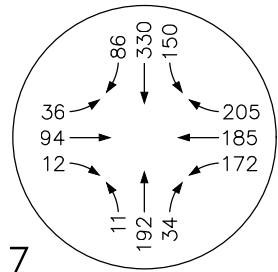
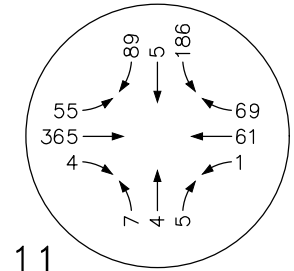
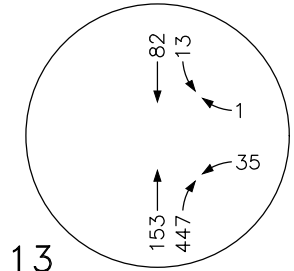
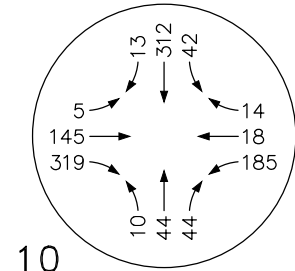
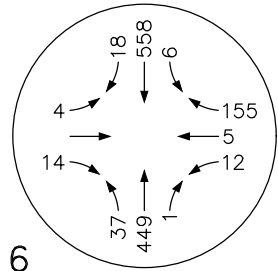
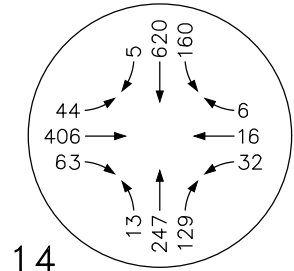
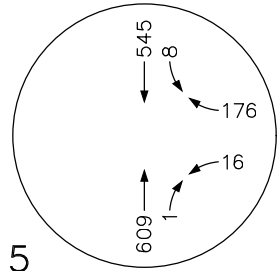
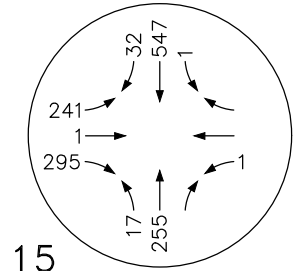
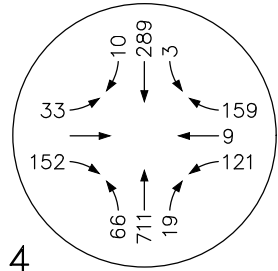
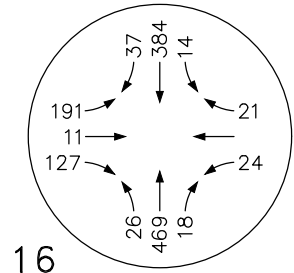
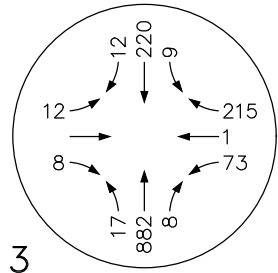
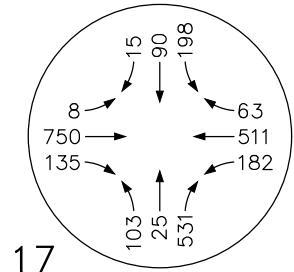
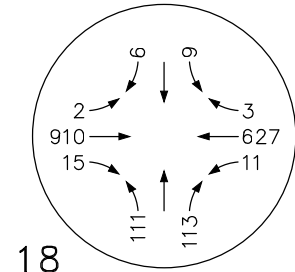
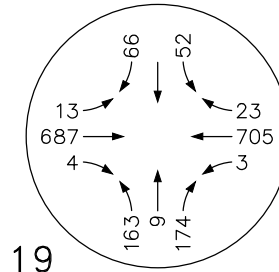
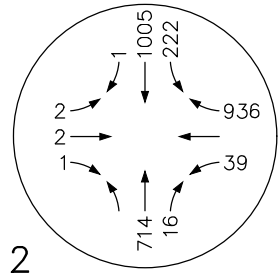
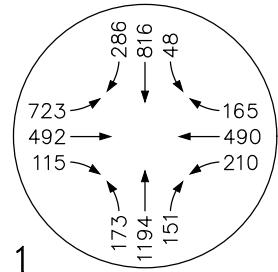
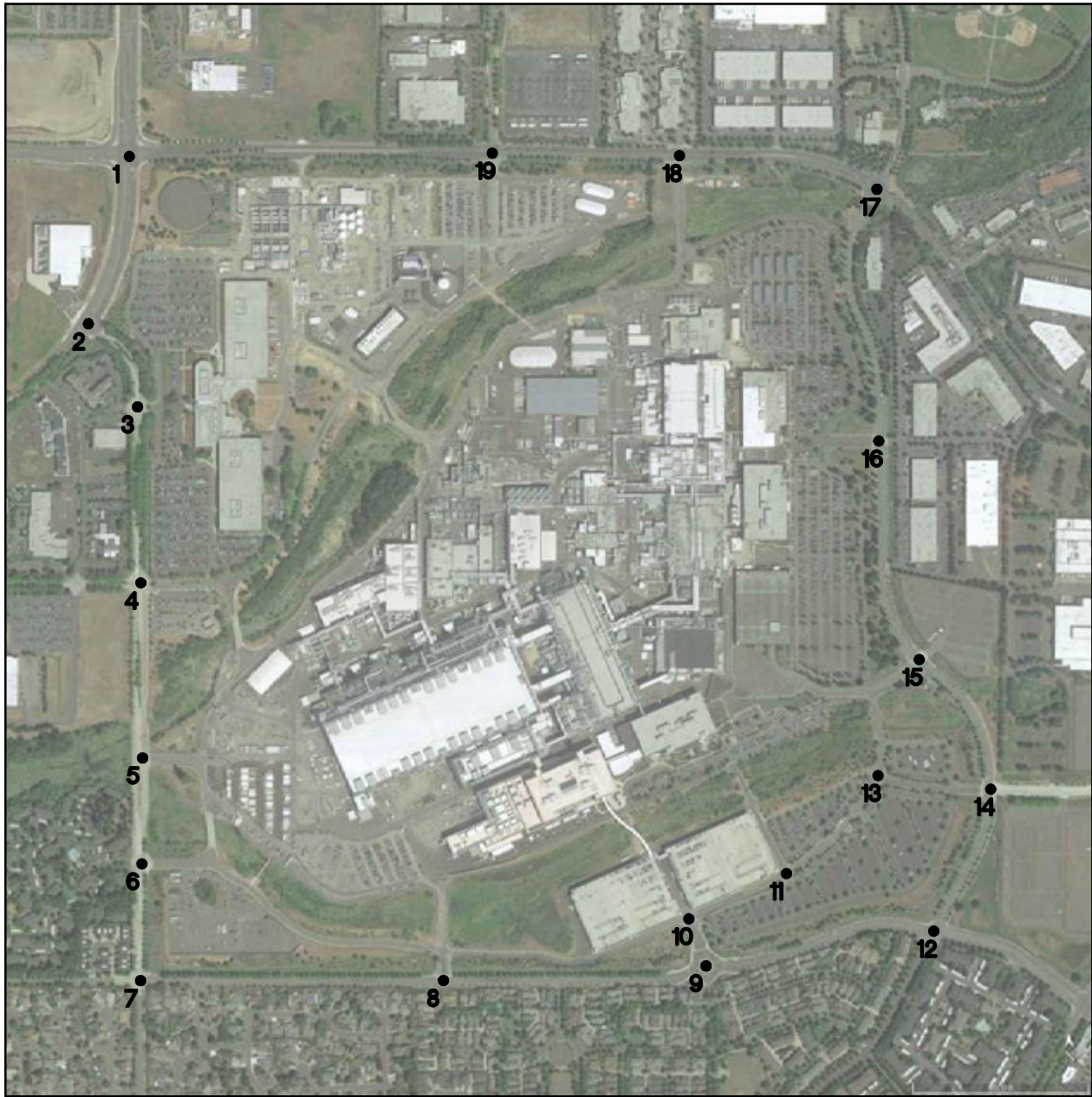
FIGURE

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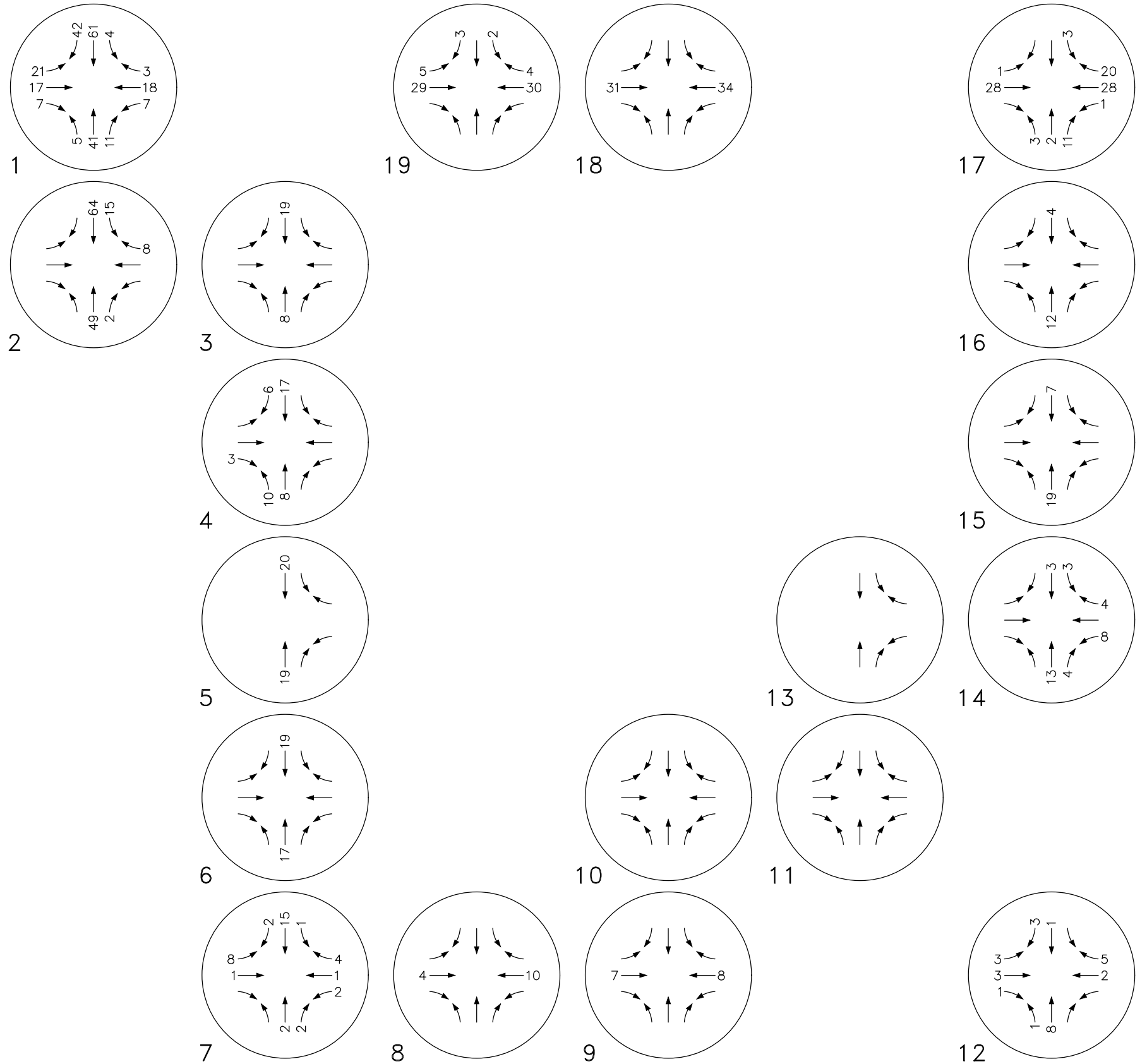
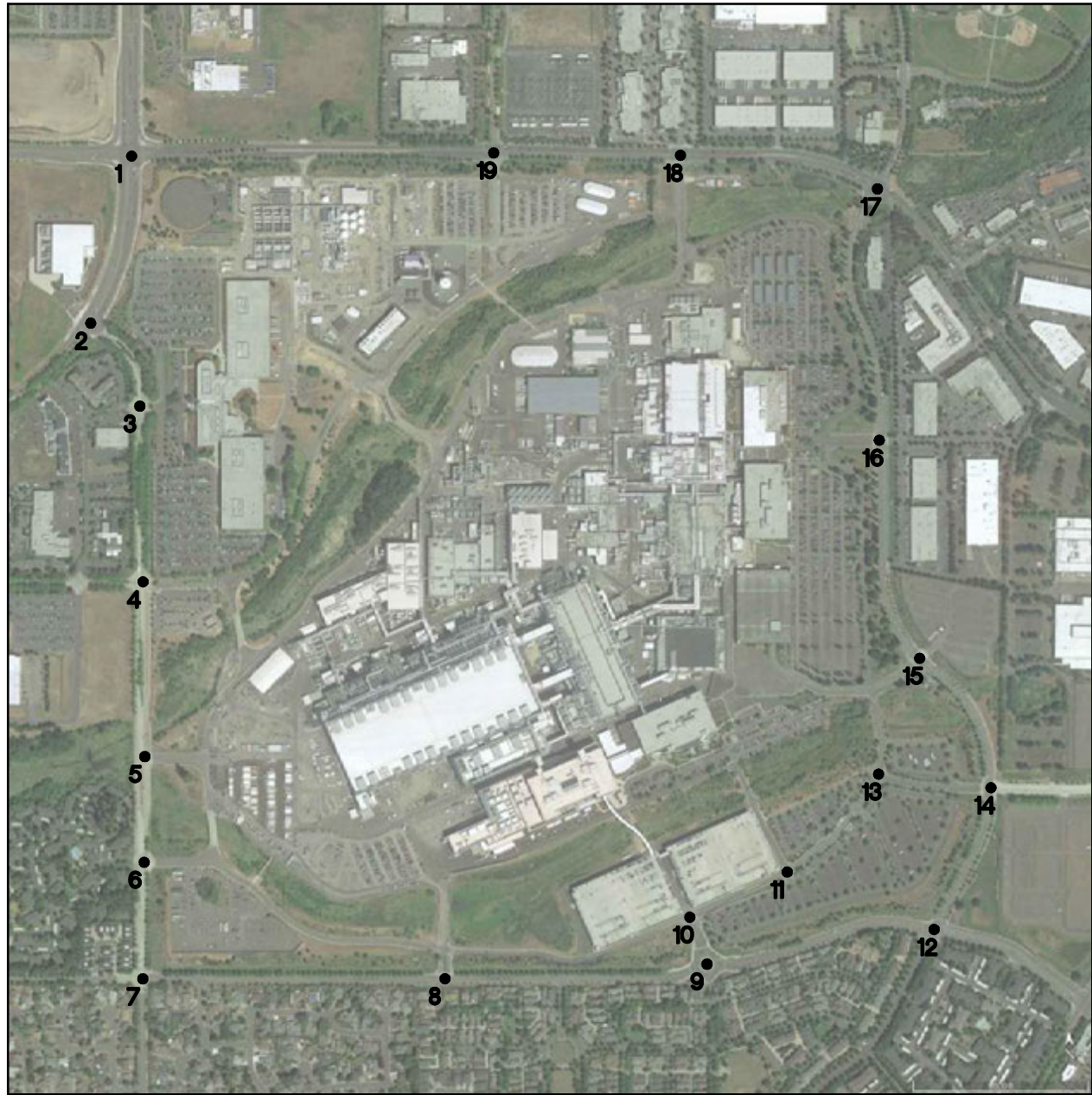
2018 EXISTING TRAFFIC
VOLUMES - PM PEAK HOUR

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FIGURE

4B

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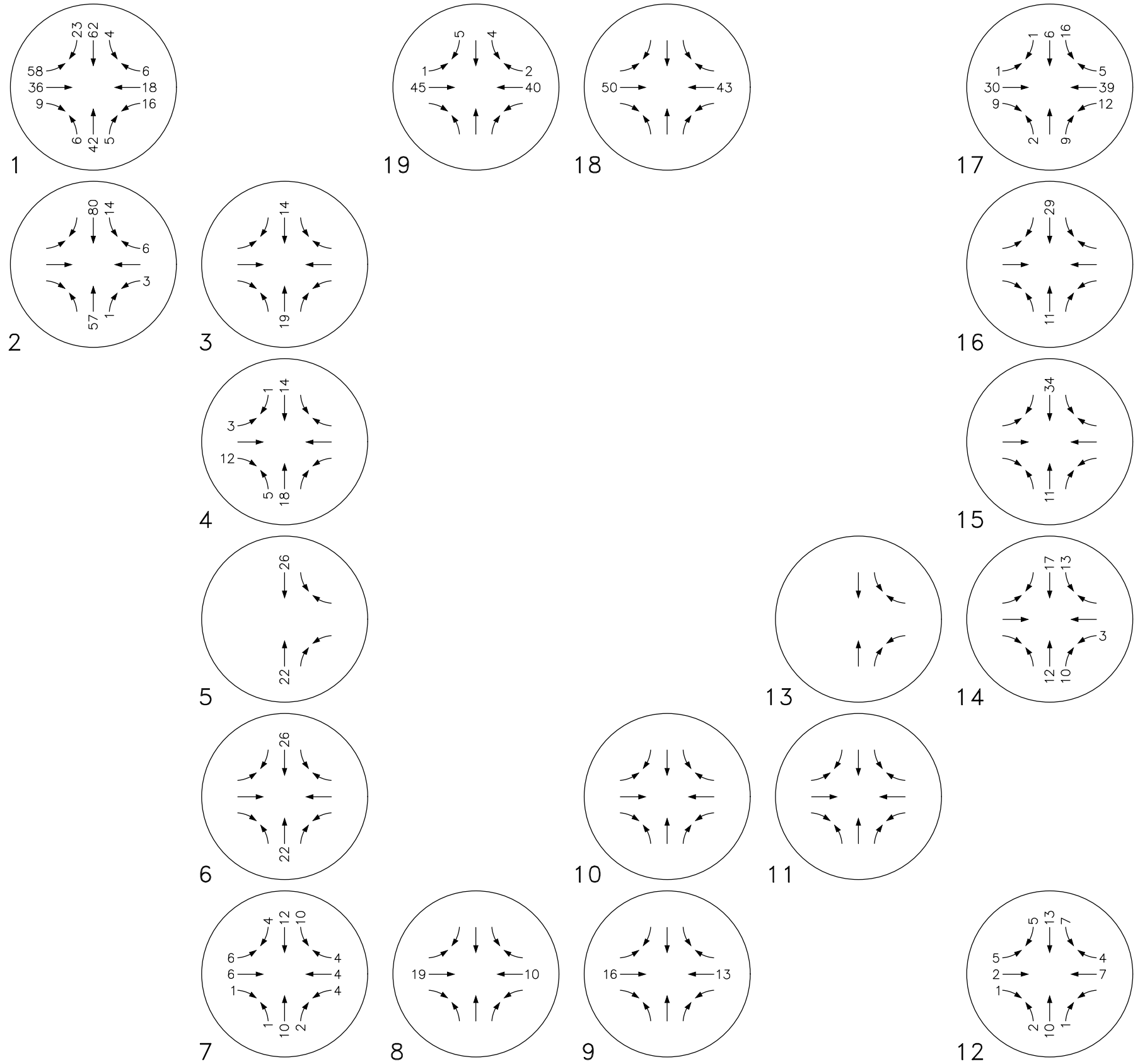
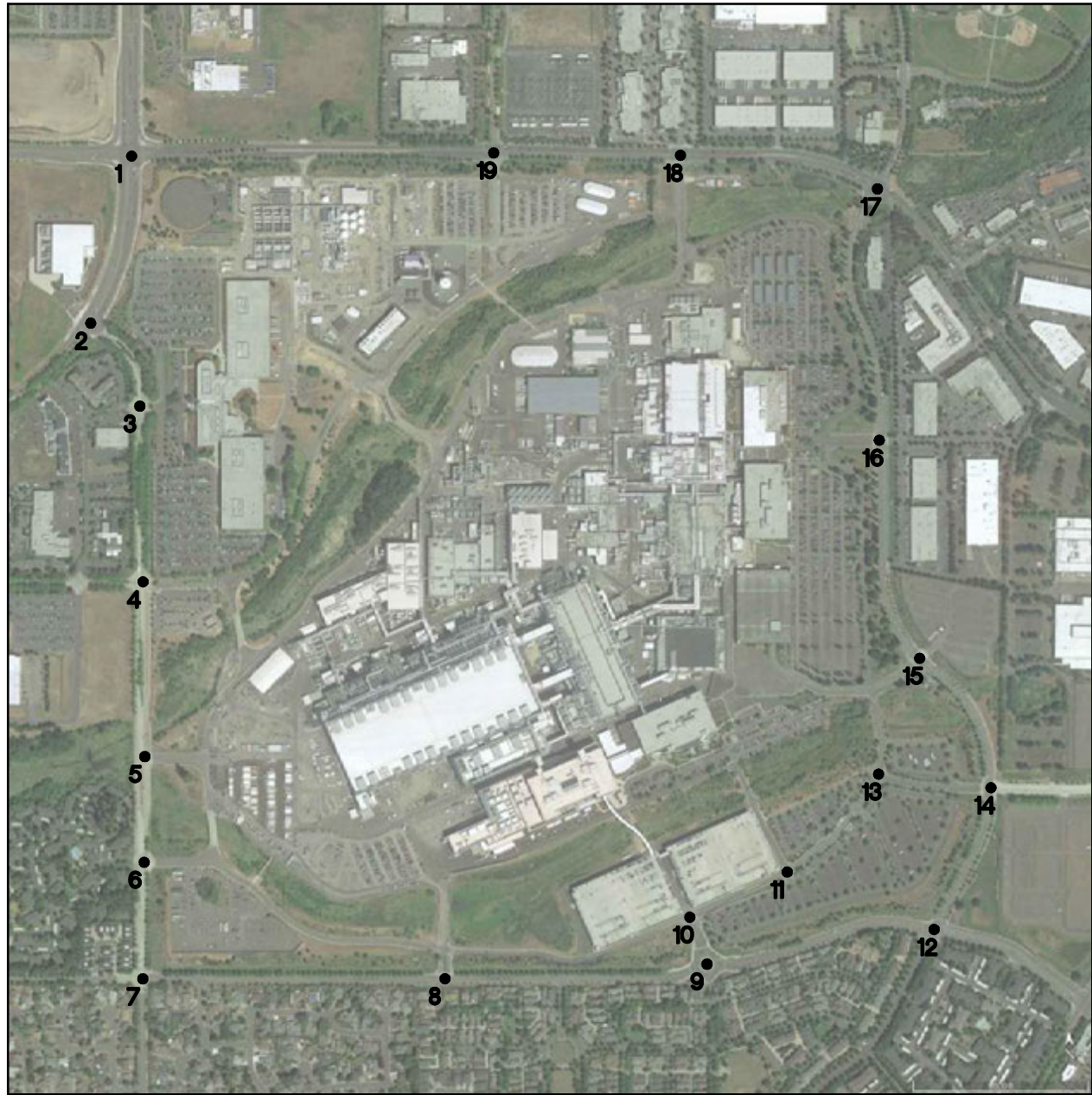
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2180548.00

BACKGROUND TRAFFIC
GROWTH - AM PEAK HOUR
INTEL RONLER ACRES - LARK
HILLSBORO, OREGON

FIGURE
5A

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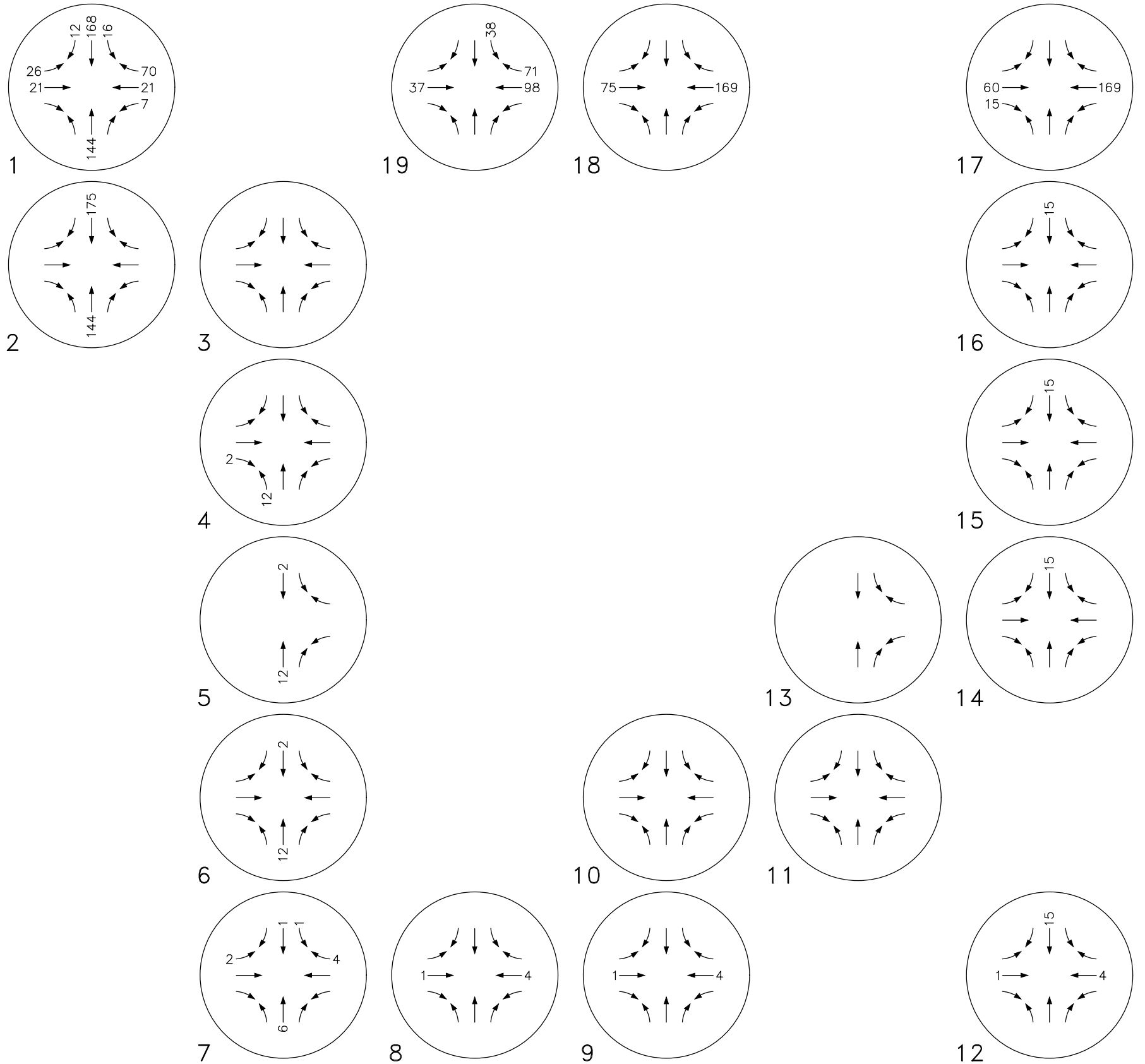
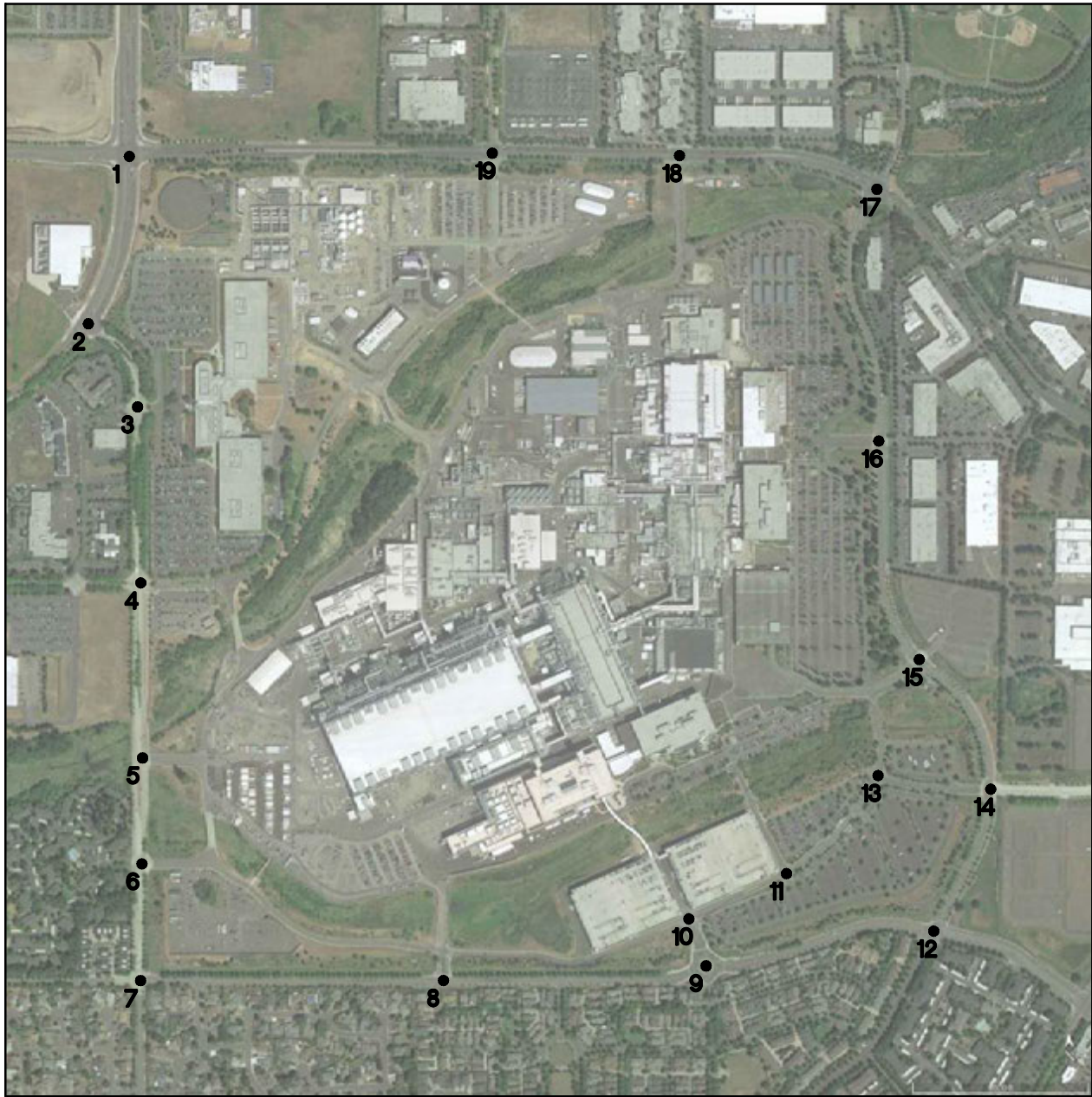
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BACKGROUND TRAFFIC
GROWTH - PM PEAK HOUR
INTEL RONLER ACRES - LARK
HILLSBORO, OREGON

FIGURE

5B

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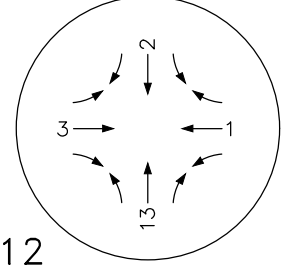
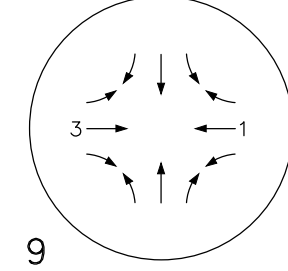
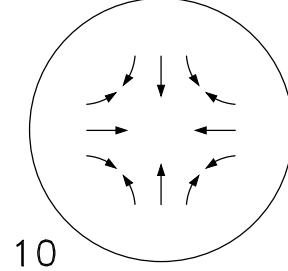
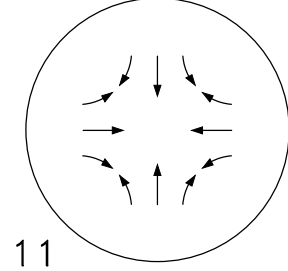
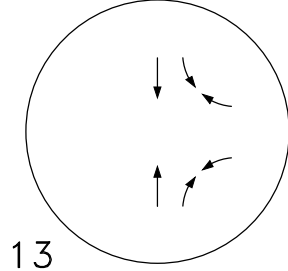
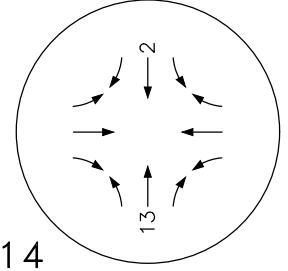
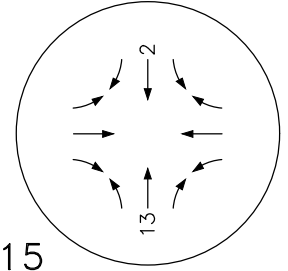
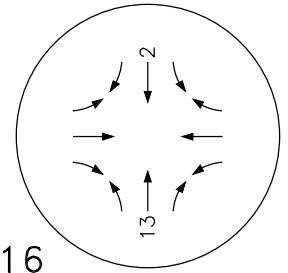
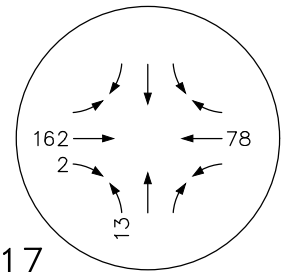
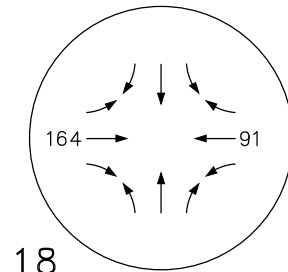
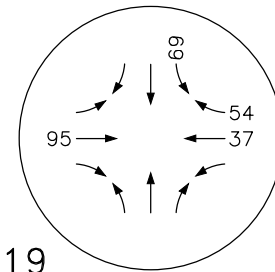
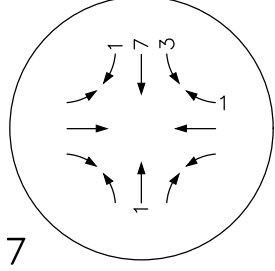
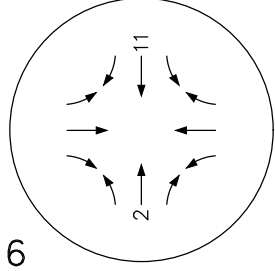
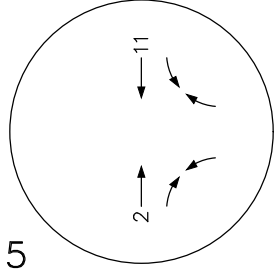
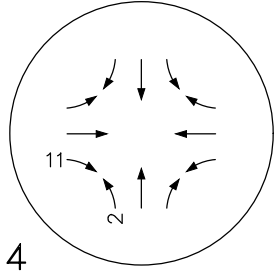
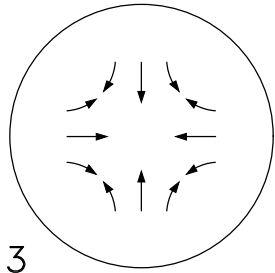
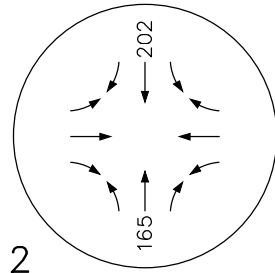
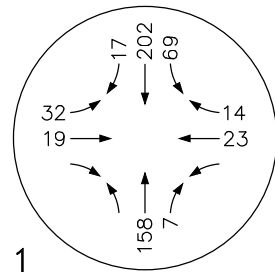
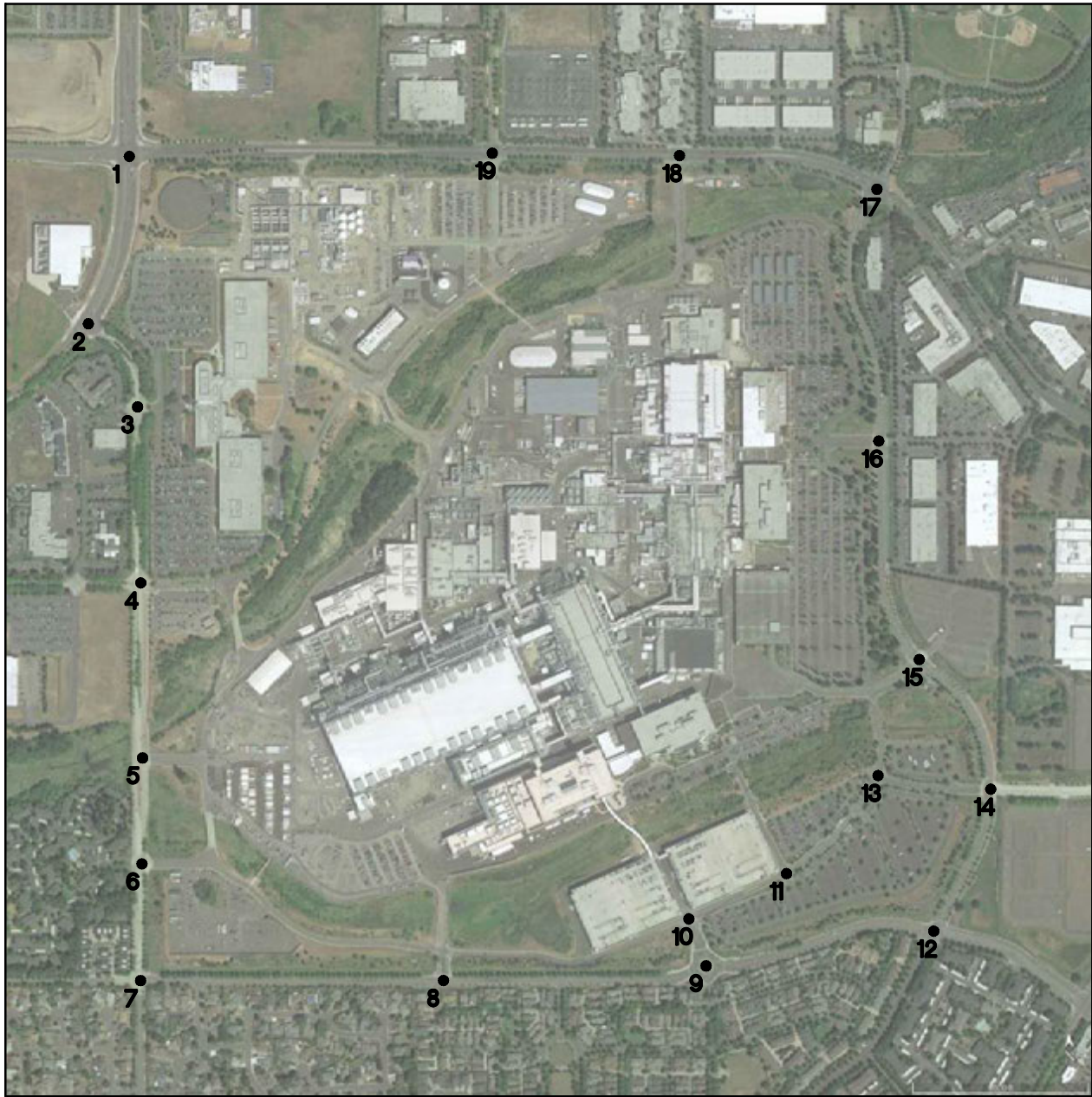
IN-PROCESS TRIPS -
AM PEAK HOUR

INTEL RONLER ACRES - LARK
HILLSBORO, OREGON

FIGURE

6A

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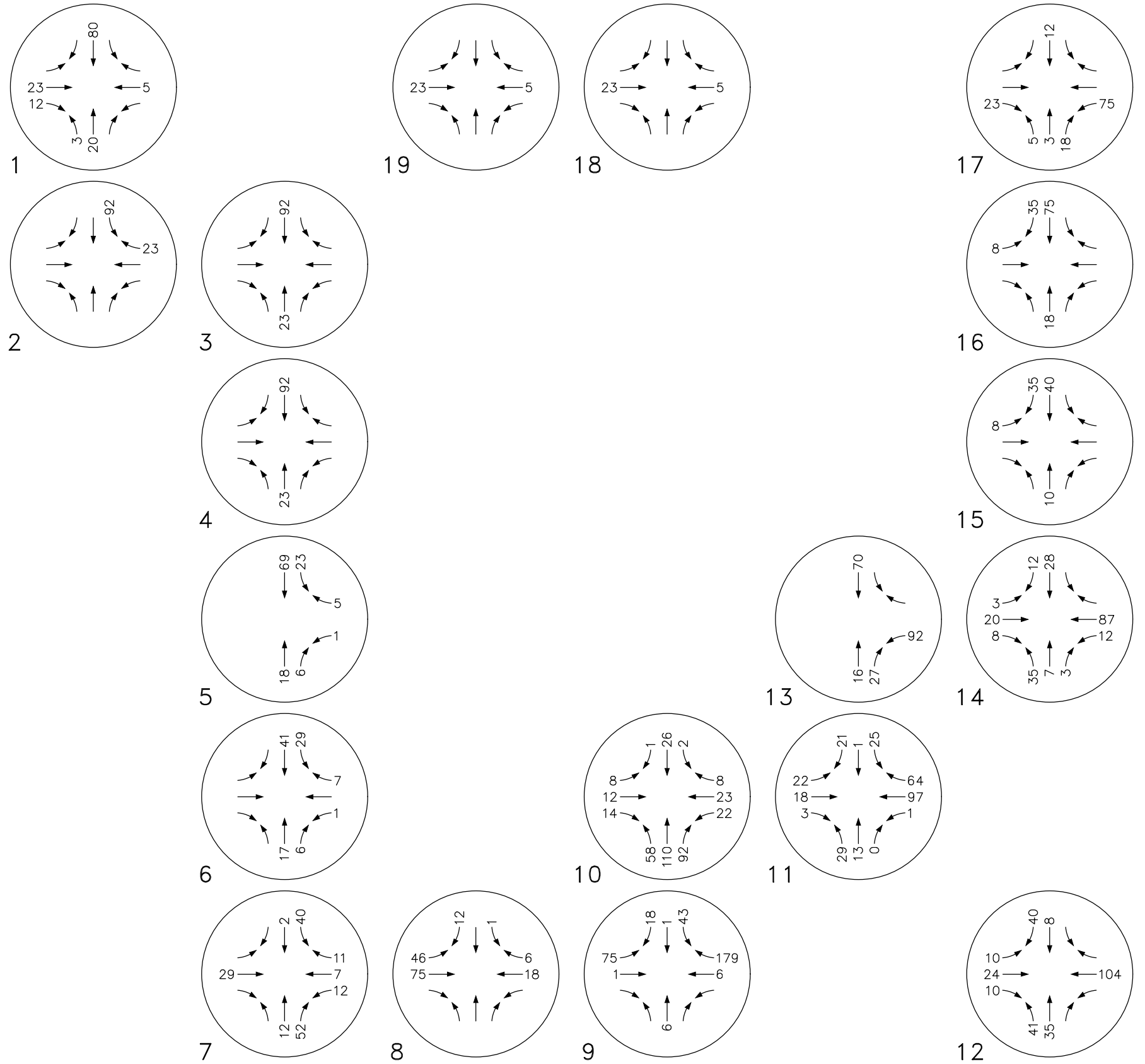
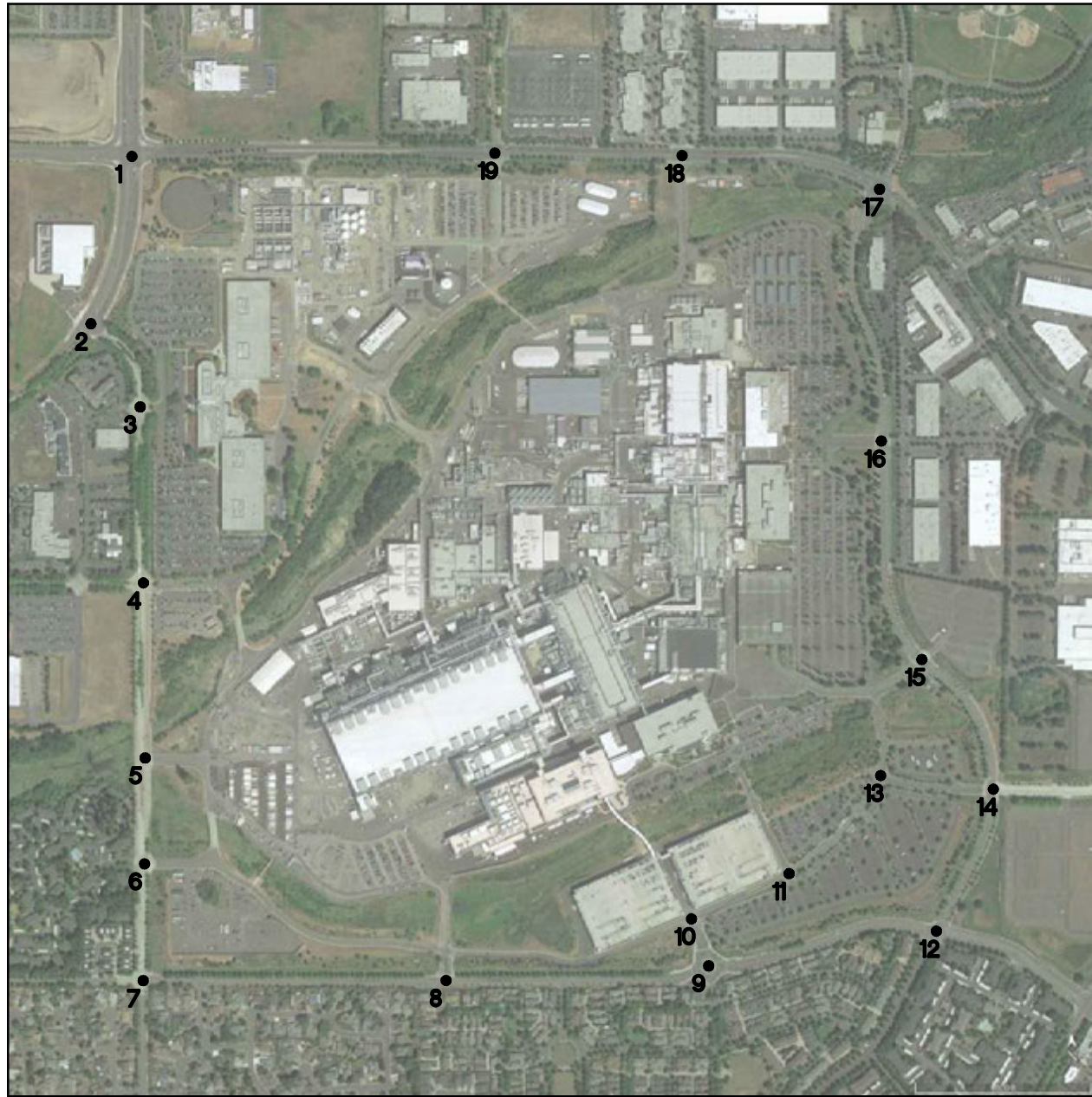
IN-PROCESS TRIPS -
PM PEAK HOUR

INTEL RONLER ACRES - LARK
HILLSBORO, OREGON

FIGURE

6B

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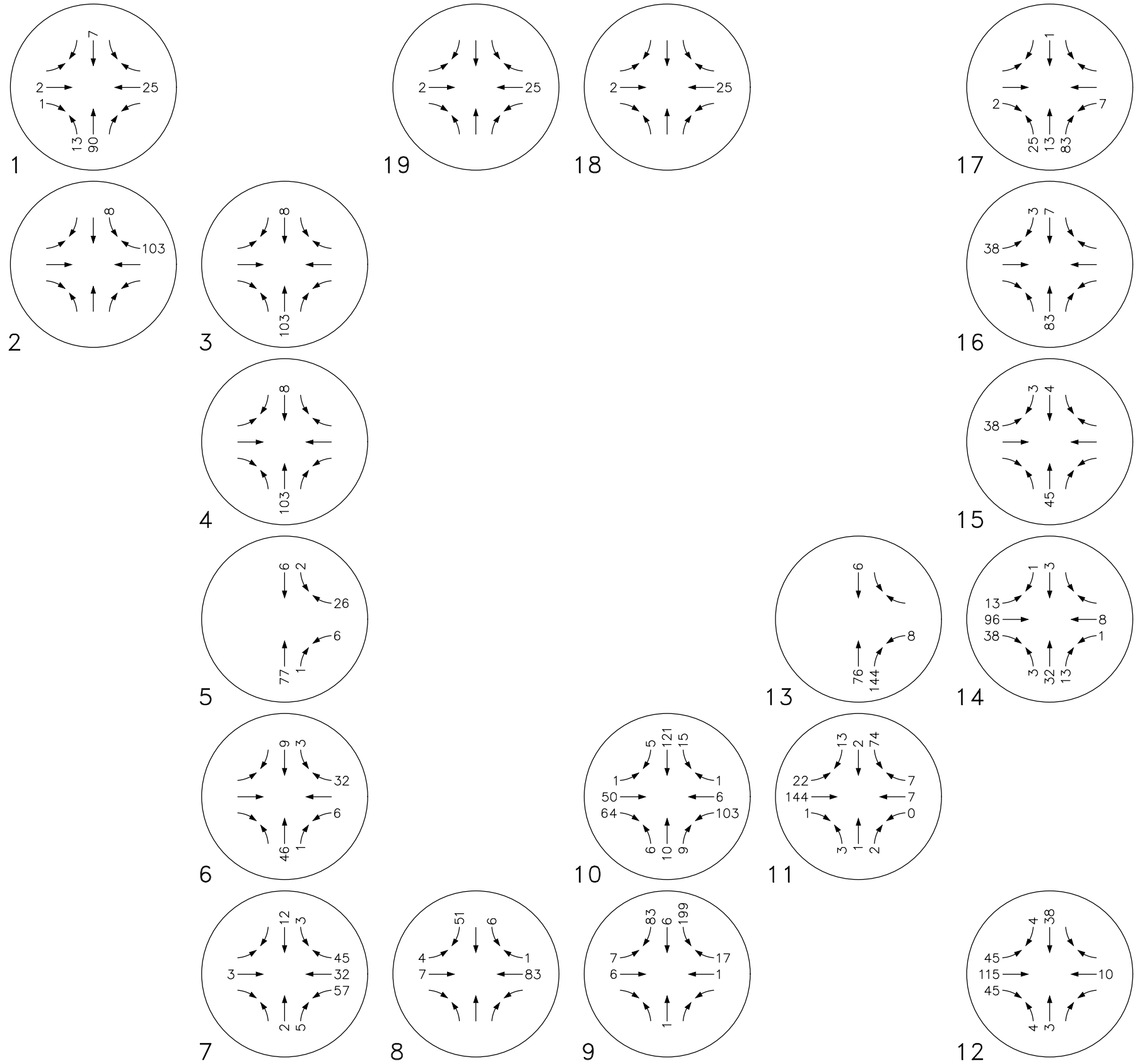
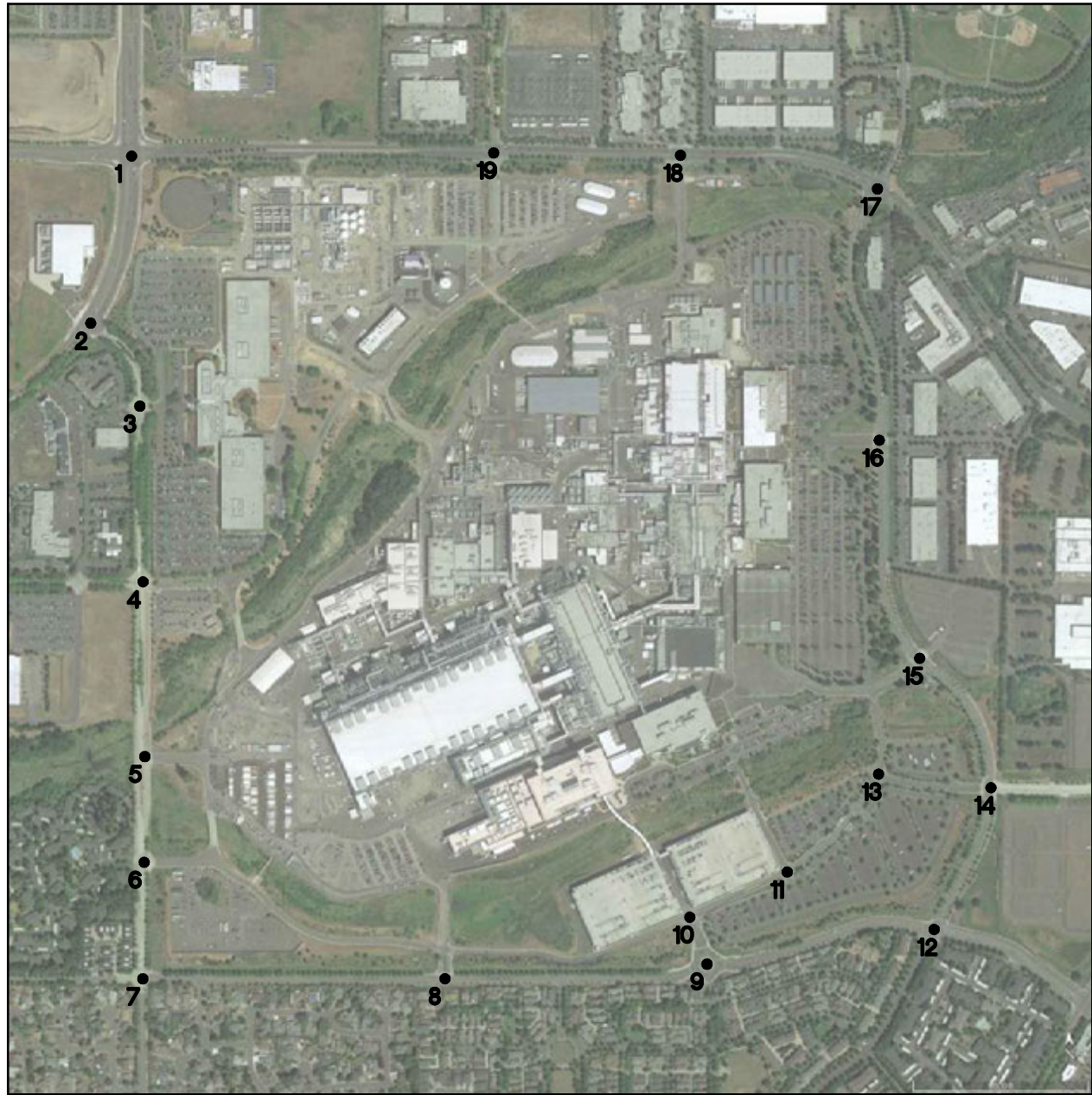
APPROVED TRIPS FOR
2,310 EMPLOYEES -
AM PEAK HOUR

INTEL RONLER ACRES - LARK
HILLSBORO, OREGON

FIGURE

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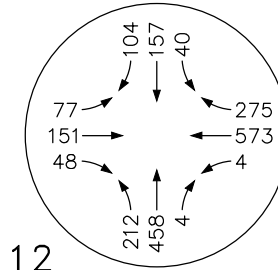
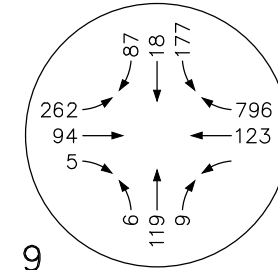
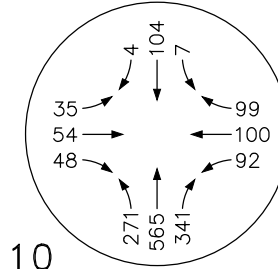
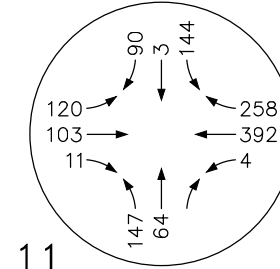
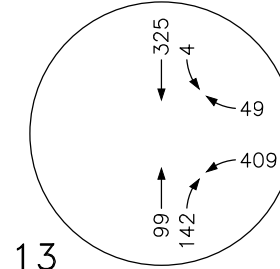
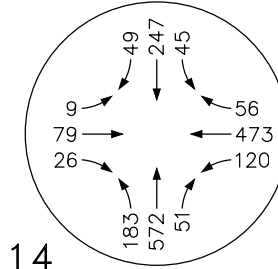
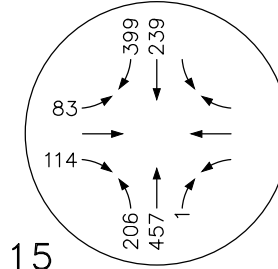
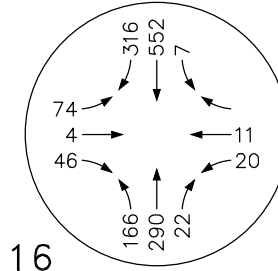
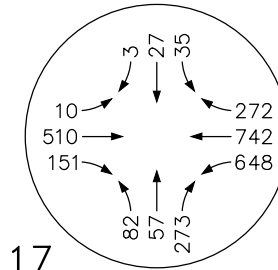
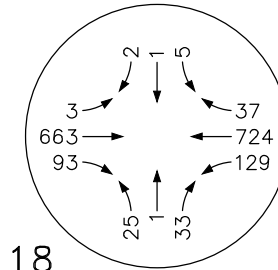
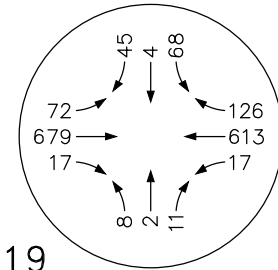
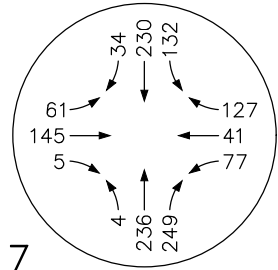
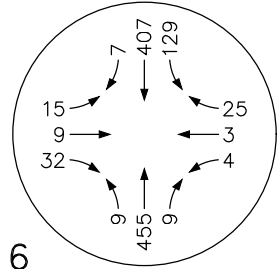
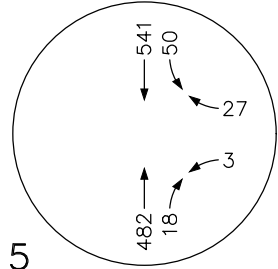
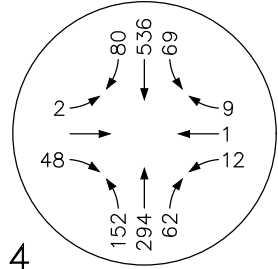
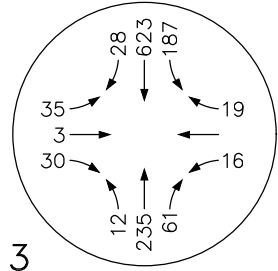
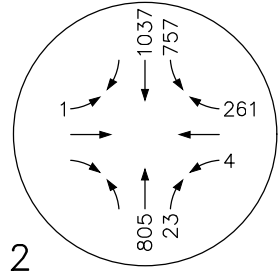
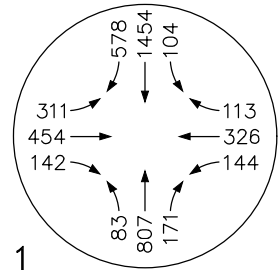
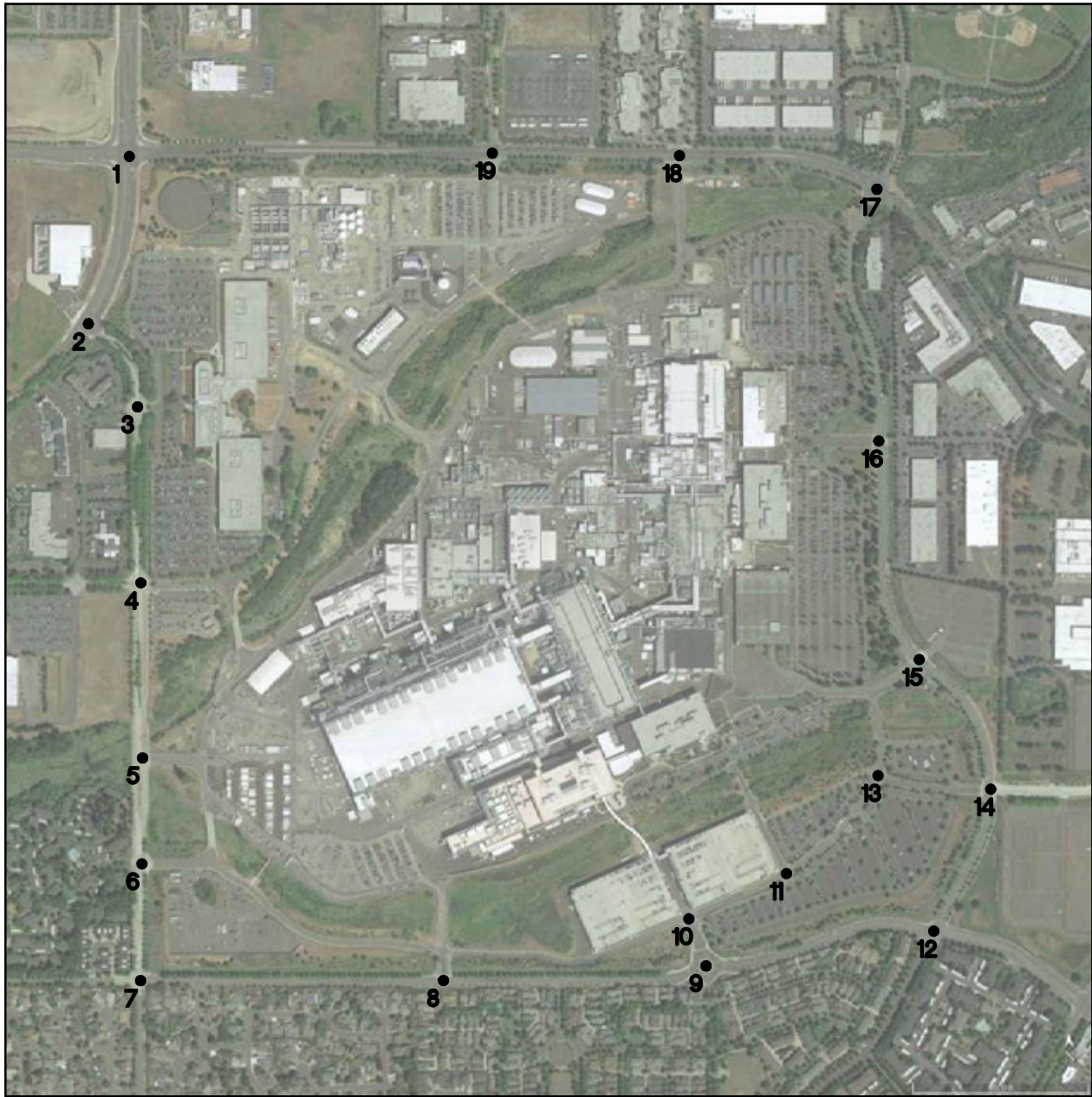
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APPROVED TRIPS FOR
2,310 EMPLOYEES -
PM PEAK HOUR

INTEL RONLER ACRES - LARK
HILLSBORO, OREGON

FIGURE
7B

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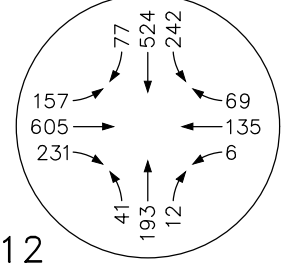
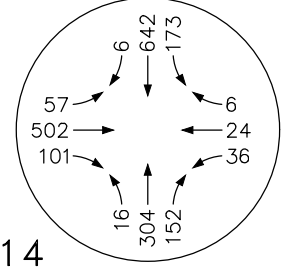
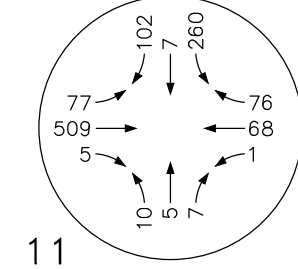
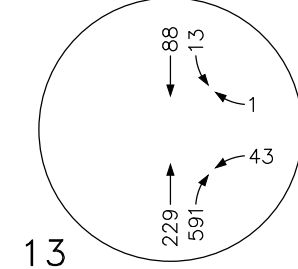
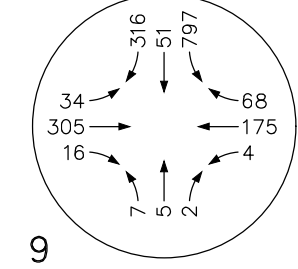
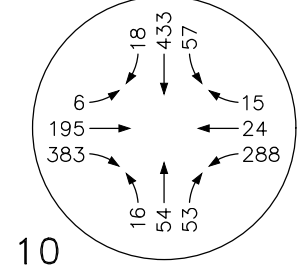
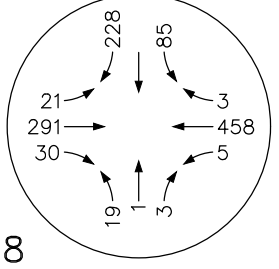
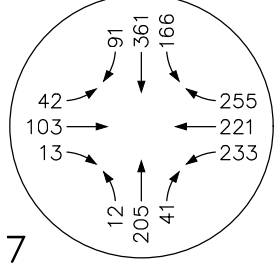
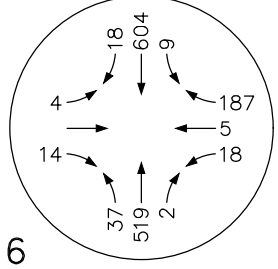
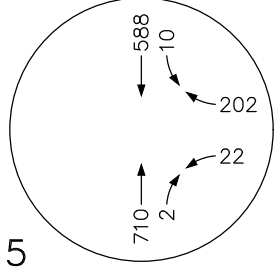
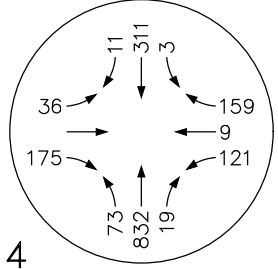
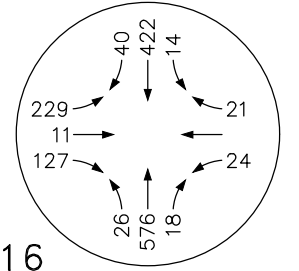
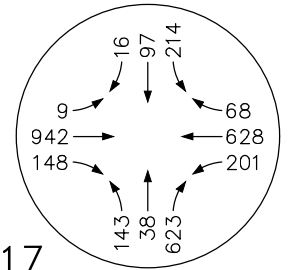
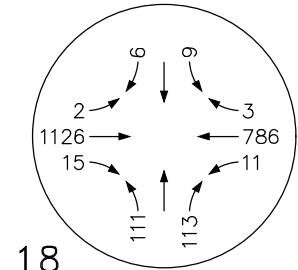
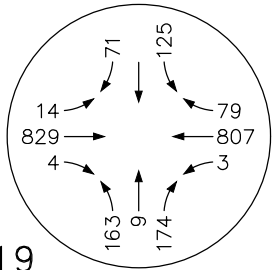
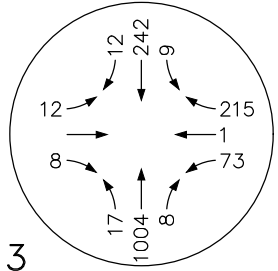
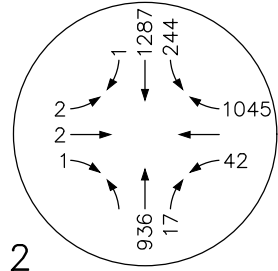
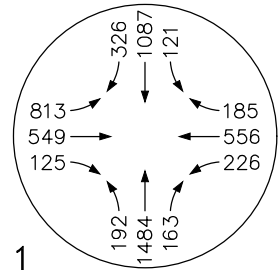
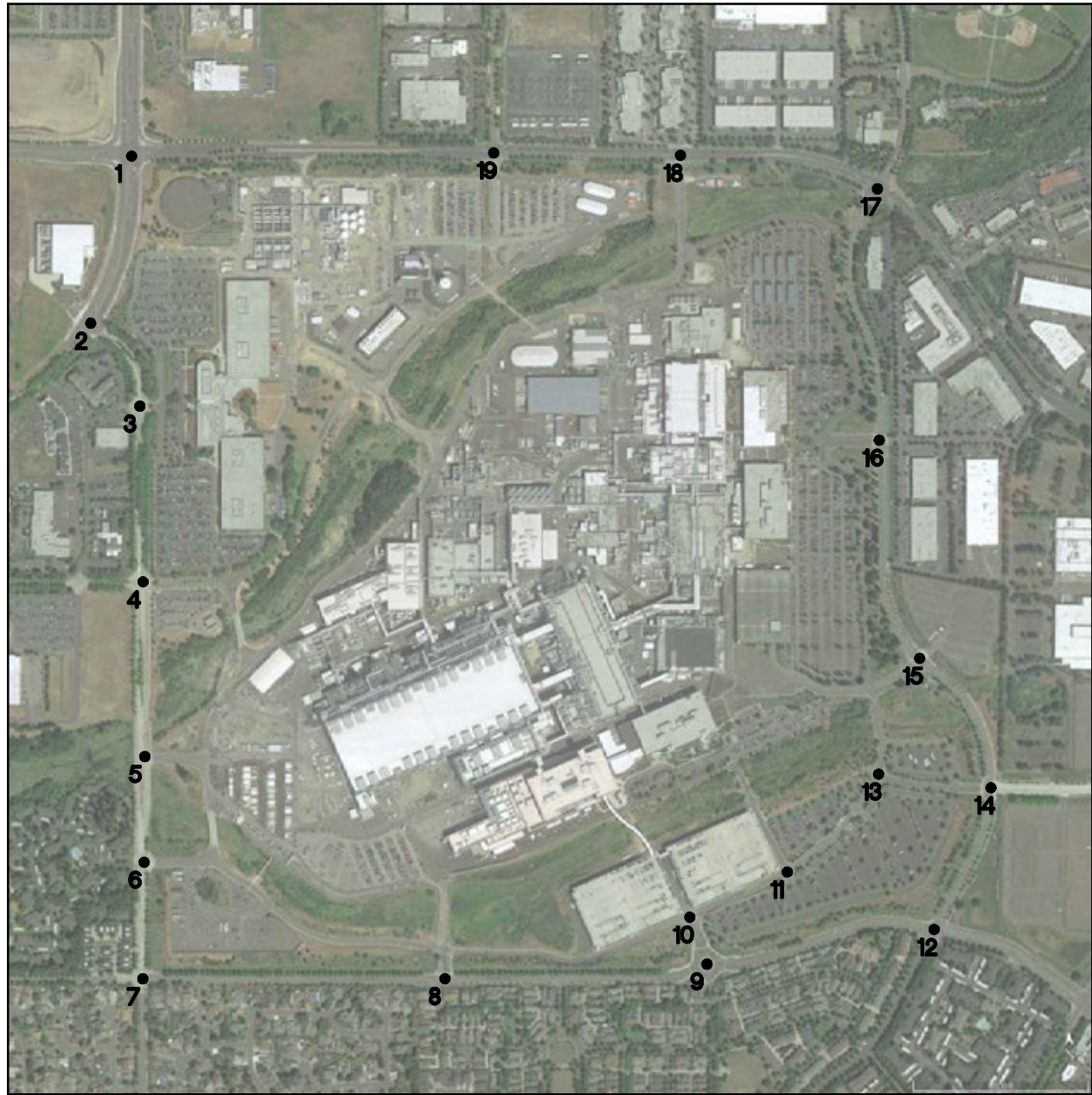
2022 APPROVED TRAFFIC
VOLUMES - AM PEAK HOUR

INTEL RONLER ACRES - LARK
HILLSBORO, OREGON

FIGURE

8A

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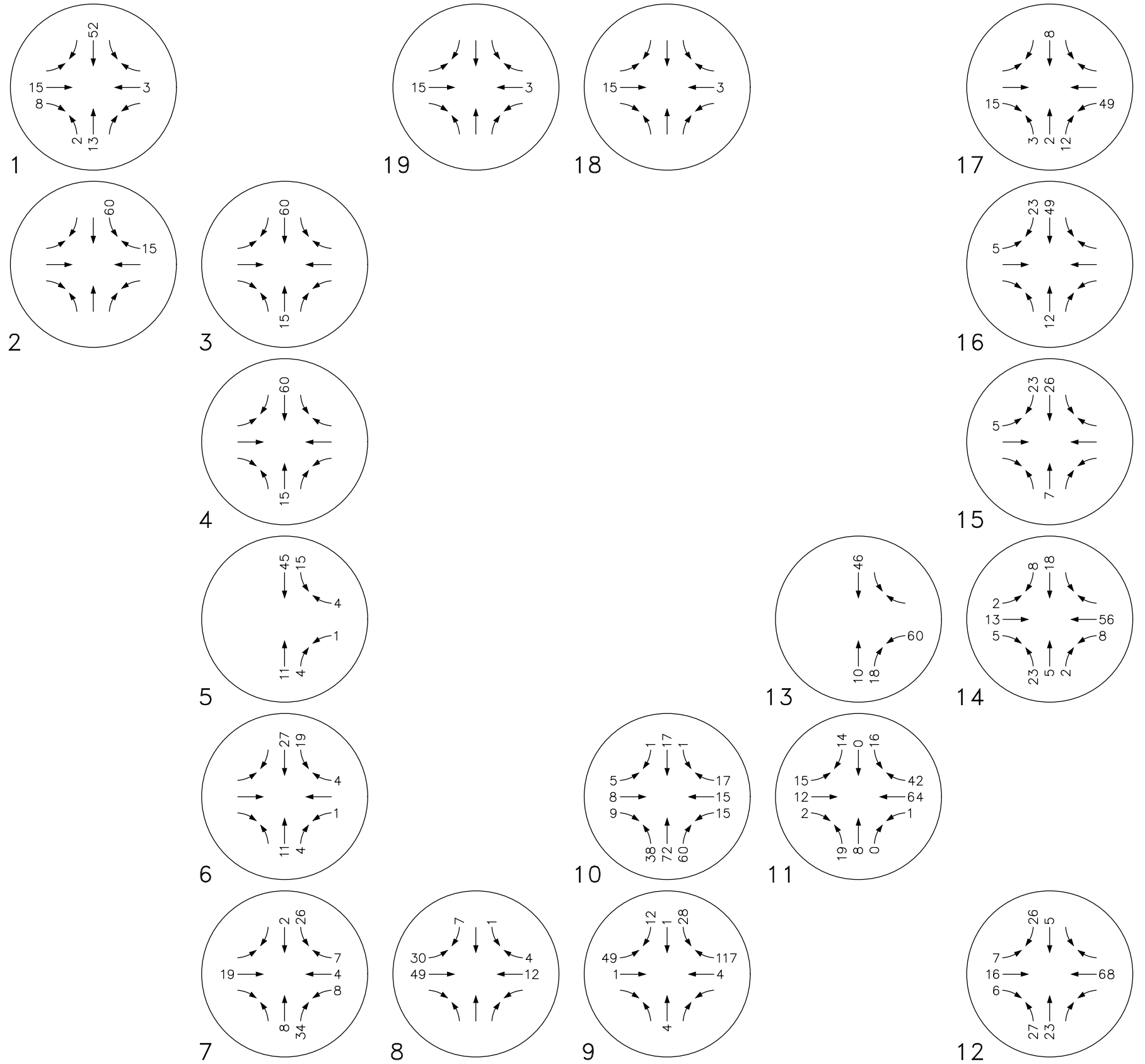
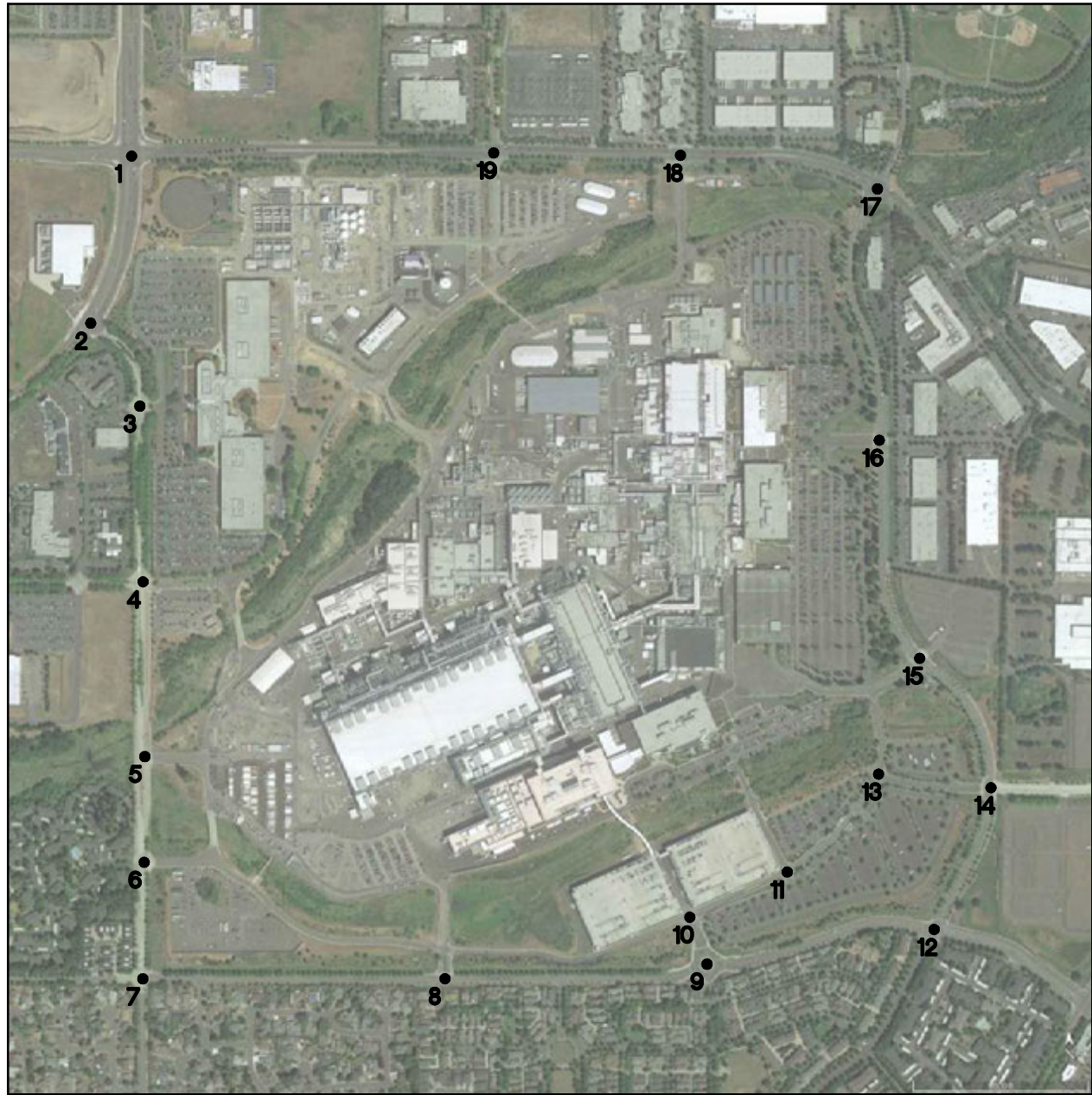
2022 APPROVED TRAFFIC
VOLUMES - PM PEAK HOUR

INTEL RONLER ACRES - LARK
HILLSBORO, OREGON

FIGURE

8B

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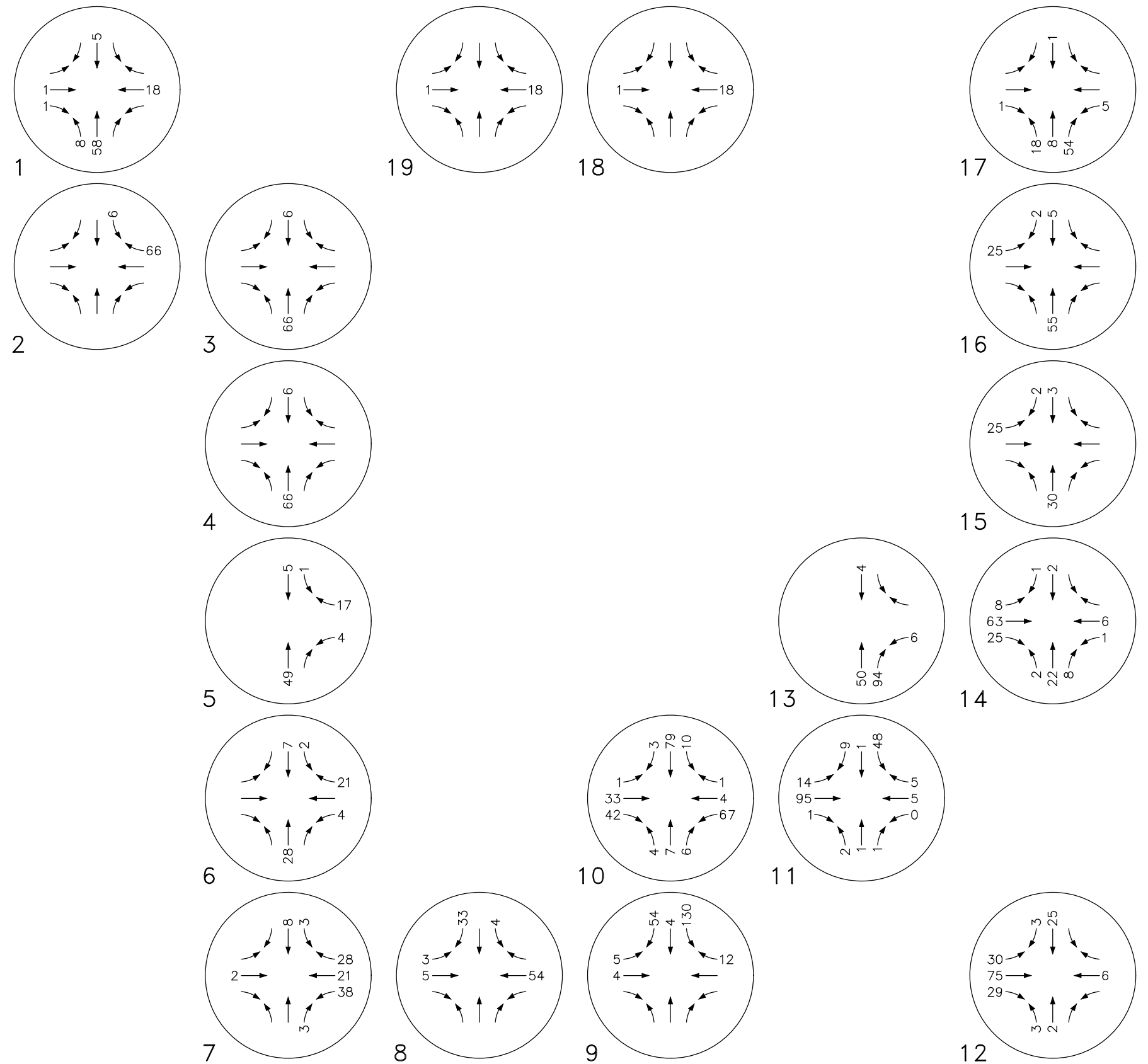
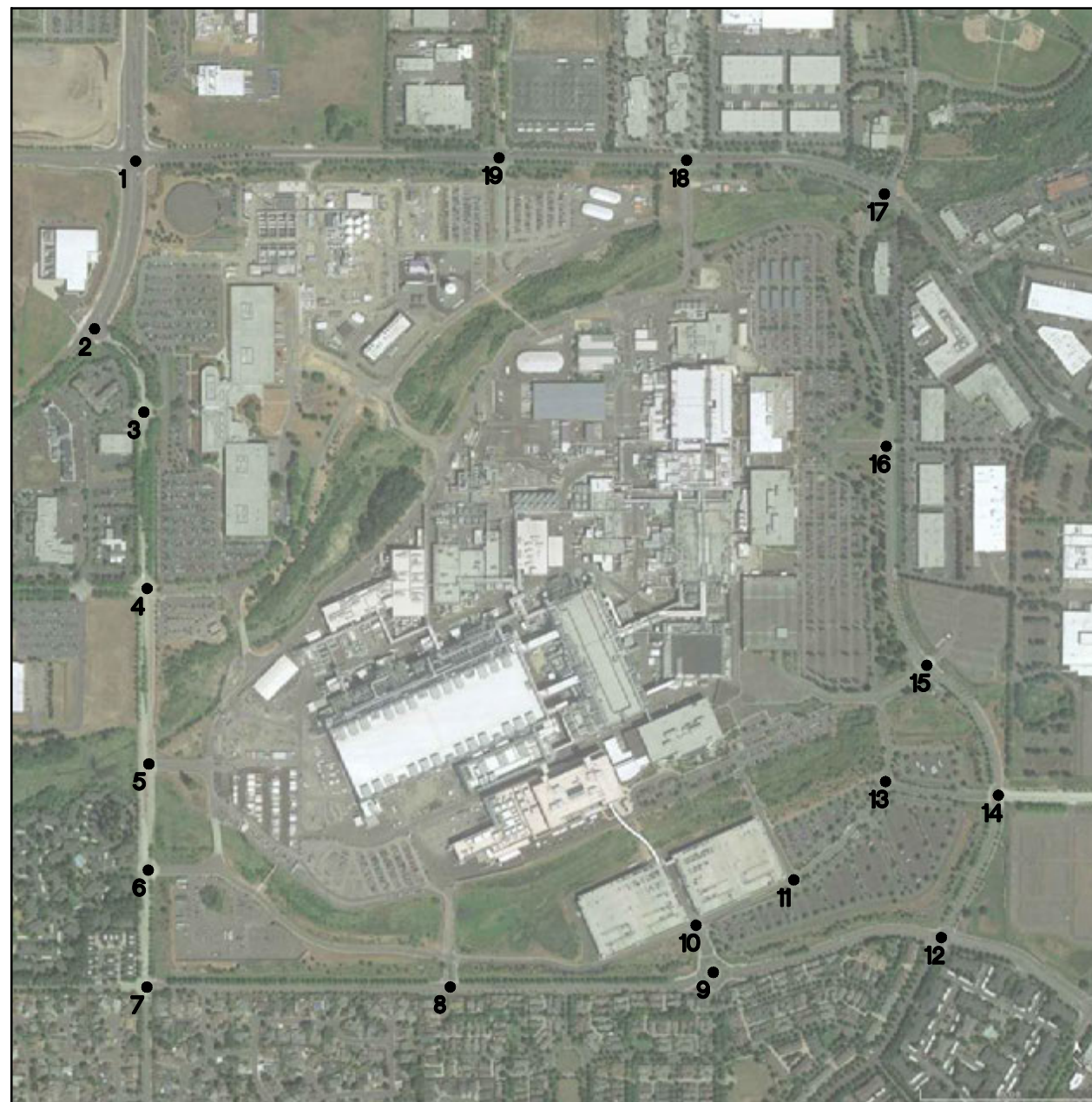
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APPROVED TRIPS FOR
1,510 EMPLOYEES -
AM PEAK HOUR

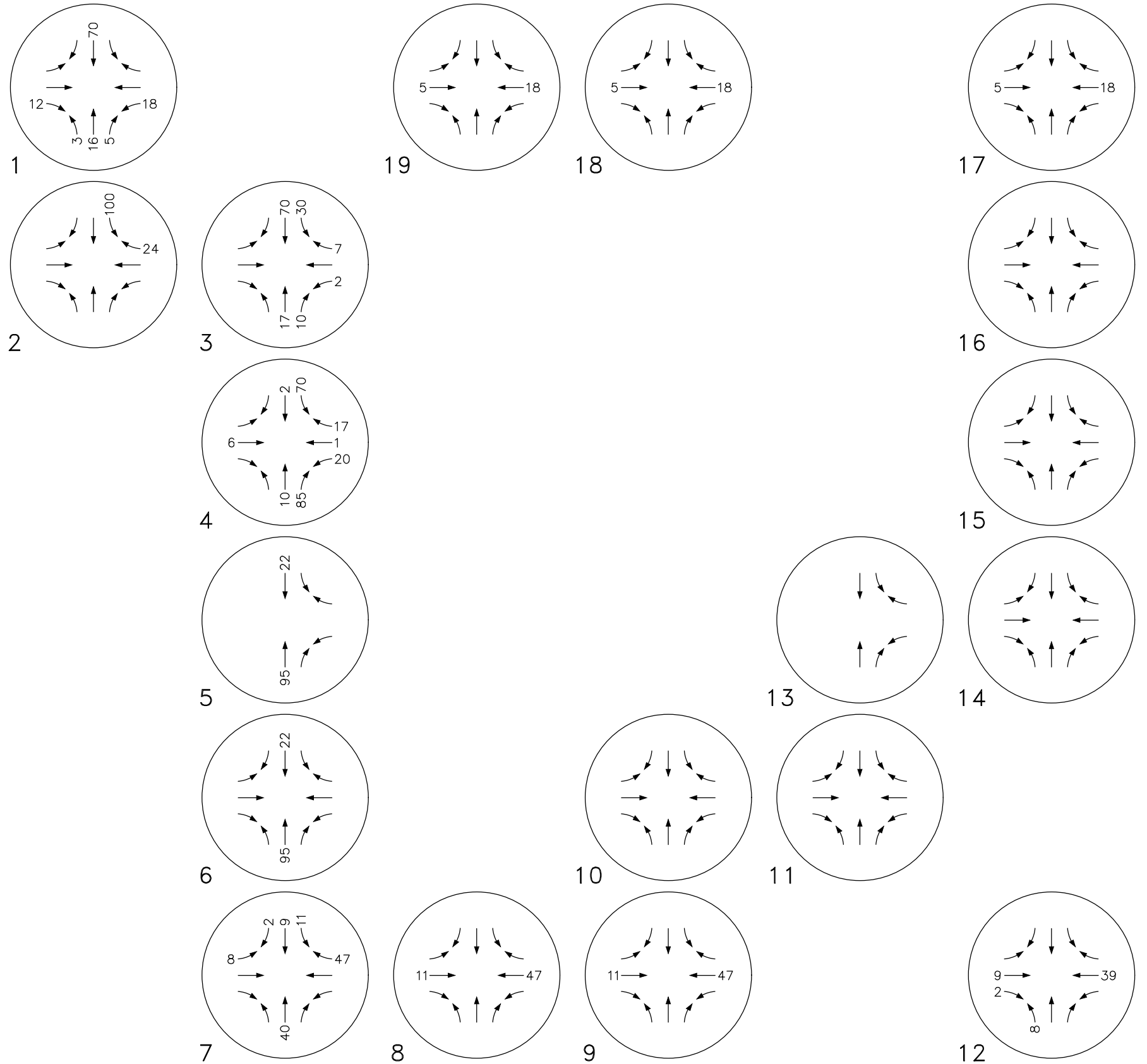
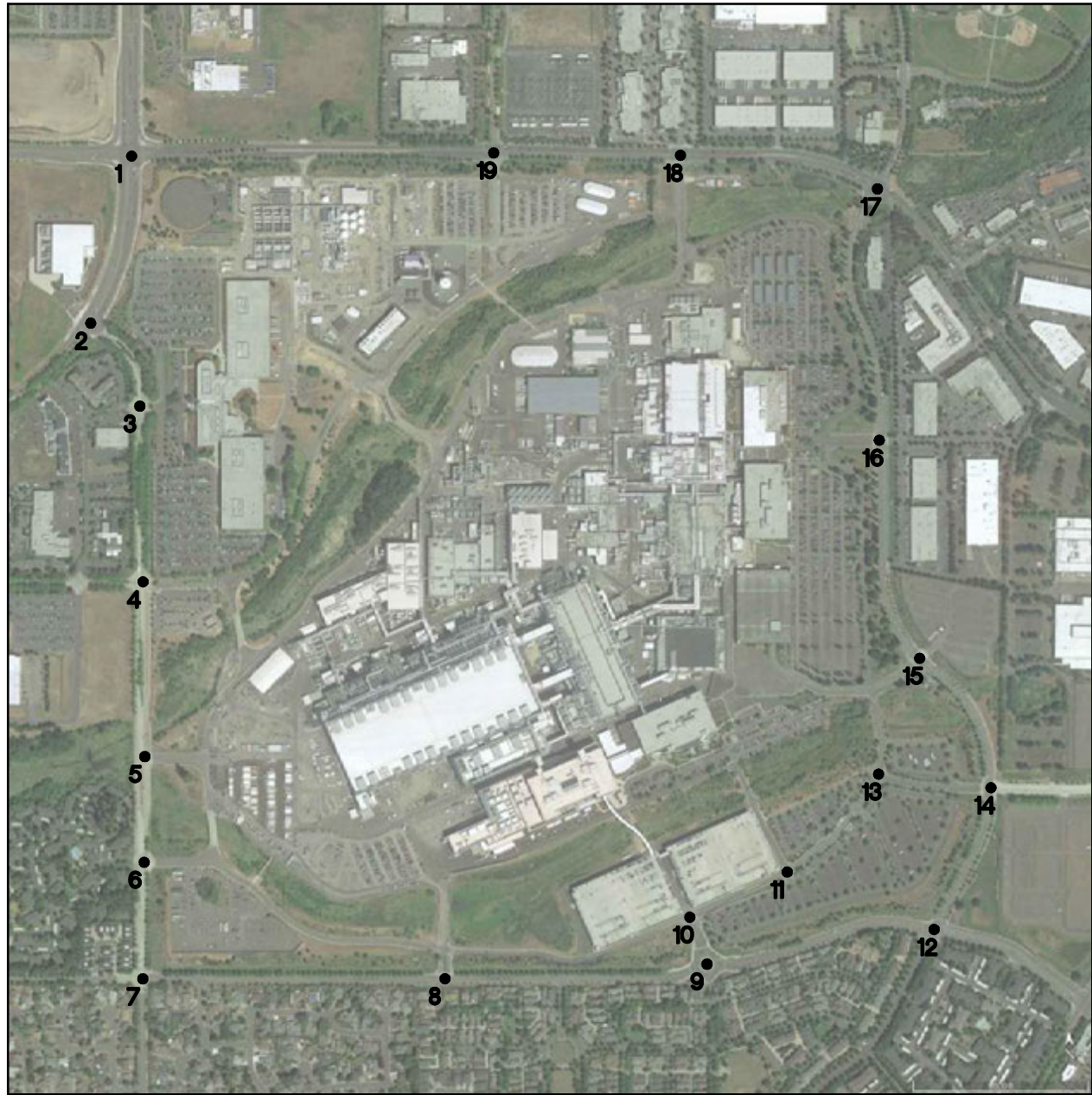
INTEL RONLER ACRES - LARK
HILLSBORO, OREGON

FIGURE

9A



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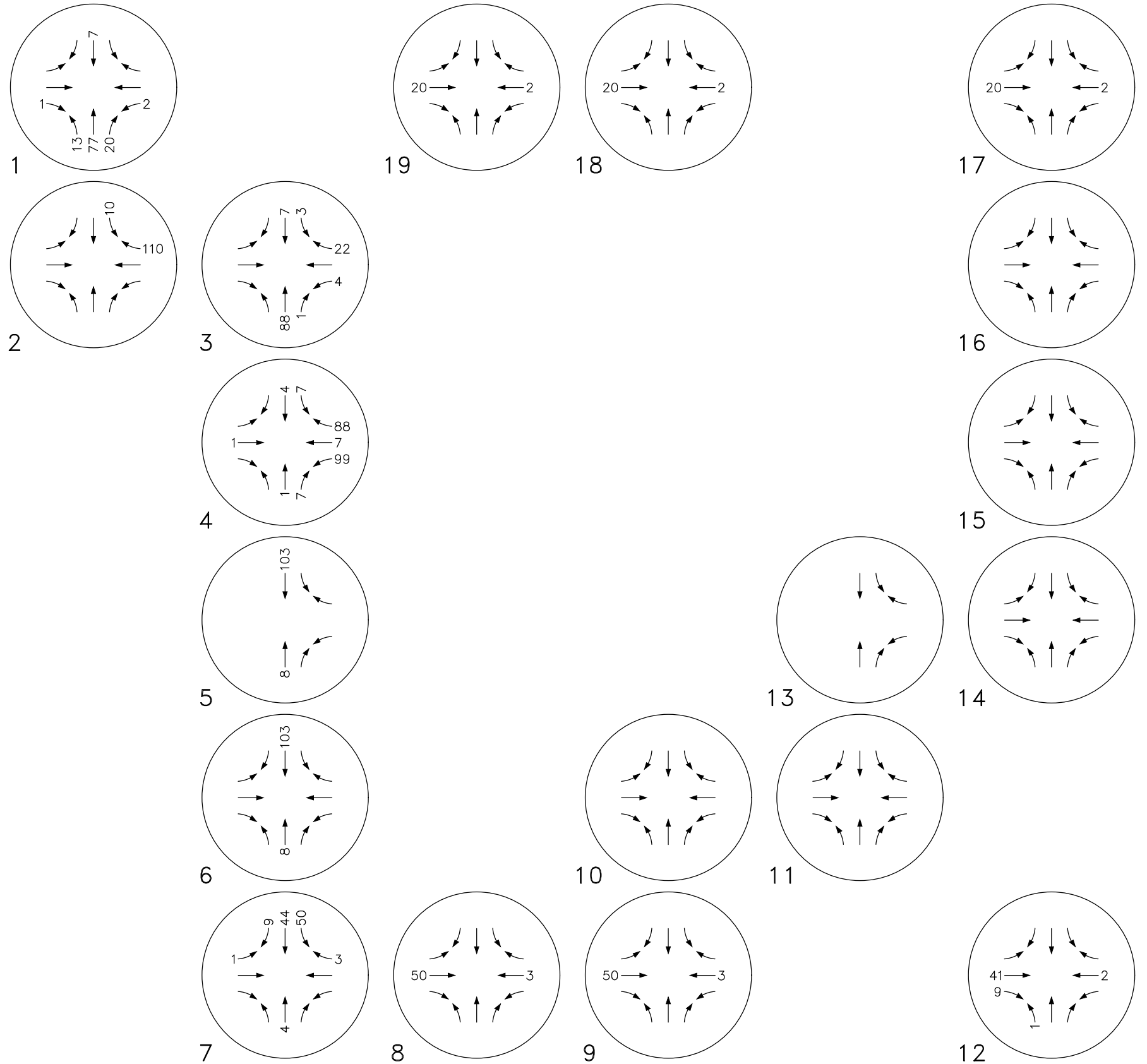
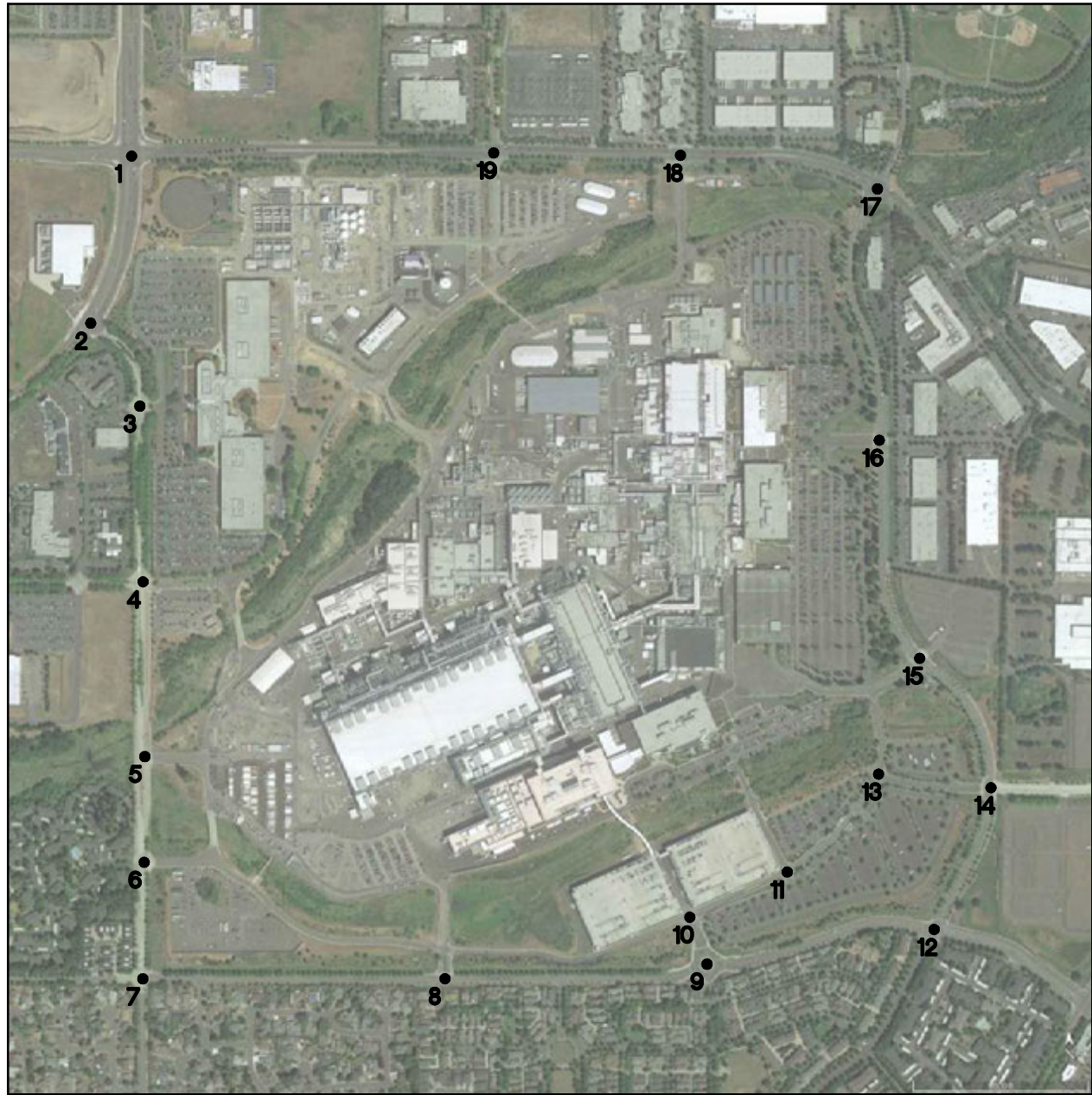
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REASSIGNED APPROVED
TRIPS FOR 800 EMPLOYEES -
AM PEAK HOUR

INTEL RONLER ACRES - LARK
HILLSBORO, OREGON

FIGURE
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DATE: 3.14.2019

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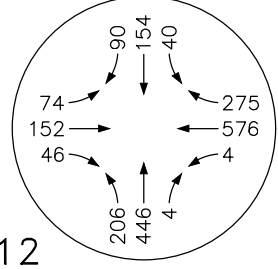
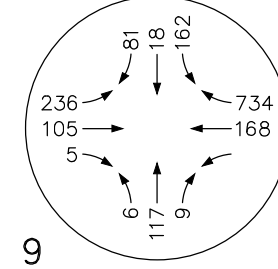
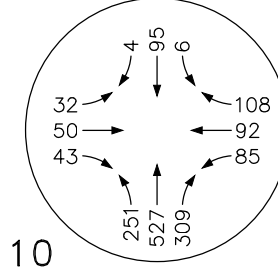
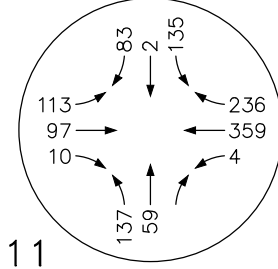
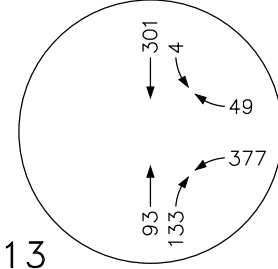
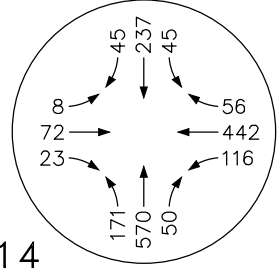
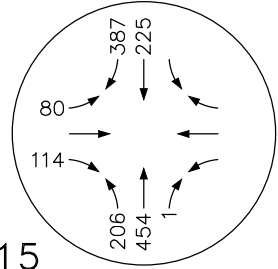
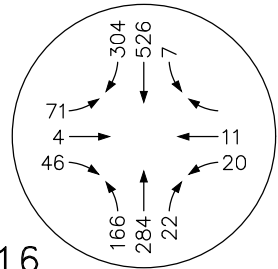
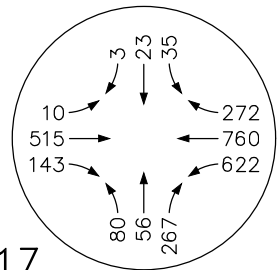
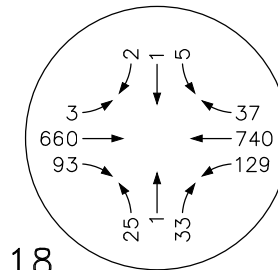
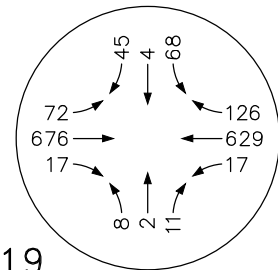
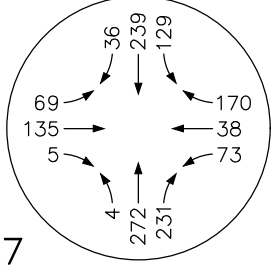
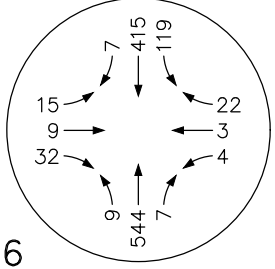
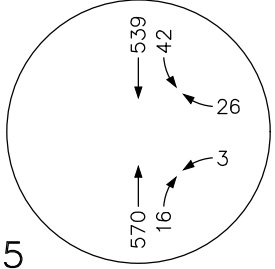
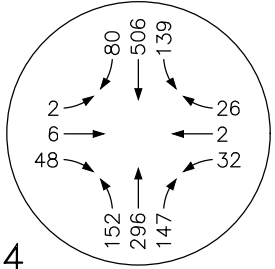
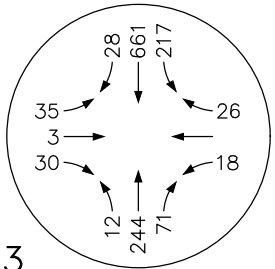
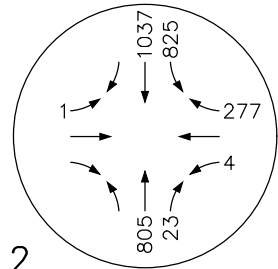
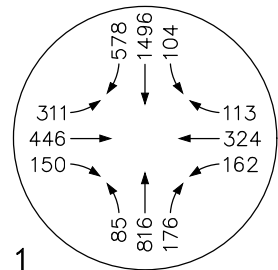
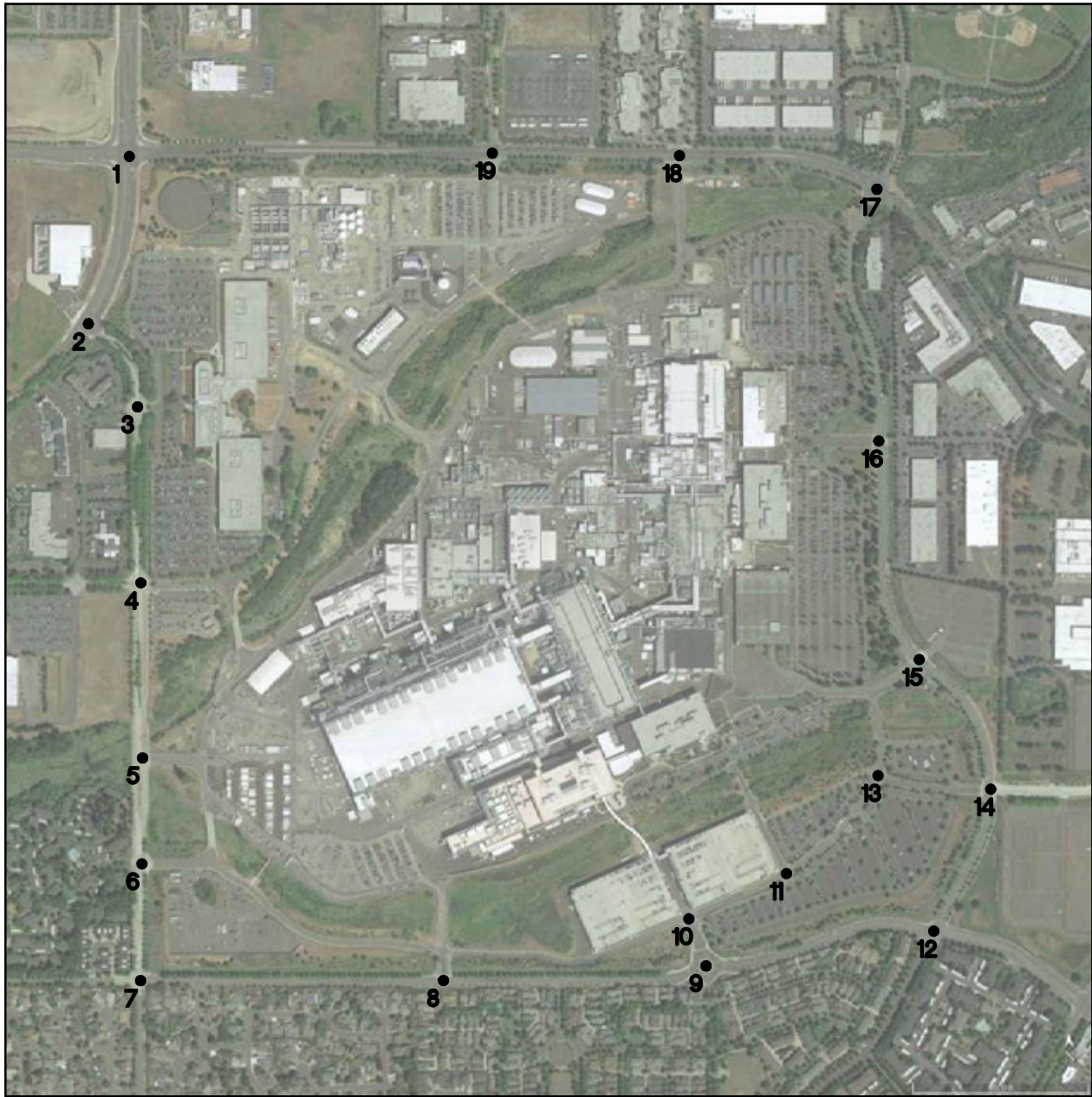
JOB NO:
2180548.00

REASSIGNED APPROVED
TRIPS FOR 800 EMPLOYEES -
PM PEAK HOUR

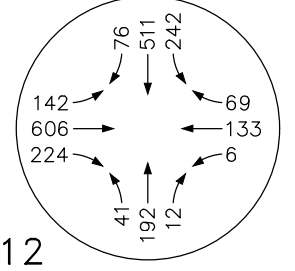
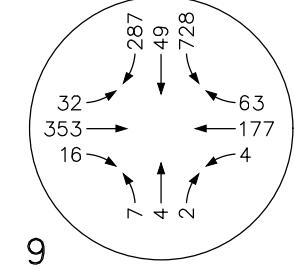
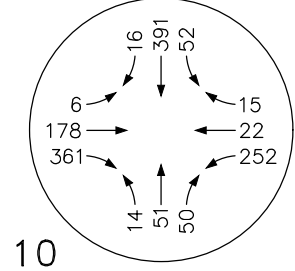
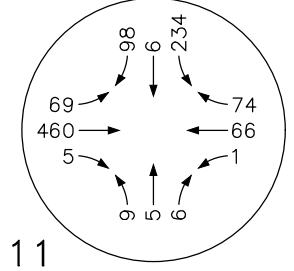
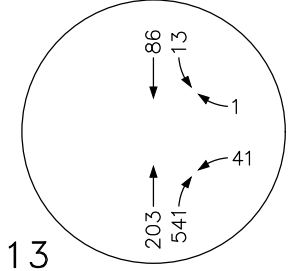
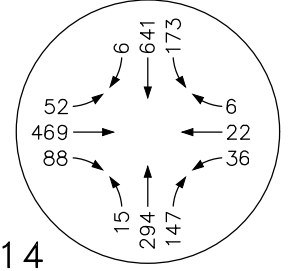
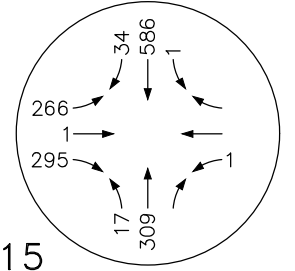
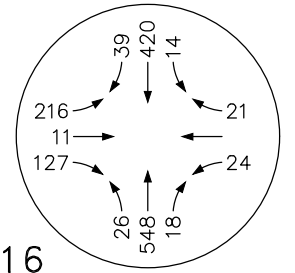
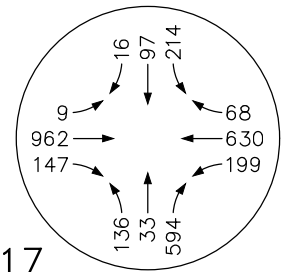
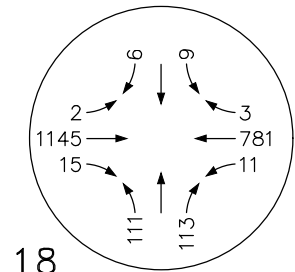
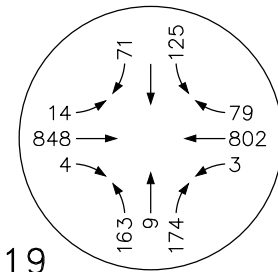
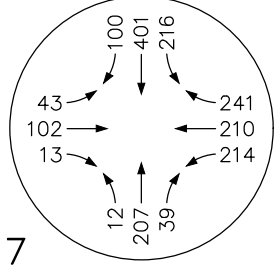
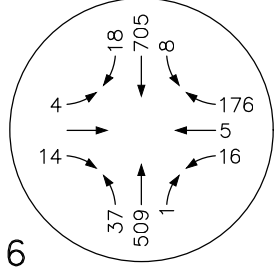
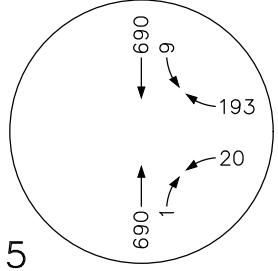
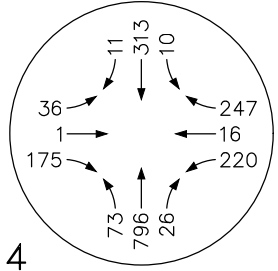
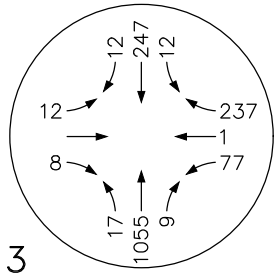
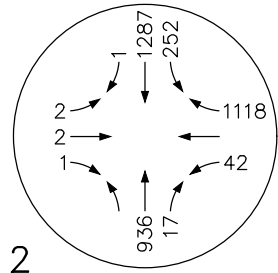
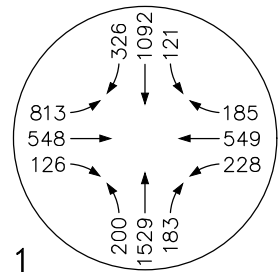
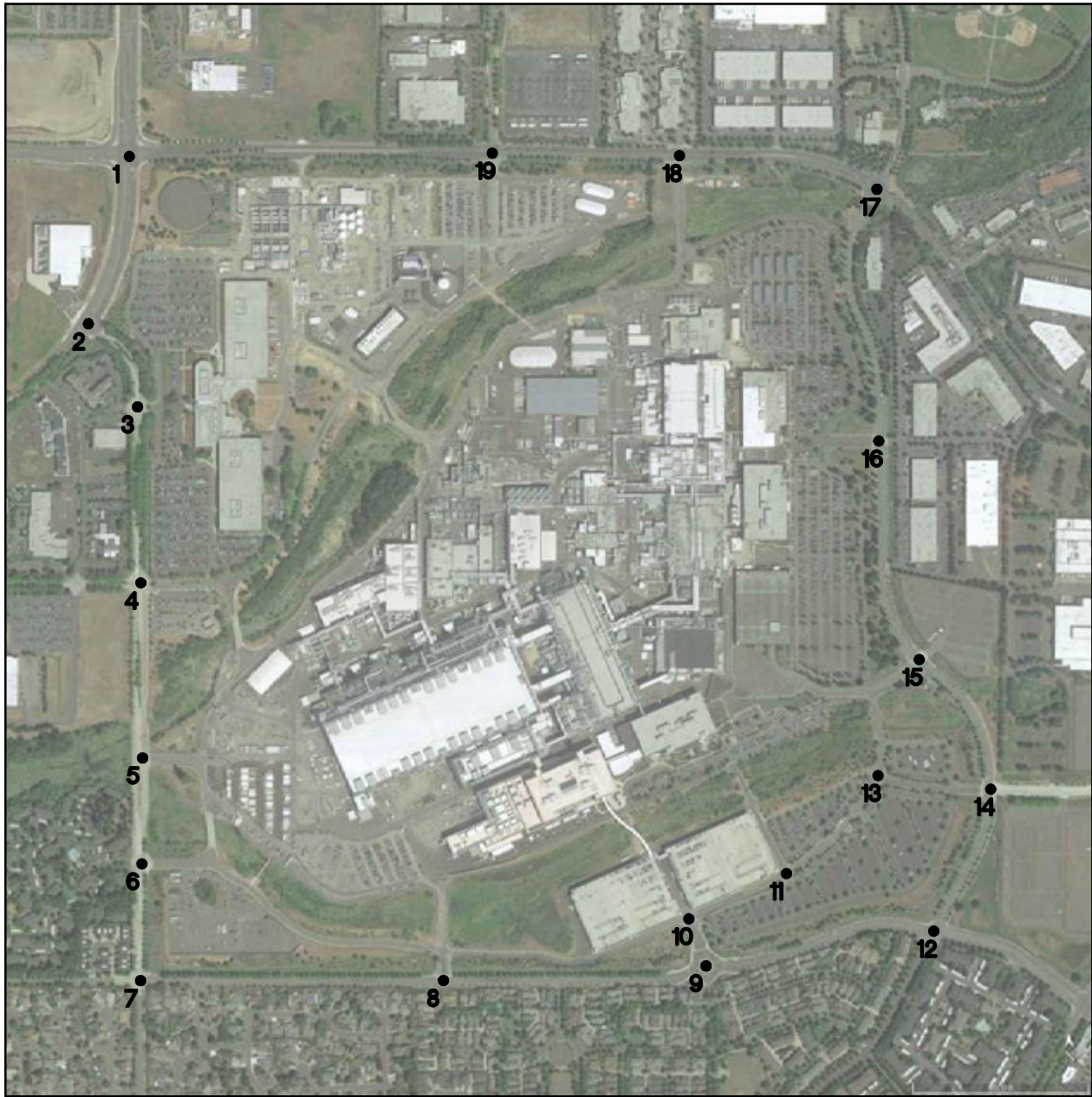
INTEL RONLER ACRES - LARK
HILLSBORO, OREGON

FIGURE
10B

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DATE: 3.14.2019

DRAWN BY: PGP

CHECKED BY: JTJ

JOB NO:
2180548.00

2022 PROPOSED TRAFFIC
VOLUMES WITH LARK -
PM PEAK HOUR

INTEL RONLER ACRES - LARK
HILLSBORO, OREGON

FIGURE
11B

APPENDIX B.
SCOPING MATERIAL

MACKENZIE.

DESIGN DRIVEN | CLIENT FOCUSED

January 3, 2019 (*Revised January 16, 2019*)

City of Hillsboro
Attention: Don Odermott, PE
150 East Main Street
Hillsboro, OR 97123

Re: **Project Lark**
Traffic Study Scoping
Project Number 2180548.00

Dear Mr. Odermott:

Mackenzie has prepared this scoping letter in advance of preparing the Transportation Impact Analysis (TIA) for the proposed Project Lark development. This letter presents trip generation and distribution, analysis periods, study area recommendations, and other assumptions to be used in the TIA.

SITE CONDITIONS

Project Lark will replace an existing parking lot (approximately 650 spaces) on the west side of campus with combined utilities building and parking structure, and expand the D1X building westward. The D1X expansion will accommodate approximately 800 employees. The parking structure will provide approximately 2,200 spaces for a net parking gain of approximately 1,550 spaces.

The two existing site accesses on NE Shute Road at RS4, RS5, and RS6 will be used for the new parking structure. Both accesses are proposed to remain as full-movement driveways.

The employees associated with the expansion will have similar shift schedules as the current overall campus. This analysis will not address temporary construction traffic impacts, which can be addressed in a separate analysis if required.

OVERALL APPROACH

In 2013, Intel was approved for an additional 5,360 employees associated with the impacts of RA4, D1X MOD2, MSB, and the RAP2E parking garage based on a TIA submitted January 9, 2013. The TIA also noted that a sustaining level of 3,600 to 4,000 craft workers would be maintained on site. The project was conditioned with substantial transportation network improvements and required to provide quarterly monitoring of employment levels on the Ronler Acres campus until all conditioned improvements were completed.

On March 3, 2013, the Ronler Blue Badge headcount was reported at 7,178 employees. With the approved development, the total Blue Badge headcount was anticipated to increase to 12,538 by 2020. The Green Badge craft/contract worker headcount was reported at 3,371, slightly below the sustaining levels assumed in the TIA.



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On October 4, 2018, the Ronler Blue Badge headcount was reported at 10,228 employees. This headcount is 2,310 employees lower than what was approved in 2013. The Green Badge headcount was reported as 3,681, which is within the range of the sustaining levels assumed in the TIA.

Since current employment is well below what was approved in 2013 but Intel has paid for infrastructure improvements to accommodate approximately 2,310 additional employees on site, the traffic analysis will assume the 800 employees associated with Project Lark are counted towards the approved site capacity. However, since a new parking garage will be provided with Project Lark, we propose to examine how future demand would be affected by the shift in traffic associated with the new parking garage.

Site trip generation, trip distribution, and trip assignment will be updated from the assumptions in the 2013 TIA based on current site patterns and then used to forecast an approved scenario with the current parking conditions and 2,310 additional employees and a proposed scenario that would reassign 800 employees to the new parking garage from the RAP2 and RAP3 structures.

TRIP GENERATION

To update trip generation for the 2,310 additional permanent employees that were already approved with the 2013 TIA, new trip rates based on current Campus traffic and employment figures have been developed. Traffic counts at the site access locations were collected on November 7 and 15, 2018 for four hours in the AM and PM periods. Table 1 summarizes the trip generation rates for the morning and afternoon periods with the time of the site peak noted. The site peak may differ from the peak hour of the adjacent street.

TABLE 1. TRIP GENERATION RATES								
Duration	Morning				Afternoon			
	Period	In	Out	Total	Period	In	Out	Total
Peak Hour	7:10-8:10 AM	81%	19%	0.31/emp.	4:05-5:05 PM	8%	92%	0.30/emp.
Peak 2 Hours	6:40-8:40 AM	83%	17%	0.54/emp.	3:55-5:55 PM	8%	92%	0.53/emp.

The traffic counts show the AM peak-hour trip rate is 0.31 trips/employee and the PM peak-hour rate is 0.30 trips/employee. These rates are very consistent with what was used in prior traffic analyses. The 2010 TIA prepared for the D1X plant used 0.31 trips/employee for the AM peak hour and 0.29 trips/employee for the PM peak hour. The 2013 TIA prepared for RA4, D1X MOD2, MSB, and the RAP2E parking garage used 0.30 trips/employee for the AM peak hour and 0.31 trips/employee for the PM peak hour.

Table 3 presents the estimated trip generation for the additional 2,310 employees that have already been approved for the Ronler Acres campus based on the 2013 TIA.

TABLE 2. ESTIMATED TRIP GENERATION – 2,310 EMPLOYEES						
Duration	Morning			Afternoon		
	In	Out	Total	In	Out	Total
Peak Hour	580	136	716	55	638	693
Peak 2 Hours	1,035	212	1,247	98	1,126	1,224

The approved employment is anticipated to generated 716 AM peak-hour and 693 PM peak-hour trips.

Table 3 presents the estimated trip generation for the 800 employees associated with Project Lark.

TABLE 3. ESTIMATED TRIP GENERATION – 800 EMPLOYEES						
Duration	Morning			Afternoon		
	In	Out	Total	In	Out	Total
Peak Hour	201	47	248	19	221	240
Peak 2 Hours	359	73	432	34	390	424

Of the approved employment, Project Lark is anticipated to generate 248 AM peak-hour and 240 PM peak-hour trips.

TRIP DISTRIBUTION

An overall trip distribution for the Ronler Acres campus has been developed from the traffic counts collected in November 2016 and compared with the assumptions from the 2013 TIA. This distribution is generally within 5% of the previous assumptions.

Within the campus, the trip distribution onto the adjacent transportation network depends on the location of the parking facilities and their access points. For the southern part of the campus where employee parking is primarily focused in the RAP2 and RAP3 parking garages, site traffic enters/exits the campus on NE Butler Street, NE Century Boulevard, and NE Shute Road. For the northwest parking areas serving RS4, RS5, and RS6, traffic can only enter/exit the campus on NE Shute Road. For the north and east parking areas, traffic primarily enters/exits the campus on NE Evergreen Parkway or NE Century Boulevard. Each of these subareas has a different distribution onto the adjacent network although the ultimate distribution of origins/destinations is the same.

Because Project Lark will construct a new parking garage in the northwest part of campus, while the approved analysis assumed new trips would be distributed from the southern part of campus, we propose using different distributions to the adjacent transportation network for the approved and proposed scenarios. Both are derived from existing campus travel patterns.

Approved Scenario

Traffic is anticipated to enter/exit the site at the following locations:

- 45% to/from NE Butler Street/NE 65th Avenue
- 9% to/from NE Butler Street/NE 60th Place
- 6% to/from NE Shute Road/NE Tandem Way
- 5% to/from NE Shute Road/D1X Access
- 23% to/from NE Century Boulevard/NE Ronler Drive
- 6% to/from NE Century Boulevard/RAP1 Access
- 6% to/from NE Century Boulevard/RA1 & RA2 Access

Traffic is anticipated to enter/exit the study area with the following pattern:

- 14% to/from the north on NE Brookwood Parkway
- 6% to/from the west on NE Evergreen Road
- 5% to/from the west on NE Airport Road
- 11% to/from the south on NE Shute Road
- 1% to/from the Orenco neighborhood
- 13% to/from the south on NE Century Boulevard
- 18% to/from the east on NE Butler Street
- 17% to/from the east on NE Ronler Drive
- 13% to/from the east on NE Evergreen Parkway
- 2% to/from the north on NE Century Boulevard

Proposed Scenario with Project Lark

Traffic is anticipated to enter/exit the site at the following locations:

- 20% to/25% from NE Shute Road/RS5 Access
- 80% to/75% from NE Shute Road/NE Dawson Creek Drive/New Garage Access

Traffic is anticipated to enter/exit the study area with the following pattern:

- 35% to/from the north on NE Brookwood Parkway
- 6% to/from the west on NE Evergreen Road
- 3% to/from the west on NE Dawson Creek Drive
- 4% to/from the west on NE Airport Road
- 20% to/from the south on NE Shute Road
- 1% to/from the Orenco neighborhood
- 4% to/from the south on NE Century Boulevard
- 18% to/from the east on NE Butler Street
- 9% to/from the east on NE Evergreen Parkway

As can be seen from the distribution pattern above, traffic from the new parking garage will rely more heavily on the road network west of the site than traffic using the existing parking garages.



TRANSPORTATION IMPACT ANALYSIS

City CDC Section 12.70.220.D provides the criteria used to define the study area for a TIA. At minimum, the study area must include site accesses and intersections along the site frontage and extending 600 feet along streets fronting the site. Additionally, the study area should include road links “where traffic generated by the proposed development equals or exceeds 10% of the Background Traffic.”

The following intersections are proposed for the study area based on these criteria and prior discussion with City staff regarding intersections of concern around the campus:

- NE Evergreen Parkway and NE Brookwood Parkway
- NE Brookwood Parkway and NE Shute Road
- NE Shute Road and NE Airport Road/NE Butler Street
- NE Butler Street and NE Century Boulevard
- NE Evergreen Road and NE Century Boulevard
- 11 Campus Accesses

In addition, three key internal intersections that could affect the external network will be evaluated.

Analysis Scenarios and Time Periods

Project Lark is anticipated to be completed with operations beginning in 2022. Therefore, the TIA will review the conditions at the study area intersections for the following scenarios:

- 2018 Existing;
- 2022 Approved with 2,310 additional employees and existing driveway distribution; and
- 2022 Proposed with 800 of the additional employees reassigned to new garage from the RAP2 and RAP3 parking structures.

Both AM and PM peak hours will be evaluated. Intersection operations will be evaluated for a common network peak hour. Queuing will be assessed over a two-hour period to capture both site and network peak activity. The Synchro/SimTraffic software will be used for the analysis.

Data Collection

All traffic counts for the TIA will be collected at least two hours in the AM and PM peak periods on a mid-week day (i.e., Tuesday, Wednesday, or Thursday) while Hillsboro schools have classes scheduled. Traffic counts at the site access locations were collected on November 7 and 15, 2018 for four hours in the AM and PM periods. Additional traffic counts were collected at off-site intersections on November 28, 2018. All November traffic counts were collected while Hillsboro schools were in session.

Background Traffic Growth

A 2.0% annual growth rate is proposed for background growth consistent with the assumptions used for other developments in the area. However, the background growth rate will not be applied to existing traffic generated by the Ronler Acres Campus because this study is specifically addressing the approved growth of the site. To calculate the



background traffic growth, traffic associated with the Ronler Acres campus will be estimated for all study area intersections. Then, the 2.0% annual background growth rate will be applied to the non-campus traffic only.

In-Process Developments

In-process trips for the following developments will also be included in the pre-development scenario:

- First Tech Corporate Office Building Phase 2
- Washington County Fairgrounds Event Center
- Staybridge Suites
- Hillsboro DFT OR 1 Data Center
- Majestic Subdivision (NE Corner of Brookwood/Huffman) as noted in Brookwood II analysis
- QTS Data Center
- Project Gutenberg
- Synopsys Master Plan
- Brookwood II (assuming approval occurs in January 2019)
- JSR Micro (assuming approval occurs in January 2019)

Planned Network Improvements

The Century Boulevard Extension is currently in the design stage, with construction scheduled for completion by December 2022 according to the Washington County Capital Projects. This project will extend SE Century Boulevard northward to connect with NE Century Boulevard at E Main Street.

To understand how this project could affect study area traffic volumes, we will obtain base year (2015) transportation network model forecasts without and with the extension.

Capacity Analysis

Intersection capacity analyses and queuing will be examined at the study intersections listed above following the standards outlined in CDC 12.70.200 and 12.70.220. Signal timing data supplied by Washington County and City of Hillsboro will be used. The analysis will use the Synchro/SimTraffic templates created by the Oregon Department of Transportation (ODOT) as requested by City of Hillsboro.

We propose to evaluate operations for a common peak hour for the 16 study area intersections. Review of the traffic counts shows the common morning peak hour occurs between 7:15 and 8:15 AM and the afternoon common peak hour occurs between 4:15 and 5:15 PM. In most cases, the peak hours of individual intersections only vary by 5 to 10 minutes compared with the common peak.

Queuing will be evaluated using a peak two-hour volume profile divided into 15-minute increments with a 15-minute seeding period. This approach captures the peaking profiles of individual movements at each intersection and better represents traffic patterns than a one-hour analysis using each intersection peak. In the morning, the traffic simulation extends from 6:45 AM to 8:45 AM. In the afternoon, the traffic simulation extends from 4:00 to 6:00 PM.

Safety Analysis

Crash data for the study area will be compiled and evaluated for safety using the most recent five (5) years of complete data from ODOT's crash database. Sight distance evaluations will be compared with the City of Hillsboro Design and Construction Standards.

SUMMARY

Please confirm the following analysis assumptions:

- Site trip generation estimates are acceptable.
- Site trips will be assigned to the study area using the trip distribution patterns described in this letter.
- The study area will include the intersections and time periods listed in this letter.
- The approach to calculating the background traffic growth is acceptable.
- The in-process project list is complete.

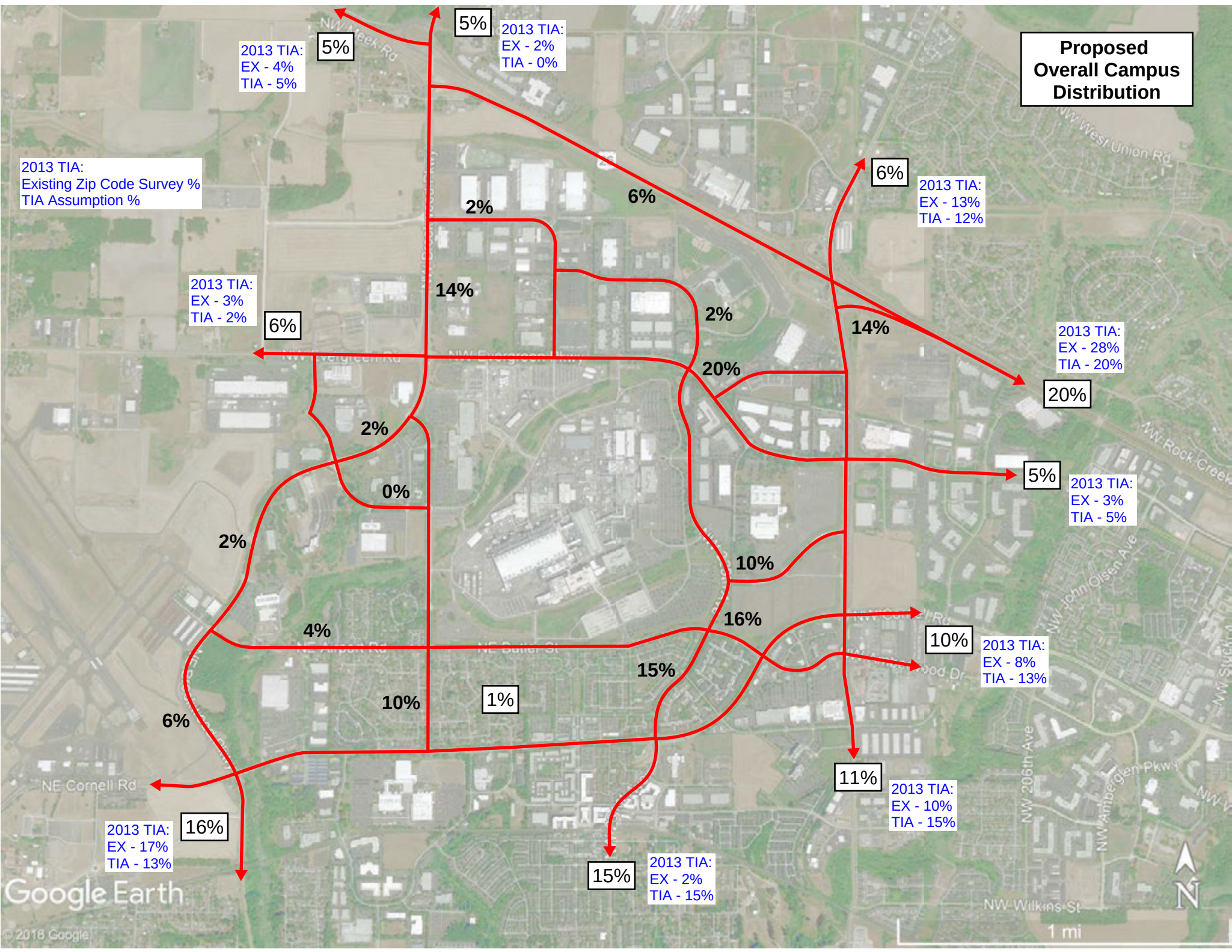
If you have any questions or comments regarding this proposed scope, please do not hesitate to contact me.

Sincerely,



Jennifer Danziger, PE
Transportation Engineer

c: Patrick Dwyer – Intel
Brent Ahrend – Mackenzie



**Proposed
Overall Campus
Distribution**

2013 TIA:
EX - 4%
TIA - 5%

5%

2013 TIA:
EX - 2%
TIA - 0%

5%

2013 TIA:
Existing Zip Code Survey %
TIA Assumption %

2013 TIA:
EX - 3%
TIA - 2%

6%

2%

6%

6%

2013 TIA:
EX - 13%
TIA - 12%

14%

2%

14%

2013 TIA:
EX - 28%
TIA - 20%

20%

2%

0%

2%

20%

5%

2013 TIA:
EX - 3%
TIA - 5%

10%

4%

16%

10%

2013 TIA:
EX - 8%
TIA - 13%

6%

10%

1%

15%

11%

2013 TIA:
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TIA - 15%

16%

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15%

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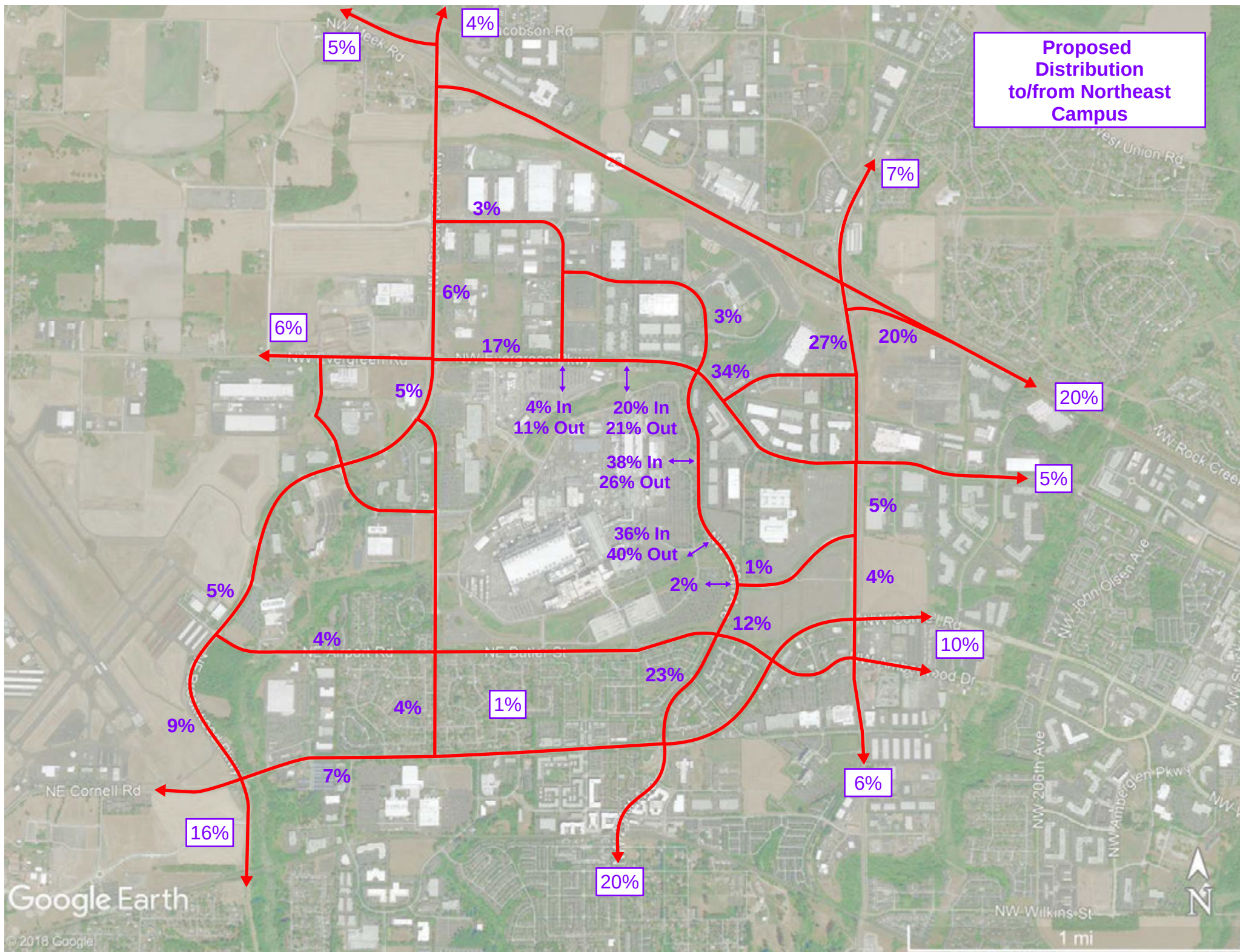
Google Earth

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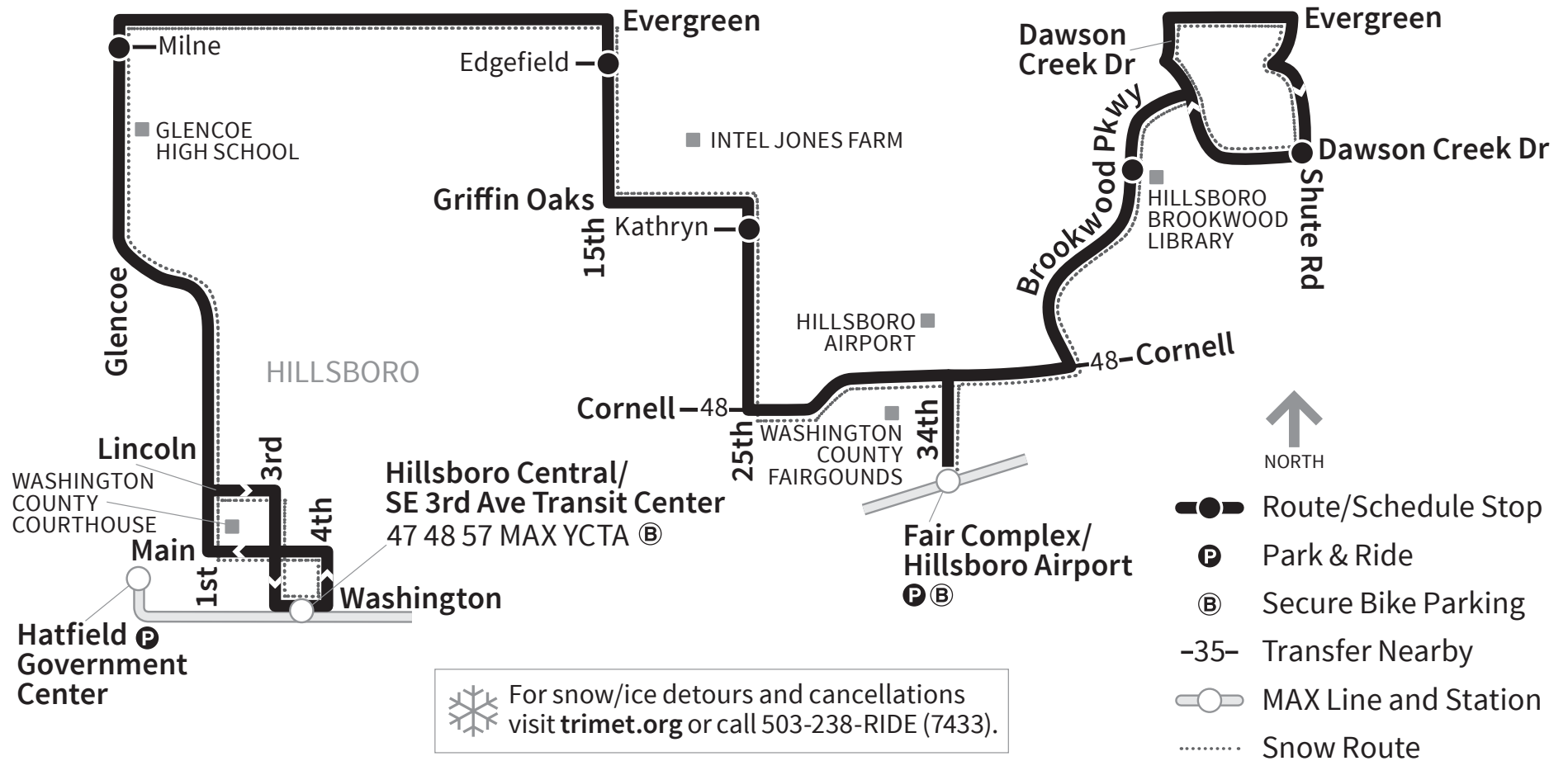
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APPENDIX C.
**TRANSIT
INFORMATION**

46-North Hillsboro



46-North Hillsboro

Weekday To Hillsboro Brookwood Library

Hillsboro Transit Center Stop ID 9954	NE Evergreen & NW Glencoe Stop ID 9942	NE 25th & Kathryn Stop ID 9952	Fair Complex/ Airport Park & Ride Stop ID 9953	Shute Rd & Dawson Creek Dr Stop ID 10063
6:12	6:18	6:24	6:28	—
—	—	6:44	6:48	6:59
7:28	7:35	7:42	7:47	7:59
8:27	8:34	8:41	8:46	8:57
9:29	9:36	9:42	9:47	9:57
10:44	10:51	10:57	11:02	11:12
11:41	11:48	11:55	12:01	12:12
12:41	12:48	12:55	1:01	1:12
1:42	1:49	1:56	2:02	2:12
2:57	3:05	3:12	3:18	3:29
4:05	4:13	4:20	4:27	4:39
—	—	4:57	5:04	5:16
5:48	5:55	6:01	6:08	6:19
6:58	7:05	7:11	7:16	7:25

Times in darker print are p.m.

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46-North Hillsboro

Weekday		To Hillsboro Transit Center			
Shute Rd & Dawson Creek Dr Stop ID 10063	Fair Complex/ Airport Park & Ride Stop ID 9953	NE 15th & Edgefield Stop ID 10278	NW Glencoe & Milne Stop ID 9994	Hillsboro Transit Center	
—	5:45	5:51	5:55	6:02	
—	6:35	6:42	—	—	
6:59	7:06	7:12	7:17	7:24	
7:59	8:06	8:13	8:18	8:26	
8:57	9:04	9:11	9:15	9:24	
9:57	10:04	10:11	10:15	10:22	
11:12	11:19	11:26	11:30	11:39	
12:12	12:19	12:26	12:30	12:37	
1:12	1:19	1:26	1:30	1:40	
2:12	2:19	2:26	2:30	2:38	
3:29	3:36	3:43	3:48	3:58	
4:39	4:47	4:55	—	—	
5:16	5:24	5:31	5:36	5:43	
6:19	6:26	6:33	6:37	6:44	
7:25	7:31	—	—	—	

Times in darker print are p.m.

Please note: Schedules may change without notice by up to three minutes to relieve overcrowding or adjust to traffic conditions. Service can also be affected by construction, accidents and weather conditions. You can check for any current detours or service disruptions at trimet.org/alerts or call 503-238-RIDE (7433) for real-time arrival information from TransitTracker™. All buses, MAX trains and streetcars are accessible to people with disabilities.

47-Main/Evergreen



● Route/Schedule Stop

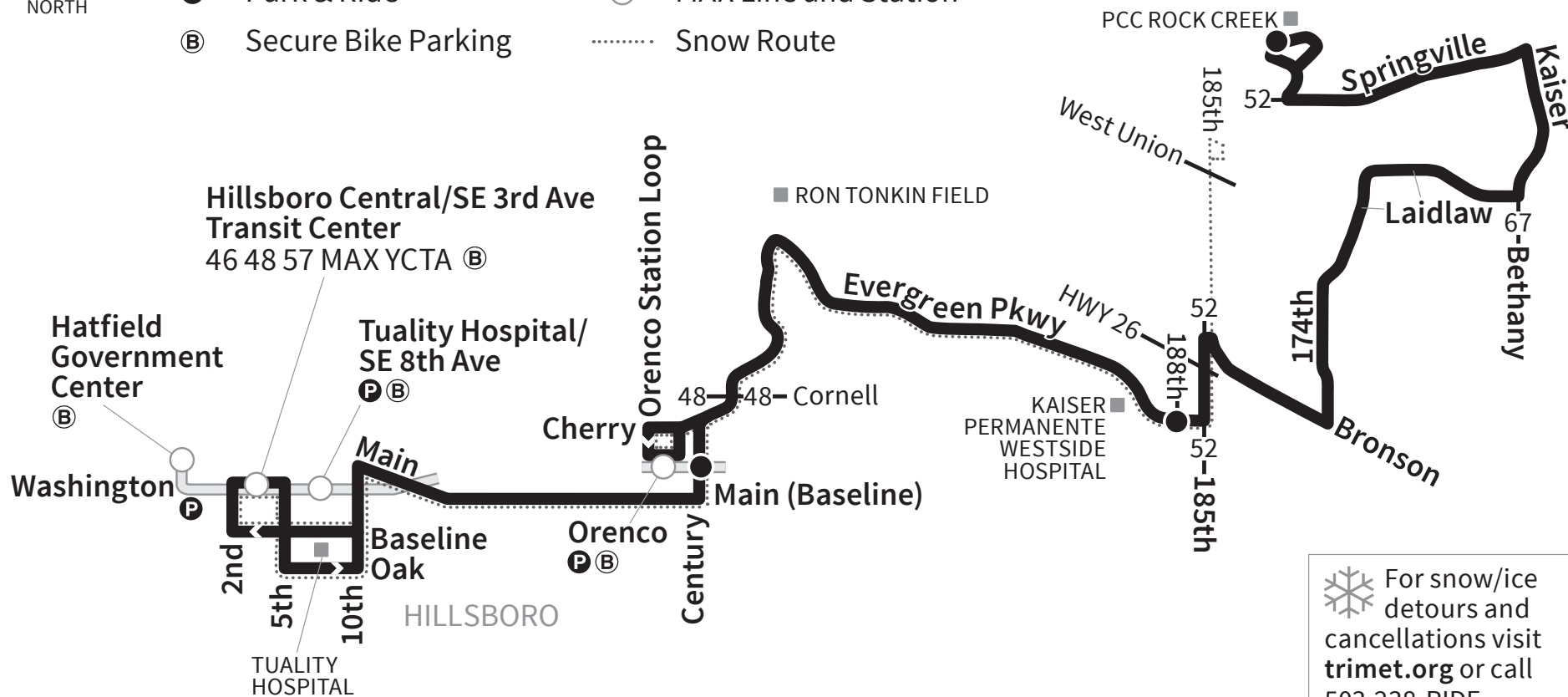
P Park & Ride

B Secure Bike Parking

-35- Transfer Nearby

○ MAX Line and Station

..... Snow Route



For snow/ice
detours and
cancellations visit
trimet.org or call
503-238-RIDE

47-Main/Evergreen

Weekday		To Hillsboro Transit Center			
PCC Rock Creek Main Stop Stop ID 4429	NE Evergreen Pkwy & 106th (NW 188th) Stop ID 1159	NE Orenco Station Loop & MAX Station Stop ID 9923	NE Century (NW 231st) & Orenco Max Stn Stop ID 10042	Hillsboro Transit Center	
5:45	5:58	—	6:07	6:23	
6:20	6:34	—	6:45	7:01	
6:35	6:50	7:06	—	—	
6:50	7:05	—	7:17	7:34	
7:04	7:20	7:36	—	—	
7:19	7:35	—	7:48	8:06	
7:34	7:50	8:06	—	—	
7:49	8:05	—	8:17	8:34	
8:04	8:20	8:36	—	—	
8:19	8:35	—	8:46	9:03	
8:50	9:06	—	9:17	9:33	
9:25	9:40	—	9:51	10:07	
10:00	10:15	—	10:26	10:42	
10:36	10:51	—	11:02	11:18	
11:12	11:27	—	11:38	11:54	
11:48	12:03	—	12:14	12:30	
12:24	12:40	—	12:51	1:08	
1:00	1:16	—	1:27	1:44	
1:36	1:52	—	2:03	2:21	
2:12	2:29	—	2:41	2:59	
2:49	3:06	—	3:18	3:37	
3:20	3:37	—	3:49	4:07	
3:50	4:07	—	4:19	4:39	
4:15	4:32	—	4:44	5:05	
4:30	4:48	5:05	—	—	
4:46	5:04	—	5:17	5:38	
5:02	5:20	5:37	—	—	
5:18	5:36	—	5:48	6:08	
5:34	5:51	6:07	—	—	
5:50	6:07	—	6:18	6:35	
6:06	6:22	6:37	—	—	
6:22	6:38	—	6:49	7:05	
6:36	6:51	7:06	—	—	
6:50	7:05	—	7:16	7:31	
7:05	7:20	—	7:31	—	
7:20	7:35	—	7:46	8:01	
7:50	8:04	—	8:15	8:29	
8:20	8:34	—	8:44	8:58	

Times in darker print are p.m.

Please note: Schedules may change without notice by up to three minutes to relieve overcrowding or adjust to traffic conditions. Service can also be affected by construction, accidents and weather conditions. You can check for any current detours or service disruptions at trimet.org/alerts or call 503-238-RIDE (7433) for real-time arrival information from TransitTracker™. All buses, MAX trains and streetcars are accessible to people with disabilities.

47-Main/Evergreen

Weekday		To PCC Rock Creek	
Hillsboro Transit Center Stop ID 2672	NE Orenco Station Loop & MAX Station Stop ID 9923	NE Evergreen Pkwy & 106th (NW 188th) Stop ID 10056	PCC Rock Creek Main Stop Stop ID 4429
5:32	5:47	5:57	6:12
6:02	6:17	6:27	6:42
6:20	6:35	6:47	7:04
6:37	6:52	7:05	7:22
—	7:06	7:20	7:37
7:06	7:21	7:35	7:52
—	7:36	7:50	8:07
7:35	7:51	8:05	8:22
—	8:06	8:20	8:37
8:06	8:21	8:35	8:52
—	8:36	8:50	9:07
8:43	8:58	9:11	9:28
9:19	9:34	9:47	10:04
9:55	10:10	10:23	10:40
10:31	10:46	10:59	11:16
11:07	11:22	11:35	11:52
11:43	11:58	12:11	12:28
12:18	12:34	12:47	1:04
12:54	1:10	1:23	1:40
1:30	1:46	1:59	2:17
2:07	2:23	2:36	2:54
2:44	3:00	3:14	3:32
3:24	3:40	3:54	4:12
4:00	4:16	4:30	4:48
—	4:34	4:48	5:06
4:33	4:50	5:02	5:22
—	5:05	5:19	5:38
5:03	5:21	5:35	5:54
—	5:37	5:51	6:10
5:36	5:52	6:06	6:24
—	6:07	6:20	6:38
6:07	6:22	6:35	6:52
—	6:37	6:50	7:07
6:36	6:51	7:04	7:20
—	7:06	7:18	7:34
7:05	7:20	7:32	7:48
7:35	7:49	8:01	8:17
8:05	8:19	8:31	8:47
8:46	9:00	9:11	9:27
9:46	9:59	10:09	10:25

Times in darker print are p.m.

Please note: Schedules may change without notice by up to three minutes to relieve overcrowding or adjust to traffic conditions. Service can also be affected by construction, accidents and weather conditions. You can check for any current detours or service disruptions at trimet.org/alerts or call 503-238-RIDE (7433) for real-time arrival information from TransitTracker™. All buses, MAX trains and streetcars are accessible to people with disabilities.

MONDAY-FRIDAY

To North Hillsboro						
Westmark Center	Orenco Station	Shute Road	Bennett Street	Huffman Street	Pinefarm Place	Westmark Center
5:04	5:18	5:24	5:29	5:31	5:35	5:38
5:31	5:45	5:51	5:56	5:58	6:02	6:05
5:50	6:04	6:10	6:15	6:17	6:21	6:24
6:17	6:31	6:37	6:42	6:44	6:48	6:51
6:33	6:47	6:53	6:58	7:00	7:04	7:07
7:03	7:17	7:23	7:28	7:30	7:34	7:37
7:26	7:40	7:46	7:51	7:53	7:57	8:00
7:56	8:10	8:16	8:21	8:23	8:27	8:30
8:11	8:25	8:31	8:36	8:38	8:42	8:45
8:41	8:55	9:01	9:06	9:08	9:12	9:15
8:56	9:10	9:16	9:21	9:23	9:27	9:30
11:11	11:25	11:31	11:36	11:38	11:42	11:45
11:55	12:09	12:15	12:20	12:22	12:26	12:29
12:46	1:00	1:06	1:11	1:13	1:17	1:20
1:26	1:40	1:46	1:51	1:53	1:57	2:00
To Orenco Station						
Westmark Center	Pinefarm	Huffman Street	Bennett Street	Shute Road	Orenco Station	Westmark Center
1:45	1:48	1:52	1:54	1:59	2:05	2:19
2:02	2:05	2:09	2:11	2:16	2:22	2:36
2:30	2:33	2:37	2:39	2:44	2:50	3:04
3:15	3:18	3:22	3:24	3:29	3:35	3:49
3:35	3:38	3:42	3:44	3:49	3:55	4:09
3:59	4:02	4:06	4:08	4:13	4:19	4:33
4:25	4:28	4:32	4:34	4:39	4:45	4:59
4:53	4:56	5:00	5:02	5:07	5:13	5:27
5:10	5:13	5:17	5:19	5:24	5:30	5:44
5:45	5:48	5:52	5:54	5:59	6:05	6:19
6:02	6:05	6:09	6:11	6:16	6:22	6:36
6:30	6:33	6:37	6:39	6:44	6:50	7:04
7:02	7:05	7:09	7:11	7:16	7:22	7:36
7:43	7:46	7:50	7:52	7:57	8:03	8:17
8:30	8:33	8:37	8:39	8:44	8:50	9:04
9:15	9:18	9:22	9:24	9:29	9:35	9:49

SATURDAY AND SUNDAY

To North Hillsboro						
Westmark Center	Orenco Station	Shute Road	Bennett Street	Huffman Street	Pinefarm Place	Westmark Center
5:16	5:30	5:36	5:41	5:43	5:47	5:50
6:00	6:14	6:20	6:25	6:27	6:31	6:34
6:56	7:10	7:16	7:21	7:23	7:27	7:30
7:40	7:54	8:00	8:05	8:07	8:11	8:14
8:24	8:38	8:44	8:49	8:51	8:55	8:58
9:31	9:45	9:51	9:56	9:58	10:02	10:05
10:24	10:38	10:44	10:49	10:51	10:55	10:58
11:13	11:27	11:33	11:38	11:40	11:44	11:47
11:56	12:10	12:16	12:21	12:23	12:27	12:30
To Orenco Station						
Westmark Center	Pinefarm Place	Huffman Street	Bennett Street	Shute Road	Orenco Station	Westmark Center
1:40	1:43	1:47	1:49	1:54	2:00	2:14
2:15	2:18	2:22	2:24	2:29	2:35	2:49
3:00	3:03	3:07	3:09	3:14	3:20	3:34
3:55	3:58	4:02	4:04	4:09	4:15	4:29
5:00	5:03	5:07	5:09	5:14	5:20	5:34
5:45	5:48	5:52	5:54	5:59	6:05	6:19
6:30	6:33	6:37	6:39	6:44	6:50	7:04
7:15	7:18	7:22	7:24	7:29	7:35	7:49
8:10	8:13	8:17	8:19	8:24	8:30	8:44
9:10	9:13	9:17	9:19	9:24	9:30	9:44

Times may be changed by up to 5 minutes past the scheduled stop time to adjust for traffic conditions.



\$ No Fare Required

ABOUT RIDING N.HILLSBORO LINK

FLAG STOPS

If you are along the route, and not near a designated stop, you can “flag” or simply wave to signal the bus driver to stop. Be sure to stand on the correct side of the road. Passengers may request on-route stops when boarding as well. Street and traffic conditions may make it unsafe for a driver to perform a flag stop where requested.

DEVIATIONS (OFF-ROUTE STOPS)

We will deviate off the route to pick you up or drop you off (see shaded areas on map). Off-route stop requests should be scheduled at least one day in advance. Only one scheduled deviation (pick-up or drop-off) is allowed per zone per trip. However, multiple passengers may use the same deviation.

To schedule a deviation, please call 503-226-0700 between 7:30am and 5:00pm Monday through Friday.

BIKE RACKS AND ACCESSIBILITY

All buses are accessible and equipped with bike racks and lifts.

SEVERE WEATHER

On days with severe weather such as ice or snow, N.Hillsboro Link schedules may follow snow routes or all service may be suspended until weather improves. If conditions warrant a closure or change in operations, information will be available on our website: www.rideconnection.org. You can also call 503-226-0700.

HOLIDAY CLOSURES

Service will not be available on: New Year’s Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day.

CUSTOMER COMMENTS

Your input is appreciated! Feel free to contact us: 503-226-0700 or info@rideconnection.org

WE RESPECT CIVIL RIGHTS. For a copy of our policy, please call 503-528-1721.

To request this brochure in an alternate format, call 503-528-1721.

N.Hillsboro Link

The North Hillsboro Link is a free “deviated fixed-route” service linking Orenco MAX Station to suburban employment destinations in the North Hillsboro area. While specifically designed for transit-dependent employees, job-seekers, and low-income individuals, service is open to the public.

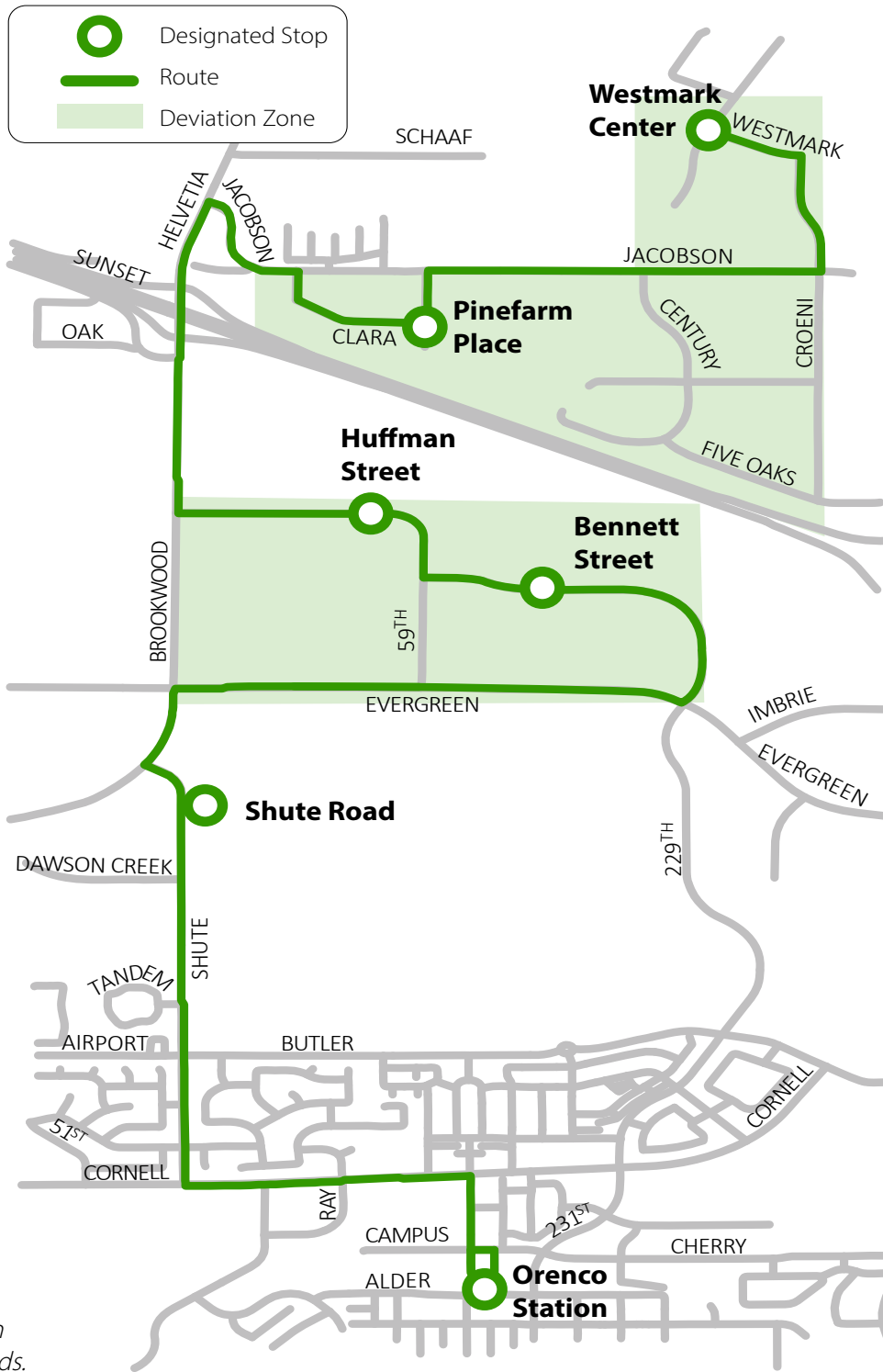
For service questions call:
503.226.0700 | TTY: 711

N.Hillsboro Link is operated by:

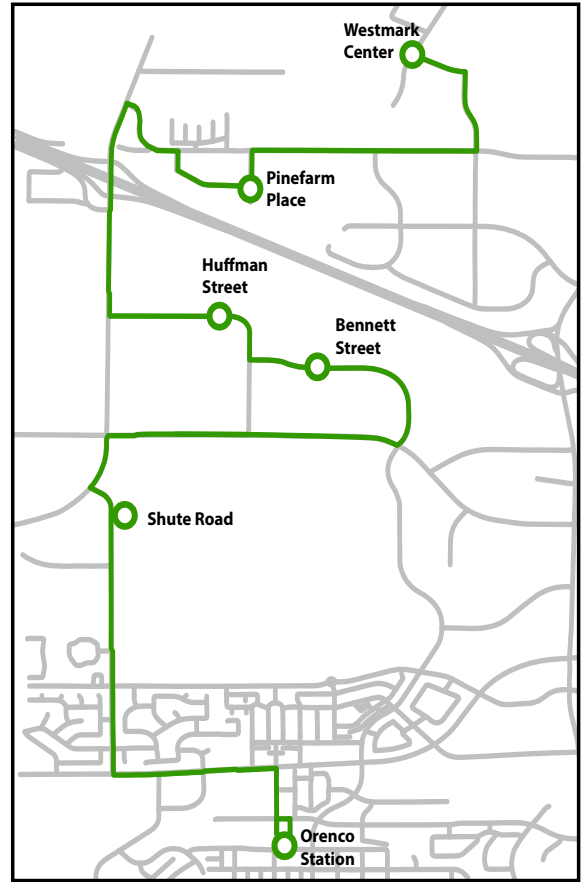


9955 NE Glisan St.
Portland, OR 97220
rideconnection.org

To link accessible, responsive transportation alternatives with individual and community needs.



N.Hillsboro Link



Effective October 1, 2018

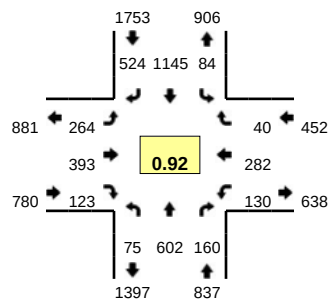
APPENDIX D.
**TRAFFIC COUNT
SUMMARIES**

Type of peak hour being reported: Intersection Peak

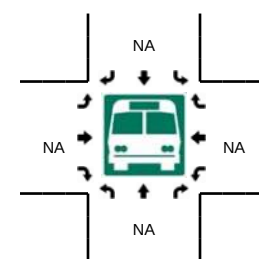
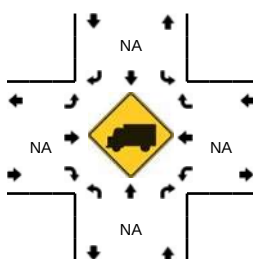
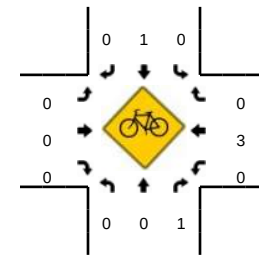
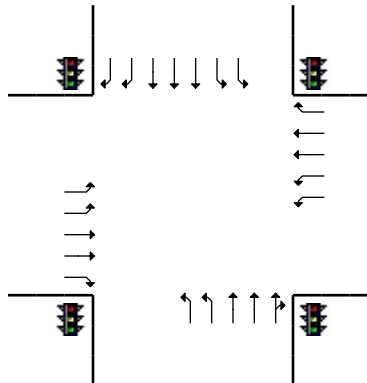
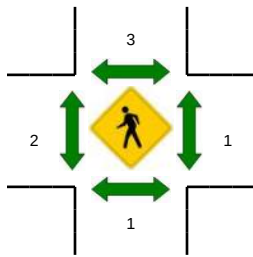
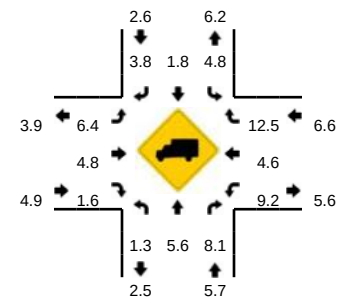
Method for determining peak hour: Total Entering Volume

LOCATION: NE Brookwood Pkwy -- NE Evergreen Rd
CITY/STATE: Hillsboro, OR

QC JOB #: 14854601
DATE: Wed, Nov 28 2018



Peak-Hour: 7:25 AM -- 8:25 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

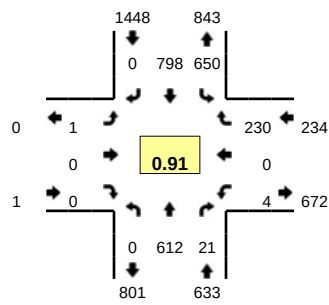


5-Min Count Period Beginning At	NE Brookwood Pkwy (Northbound)				NE Brookwood Pkwy (Southbound)				NE Evergreen Rd (Eastbound)				NE Evergreen Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:55 AM	2	42	18	0	2	73	21	0	33	37	13	0	11	13	5	0	270	2627
7:00 AM	0	41	8	0	8	81	24	0	27	28	8	0	9	14	2	0	250	2703
7:05 AM	5	45	16	0	3	65	25	0	20	30	11	0	10	12	1	0	243	2716
7:10 AM	5	49	7	0	6	68	22	1	27	22	8	0	12	12	3	0	242	2776
7:15 AM	4	44	4	0	7	94	26	0	23	38	13	0	6	13	5	0	277	2846
7:20 AM	3	47	9	0	9	88	28	0	21	30	12	0	10	22	2	0	281	2939
7:25 AM	4	45	12	0	8	106	27	0	21	32	10	0	7	22	1	0	295	3030
7:30 AM	5	61	14	0	12	139	40	0	22	16	8	0	7	17	3	0	344	3176
7:35 AM	6	68	10	0	8	81	38	0	39	38	11	0	12	24	1	0	336	3303
7:40 AM	0	58	19	0	8	89	32	0	24	51	13	0	13	24	3	0	334	3398
7:45 AM	13	46	17	0	8	116	42	0	16	42	14	0	2	20	2	0	338	3464
7:50 AM	3	44	15	0	5	107	41	0	27	38	16	0	11	33	7	0	347	3557
7:55 AM	13	51	19	0	15	105	37	0	24	45	10	0	8	21	5	0	353	3640
8:00 AM	7	27	10	0	6	81	51	0	16	29	4	0	15	39	1	0	286	3676
8:05 AM	7	60	11	0	2	98	57	0	16	30	10	0	13	20	6	0	330	3763
8:10 AM	4	54	11	0	6	73	45	0	17	33	9	0	8	22	3	0	285	3806
8:15 AM	7	39	10	0	4	60	58	0	31	26	7	0	13	19	2	0	276	3805
8:20 AM	6	49	12	0	2	90	56	0	11	13	11	0	20	21	6	1	298	3822
8:25 AM	6	46	12	0	6	87	38	0	19	33	6	0	6	18	2	0	279	3806
8:30 AM	5	42	13	0	5	67	57	0	19	27	6	0	9	26	1	0	277	3739
8:35 AM	11	60	11	0	3	61	42	0	30	21	5	0	9	18	3	0	274	3677
8:40 AM	6	56	10	0	2	77	51	0	18	25	8	0	10	30	5	0	298	3641
8:45 AM	3	50	13	0	5	88	62	0	30	35	4	0	10	13	2	0	315	3618
8:50 AM	4	43	10	0	3	69	56	0	30	25	11	0	15	36	5	0	307	3578
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	116	564	204	0	112	1312	480	0	268	500	160	0	84	296	56	0	4152	
Heavy Trucks	0	24	20	0	0	28	4	0	8	24	4	0	0	0	0	0	112	
Pedestrians	0	4	0	0	0	0	0	0	0	4	0	0	0	0	0	0	8	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

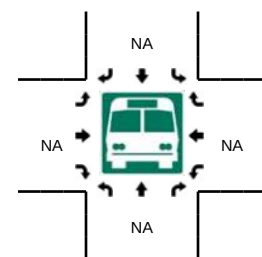
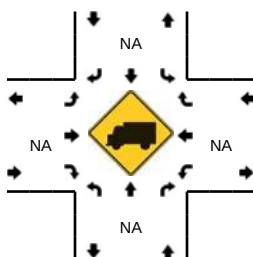
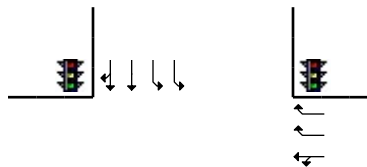
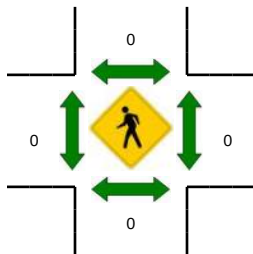
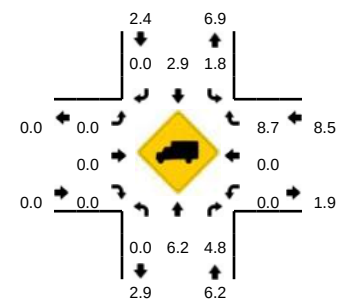
Comments:

LOCATION: NE Brookwood Pkwy -- NE Shute Rd
CITY/STATE: Hillsboro, OR

QC JOB #: 14854603
DATE: Wed, Nov 28 2018



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

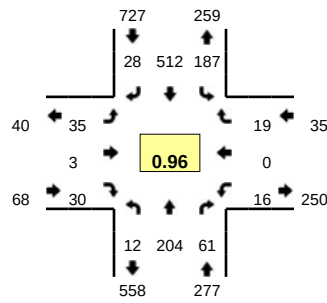


5-Min Count Period Beginning At	NE Brookwood Pkwy (Northbound)				NE Brookwood Pkwy (Southbound)				NE Shute Rd (Eastbound)				NE Shute Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:45 AM	0	54	0	0	66	43	0	0	0	0	0	0	0	0	11	0	174	1749
6:50 AM	0	72	3	0	26	44	0	0	0	0	0	0	0	1	8	0	154	1741
6:55 AM	0	50	5	0	58	43	2	0	0	0	0	0	0	0	17	0	175	1760
7:00 AM	0	56	2	0	66	53	0	0	1	0	0	0	0	1	4	0	183	1822
7:05 AM	0	52	1	0	23	53	0	0	0	0	0	0	1	0	20	0	150	1810
7:10 AM	0	41	4	0	45	44	0	0	0	1	0	0	0	0	18	0	153	1836
7:15 AM	0	43	2	0	55	43	0	0	0	0	0	0	0	0	21	0	164	1841
7:20 AM	0	45	0	0	74	50	0	0	0	0	0	0	0	0	19	0	188	1905
7:25 AM	0	61	1	0	61	70	0	0	0	0	0	0	0	0	14	1	208	1971
7:30 AM	0	43	1	0	62	94	0	0	0	0	0	0	0	0	29	0	229	2063
7:35 AM	0	69	4	0	56	49	0	0	0	0	0	0	0	0	20	0	198	2137
7:40 AM	0	51	2	0	44	88	0	0	0	0	0	0	0	0	14	0	199	2175
7:45 AM	0	54	4	0	54	53	0	0	0	0	0	0	0	0	11	0	176	2177
7:50 AM	0	47	1	0	57	103	0	0	0	0	0	0	0	0	28	0	236	2259
7:55 AM	0	57	2	0	54	56	0	0	0	0	0	0	1	0	15	0	185	2269
8:00 AM	0	34	2	0	39	77	0	0	0	0	0	0	0	0	25	0	177	2263
8:05 AM	0	46	1	0	59	66	0	0	0	0	0	0	0	0	19	0	191	2304
8:10 AM	0	62	1	0	35	49	0	0	1	0	0	0	2	0	15	0	165	2316
8:15 AM	0	45	0	0	35	52	0	0	0	0	0	0	0	0	27	0	159	2311
8:20 AM	0	39	0	0	57	74	0	0	0	0	0	0	0	0	22	0	192	2315
8:25 AM	0	43	3	0	46	52	0	0	1	0	0	0	0	0	17	0	162	2269
8:30 AM	0	53	3	0	29	48	0	0	0	0	0	0	1	1	12	0	147	2187
8:35 AM	0	71	1	0	28	65	0	0	0	0	0	0	0	0	16	0	181	2170
8:40 AM	0	44	1	0	42	56	1	0	0	0	0	0	1	0	19	0	164	2135
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	692	24	0	716	852	0	0	0	0	0	0	0	0	252	4	2540	
Heavy Trucks	0	36	0	0	12	8	0	0	0	0	0	0	0	0	28	0	84	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	
Railroad																		
Stopped Buses																		

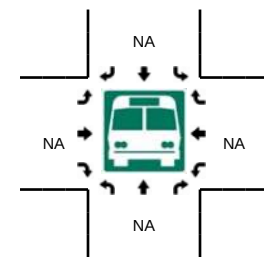
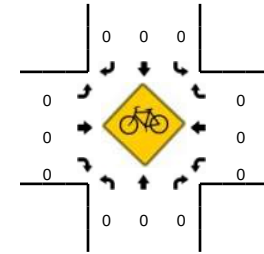
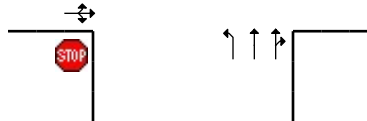
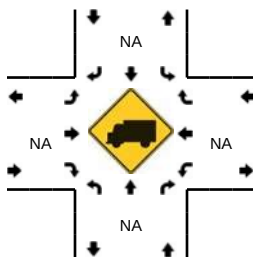
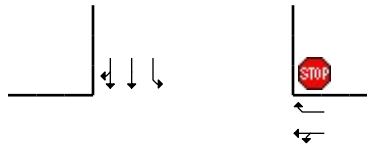
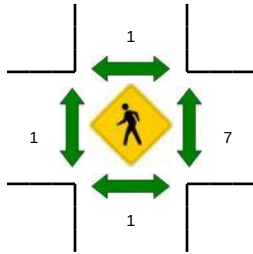
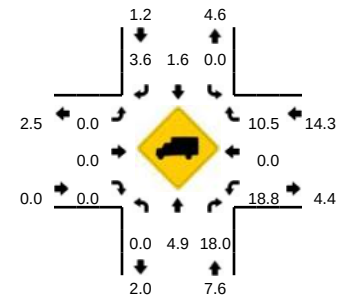
Comments:

LOCATION: NE Shute Rd -- RS5 Access
CITY/STATE: Hillsboro, OR

QC JOB #: 14840001
DATE: Wed, Nov 07 2018



Peak-Hour: 7:25 AM -- 8:25 AM
Peak 15-Min: 8:00 AM -- 8:15 AM

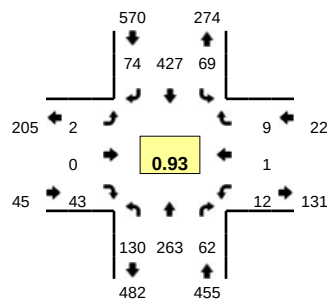


5-Min Count Period Beginning At	NE Shute Rd (Northbound)				NE Shute Rd (Southbound)				RS5 Access (Eastbound)				RS5 Access (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:55 AM	0	12	7	0	20	29	1	0	1	0	2	0	0	0	1	0	73	644
7:00 AM	1	16	7	0	14	39	4	0	8	0	2	0	1	0	0	0	92	686
7:05 AM	0	16	5	0	9	24	0	0	2	0	0	0	0	0	3	0	59	715
7:10 AM	1	19	2	0	10	38	4	0	1	0	3	0	0	0	0	0	78	750
7:15 AM	0	9	6	0	8	27	1	0	0	1	0	0	1	0	0	0	53	757
7:20 AM	1	19	2	0	14	56	1	1	3	0	2	0	1	0	3	0	103	817
7:25 AM	0	23	6	0	11	47	3	0	3	0	1	0	1	0	1	0	96	879
7:30 AM	0	19	3	0	17	51	1	0	2	0	4	0	2	0	1	0	100	924
7:35 AM	1	15	8	0	10	24	3	0	5	2	2	0	1	0	2	0	73	952
7:40 AM	1	11	6	0	16	55	2	0	2	0	1	0	0	0	1	0	95	979
7:45 AM	3	7	9	0	9	38	3	0	4	0	4	0	2	0	2	0	81	991
7:50 AM	2	22	2	0	14	48	4	0	1	0	7	0	2	0	1	0	103	1006
7:55 AM	1	20	1	0	14	26	3	1	6	0	2	0	0	0	1	0	75	1008
8:00 AM	1	15	7	0	20	53	4	0	4	0	0	0	0	0	2	0	106	1022
8:05 AM	3	22	9	0	14	37	1	0	2	0	4	0	2	0	1	0	95	1058
8:10 AM	0	14	3	0	20	43	2	0	1	0	0	0	3	0	2	0	88	1068
8:15 AM	0	18	3	0	15	41	1	0	3	1	3	0	1	0	1	0	87	1102
8:20 AM	0	18	4	0	26	49	1	0	2	0	2	0	2	0	4	0	108	1107
8:25 AM	0	11	2	0	8	28	1	0	2	0	1	0	3	0	1	0	57	1068
8:30 AM	0	19	6	0	21	49	1	0	2	0	1	0	1	0	2	0	102	1070
8:35 AM	0	22	4	0	15	31	0	0	0	0	2	0	1	0	0	0	75	1072
8:40 AM	0	16	4	0	14	35	2	0	1	1	1	0	1	0	0	0	75	1052
8:45 AM	0	16	4	0	13	33	3	0	2	1	1	0	0	1	2	0	76	1047
8:50 AM	0	20	6	0	10	33	0	0	0	1	3	0	3	0	4	0	80	1024
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	16	204	76	0	216	532	28	0	28	0	16	0	20	0	20	0	1156	
Heavy Trucks	0	20	12		0	24	0		0	0	0		8	0	0		64	
Pedestrians	0				0				0				8				8	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

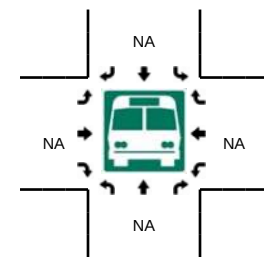
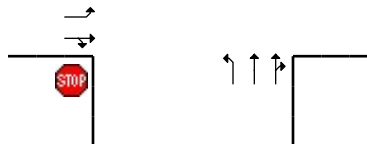
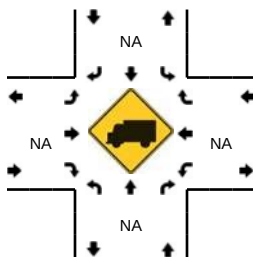
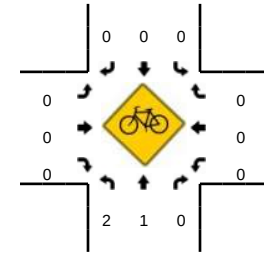
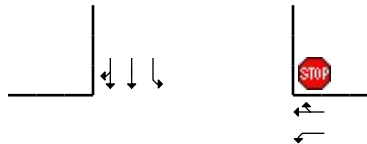
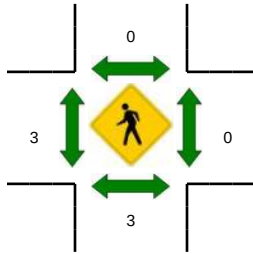
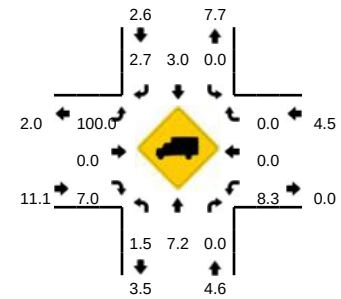
Comments:

LOCATION: NE Shute Rd -- NE Dawson Creek Dr Access
CITY/STATE: Hillsboro, OR

QC JOB #: 14840003
DATE: Wed, Nov 07 2018



Peak-Hour: 7:20 AM -- 8:20 AM
Peak 15-Min: 7:50 AM -- 8:05 AM

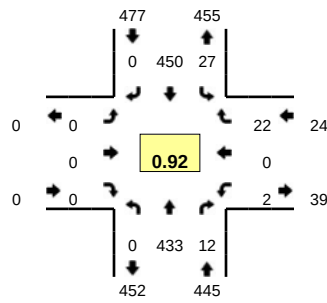


5-Min Count Period Beginning At	NE Shute Rd (Northbound)				NE Shute Rd (Southbound)				NE Dawson Creek Dr Access (Eastbound)				NE Dawson Creek Dr Access (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:50 AM	5	18	11	0	7	32	4	0	0	0	8	0	0	0	0	0	85	635
6:55 AM	7	17	12	0	3	24	3	0	0	0	2	0	0	0	1	0	69	655
7:00 AM	6	23	7	0	9	26	7	0	0	0	2	0	0	0	0	0	80	705
7:05 AM	5	17	6	0	7	17	0	0	0	0	5	0	0	0	0	0	57	723
7:10 AM	9	25	8	0	8	30	2	0	0	0	3	0	3	0	0	0	88	765
7:15 AM	5	15	5	0	3	26	1	0	0	0	4	0	0	0	0	0	59	784
7:20 AM	9	20	6	0	6	48	7	0	0	0	2	0	1	0	1	0	100	838
7:25 AM	5	29	8	0	5	39	5	0	0	0	4	0	2	0	0	0	97	900
7:30 AM	7	23	5	0	10	42	4	0	0	0	5	0	0	1	0	0	97	938
7:35 AM	6	22	6	0	4	22	2	0	0	0	3	0	1	0	0	0	66	950
7:40 AM	5	22	3	0	5	39	11	0	0	0	2	0	1	0	1	0	89	959
7:45 AM	12	17	0	0	1	40	5	0	0	0	2	0	0	0	0	0	77	964
7:50 AM	17	22	8	0	7	44	6	0	1	0	5	0	1	0	0	0	111	990
7:55 AM	20	23	11	0	6	17	5	0	0	0	4	0	1	0	1	0	88	1009
8:00 AM	12	21	4	0	5	36	12	0	1	0	4	0	1	0	0	0	96	1025
8:05 AM	18	31	6	0	6	30	9	0	0	0	5	0	2	0	3	0	110	1078
8:10 AM	6	17	2	0	8	33	5	0	0	0	4	0	0	0	0	0	75	1065
8:15 AM	13	16	3	0	6	37	3	0	0	0	3	0	2	0	3	0	86	1092
8:20 AM	11	18	1	0	7	35	11	0	0	0	5	0	2	0	2	0	92	1084
8:25 AM	13	12	5	0	1	28	7	0	0	0	4	0	0	0	1	0	71	1058
8:30 AM	8	20	0	0	3	36	11	0	0	0	3	0	1	0	1	0	83	1044
8:35 AM	4	24	5	0	1	27	1	0	0	0	2	0	0	0	5	0	69	1047
8:40 AM	7	20	6	0	1	38	5	0	0	0	0	0	2	0	1	0	80	1038
8:45 AM	6	18	4	0	1	23	6	0	0	0	2	0	1	0	2	0	63	1024
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	196	264	92	0	72	388	92	0	8	0	52	0	12	0	4	0	1180	
Heavy Trucks	4	8	0		0	16	4		8	0	4		0	0	0		44	
Pedestrians		0				0				8				0			8	
Bicycles	1	0	0		0	0	0		0	0	0		0	0	0		1	
Railroad																		
Stopped Buses																		

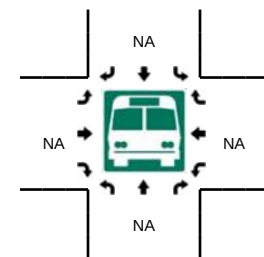
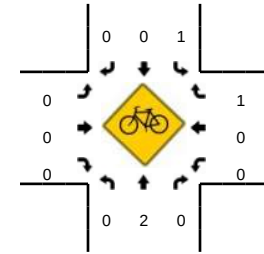
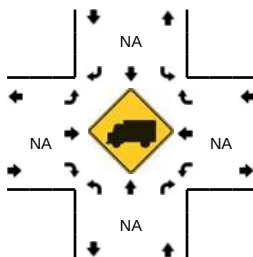
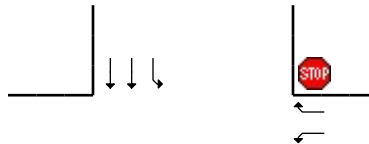
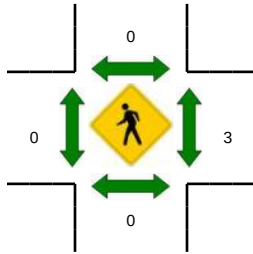
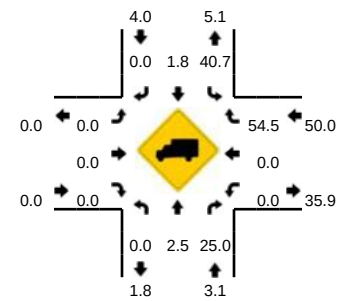
Comments:

LOCATION: NE Shute Rd -- D1X Access
CITY/STATE: Hillsboro, OR

QC JOB #: 14840005
DATE: Wed, Nov 07 2018



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

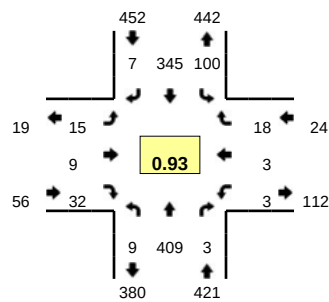


5-Min Count Period Beginning At	NE Shute Rd (Northbound)				NE Shute Rd (Southbound)				D1X Access (Eastbound)				D1X Access (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:50 AM	0	31	0	0	2	38	0	0	0	0	0	0	0	0	0	0	71	558
6:55 AM	0	32	1	0	0	28	0	0	0	0	0	0	1	0	3	0	65	568
7:00 AM	0	32	0	0	1	26	0	0	0	0	0	0	0	0	1	0	60	599
7:05 AM	0	30	0	0	0	23	0	0	0	0	0	0	0	0	3	0	56	617
7:10 AM	0	36	3	0	3	28	0	0	0	0	0	0	0	0	1	0	71	651
7:15 AM	0	23	1	0	5	30	0	0	0	0	0	0	0	0	2	0	61	675
7:20 AM	0	33	1	0	3	44	0	0	0	0	0	0	0	0	2	0	83	721
7:25 AM	0	45	0	0	4	44	0	0	0	0	0	0	0	0	1	0	94	784
7:30 AM	0	30	1	0	2	44	0	0	0	0	0	0	0	0	2	0	79	813
7:35 AM	0	34	1	0	2	26	0	0	0	0	0	0	0	0	3	0	66	837
7:40 AM	0	28	1	0	3	37	0	0	0	0	0	0	0	0	3	0	72	843
7:45 AM	0	26	0	0	1	40	0	0	0	0	0	0	0	0	2	0	69	847
7:50 AM	0	46	2	0	2	44	0	0	0	0	0	0	1	0	4	0	99	875
7:55 AM	0	51	1	0	0	28	0	0	0	0	0	0	0	0	0	0	80	890
8:00 AM	0	40	1	0	2	30	0	0	0	0	0	0	1	0	1	0	75	905
8:05 AM	0	43	3	0	2	41	0	0	0	0	0	0	0	0	2	0	91	940
8:10 AM	0	27	1	0	4	35	0	0	0	0	0	0	0	0	0	0	67	936
8:15 AM	0	30	0	0	2	37	0	0	0	0	0	0	0	0	2	0	71	946
8:20 AM	0	32	0	0	2	35	0	0	0	0	0	0	0	0	3	0	72	935
8:25 AM	0	30	3	0	4	29	0	0	0	0	0	0	0	0	0	0	66	907
8:30 AM	0	25	0	0	1	40	0	0	0	0	0	0	0	0	2	0	68	896
8:35 AM	0	27	4	0	0	22	0	0	0	0	0	0	2	0	3	0	58	888
8:40 AM	0	30	0	0	4	40	0	0	0	0	0	0	0	0	5	0	79	895
8:45 AM	0	22	0	0	2	26	0	0	0	0	0	0	0	0	3	0	53	879
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	0	432	8	0	36	528	0	0	0	0	0	0	0	0	20	0	1024	
Heavy Trucks	0	8	0	0	16	8	0	0	0	0	0	0	0	0	8	0	40	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

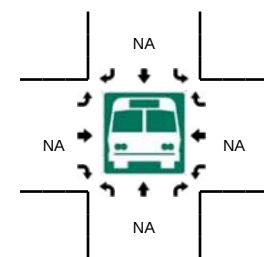
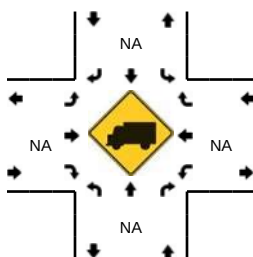
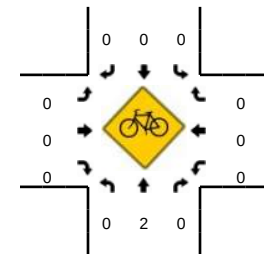
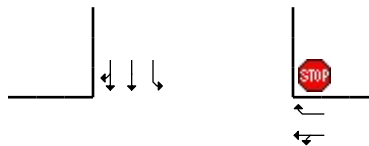
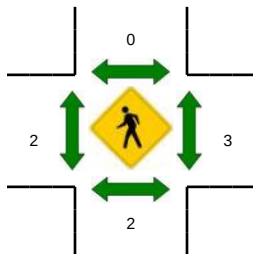
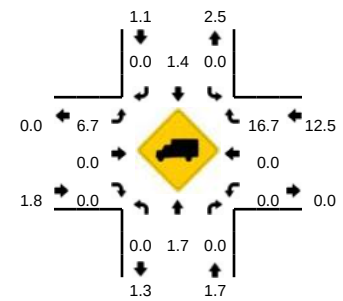
Comments:

LOCATION: NE Shute Rd -- NE Tandem Way Access
CITY/STATE: Hillsboro, OR

QC JOB #: 14840007
DATE: Wed, Nov 07 2018



Peak-Hour: 7:20 AM -- 8:20 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

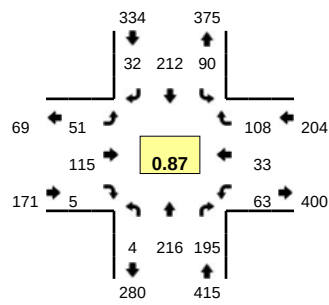


5-Min Count Period Beginning At	NE Shute Rd (Northbound)				NE Shute Rd (Southbound)				NE Tandem Way Access (Eastbound)				NE Tandem Way Access (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:50 AM	0	26	0	0	8	24	1	0	4	0	1	0	0	0	1	0	65	535
6:55 AM	0	35	0	0	16	18	0	0	1	1	1	0	0	0	1	0	73	565
7:00 AM	0	30	2	0	9	16	0	0	2	0	4	0	0	0	0	0	63	600
7:05 AM	0	30	0	0	8	15	0	0	1	2	3	0	0	0	0	0	59	619
7:10 AM	0	33	0	0	9	16	1	1	3	0	1	0	0	0	3	0	67	654
7:15 AM	2	20	0	0	12	22	0	0	1	0	3	0	0	0	3	0	63	678
7:20 AM	0	32	0	0	13	24	0	0	4	1	3	0	0	0	1	0	78	723
7:25 AM	2	38	1	0	17	34	0	0	1	2	1	0	0	0	3	0	99	792
7:30 AM	1	29	0	0	7	33	1	0	1	1	1	0	0	0	1	0	75	817
7:35 AM	0	33	0	0	6	24	2	0	2	1	5	0	0	1	0	0	74	849
7:40 AM	1	22	0	0	9	27	0	0	0	1	1	0	0	0	2	0	63	848
7:45 AM	2	28	1	0	8	33	0	0	0	1	6	0	0	0	0	0	79	858
7:50 AM	0	47	1	0	6	37	0	0	1	0	3	0	2	0	0	0	97	890
7:55 AM	1	49	0	0	5	23	0	0	1	0	1	0	0	0	1	0	81	898
8:00 AM	1	34	0	0	2	23	1	0	2	1	3	0	0	1	4	0	72	907
8:05 AM	1	42	0	0	9	36	1	0	1	0	3	0	1	0	3	0	97	945
8:10 AM	0	25	0	0	11	20	1	0	0	1	3	0	0	0	2	0	63	941
8:15 AM	0	30	0	0	7	31	1	0	2	0	2	0	0	1	1	0	75	953
8:20 AM	1	29	1	0	6	29	0	0	0	1	3	0	0	0	1	0	71	946
8:25 AM	1	30	0	0	10	21	0	1	1	0	2	0	0	0	1	0	67	914
8:30 AM	1	21	1	0	6	32	0	0	2	1	3	0	0	0	1	0	68	907
8:35 AM	0	30	1	0	3	23	0	0	2	1	3	0	0	0	1	0	64	897
8:40 AM	1	25	0	0	7	33	0	0	3	0	3	0	2	0	2	0	76	910
8:45 AM	1	20	0	0	2	24	0	0	2	0	2	0	0	0	0	0	51	882
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	12	496	8	0	76	372	0	0	8	4	40	0	8	0	4	0	1028	
Heavy Trucks	0	12	0	0	0	4	0	0	0	0	0	0	0	0	4	0	20	
Pedestrians	8				0				4				4				16	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

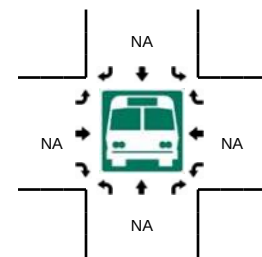
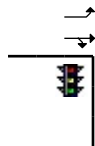
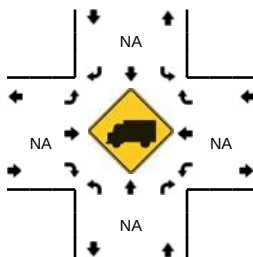
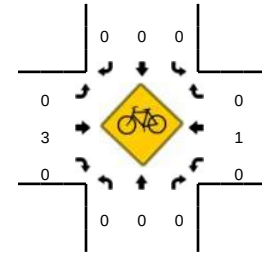
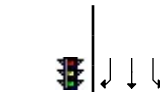
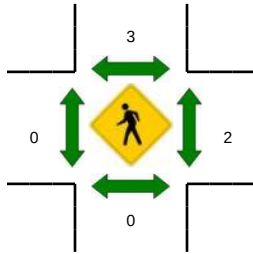
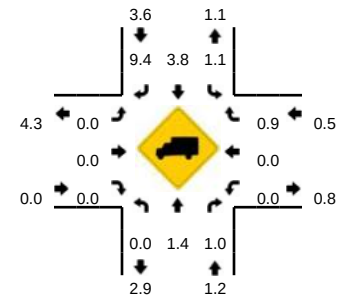
Comments:

LOCATION: NE Shute Rd -- NE Airport Rd
CITY/STATE: Hillsboro, OR

QC JOB #: 14854605
DATE: Wed, Nov 28 2018



Peak-Hour: 7:10 AM -- 8:10 AM
Peak 15-Min: 7:50 AM -- 8:05 AM

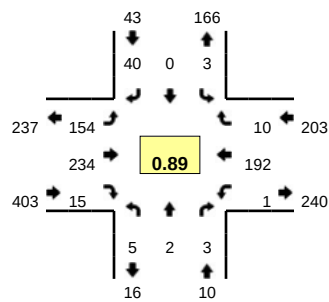


5-Min Count Period Beginning At	NE Shute Rd (Northbound)				NE Shute Rd (Southbound)				NE Airport Rd (Eastbound)				NE Airport Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:40 AM	0	17	10	0	10	8	2	0	2	9	3	0	1	3	8	0	73	598
6:45 AM	1	12	13	0	9	13	1	0	4	14	4	0	2	0	6	0	79	616
6:50 AM	0	21	12	0	12	6	2	0	4	6	1	0	2	0	5	0	71	634
6:55 AM	1	23	19	0	9	15	1	0	4	6	0	0	2	1	4	0	85	659
7:00 AM	1	15	16	0	7	5	1	0	5	8	0	0	2	2	4	0	66	669
7:05 AM	1	19	13	0	7	10	1	0	9	4	1	0	1	1	5	0	72	702
7:10 AM	1	9	25	0	8	7	2	0	5	14	0	0	1	1	7	0	80	747
7:15 AM	0	17	19	0	12	20	1	0	3	12	0	0	1	3	5	0	93	804
7:20 AM	0	18	25	0	7	13	1	0	4	15	0	0	5	0	5	0	93	857
7:25 AM	3	20	20	0	7	16	1	0	7	2	0	0	9	2	11	0	98	920
7:30 AM	0	21	15	0	10	15	3	0	6	11	0	0	2	1	8	0	92	959
7:35 AM	0	11	12	0	9	21	1	0	5	9	0	0	2	1	5	0	76	978
7:40 AM	0	18	19	0	2	16	3	0	4	5	1	0	3	2	12	0	85	990
7:45 AM	0	22	15	0	6	21	6	0	1	6	1	0	2	3	5	0	88	999
7:50 AM	0	20	10	0	12	21	4	0	5	10	0	0	4	5	14	0	105	1033
7:55 AM	0	25	11	0	6	21	2	0	4	7	0	0	13	7	10	0	106	1054
8:00 AM	0	19	9	0	3	22	3	0	3	14	2	0	16	4	16	0	111	1099
8:05 AM	0	16	15	0	8	19	5	0	4	10	1	0	5	4	10	0	97	1124
8:10 AM	1	21	3	0	7	14	0	0	3	11	0	0	6	2	12	0	80	1124
8:15 AM	1	14	18	0	7	14	1	0	5	8	0	0	4	5	14	0	91	1122
8:20 AM	0	19	6	0	3	9	1	0	4	10	0	0	3	8	10	0	73	1102
8:25 AM	1	15	13	0	6	37	3	0	3	9	2	0	3	5	6	0	103	1107
8:30 AM	0	9	11	0	3	15	2	0	5	6	0	0	7	3	11	0	72	1087
8:35 AM	0	8	8	0	3	9	3	0	4	10	0	0	2	5	9	0	61	1072
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	0	256	120	0	84	256	36	0	48	124	8	0	132	64	160	0	1288	
Heavy Trucks	0	0	4	0	0	16	0	0	0	0	0	0	0	0	0	0	20	
Pedestrians	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	
Bicycles	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	
Railroad																		
Stopped Buses																		

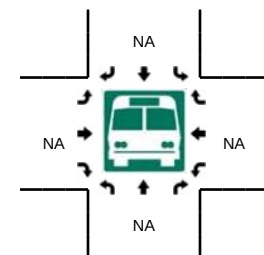
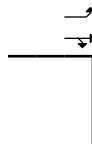
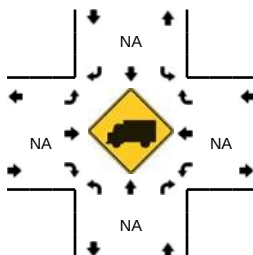
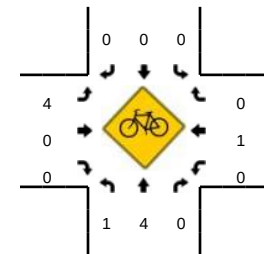
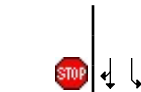
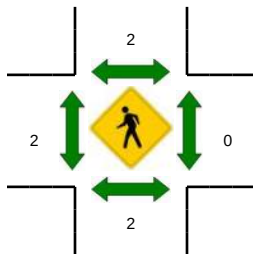
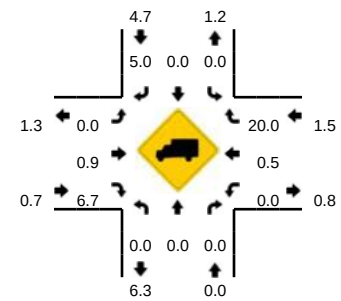
Comments:

LOCATION: NE 60th PI Access -- NE Butler St
CITY/STATE: Hillsboro, OR

QC JOB #: 14840009
DATE: Wed, Nov 07 2018



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

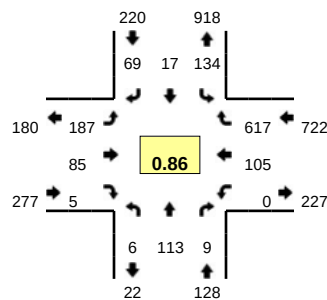


5-Min Count Period Beginning At	NE 60th PI Access (Northbound)				NE 60th PI Access (Southbound)				NE Butler St (Eastbound)				NE Butler St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:45 AM	0	0	1	0	0	0	1	0	11	21	0	0	0	13	0	0	47	418
6:50 AM	0	0	0	0	0	0	3	0	9	24	0	0	0	8	0	0	44	398
6:55 AM	1	0	0	0	0	0	1	0	12	24	0	0	0	12	0	0	50	408
7:00 AM	2	1	0	0	1	0	1	0	8	26	0	0	0	8	0	0	47	430
7:05 AM	0	0	1	0	1	0	1	0	11	23	0	0	0	5	1	0	43	449
7:10 AM	0	0	0	0	1	0	0	0	20	22	0	0	0	6	2	0	51	475
7:15 AM	0	0	0	0	0	0	0	0	23	27	1	0	0	4	1	0	56	498
7:20 AM	1	0	0	0	0	0	5	0	28	24	0	0	0	15	4	0	77	558
7:25 AM	0	0	1	0	0	0	6	0	19	17	0	0	0	7	1	0	51	586
7:30 AM	1	0	0	0	0	0	1	0	11	26	1	0	0	15	1	0	56	613
7:35 AM	1	0	0	0	0	0	0	0	16	19	1	0	0	9	0	0	46	622
7:40 AM	0	1	0	0	1	0	5	0	4	12	1	0	0	11	1	0	36	604
7:45 AM	0	0	0	0	1	0	1	0	7	14	2	0	0	15	0	0	40	597
7:50 AM	1	0	0	0	0	0	7	0	7	19	3	0	0	21	0	0	58	611
7:55 AM	0	1	0	0	1	0	4	0	14	16	0	0	0	22	0	0	58	619
8:00 AM	0	0	1	0	0	0	6	0	8	26	0	0	0	27	2	0	70	642
8:05 AM	1	0	1	0	0	0	3	0	8	15	1	0	1	23	0	0	53	652
8:10 AM	0	0	0	0	0	0	2	0	9	19	5	0	0	23	0	0	58	659
8:15 AM	0	0	0	0	1	0	1	0	6	14	2	0	0	12	0	0	36	639
8:20 AM	1	0	1	0	0	0	1	0	12	19	1	0	0	12	0	0	47	609
8:25 AM	0	0	0	0	0	0	2	0	5	15	0	0	0	20	1	0	43	601
8:30 AM	0	0	1	0	2	0	2	0	3	11	0	0	0	14	0	0	33	578
8:35 AM	1	0	3	0	0	0	3	0	6	20	0	0	0	16	0	0	49	581
8:40 AM	1	0	0	0	0	0	1	0	5	22	1	0	0	16	0	0	46	591
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	4	4	4	0	4	0	68	0	116	244	12	0	0	280	8	0	744	
Heavy Trucks	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3	
Railroad																		
Stopped Buses																		

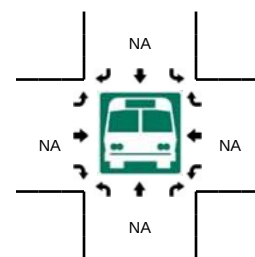
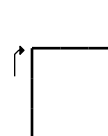
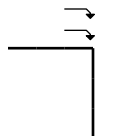
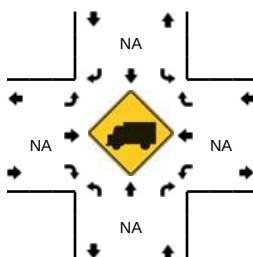
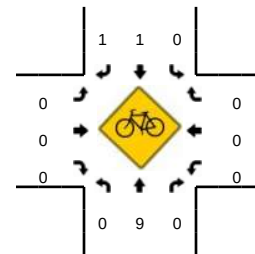
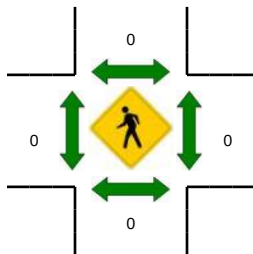
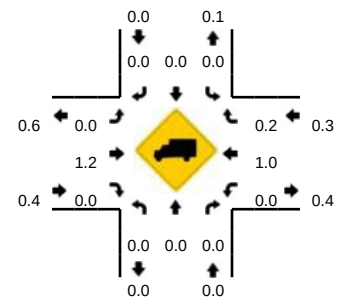
Comments:

LOCATION: NE 65th Ave Access -- NE Butler St
CITY/STATE: Hillsboro, OR

QC JOB #: 14840011
DATE: Wed, Nov 07 2018



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



5-Min Count Period Beginning At	NE 65th Ave Access (Northbound)				NE 65th Ave Access (Southbound)				NE Butler St (Eastbound)				NE Butler St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:40 AM	0	2	0	0	6	0	10	0	11	3	2	0	0	9	34	0	77	645
6:45 AM	0	3	0	0	1	0	4	0	13	10	0	0	0	9	41	0	81	638
6:50 AM	0	8	0	0	2	1	2	0	18	8	1	1	0	5	43	0	89	628
6:55 AM	0	1	1	0	2	0	3	0	17	6	2	0	0	8	64	0	104	675
7:00 AM	0	8	2	1	5	0	2	0	24	4	0	0	0	6	50	0	102	746
7:05 AM	0	8	0	0	3	2	1	0	17	8	0	0	0	7	45	0	91	806
7:10 AM	1	5	0	0	6	1	1	0	24	4	0	0	0	1	63	0	106	866
7:15 AM	0	13	1	0	4	2	3	0	27	4	0	0	0	2	62	0	118	943
7:20 AM	0	15	0	0	11	1	9	0	18	8	0	0	0	7	68	0	137	1039
7:25 AM	1	25	1	0	14	1	5	1	18	3	0	0	0	0	45	0	114	1120
7:30 AM	1	9	1	0	12	1	3	0	16	11	0	0	0	11	75	0	140	1222
7:35 AM	0	7	0	0	14	3	4	0	12	7	0	0	0	6	66	0	119	1278
7:40 AM	0	4	1	0	8	2	3	0	9	5	0	0	0	9	51	0	92	1293
7:45 AM	1	6	1	0	10	2	3	0	11	7	0	0	0	12	37	0	90	1302
7:50 AM	0	8	0	0	6	0	8	0	15	9	1	0	0	15	32	0	94	1307
7:55 AM	0	5	0	0	17	0	14	0	8	6	1	0	0	12	40	0	103	1306
8:00 AM	2	10	1	0	16	2	7	0	16	16	2	0	0	15	33	0	120	1324
8:05 AM	0	6	3	0	15	2	9	0	13	5	1	0	0	15	45	0	114	1347
8:10 AM	1	6	1	0	11	2	9	0	13	7	0	0	0	13	37	0	100	1341
8:15 AM	1	1	0	0	10	3	3	0	11	8	0	0	0	8	32	0	77	1300
8:20 AM	0	3	0	0	7	2	4	0	9	7	1	0	0	10	26	0	69	1232
8:25 AM	0	8	5	0	10	2	3	0	13	2	0	0	0	10	25	0	78	1196
8:30 AM	1	2	2	0	4	1	1	0	8	10	1	0	0	11	25	0	66	1122
8:35 AM	0	1	0	0	7	1	2	0	4	14	0	1	1	13	38	0	82	1085
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	8	196	8	0	148	12	68	4	208	88	0	0	0	72	752	0	1564	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	
Railroad																		
Stopped Buses																		

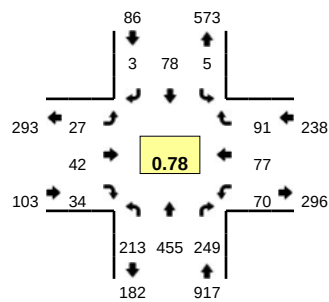
Comments:

Type of peak hour being reported: Intersection Peak

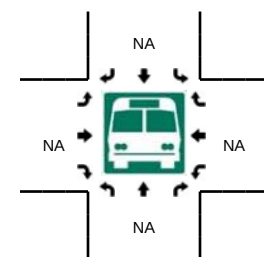
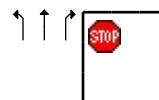
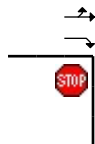
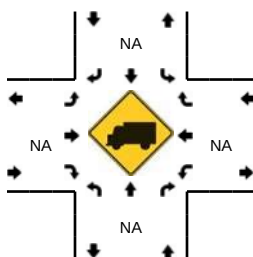
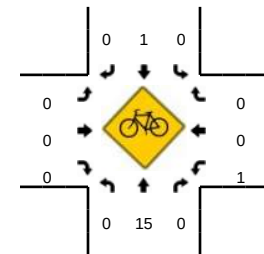
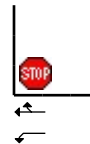
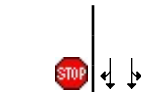
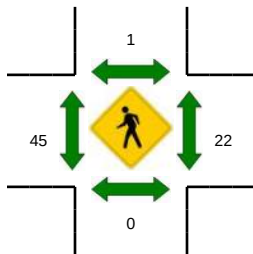
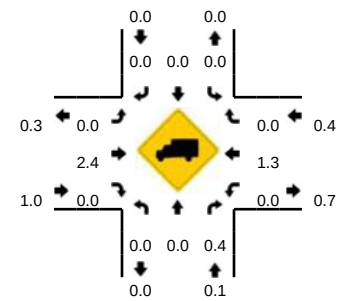
Method for determining peak hour: Total Entering Volume

LOCATION: NE 65th Ave/Intel Access -- Intel Internal Rd (Tandem Way)
CITY/STATE: Hillsboro, OR

QC JOB #: 14854703
DATE: Wed, Nov 28 2018



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

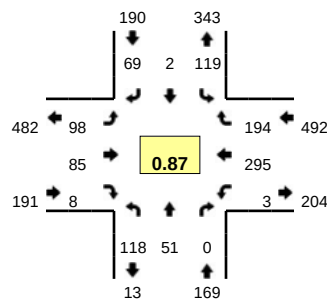


5-Min Count Period Beginning At	NE 65th Ave/Intel Access (Northbound)				NE 65th Ave/Intel Access (Southbound)				Intel Internal Rd (Tandem Way) (Eastbound)				Intel Internal Rd (Tandem Way) (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	10	20	11	0	0	1	0	0	2	4	1	0	2	6	10	0	67	
6:35 AM	11	20	13	0	0	0	0	0	0	1	1	0	2	5	6	0	59	
6:40 AM	8	19	12	0	0	2	0	0	1	5	0	0	3	9	7	0	66	
6:45 AM	9	31	11	0	0	1	0	0	2	2	1	0	1	7	13	0	78	
6:50 AM	14	36	17	0	0	2	0	0	0	5	0	0	1	6	9	0	90	
6:55 AM	19	36	17	0	1	1	0	0	1	3	0	0	3	7	4	0	92	719
7:00 AM	13	33	27	0	0	1	0	0	2	1	0	0	3	5	8	0	93	763
7:05 AM	15	33	24	0	1	1	1	0	0	2	4	0	1	6	8	0	96	820
7:10 AM	23	45	20	0	0	2	0	0	4	4	2	0	7	4	4	0	115	889
7:15 AM	26	47	28	0	0	6	1	0	2	8	3	0	4	6	8	0	139	979
7:20 AM	26	45	32	0	0	8	0	0	2	7	4	0	9	5	7	0	145	1081
7:25 AM	26	46	19	0	0	10	0	0	4	5	1	0	10	10	8	0	139	1179
7:30 AM	22	57	29	0	0	3	0	0	5	6	0	0	6	9	10	0	147	1259
7:35 AM	19	37	11	0	1	10	0	0	2	2	4	0	4	8	12	0	110	1310
7:40 AM	15	29	26	0	0	1	0	0	3	1	1	0	3	6	8	0	93	1337
7:45 AM	8	25	10	0	0	5	0	0	1	2	5	0	5	6	4	0	71	1330
7:50 AM	7	27	8	0	2	8	1	0	1	3	4	0	7	10	8	0	86	1326
7:55 AM	13	31	15	0	1	23	0	0	1	1	6	0	11	2	6	0	110	1344
8:00 AM	16	24	12	0	0	10	0	0	0	3	6	0	10	6	4	0	91	1342
8:05 AM	10	20	19	0	1	7	0	0	1	1	4	0	5	5	5	0	78	1324
8:10 AM	6	36	10	0	0	4	0	0	2	3	5	0	8	2	2	0	78	1287
8:15 AM	12	32	16	0	0	4	1	0	1	2	6	0	4	5	5	0	88	1236
8:20 AM	5	29	18	0	0	6	0	0	2	2	4	0	6	6	7	0	85	1176
8:25 AM	5	28	9	0	0	4	0	0	1	2	5	0	4	5	2	0	65	1102
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	296	592	320	0	0	84	0	0	44	72	20	0	100	96	100	0	1724	
Heavy Trucks	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4	
Pedestrians	0	0	0	0	0	0	0	0	0	72	0	0	0	16	0	0	88	
Bicycles	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
Railroad																		
Stopped Buses																		

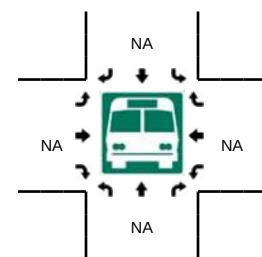
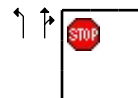
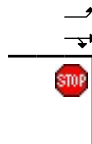
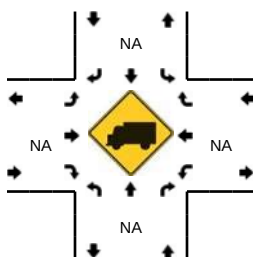
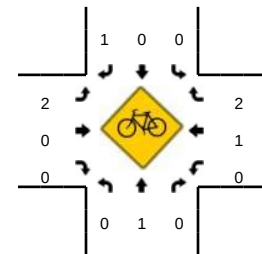
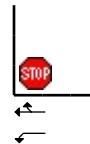
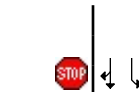
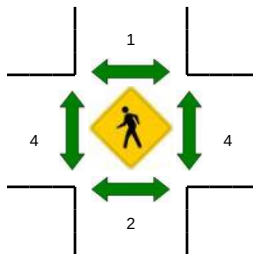
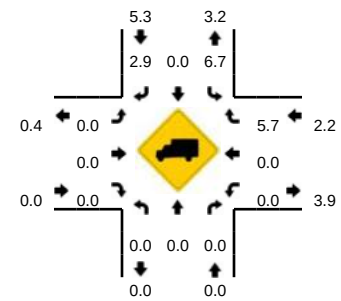
Comments: Summarize Count

LOCATION: RAP3 East Access Rd -- Intel Internal Rd (Tandem Way)
CITY/STATE: Hillsboro, OR

QC JOB #: 14736511
DATE: Thu, Jun 28 2018



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

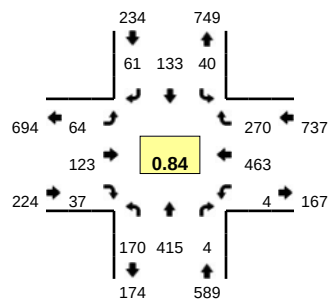


5-Min Count Period Beginning At	RAP3 East Access Rd (Northbound)				RAP3 East Access Rd (Southbound)				Intel Internal Rd (Tandem Way) (Eastbound)				Intel Internal Rd (Tandem Way) (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:40 AM	1	2	0	0	2	0	0	0	5	3	0	0	0	29	19	0	61	
6:45 AM	6	0	0	0	2	0	2	0	9	1	0	0	1	38	26	0	85	
6:50 AM	5	1	0	0	3	0	1	0	9	3	0	0	0	34	26	0	82	
6:55 AM	5	5	0	0	4	0	2	0	8	4	0	0	1	27	18	0	74	583
7:00 AM	10	2	0	0	4	0	3	0	4	6	0	0	0	27	19	0	75	629
7:05 AM	10	8	0	0	4	0	1	0	9	5	1	0	0	24	18	0	80	686
7:10 AM	11	2	0	0	10	1	5	0	16	5	1	0	0	30	15	0	96	747
7:15 AM	17	8	0	0	9	0	5	0	9	11	0	0	1	27	15	0	102	811
7:20 AM	19	9	0	0	3	0	5	0	6	7	1	0	0	29	23	0	102	881
7:25 AM	17	6	0	0	6	0	2	0	12	5	0	0	0	25	13	0	86	935
7:30 AM	13	7	0	0	10	0	8	0	10	7	0	0	0	26	17	0	98	988
7:35 AM	10	2	0	0	6	0	5	0	8	6	1	0	1	23	16	0	78	1019
7:40 AM	10	2	0	0	5	0	3	0	5	6	1	0	0	22	14	0	68	1026
7:45 AM	7	3	0	0	9	0	6	0	7	4	1	0	1	26	18	0	82	1023
7:50 AM	4	1	0	0	11	0	7	0	7	4	1	0	0	29	15	0	79	1020
7:55 AM	4	3	0	0	18	0	10	0	4	11	1	0	0	15	16	0	82	1028
8:00 AM	4	3	0	0	17	1	6	0	6	12	1	0	0	19	17	0	86	1039
8:05 AM	2	5	0	0	15	0	7	0	8	7	0	0	0	24	15	0	83	1042
8:10 AM	8	5	0	0	11	0	3	0	6	10	0	0	0	27	19	0	89	1035
8:15 AM	1	1	0	0	4	0	5	0	12	7	1	0	0	20	15	0	66	999
8:20 AM	0	1	0	0	7	0	6	0	7	1	0	0	0	19	11	0	52	949
8:25 AM	1	0	0	0	3	0	8	0	4	6	0	0	0	25	16	0	63	926
8:30 AM	0	1	0	0	6	0	3	0	3	5	3	0	0	30	10	0	61	889
8:35 AM	2	1	0	0	3	1	2	0	2	4	0	0	1	25	15	0	56	867
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	188	76	0	0	88	4	60	0	124	92	8	0	4	344	212	0	1200	
Heavy Trucks	0	0	0	0	4	0	0	0	0	0	0	0	0	0	12	0	16	
Pedestrians	0	0	0	0	4	0	0	0	0	0	0	0	0	4	0	0	8	
Bicycles	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2	
Railroad																		
Stopped Buses																		

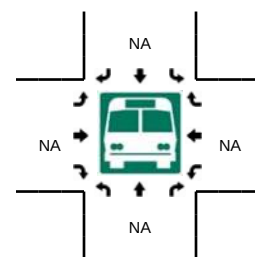
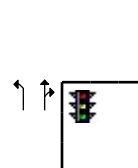
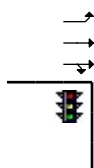
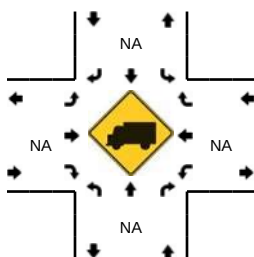
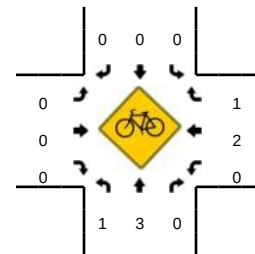
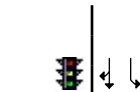
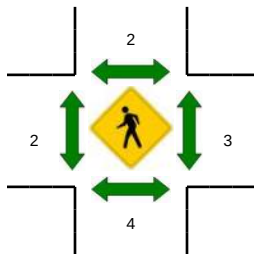
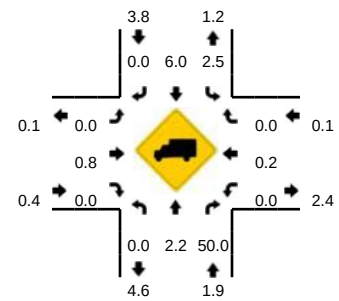
Comments: Please capture direction of pedestrian in crosswalk

LOCATION: NE Century Blvd -- NE Butler St
CITY/STATE: Hillsboro, OR

QC JOB #: 14854607
DATE: Wed, Nov 28 2018



Peak-Hour: 7:05 AM -- 8:05 AM
Peak 15-Min: 7:20 AM -- 7:35 AM



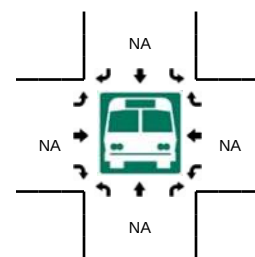
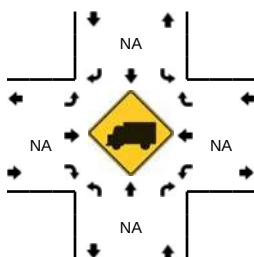
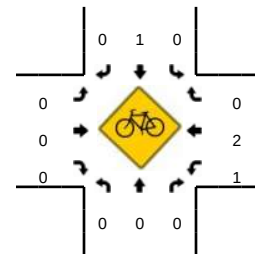
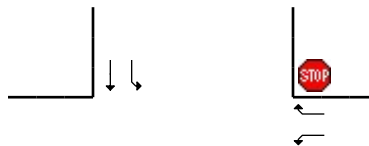
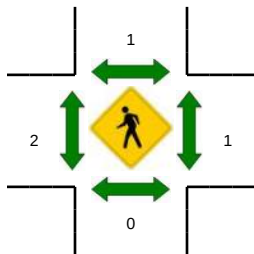
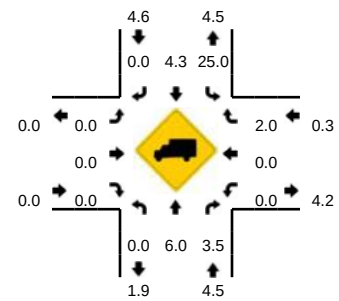
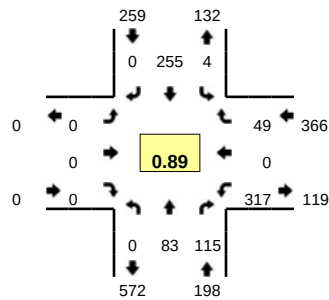
5-Min Count Period Beginning At	NE Century Blvd (Northbound)				NE Century Blvd (Southbound)				NE Butler St (Eastbound)				NE Butler St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:35 AM	7	20	0	0	4	3	6	0	8	7	0	0	0	21	3	0	79	860
6:40 AM	10	25	0	0	0	5	8	0	3	3	2	0	1	19	9	0	85	860
6:45 AM	9	19	0	0	2	5	4	0	6	16	0	0	0	35	11	0	107	855
6:50 AM	13	14	4	0	1	5	9	0	2	6	2	0	0	30	16	0	102	878
6:55 AM	17	22	0	0	1	3	3	0	2	4	0	0	0	26	9	0	87	904
7:00 AM	15	30	0	0	3	7	6	0	2	3	0	0	2	26	6	0	100	939
7:05 AM	17	37	1	0	0	4	6	0	6	3	4	0	0	45	16	0	139	1033
7:10 AM	15	29	1	0	3	2	3	0	4	6	3	0	0	47	37	0	150	1129
7:15 AM	19	36	0	0	1	5	6	0	2	12	1	0	0	46	30	0	158	1239
7:20 AM	21	47	0	0	2	8	7	0	6	11	2	0	2	46	34	0	186	1380
7:25 AM	11	39	0	0	4	8	10	0	7	13	3	0	0	41	45	0	181	1495
7:30 AM	12	45	0	0	7	11	5	0	6	7	3	0	0	49	19	0	164	1538
7:35 AM	11	26	1	0	3	13	6	0	2	12	1	0	0	33	17	0	125	1584
7:40 AM	20	28	1	0	3	7	4	0	6	9	2	0	0	34	15	0	129	1628
7:45 AM	9	32	0	0	3	17	7	0	6	9	2	0	0	27	13	0	125	1646
7:50 AM	10	23	0	0	4	14	1	0	4	14	4	0	0	38	13	0	125	1669
7:55 AM	14	32	0	0	5	26	3	0	6	13	9	0	1	30	15	0	154	1736
8:00 AM	11	41	0	0	5	18	3	0	9	14	3	0	1	27	16	0	148	1784
8:05 AM	10	15	0	0	3	24	5	0	2	11	3	0	0	34	17	0	124	1769
8:10 AM	15	41	1	0	8	12	6	0	9	11	3	0	0	30	16	0	152	1771
8:15 AM	14	18	0	0	5	16	6	0	6	11	2	0	1	34	7	0	120	1733
8:20 AM	16	26	0	0	6	9	7	0	6	10	2	0	0	26	13	0	121	1668
8:25 AM	10	18	0	0	4	15	7	0	4	8	1	0	1	21	8	0	97	1584
8:30 AM	5	15	0	0	6	14	5	0	5	13	0	0	0	26	11	0	100	1520
Peak 15-Min Flowrates																		
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Total	
All Vehicles	176	524	0	0	52	108	88	0	76	124	32	0	8	544	392	0	2124	
Heavy Trucks	0	4	0	0	0	12	0	0	0	0	0	0	0	0	0	0	16	
Pedestrians	4				4				0				4				12	
Bicycles	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1		3	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Intel Internal Rd (Garrett Dr) -- NE Ronler Dr
CITY/STATE: Hillsboro, OR

QC JOB #: 14736517
DATE: Thu, Jun 28 2018

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

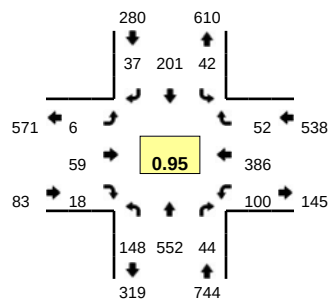


5-Min Count Period Beginning At	Intel Internal Rd (Garrett Dr) (Northbound)				Intel Internal Rd (Garrett Dr) (Southbound)				NE Ronler Dr (Eastbound)				NE Ronler Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:45 AM	0	1	1	0	0	29	0	0	0	0	0	0	36	0	0	0	67	
6:50 AM	0	2	4	0	0	27	0	0	0	0	0	0	30	0	0	0	63	
6:55 AM	0	4	4	0	0	25	0	0	0	0	0	0	24	0	2	0	59	491
7:00 AM	0	4	2	0	0	27	0	0	0	0	0	0	19	0	2	0	54	521
7:05 AM	0	5	3	0	0	26	0	0	0	0	0	0	27	0	3	0	64	565
7:10 AM	0	4	9	0	0	20	0	0	0	0	0	0	32	0	4	0	69	601
7:15 AM	0	6	6	0	0	36	0	0	0	0	0	0	31	0	7	0	86	660
7:20 AM	0	10	4	0	0	32	0	0	0	0	0	0	27	0	4	0	77	709
7:25 AM	0	7	4	0	0	21	0	0	0	0	0	0	28	0	8	0	68	747
7:30 AM	0	7	11	0	0	21	0	0	0	0	0	0	21	0	4	0	64	771
7:35 AM	0	4	5	0	0	21	0	0	0	0	0	0	24	0	2	0	56	786
7:40 AM	0	4	6	0	0	19	0	0	0	0	0	0	29	0	2	0	60	787
7:45 AM	0	5	6	0	0	21	0	0	0	0	0	0	33	0	5	0	70	790
7:50 AM	0	8	10	0	0	18	0	0	0	0	0	0	23	0	8	0	67	794
7:55 AM	0	8	14	0	2	13	0	0	0	0	0	0	25	0	3	0	65	800
8:00 AM	0	9	17	0	1	18	0	0	0	0	0	0	21	0	3	0	69	815
8:05 AM	0	7	19	0	1	17	0	0	0	0	0	0	25	0	2	0	71	822
8:10 AM	0	8	13	0	0	18	0	0	0	0	0	0	30	0	1	0	70	823
8:15 AM	0	4	8	0	1	12	0	0	0	0	0	0	26	0	2	0	53	790
8:20 AM	0	3	7	0	1	17	0	0	0	0	0	0	21	0	1	0	50	763
8:25 AM	0	3	5	0	0	11	0	0	0	0	0	0	30	0	0	0	49	744
8:30 AM	0	6	4	0	0	18	0	0	0	0	0	0	22	0	2	0	52	732
8:35 AM	0	3	4	0	0	17	0	0	0	0	0	0	30	0	0	0	54	730
8:40 AM	0	5	9	0	0	10	0	0	0	0	0	0	31	0	0	0	55	725
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	92	56	0	0	356	0	0	0	0	0	0	344	0	76	0	924	
Heavy Trucks	0	4	8	0	0	8	0	0	0	0	0	0	0	0	0	0	20	
Pedestrians	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
Railroad																		
Stopped Buses																		

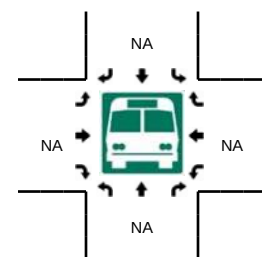
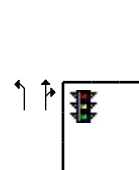
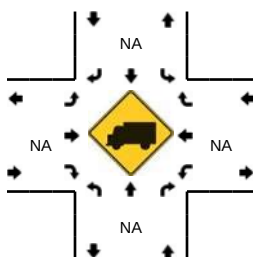
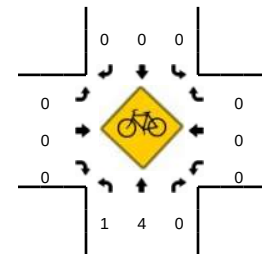
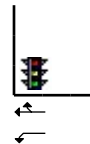
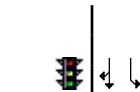
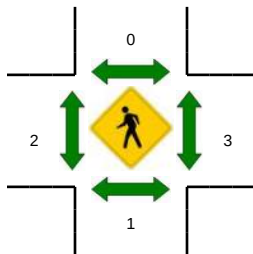
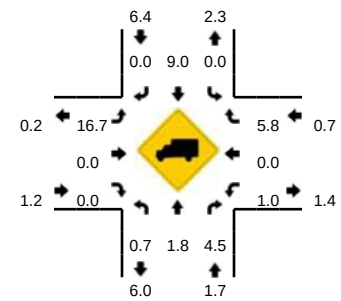
Comments:

LOCATION: NE Century Blvd -- NE Ronler Dr Access
CITY/STATE: Hillsboro, OR

QC JOB #: 14840013
DATE: Wed, Nov 07 2018



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



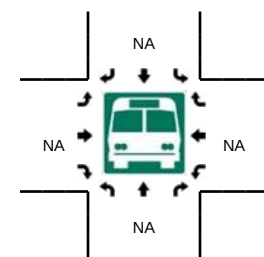
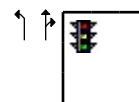
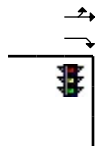
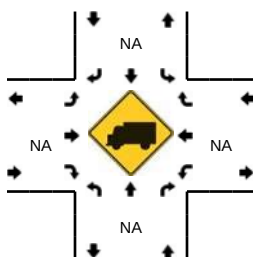
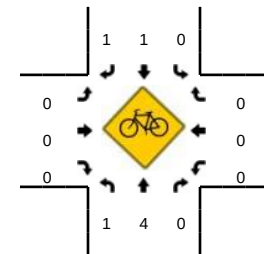
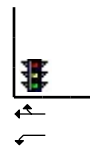
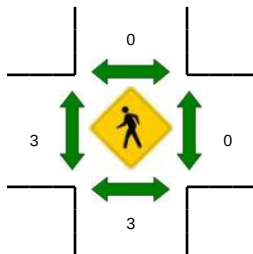
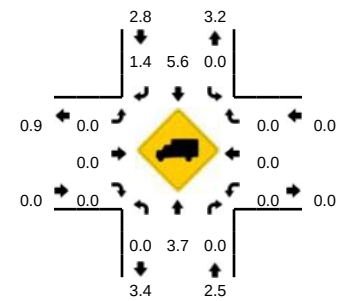
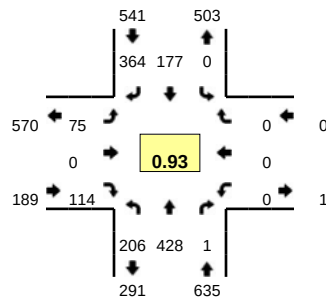
5-Min Count Period Beginning At	NE Century Blvd (Northbound)				NE Century Blvd (Southbound)				NE Ronler Dr Access (Eastbound)				NE Ronler Dr Access (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:40 AM	6	24	4	0	1	8	1	0	3	2	2	0	6	29	6	0	92	798
6:45 AM	7	27	3	0	0	9	0	0	1	1	1	0	3	28	1	0	81	768
6:50 AM	3	41	6	0	0	11	1	0	0	0	0	0	8	18	10	0	98	775
6:55 AM	5	41	3	0	1	12	0	0	1	0	1	0	10	26	4	0	104	821
7:00 AM	10	27	1	0	1	6	0	0	1	0	0	0	10	26	3	0	85	855
7:05 AM	12	39	5	0	2	9	2	0	0	3	1	0	9	29	5	0	116	917
7:10 AM	13	48	4	0	1	6	1	0	0	3	1	0	11	42	6	0	136	1005
7:15 AM	23	48	2	0	2	6	7	0	1	1	0	0	7	24	4	0	125	1092
7:20 AM	30	48	1	0	3	13	6	0	0	5	1	0	22	24	5	0	158	1182
7:25 AM	21	65	3	0	0	11	5	0	0	7	3	0	1	31	5	0	152	1275
7:30 AM	13	40	3	0	3	11	7	0	0	4	0	0	10	26	5	0	122	1343
7:35 AM	11	43	7	0	1	13	3	0	0	3	1	0	8	34	4	0	128	1397
7:40 AM	7	52	6	0	5	20	1	0	1	7	1	0	10	38	7	0	155	1460
7:45 AM	10	37	2	0	4	15	0	0	0	3	0	0	12	44	3	0	130	1509
7:50 AM	7	37	1	0	3	24	2	0	0	5	3	0	4	37	5	0	128	1539
7:55 AM	2	48	4	0	11	27	0	0	1	11	2	0	6	37	3	0	152	1587
8:00 AM	7	35	4	0	6	27	1	0	2	8	4	0	4	29	4	0	131	1633
8:05 AM	4	51	7	0	3	28	4	0	1	2	2	0	5	20	1	0	128	1645
8:10 AM	6	33	4	0	3	20	1	0	1	8	2	0	3	13	2	0	96	1605
8:15 AM	2	27	6	0	2	11	1	0	1	1	0	0	5	29	1	0	86	1566
8:20 AM	5	28	2	0	0	19	0	0	1	4	0	0	3	20	6	0	88	1496
8:25 AM	2	28	2	0	0	11	2	0	1	1	0	0	3	24	5	0	79	1423
8:30 AM	8	37	4	0	1	7	0	0	0	2	0	0	6	27	1	0	93	1394
8:35 AM	5	25	7	0	0	20	2	0	0	2	2	0	3	15	1	0	82	1348
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	296	644	24	0	20	120	72	0	4	52	16	0	120	316	56	0	1740	
Heavy Trucks	0	4	4		0	12	0		0	0	0		0	0	8		28	
Pedestrians		0				0				4				4			8	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: NE Century Blvd -- RP1 Access
CITY/STATE: Hillsboro, OR

QC JOB #: 14840015
DATE: Wed, Nov 14 2018

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

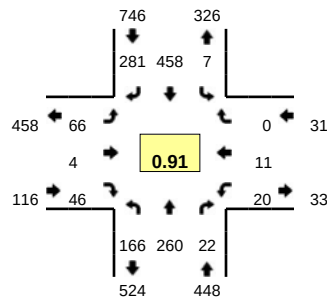


5-Min Count Period Beginning At	NE Century Blvd (Northbound)				NE Century Blvd (Southbound)				RP1 Access (Eastbound)				RP1 Access (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:45 AM	11	24	0	0	0	10	28	0	0	0	1	0	0	0	0	0	74	602
6:50 AM	14	26	0	0	1	10	34	0	2	0	2	0	0	0	0	0	89	633
6:55 AM	11	19	0	0	0	9	26	0	2	0	0	0	1	0	0	0	68	648
7:00 AM	12	26	0	0	0	11	32	0	1	0	0	0	0	0	0	0	82	701
7:05 AM	14	23	0	0	0	5	42	0	0	0	2	0	0	0	0	0	86	745
7:10 AM	19	25	0	0	0	11	36	0	0	0	2	0	0	0	0	0	93	808
7:15 AM	21	32	0	0	0	11	33	0	4	0	0	0	0	0	0	0	101	870
7:20 AM	27	26	0	0	0	14	36	0	7	0	5	0	0	0	0	0	115	948
7:25 AM	37	32	0	0	0	20	48	0	2	0	5	0	0	0	0	0	144	1042
7:30 AM	23	27	0	0	0	13	36	0	4	0	6	0	0	0	0	0	109	1086
7:35 AM	9	43	0	0	0	14	26	0	7	0	5	0	0	0	0	0	104	1125
7:40 AM	11	28	1	0	0	17	30	0	6	0	5	0	0	0	0	0	98	1163
7:45 AM	10	33	0	0	0	18	30	0	1	0	6	0	0	0	0	0	98	1187
7:50 AM	11	45	0	0	0	13	26	0	9	0	20	0	0	0	0	0	124	1222
7:55 AM	14	37	0	0	0	14	23	0	16	0	19	0	0	0	0	0	123	1277
8:00 AM	18	42	0	0	0	11	23	0	6	0	19	0	0	0	0	0	119	1314
8:05 AM	13	37	0	0	0	18	21	0	9	0	13	0	0	0	0	0	111	1339
8:10 AM	12	46	0	0	0	14	32	0	4	0	11	0	0	0	0	0	119	1365
8:15 AM	5	25	0	0	0	13	16	0	3	0	7	0	0	0	0	0	69	1333
8:20 AM	3	36	0	0	0	9	31	0	3	0	8	0	0	0	0	0	90	1308
8:25 AM	11	23	0	0	0	14	17	0	4	0	2	0	0	0	0	0	71	1235
8:30 AM	12	23	0	0	0	17	19	0	2	0	2	0	0	0	0	0	75	1201
8:35 AM	11	27	0	0	0	19	23	0	4	0	2	0	0	0	0	0	86	1183
8:40 AM	8	30	0	0	0	17	18	0	2	0	5	0	0	0	0	0	80	1165
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	348	340	0	0	0	188	480	0	52	0	64	0	0	0	0	0	1472	
Heavy Trucks	0	8	0	0	0	4	8	0	0	0	0	0	0	0	0	0	20	
Pedestrians	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	8	
Bicycles	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
Railroad																		
Stopped Buses																		

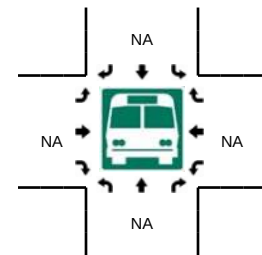
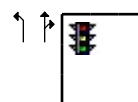
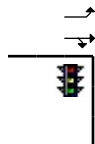
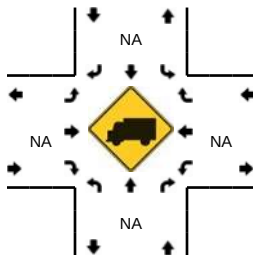
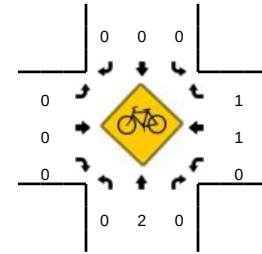
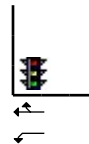
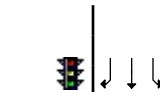
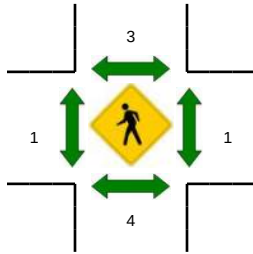
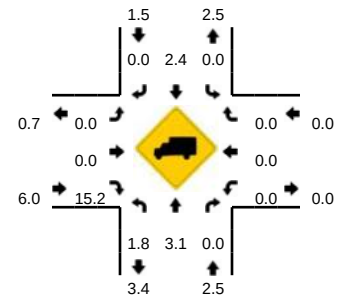
Comments:

LOCATION: NE Century Blvd -- RA1/2 Access
CITY/STATE: Hillsboro, OR

QC JOB #: 14840017
DATE: Wed, Nov 07 2018



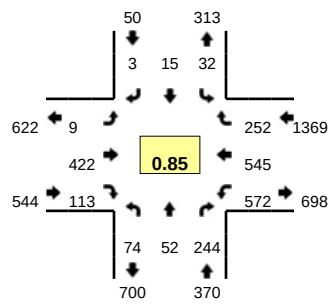
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:20 AM -- 7:35 AM

[illegible]

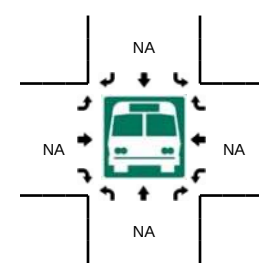
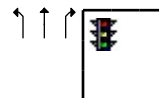
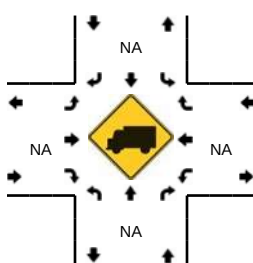
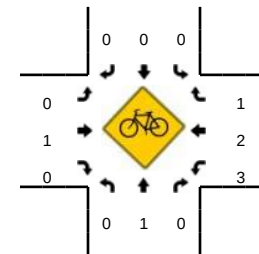
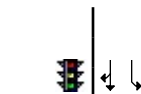
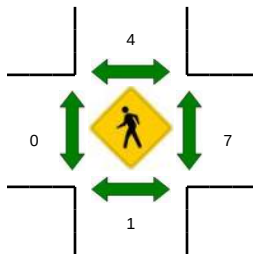
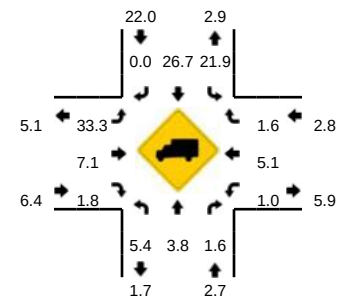
Comments:

LOCATION: NE Century Blvd -- NE Evergreen Pkwy
CITY/STATE: Hillsboro, OR

QC JOB #: 14854609
DATE: Wed, Nov 28 2018



Peak-Hour: 7:20 AM -- 8:20 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

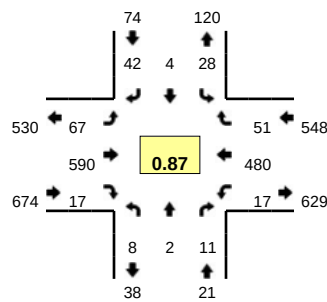


5-Min Count Period Beginning At	NE Century Blvd (Northbound)				NE Century Blvd (Southbound)				NE Evergreen Pkwy (Eastbound)				NE Evergreen Pkwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:50 AM	1	2	18	0	2	0	0	0	0	32	7	0	41	50	18	0	171	1326
6:55 AM	1	2	5	0	3	2	0	0	1	37	12	0	33	37	13	0	146	1358
7:00 AM	4	1	7	0	2	0	0	0	0	24	8	0	48	31	11	0	136	1409
7:05 AM	0	2	6	0	3	2	0	0	0	19	6	0	37	40	6	0	121	1440
7:10 AM	3	4	11	0	2	3	0	0	0	37	21	0	60	29	17	0	187	1561
7:15 AM	2	2	10	0	4	1	0	0	0	27	11	0	59	40	10	0	166	1622
7:20 AM	2	1	9	0	2	0	0	0	0	19	14	0	78	38	7	0	170	1693
7:25 AM	4	7	8	0	0	2	0	0	2	27	12	0	65	39	19	0	185	1781
7:30 AM	4	2	15	0	1	4	1	0	0	23	6	0	52	50	14	0	172	1845
7:35 AM	5	0	15	0	4	0	0	0	0	29	11	0	41	47	14	0	166	1902
7:40 AM	4	4	13	0	2	1	0	0	1	32	13	0	28	50	20	0	168	1927
7:45 AM	5	6	17	0	2	1	0	0	2	60	9	0	51	43	25	0	221	2009
7:50 AM	6	1	27	0	9	1	1	0	1	45	8	0	44	48	30	0	221	2059
7:55 AM	6	8	40	0	0	1	0	0	0	48	11	0	50	52	29	0	245	2158
8:00 AM	10	4	33	0	1	1	0	0	2	29	9	0	37	59	26	0	211	2233
8:05 AM	10	5	28	0	4	0	0	0	0	43	9	0	35	37	26	0	197	2309
8:10 AM	11	6	18	0	3	2	0	0	1	40	7	0	44	36	19	0	187	2309
8:15 AM	7	8	21	0	4	2	1	0	0	27	4	0	47	46	23	0	190	2333
8:20 AM	5	5	13	0	4	0	1	0	0	29	10	0	30	47	13	0	157	2320
8:25 AM	5	6	10	0	4	1	0	0	0	31	9	0	38	52	18	0	174	2309
8:30 AM	6	6	14	0	2	1	0	0	1	27	4	0	48	32	15	0	156	2293
8:35 AM	2	1	12	0	7	2	0	0	1	32	4	0	33	41	18	0	153	2280
8:40 AM	5	7	14	0	3	0	0	0	0	19	10	0	25	42	17	0	142	2254
8:45 AM	2	6	14	0	7	1	0	0	3	44	6	0	33	54	26	0	196	2229
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	68	60	336	0	44	12	4	0	12	612	112	0	580	572	336	0	2748	
Heavy Trucks	0	0	0	0	4	4	0	0	0	48	0	0	12	24	12	0	104	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	
Railroad																		
Stopped Buses																		

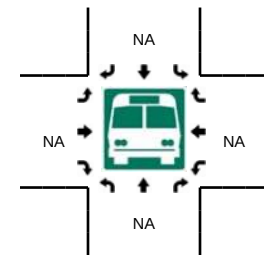
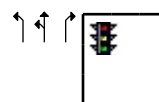
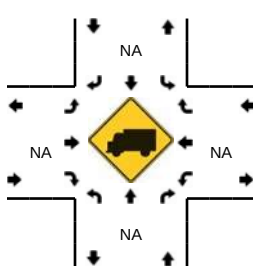
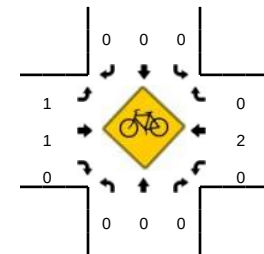
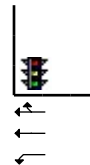
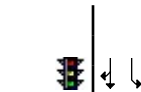
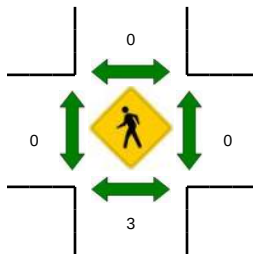
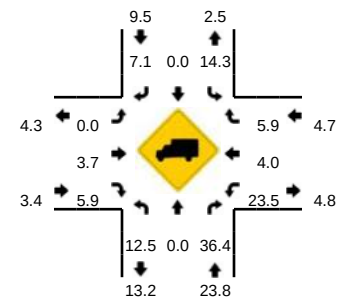
Comments:

LOCATION: NE 59th Ave Access -- NE Evergreen Pkwy
CITY/STATE: Hillsboro, OR

QC JOB #: 14840021
DATE: Wed, Nov 07 2018



Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:40 AM -- 7:55 AM

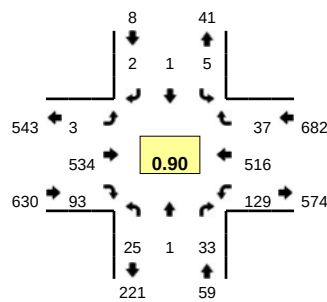


5-Min Count Period Beginning At	NE 59th Ave Access (Northbound)				NE 59th Ave Access (Southbound)				NE Evergreen Pkwy (Eastbound)				NE Evergreen Pkwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	0	1	0	0	0	2	0	5	42	2	0	1	22	4	0	80	838
7:05 AM	1	0	2	0	0	0	1	0	4	42	3	0	0	17	4	0	74	858
7:10 AM	0	0	1	0	2	0	2	0	4	44	2	0	1	20	4	0	80	881
7:15 AM	1	0	0	0	4	0	3	0	8	45	1	0	3	17	4	0	86	918
7:20 AM	1	0	1	0	1	2	2	0	8	42	0	0	2	27	0	0	86	956
7:25 AM	0	0	0	0	1	0	0	0	2	50	2	0	2	30	3	0	90	1009
7:30 AM	0	0	2	0	0	1	1	0	5	54	3	0	2	40	7	0	115	1056
7:35 AM	0	0	0	0	2	0	3	0	0	32	2	0	2	31	4	0	76	1062
7:40 AM	1	0	0	0	0	0	10	0	3	74	2	0	2	47	3	0	142	1116
7:45 AM	0	1	1	0	1	0	4	0	8	61	1	0	1	39	8	0	125	1139
7:50 AM	0	0	1	0	2	0	2	0	7	55	0	0	1	36	6	0	110	1163
7:55 AM	1	0	1	0	3	1	3	0	11	43	4	0	2	35	5	0	109	1173
8:00 AM	1	0	0	0	2	1	4	0	7	60	1	0	0	35	4	0	115	1208
8:05 AM	2	1	3	0	3	0	2	0	4	47	0	0	3	54	2	0	121	1255
8:10 AM	1	0	1	0	3	0	4	0	5	48	3	0	2	43	6	0	116	1291
8:15 AM	1	0	1	0	9	0	4	0	3	23	0	0	2	46	2	0	91	1296
8:20 AM	1	0	1	0	0	1	2	0	8	39	0	0	0	43	2	0	97	1307
8:25 AM	0	0	0	0	3	0	3	0	6	54	1	0	0	31	2	0	100	1317
8:30 AM	0	0	1	0	2	0	0	0	6	25	0	0	1	34	5	0	74	1276
8:35 AM	1	0	1	0	6	0	5	0	5	46	3	0	0	37	4	0	108	1308
8:40 AM	0	0	0	0	3	0	10	0	8	35	2	0	2	52	3	0	115	1281
8:45 AM	1	0	3	0	1	0	2	0	5	41	2	0	1	36	5	0	97	1253
8:50 AM	1	0	2	0	3	0	3	0	8	40	1	0	1	36	3	0	98	1241
8:55 AM	0	0	3	0	3	0	5	0	7	59	1	0	2	41	3	0	124	1256
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	4	4	8	0	12	0	64	0	72	760	12	0	16	488	68	0	1508	
Heavy Trucks	0	0	4	0	0	0	4	0	0	12	0	0	4	20	12	0	56	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	3	
Railroad																		
Stopped Buses																		

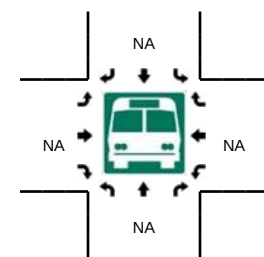
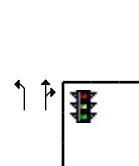
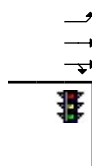
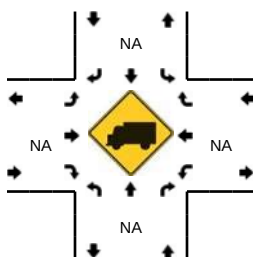
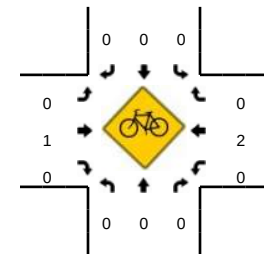
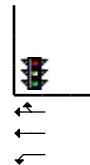
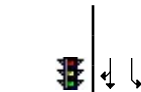
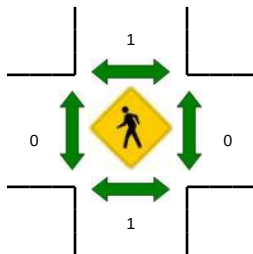
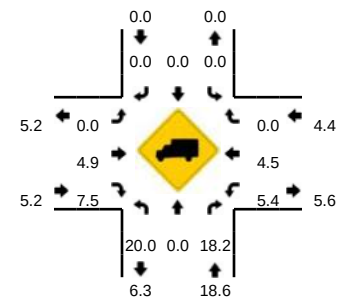
Comments:

LOCATION: Evergreen Main Entrance -- NE Evergreen Pkwy
CITY/STATE: Hillsboro, OR

QC JOB #: 14840019
DATE: Wed, Nov 07 2018



Peak-Hour: 7:20 AM -- 8:20 AM
Peak 15-Min: 7:40 AM -- 7:55 AM

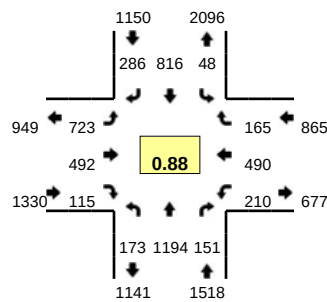


5-Min Count Period Beginning At	Evergreen Main Entrance (Northbound)				Evergreen Main Entrance (Southbound)				NE Evergreen Pkwy (Eastbound)				NE Evergreen Pkwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:50 AM	3	0	2	0	0	0	0	0	0	45	7	0	10	22	0	0	89	797
6:55 AM	1	0	2	0	0	0	0	0	0	42	6	0	8	29	2	0	90	819
7:00 AM	1	0	2	0	0	0	0	0	1	31	10	0	8	23	3	0	79	849
7:05 AM	0	0	1	0	0	0	0	0	0	38	6	0	12	24	2	0	83	873
7:10 AM	1	0	0	0	0	0	1	0	0	42	6	0	7	24	2	0	83	907
7:15 AM	1	0	5	0	0	0	0	0	1	41	7	0	10	21	0	0	86	934
7:20 AM	3	0	5	0	0	0	0	0	0	35	9	0	17	24	1	0	94	978
7:25 AM	2	0	2	0	1	0	0	0	0	40	11	0	11	34	3	0	104	1041
7:30 AM	3	0	1	0	0	0	0	0	1	51	6	0	21	46	0	0	129	1102
7:35 AM	1	0	0	0	0	0	1	0	0	28	4	0	7	41	1	1	84	1121
7:40 AM	0	0	2	0	2	0	0	0	0	65	11	0	8	47	7	0	142	1182
7:45 AM	2	0	3	0	0	1	0	0	0	52	7	0	19	44	3	0	131	1194
7:50 AM	1	0	3	0	0	0	0	0	0	50	6	0	8	42	0	0	110	1215
7:55 AM	3	0	9	0	1	0	0	0	0	37	12	0	14	47	3	0	126	1251
8:00 AM	1	0	3	0	0	0	0	0	0	54	10	0	4	32	6	0	110	1282
8:05 AM	3	1	5	0	1	0	0	0	0	46	8	0	7	59	6	0	136	1335
8:10 AM	3	0	0	0	0	0	1	0	2	42	7	0	5	51	5	0	116	1368
8:15 AM	3	0	0	0	0	0	0	0	0	34	2	0	6	49	2	1	97	1379
8:20 AM	3	0	3	0	0	0	0	0	0	33	2	0	2	41	3	0	87	1372
8:25 AM	0	0	1	0	0	0	0	0	0	50	8	0	9	35	4	0	107	1375
8:30 AM	1	0	2	0	0	0	1	0	0	28	4	0	8	34	5	0	83	1329
8:35 AM	1	0	2	0	2	0	1	0	0	47	5	0	9	40	4	0	111	1356
8:40 AM	1	0	0	0	1	0	0	0	0	36	2	0	7	59	2	2	110	1324
8:45 AM	2	0	0	0	2	0	0	0	0	40	3	1	3	39	4	0	94	1287
Peak 15-Min Flowrates																		
	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	12	0	32	0	8	4	0	0	0	668	96	0	140	532	40	0	1532	
Heavy Trucks	4	0	16		0	0	0		0	16	0		8	16	0		60	
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	2	0		2	
Railroad																		
Stopped Buses																		

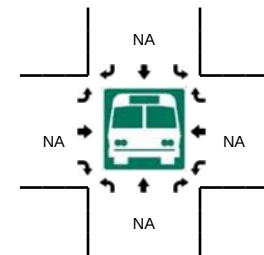
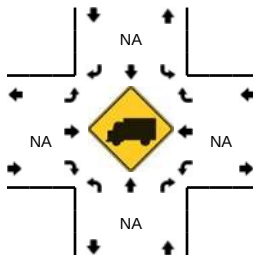
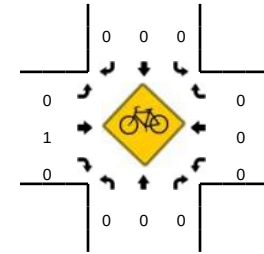
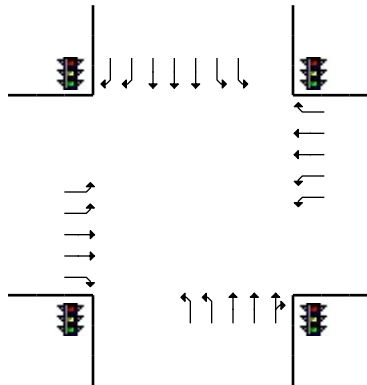
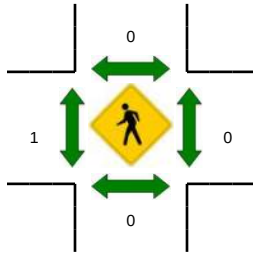
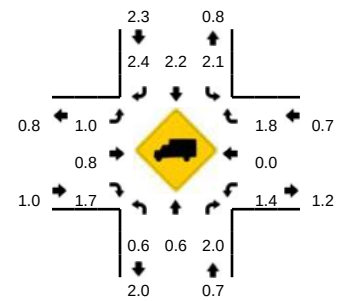
Comments:

LOCATION: NE Brookwood Pkwy -- NE Evergreen Rd
CITY/STATE: Hillsboro, OR

QC JOB #: 14854602
DATE: Wed, Nov 28 2018



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

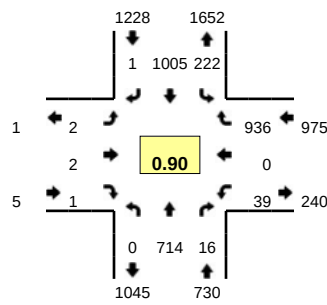


5-Min Count Period Beginning At	NE Brookwood Pkwy (Northbound)				NE Brookwood Pkwy (Southbound)				NE Evergreen Rd (Eastbound)				NE Evergreen Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:50 PM	6	63	20	0	1	77	37	0	34	32	8	0	10	36	8	0	332	3698
3:55 PM	14	95	11	0	3	77	23	1	33	16	8	0	12	22	16	0	331	3783
4:00 PM	14	85	10	0	1	71	17	4	37	24	6	0	18	43	12	0	342	3883
4:05 PM	22	134	8	0	3	59	22	2	63	26	11	0	12	18	11	0	391	3965
4:10 PM	14	130	10	0	4	76	27	1	68	30	8	0	26	50	17	0	461	4148
4:15 PM	14	156	16	0	0	88	11	1	55	27	9	0	19	33	22	0	451	4342
4:20 PM	18	118	10	0	2	55	25	1	53	29	7	0	33	65	41	0	457	4479
4:25 PM	20	106	13	0	2	58	19	1	39	37	7	0	24	31	16	0	373	4542
4:30 PM	11	130	18	0	0	82	19	0	46	27	5	0	14	29	11	0	392	4646
4:35 PM	11	87	9	0	2	62	21	2	60	46	9	0	20	58	13	0	400	4698
4:40 PM	19	85	14	0	6	72	30	0	56	25	6	0	8	37	11	0	369	4683
4:45 PM	6	108	12	0	3	61	31	1	64	29	8	0	11	32	3	0	369	4668
4:50 PM	17	80	14	0	2	71	26	0	58	48	13	0	16	44	11	0	400	4736
4:55 PM	7	64	7	0	4	49	19	1	89	50	10	0	14	34	16	0	364	4769
5:00 PM	16	81	14	0	2	53	31	3	61	39	14	0	12	24	12	0	362	4789
5:05 PM	16	113	10	0	7	88	17	4	39	53	8	0	22	42	9	0	428	4826
5:10 PM	13	112	19	0	2	84	25	1	85	44	14	0	24	47	15	0	485	4850
5:15 PM	19	110	11	0	2	81	23	0	73	65	14	0	12	47	7	0	464	4863
5:20 PM	14	96	13	0	3	68	17	1	83	44	19	0	13	39	6	0	416	4822
5:25 PM	11	63	4	0	3	53	15	4	73	64	22	0	24	43	13	0	392	4841
5:30 PM	13	62	9	0	6	66	16	1	79	35	12	0	12	22	11	0	344	4793
5:35 PM	7	94	16	0	3	74	19	5	57	32	6	0	12	29	6	0	360	4753
5:40 PM	7	73	10	0	2	55	21	2	54	57	15	0	21	42	7	0	366	4750
5:45 PM	7	60	10	0	3	72	27	3	81	43	14	0	19	36	6	0	381	4762
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	192	1340	160	0	44	1012	260	20	788	648	144	0	232	544	124	0	5508	
Heavy Trucks	0	8	4		0	16	4		4	4	0		0	0	0		40	
Pedestrians	0	0	0		0	0	0		0	0	0		0	0	0		0	
Bicycles	0	0	0		0	0	0		0	1	0		0	0	0		1	
Railroad																		
Stopped Buses																		

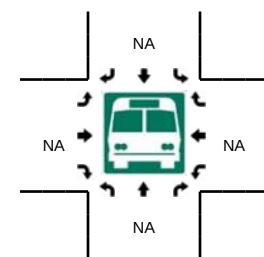
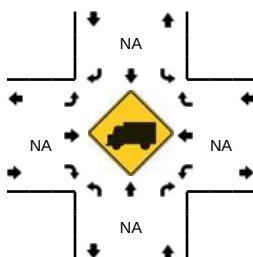
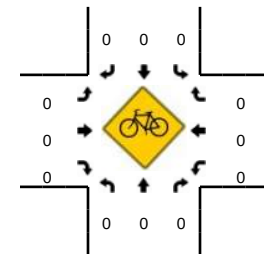
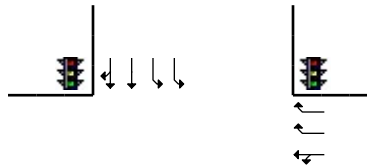
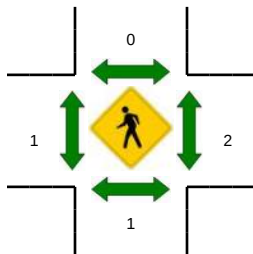
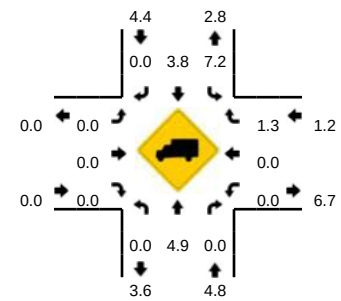
Comments:

LOCATION: NE Brookwood Pkwy -- NE Shute Rd
CITY/STATE: Hillsboro, OR

QC JOB #: 14854604
DATE: Wed, Nov 28 2018



Peak-Hour: 3:40 PM -- 4:40 PM
Peak 15-Min: 4:15 PM -- 4:30 PM

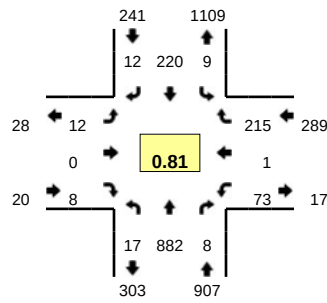


5-Min Count Period Beginning At	NE Brookwood Pkwy (Northbound)				NE Brookwood Pkwy (Southbound)				NE Shute Rd (Eastbound)				NE Shute Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:10 PM	0	57	0	0	10	44	0	0	0	0	1	0	0	0	26	0	138	1893
3:15 PM	0	63	1	0	17	56	0	0	0	0	0	0	0	0	21	1	159	
3:20 PM	0	70	1	0	19	50	0	0	0	0	0	0	0	0	30	0	170	
3:25 PM	0	62	2	0	21	51	0	0	1	0	0	0	0	0	34	0	171	
3:30 PM	0	54	1	0	16	76	0	1	0	0	0	0	0	0	30	0	178	
3:35 PM	0	78	2	0	8	76	0	0	0	0	0	0	4	0	45	0	213	1978
3:40 PM	0	64	3	0	24	100	0	0	0	0	0	0	3	0	43	0	237	2056
3:45 PM	0	74	2	0	21	92	0	0	0	0	0	0	1	0	45	0	235	2130
3:50 PM	0	50	1	0	17	86	0	0	0	0	0	0	3	0	45	0	202	2188
3:55 PM	0	53	2	0	17	72	0	0	0	0	0	0	2	0	65	0	211	2263
4:00 PM	0	54	2	0	17	93	0	0	1	1	0	0	5	0	81	0	254	2379
4:05 PM	0	73	1	0	20	67	0	0	0	0	0	0	3	0	99	0	263	2431
4:10 PM	0	60	1	0	20	81	0	0	0	0	0	0	4	0	76	0	242	2535
4:15 PM	0	53	1	0	21	82	1	0	0	1	1	0	5	0	124	0	289	2665
4:20 PM	0	58	1	0	16	86	0	0	0	0	0	0	2	0	104	0	267	2762
4:25 PM	0	54	0	0	17	82	0	0	0	0	0	0	4	0	104	0	261	2852
4:30 PM	0	60	0	0	16	72	0	0	0	0	0	0	4	0	89	0	241	2915
4:35 PM	0	61	2	0	16	92	0	0	1	0	0	0	3	0	61	0	236	2938
4:40 PM	0	65	1	0	12	58	0	0	0	0	0	0	3	0	66	0	205	2906
4:45 PM	0	60	1	0	20	70	0	0	0	0	0	0	5	1	57	0	214	2885
4:50 PM	0	50	2	0	26	73	0	0	0	0	0	0	1	0	53	0	205	2888
4:55 PM	0	49	5	0	22	61	0	0	0	0	0	0	3	0	55	0	195	2872
5:00 PM	0	61	1	0	9	70	0	0	1	0	0	0	4	0	62	0	208	2826
5:05 PM	0	80	2	0	22	97	0	0	0	0	0	0	1	0	58	0	260	2823
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
	0	660	8	0	216	1000	4	0	0	4	4	0	44	0	1328	0		
	0	48	0	0	4	24	0	0	0	0	0	0	0	0	4	0		
	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0		
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

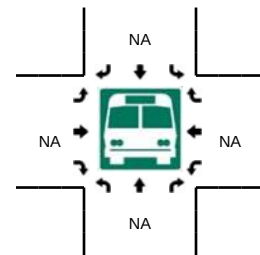
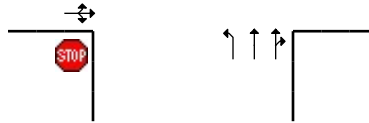
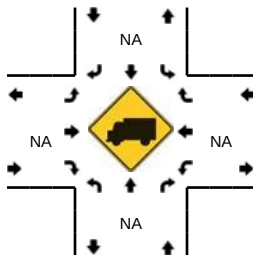
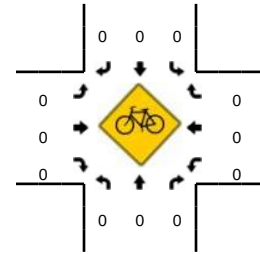
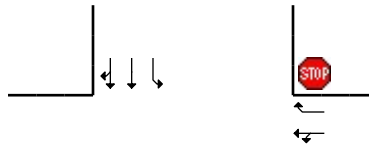
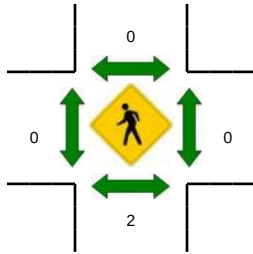
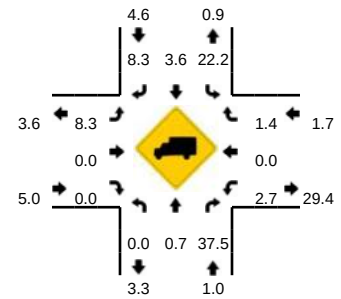
Comments:

LOCATION: NE Shute Rd -- RS5 Access
CITY/STATE: Hillsboro, OR

QC JOB #: 14840002
DATE: Wed, Nov 07 2018



Peak-Hour: 3:55 PM -- 4:55 PM
Peak 15-Min: 4:15 PM -- 4:30 PM

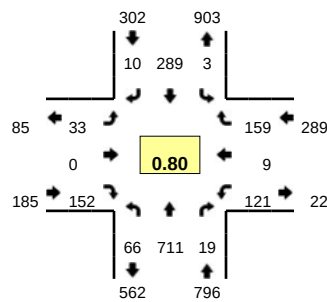


5-Min Count Period Beginning At	NE Shute Rd (Northbound)				NE Shute Rd (Southbound)				RS5 Access (Eastbound)				RS5 Access (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:25 PM	1	28	1	0	1	8	0	0	0	0	0	0	4	0	10	0	53	574
3:30 PM	1	34	1	0	0	17	2	0	0	0	2	0	3	0	8	0	68	603
3:35 PM	0	43	0	0	0	11	1	0	0	0	0	0	4	0	8	0	67	625
3:40 PM	1	38	3	0	0	15	1	0	2	0	0	0	3	0	10	0	73	654
3:45 PM	0	47	1	0	0	20	0	0	2	0	0	0	2	0	12	0	84	695
3:50 PM	0	46	1	0	1	12	0	0	0	0	0	0	3	0	11	0	74	725
3:55 PM	0	67	1	0	1	16	3	0	1	0	1	0	5	0	13	0	108	781
4:00 PM	1	64	1	0	0	12	0	0	2	0	0	0	6	0	22	0	108	852
4:05 PM	2	74	0	0	0	20	0	0	1	0	0	0	9	0	22	0	128	925
4:10 PM	1	70	0	0	1	24	0	0	1	0	1	0	3	0	19	0	120	990
4:15 PM	2	112	0	1	0	17	1	0	0	0	0	0	6	0	14	0	153	1091
4:20 PM	2	121	0	1	1	23	0	0	1	0	1	0	6	1	19	0	176	1212
4:25 PM	0	75	3	0	0	17	1	0	1	0	0	0	4	0	22	0	123	1282
4:30 PM	0	61	0	0	0	22	3	0	1	0	1	0	6	0	18	0	112	1326
4:35 PM	2	76	0	0	1	16	1	0	2	0	2	0	5	0	19	0	124	1383
4:40 PM	2	56	1	0	1	13	3	0	1	0	1	0	6	0	17	0	101	1411
4:45 PM	1	47	1	0	3	24	0	0	1	0	1	0	11	0	18	0	107	1434
4:50 PM	2	59	1	0	1	16	0	0	0	0	0	0	6	0	12	0	97	1457
4:55 PM	0	49	1	0	3	11	1	0	2	0	0	0	3	0	17	0	87	1436
5:00 PM	1	45	0	1	0	28	1	0	2	0	0	0	2	0	16	0	96	1424
5:05 PM	1	50	0	0	2	25	6	0	2	0	1	0	3	0	13	0	103	1399
5:10 PM	2	59	1	0	0	28	2	0	1	0	0	0	7	0	24	0	124	1403
5:15 PM	6	52	0	0	0	24	0	0	0	0	2	0	3	1	19	0	107	1357
5:20 PM	1	47	2	0	1	19	0	0	1	0	0	0	5	0	14	0	90	1271
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	16	1232	12	8	4	228	8	0	8	0	4	0	64	4	220	0	1808	
Heavy Trucks	0	20	4		0	8	0		0	0	0		4	0	0		36	
Pedestrians	0				0				0				0				0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

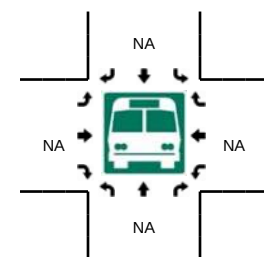
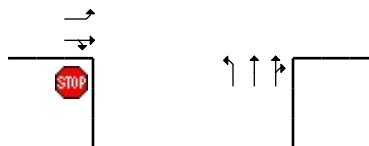
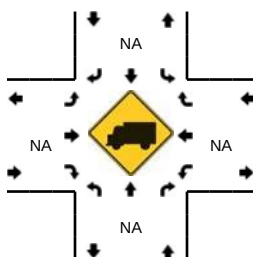
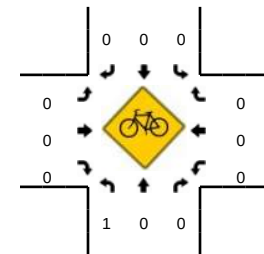
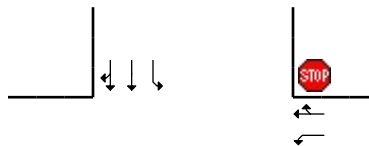
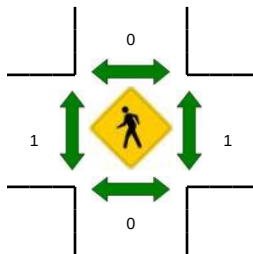
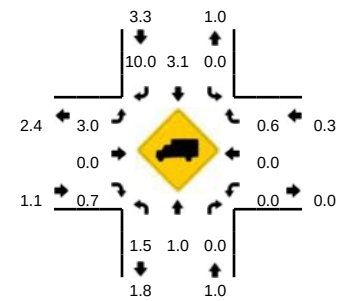
Comments:

LOCATION: NE Shute Rd -- NE Dawson Creek Dr Access
CITY/STATE: Hillsboro, OR

QC JOB #: 14840004
DATE: Wed, Nov 07 2018



Peak-Hour: 3:55 PM -- 4:55 PM
Peak 15-Min: 4:15 PM -- 4:30 PM

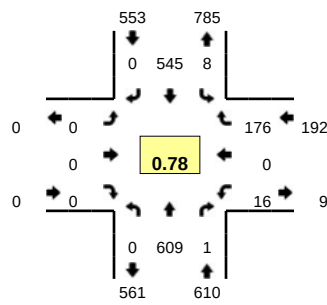


5-Min Count Period Beginning At	NE Shute Rd (Northbound)				NE Shute Rd (Southbound)				NE Dawson Creek Dr Access (Eastbound)				NE Dawson Creek Dr Access (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:25 PM	1	25	0	0	0	11	1	0	4	0	8	0	5	0	2	0	57	584
3:30 PM	0	31	0	0	1	19	2	0	3	0	5	0	2	0	2	0	65	610
3:35 PM	2	31	1	0	0	14	0	0	4	0	11	0	6	0	7	0	76	645
3:40 PM	4	32	1	0	1	17	2	0	3	0	11	0	5	1	8	0	85	687
3:45 PM	3	42	0	0	0	19	0	0	3	0	9	0	3	0	9	0	88	730
3:50 PM	4	34	0	0	0	19	0	0	2	0	7	0	3	0	6	0	75	773
3:55 PM	4	56	3	0	0	22	0	0	3	0	5	0	6	0	10	0	109	821
4:00 PM	4	54	0	0	0	20	0	0	1	0	6	0	12	0	10	0	107	886
4:05 PM	3	60	3	0	0	27	1	0	4	0	16	0	17	1	17	0	149	981
4:10 PM	4	57	1	0	0	26	1	0	1	0	23	0	7	2	9	0	131	1057
4:15 PM	9	105	0	0	1	23	0	0	2	0	11	0	6	2	11	0	170	1167
4:20 PM	9	104	2	0	1	28	3	0	3	0	12	0	6	0	14	0	182	1294
4:25 PM	9	57	1	0	0	20	1	0	2	0	18	0	15	1	14	0	138	1375
4:30 PM	9	37	4	0	0	25	0	0	5	0	8	0	11	1	17	0	117	1427
4:35 PM	2	51	1	0	1	25	1	0	5	0	15	0	17	0	27	0	145	1496
4:40 PM	5	47	2	0	0	18	1	0	2	0	11	0	10	2	10	0	108	1519
4:45 PM	4	37	1	0	0	34	2	0	1	0	17	0	5	0	9	0	110	1541
4:50 PM	4	46	1	0	0	21	0	0	4	0	10	0	9	0	11	0	106	1572
4:55 PM	3	44	1	0	0	16	0	0	1	0	15	0	9	2	9	0	100	1563
5:00 PM	3	33	0	0	0	31	0	0	4	0	19	0	4	0	9	0	103	1559
5:05 PM	4	37	0	0	0	28	0	0	5	0	19	0	10	1	8	0	112	1522
5:10 PM	5	52	1	0	0	33	2	0	3	0	17	0	3	2	8	0	126	1517
5:15 PM	4	44	0	0	0	31	0	0	4	0	15	0	6	0	8	0	112	1459
5:20 PM	1	42	1	0	0	24	0	0	5	0	15	0	1	0	3	0	92	1369
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	108	1064	12	0	8	284	16	0	28	0	164	0	108	12	156	0	1960	
Heavy Trucks	0	20	0	0	0	12	0	0	4	0	4	0	0	0	0	0	40	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	
Bicycles	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Railroad																		
Stopped Buses																		

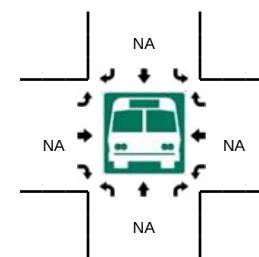
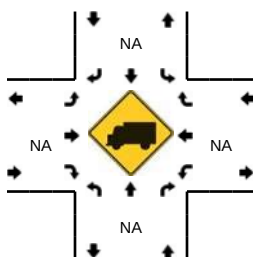
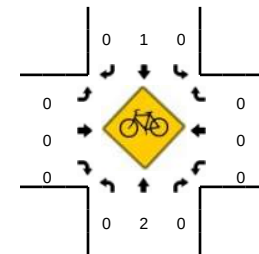
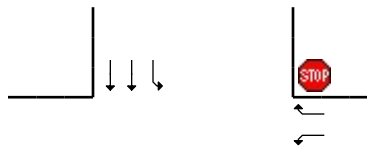
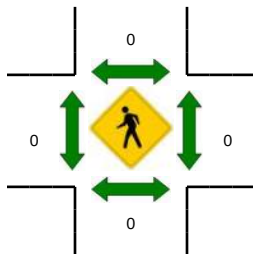
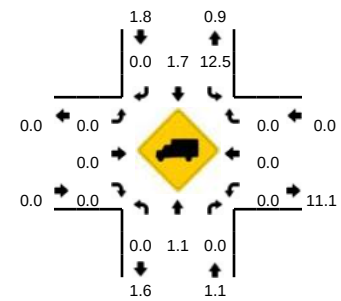
Comments:

LOCATION: NE Shute Rd -- D1X Access
CITY/STATE: Hillsboro, OR

QC JOB #: 14840006
DATE: Wed, Nov 07 2018



Peak-Hour: 3:55 PM -- 4:55 PM
Peak 15-Min: 4:10 PM -- 4:25 PM

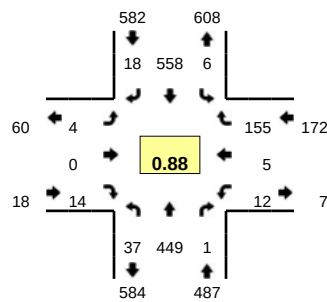


5-Min Count Period Beginning At	NE Shute Rd (Northbound)				NE Shute Rd (Southbound)				D1X Access (Eastbound)				D1X Access (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:25 PM	0	26	0	0	2	19	0	0	0	0	0	0	1	0	1	0	49	520
3:30 PM	0	30	0	0	0	29	0	0	0	0	0	0	1	0	4	0	64	538
3:35 PM	0	31	0	0	1	30	0	0	0	0	0	0	0	0	0	0	62	563
3:40 PM	0	32	0	0	0	33	0	0	0	0	0	0	0	0	8	0	73	600
3:45 PM	0	36	0	0	1	31	0	0	0	0	0	0	2	0	7	0	77	637
3:50 PM	0	32	1	0	0	30	0	0	0	0	0	0	2	0	11	0	76	683
3:55 PM	0	46	0	0	0	32	0	0	0	0	0	0	1	0	14	0	93	729
4:00 PM	0	41	0	0	1	34	0	0	0	0	0	0	5	0	15	0	96	791
4:05 PM	0	45	1	0	1	61	0	0	0	0	0	0	3	0	21	0	132	880
4:10 PM	0	49	0	0	2	53	0	0	0	0	0	0	0	0	19	0	123	955
4:15 PM	0	79	0	0	1	40	0	0	0	0	0	0	1	0	27	0	148	1045
4:20 PM	0	70	0	0	2	43	0	0	0	0	0	0	3	0	44	0	162	1155
4:25 PM	0	50	0	0	1	50	0	0	0	0	0	0	1	0	18	0	120	1226
4:30 PM	0	44	0	0	0	42	0	0	0	0	0	0	0	0	7	0	93	1255
4:35 PM	0	52	0	0	0	56	0	0	0	0	0	0	0	0	3	0	111	1304
4:40 PM	0	48	0	0	0	41	0	0	0	0	0	0	0	0	2	0	91	1322
4:45 PM	0	45	0	0	0	55	0	0	0	0	0	0	1	0	2	0	103	1348
4:50 PM	0	40	0	0	0	38	0	0	0	0	0	0	1	0	4	0	83	1355
4:55 PM	0	46	0	0	0	37	0	0	0	0	0	0	0	0	2	0	85	1347
5:00 PM	0	35	0	0	0	56	0	0	0	0	0	0	0	0	0	0	91	1342
5:05 PM	0	42	0	0	0	57	0	0	0	0	0	0	0	0	0	0	99	1309
5:10 PM	0	62	0	0	0	47	0	0	0	0	0	0	0	0	1	0	110	1296
5:15 PM	0	45	1	0	1	54	0	0	0	0	0	0	0	0	1	0	102	1250
5:20 PM	0	42	1	0	0	38	0	0	0	0	0	0	0	0	2	0	83	1171
Peak 15-Min Flowrates																		
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Total	
All Vehicles	0	792	0	0	20	544	0	0	0	0	0	0	16	0	360	0	1732	
Heavy Trucks	0	8	0	0	0	12	0	0	0	0	0	0	0	0	0	0	20	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Railroad																		
Stopped Buses																		

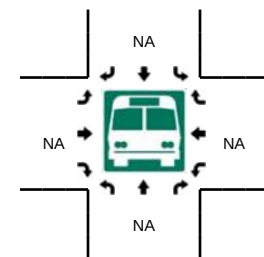
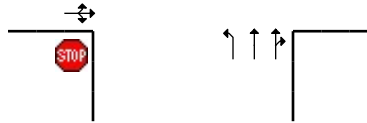
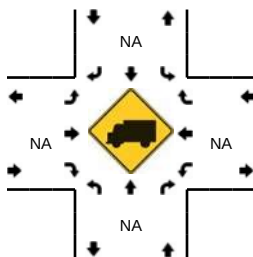
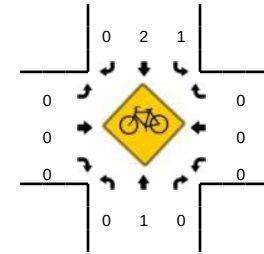
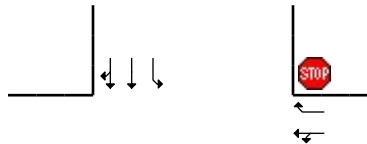
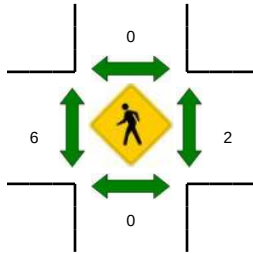
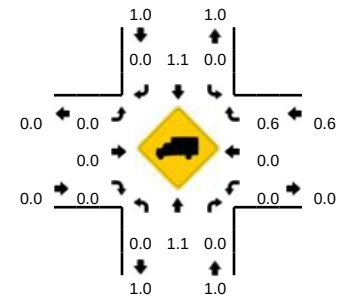
Comments:

LOCATION: NE Shute Rd -- NE Tandem Way Access
CITY/STATE: Hillsboro, OR

QC JOB #: 14840008
DATE: Wed, Nov 07 2018



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

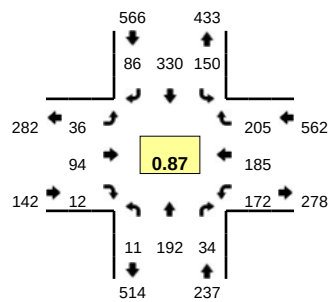


5-Min Count Period Beginning At	NE Shute Rd (Northbound)				NE Shute Rd (Southbound)				NE Tandem Way Access (Eastbound)				NE Tandem Way Access (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:45 PM	0	30	0	0	1	30	1	0	1	0	1	0	3	0	4	0	71	650
3:50 PM	1	28	0	0	0	28	0	0	1	0	0	0	1	0	7	0	66	686
3:55 PM	6	27	0	0	2	34	1	0	1	0	4	0	3	0	14	0	92	733
4:00 PM	2	34	1	0	0	36	2	0	0	0	1	0	3	0	9	0	88	786
4:05 PM	1	29	0	0	0	62	2	0	1	0	1	0	1	0	17	0	114	847
4:10 PM	1	23	0	0	1	50	0	0	1	0	2	0	3	0	23	0	104	903
4:15 PM	2	42	0	0	1	40	1	0	2	0	1	0	3	0	34	0	126	968
4:20 PM	2	38	0	0	1	44	1	0	0	0	0	0	5	0	29	0	120	1033
4:25 PM	1	37	0	0	0	52	0	0	0	0	1	0	1	0	18	0	110	1087
4:30 PM	3	28	0	0	0	44	0	0	0	0	0	0	0	0	11	0	86	1107
4:35 PM	1	43	0	0	0	57	0	0	0	0	4	0	1	0	8	0	114	1163
4:40 PM	4	31	0	0	0	41	1	0	0	0	1	0	1	0	15	0	94	1185
4:45 PM	8	33	1	0	2	53	4	0	0	0	3	0	0	0	15	0	119	1233
4:50 PM	2	30	0	0	0	38	1	0	0	0	2	0	0	1	8	0	82	1249
4:55 PM	5	39	0	0	1	34	3	0	1	0	1	0	1	0	6	0	91	1248
5:00 PM	2	34	0	0	0	53	3	0	0	0	0	0	0	1	4	0	97	1257
5:05 PM	3	35	0	0	1	53	3	0	0	0	1	0	0	2	4	0	102	1245
5:10 PM	4	59	0	0	0	49	1	0	1	0	0	0	0	1	3	0	118	1259
5:15 PM	3	33	0	0	0	50	4	0	1	0	1	0	0	0	10	0	102	1235
5:20 PM	1	32	0	0	0	36	3	0	0	0	2	0	0	2	10	0	86	1201
5:25 PM	3	32	0	0	0	33	1	0	1	0	4	0	1	0	8	0	83	1174
5:30 PM	1	37	0	0	1	46	4	0	1	0	1	0	0	0	4	0	95	1183
5:35 PM	4	30	0	0	0	42	1	0	2	0	2	0	0	0	5	0	86	1155
5:40 PM	4	16	0	0	1	35	3	0	2	0	0	0	0	0	4	0	65	1126
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	20	468	0	0	8	544	8	0	8	0	8	0	36	0	324	0	1424	
Heavy Trucks	0	8	0	0	0	16	0	0	0	0	0	0	0	0	4	0	28	
Pedestrians	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4	
Bicycles	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Railroad																		
Stopped Buses																		

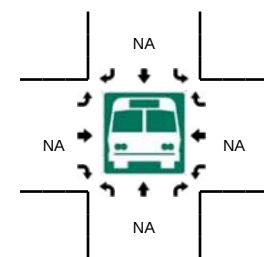
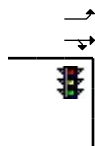
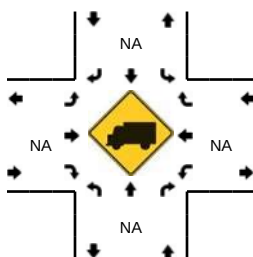
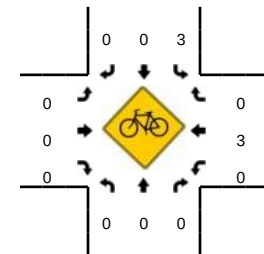
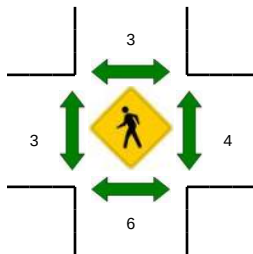
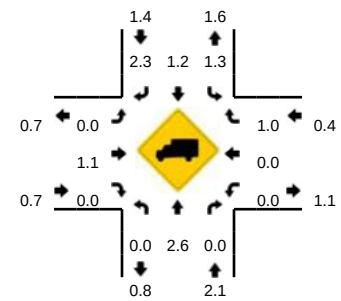
Comments:

LOCATION: NE Shute Rd -- NE Airport Rd
CITY/STATE: Hillsboro, OR

QC JOB #: 14854606
DATE: Wed, Nov 28 2018



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

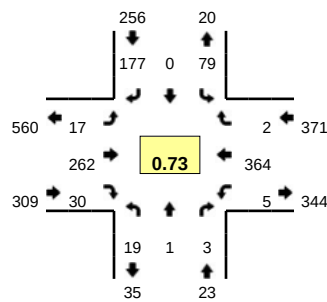


5-Min Count Period Beginning At	NE Shute Rd (Northbound)				NE Shute Rd (Southbound)				NE Airport Rd (Eastbound)				NE Airport Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:30 PM	2	10	0	0	8	20	2	0	1	9	1	0	5	4	6	0	68	756
3:35 PM	0	16	3	0	5	17	7	0	3	2	1	0	5	5	9	0	73	771
3:40 PM	0	14	1	0	6	13	2	0	3	4	2	0	12	13	6	0	76	799
3:45 PM	1	8	2	0	16	21	11	0	2	7	0	0	3	6	8	0	85	815
3:50 PM	0	15	3	0	10	27	8	0	5	3	4	0	7	7	6	0	95	854
3:55 PM	0	17	2	0	12	17	8	0	4	4	1	0	10	14	13	0	102	892
4:00 PM	0	16	2	0	6	24	8	0	3	9	1	0	6	15	15	0	105	938
4:05 PM	2	23	2	0	14	37	9	0	0	6	2	0	14	9	12	0	130	996
4:10 PM	0	18	3	0	11	33	7	0	2	5	0	0	27	14	20	0	140	1077
4:15 PM	2	11	2	0	12	27	9	0	1	9	0	0	17	14	22	0	126	1139
4:20 PM	1	19	6	0	10	19	10	0	3	7	2	0	33	25	31	0	166	1238
4:25 PM	1	12	0	0	18	22	4	0	2	8	0	0	15	21	14	0	117	1283
4:30 PM	0	19	3	0	12	22	9	0	7	6	4	0	16	19	18	0	135	1350
4:35 PM	0	18	1	0	11	30	7	0	0	5	1	0	5	5	19	0	102	1379
4:40 PM	0	12	3	0	15	20	4	0	2	13	0	0	10	18	13	0	110	1413
4:45 PM	0	13	8	0	13	26	6	0	6	5	2	0	11	23	13	0	126	1454
4:50 PM	2	11	3	0	13	28	6	0	6	10	0	0	8	15	13	0	115	1474
4:55 PM	3	20	1	0	15	42	7	0	4	11	0	0	10	7	15	0	135	1507
5:00 PM	0	19	3	0	6	17	6	0	2	5	1	0	13	13	3	0	88	1490
5:05 PM	2	24	2	0	10	29	5	0	2	10	2	0	12	12	16	0	126	1486
5:10 PM	2	41	1	0	13	38	7	0	3	13	0	0	11	10	11	0	150	1496
5:15 PM	0	21	3	0	14	20	4	0	4	12	4	0	17	19	16	0	134	1504
5:20 PM	0	20	2	0	13	26	5	0	5	10	0	0	10	16	16	0	123	1461
5:25 PM	2	17	3	0	8	28	3	0	4	12	0	0	13	20	10	0	120	1464
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	12	192	44	0	132	316	104	0	24	84	8	0	308	212	292	0	1728	
Heavy Trucks	0	12	0		4	12	4		0	0	0		0	0	0		32	
Pedestrians		8				0				4				0			12	
Bicycles	0	0	0		2	0	0		0	0	0		0	3	0		5	
Railroad																		
Stopped Buses																		

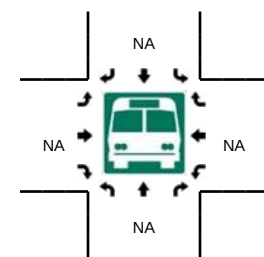
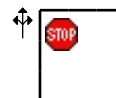
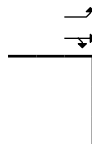
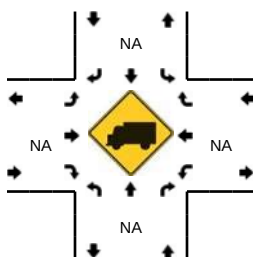
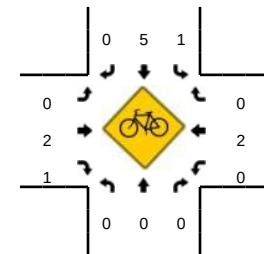
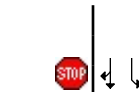
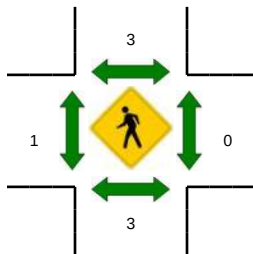
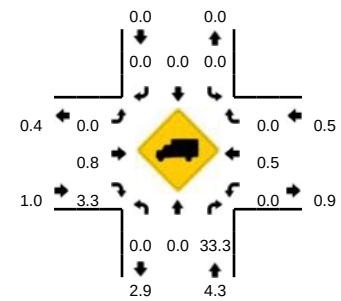
Comments:

LOCATION: NE 60th PI Access -- NE Butler St
CITY/STATE: Hillsboro, OR

QC JOB #: 14840010
DATE: Wed, Nov 07 2018



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

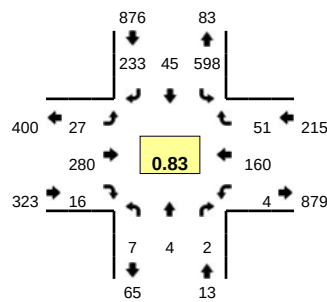


5-Min Count Period Beginning At	NE 60th PI Access (Northbound)				NE 60th PI Access (Southbound)				NE Butler St (Eastbound)				NE Butler St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:35 PM	3	0	0	0	2	0	3	0	1	15	1	0	0	19	0	0	44	496
3:40 PM	3	0	0	0	3	0	3	0	3	15	2	0	0	23	0	0	52	507
3:45 PM	0	0	0	0	2	0	11	0	2	16	1	0	1	31	0	0	64	535
3:50 PM	3	0	0	0	4	1	7	0	1	14	2	0	0	21	0	0	53	546
3:55 PM	0	0	1	0	5	0	17	0	1	13	2	0	0	29	0	0	68	581
4:00 PM	3	0	0	0	8	0	14	0	1	8	2	0	0	22	0	0	58	607
4:05 PM	2	0	0	0	15	0	17	0	0	26	2	0	0	20	0	0	82	648
4:10 PM	0	0	1	0	4	0	11	0	2	30	4	0	0	25	0	0	77	681
4:15 PM	1	0	0	0	13	0	24	0	2	21	2	0	0	37	1	0	101	731
4:20 PM	2	0	0	0	26	0	42	0	0	17	4	0	1	32	0	0	124	814
4:25 PM	2	0	0	0	13	0	22	0	1	21	5	0	0	39	0	0	103	871
4:30 PM	2	1	0	0	3	0	3	0	2	21	0	0	0	26	0	0	58	884
4:35 PM	2	0	0	0	2	0	8	0	4	23	2	0	0	20	0	0	61	901
4:40 PM	2	0	0	0	2	0	11	0	5	24	2	0	0	38	0	0	84	933
4:45 PM	0	0	0	0	1	0	15	0	1	24	6	0	2	25	0	0	74	943
4:50 PM	2	0	1	0	0	0	9	0	0	18	1	0	0	31	0	0	62	952
4:55 PM	1	0	1	0	0	0	8	0	0	19	0	0	1	36	0	0	66	950
5:00 PM	3	0	0	0	0	0	7	0	0	18	2	0	1	35	1	0	67	959
5:05 PM	0	0	0	0	0	0	16	0	1	26	4	0	0	27	0	0	74	951
5:10 PM	4	0	0	0	1	0	8	0	0	19	3	0	0	34	0	0	69	943
5:15 PM	4	0	0	0	0	1	13	0	0	23	2	0	1	31	0	0	75	917
5:20 PM	2	0	1	0	0	1	9	0	0	17	2	0	1	38	0	0	71	864
5:25 PM	1	0	0	0	1	0	6	0	0	13	2	0	0	37	0	0	60	821
5:30 PM	3	0	0	0	0	0	10	0	0	20	3	0	0	29	0	0	65	828
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	20	0	0	0	208	0	352	0	12	236	44	0	4	432	4	0	1312	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	
Pedestrians	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	
Bicycles	0	0	0	0	1	2	0	0	0	0	0	0	0	1	0	0	4	
Railroad																		
Stopped Buses																		

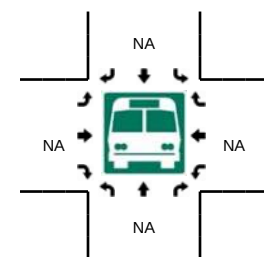
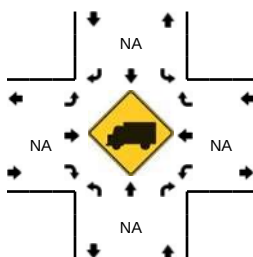
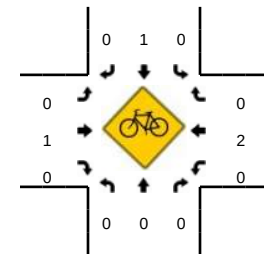
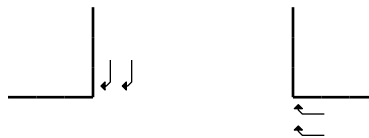
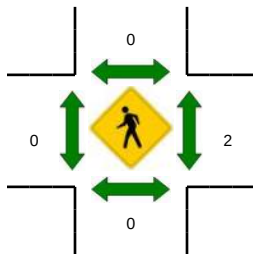
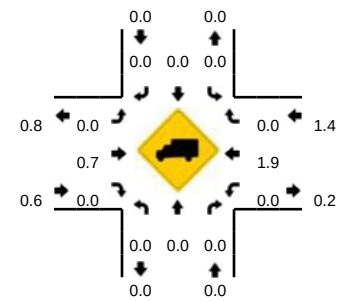
Comments:

LOCATION: NE 65th Ave Access -- NE Butler St
CITY/STATE: Hillsboro, OR

QC JOB #: 14840012
DATE: Wed, Nov 07 2018



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

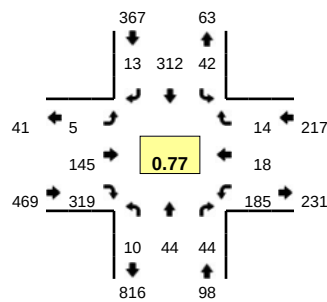


5-Min Count Period Beginning At	NE 65th Ave Access (Northbound)				NE 65th Ave Access (Southbound)				NE Butler St (Eastbound)				NE Butler St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:45 PM	3	0	0	0	21	3	8	0	0	18	1	0	0	20	7	0	81	700
3:50 PM	0	0	1	0	16	5	10	0	4	12	1	0	0	10	6	0	65	700
3:55 PM	0	0	0	0	35	0	12	2	3	14	0	0	1	18	8	0	93	747
4:00 PM	0	0	0	0	33	4	13	1	0	14	3	0	0	8	3	0	79	780
4:05 PM	0	0	0	0	28	2	12	0	0	33	1	0	0	8	8	0	92	827
4:10 PM	0	0	0	0	42	2	25	0	4	32	1	0	0	5	4	0	115	891
4:15 PM	0	0	0	0	65	2	26	0	2	29	0	0	1	10	2	0	137	964
4:20 PM	0	0	0	0	62	4	22	0	3	42	3	0	0	14	3	0	153	1056
4:25 PM	1	1	0	0	54	4	25	1	3	32	2	0	0	14	5	0	142	1152
4:30 PM	1	0	1	0	39	7	11	0	2	23	0	0	1	12	3	0	100	1190
4:35 PM	0	1	0	0	30	6	10	0	2	23	0	0	0	11	3	0	86	1205
4:40 PM	0	0	0	0	42	3	21	0	3	21	0	0	1	17	5	0	113	1256
4:45 PM	0	0	0	0	57	3	21	0	3	22	2	0	0	14	7	0	129	1304
4:50 PM	1	0	1	0	48	1	16	0	2	16	1	0	0	11	8	0	105	1344
4:55 PM	1	1	0	0	57	4	25	0	2	21	2	0	0	16	2	0	131	1382
5:00 PM	1	1	0	0	38	5	19	0	3	14	5	0	1	17	6	0	110	1413
5:05 PM	1	0	0	0	42	4	15	0	2	21	1	0	0	12	3	0	101	1422
5:10 PM	1	0	0	0	63	2	22	0	0	16	0	0	0	12	4	0	120	1427
5:15 PM	2	1	0	0	49	5	19	0	1	21	2	0	0	15	3	0	118	1408
5:20 PM	0	0	3	0	40	5	33	1	0	20	0	0	2	13	5	0	122	1377
5:25 PM	1	0	3	0	33	3	21	0	1	16	1	0	1	22	6	0	108	1343
5:30 PM	0	0	1	0	60	8	16	0	0	14	0	0	0	8	5	0	112	1355
5:35 PM	0	0	2	0	48	4	16	0	1	24	1	0	0	15	7	0	118	1387
5:40 PM	0	0	1	0	52	2	9	0	0	16	1	0	1	14	3	0	99	1373
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	4	4	0	0	724	40	292	4	32	412	20	0	4	152	40	0	1728	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
Railroad																		
Stopped Buses																		

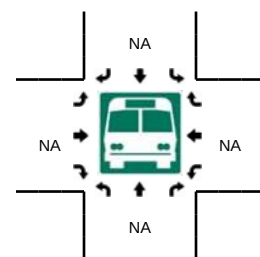
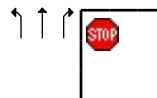
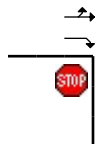
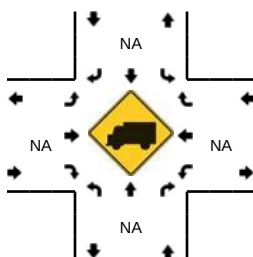
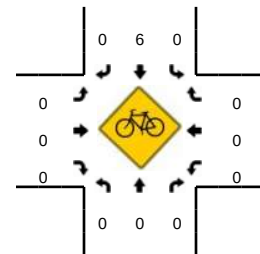
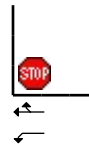
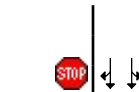
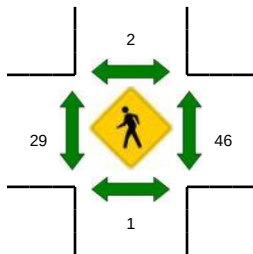
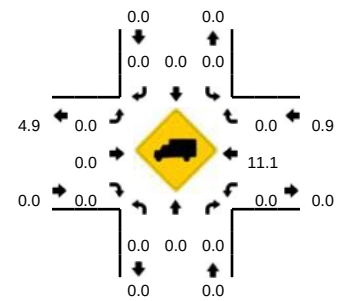
Comments:

LOCATION: NE 65th Ave/Intel Access -- Intel Internal Rd (Tandem Way)
CITY/STATE: Hillsboro, OR

QC JOB #: 14854704
DATE: Wed, Nov 28 2018



Peak-Hour: 3:55 PM -- 4:55 PM
Peak 15-Min: 4:10 PM -- 4:25 PM

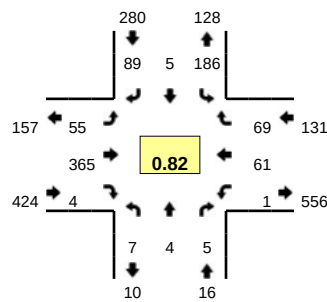


5-Min Count Period Beginning At	NE 65th Ave/Intel Access (Northbound)				NE 65th Ave/Intel Access (Southbound)				Intel Internal Rd (Tandem Way) (Eastbound)				Intel Internal Rd (Tandem Way) (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:25 PM	0	5	4	0	2	8	0	0	0	5	11	0	2	0	0	0	37	
3:30 PM	0	3	1	0	0	7	0	0	1	2	4	0	4	2	0	0	24	
3:35 PM	1	5	3	0	1	12	0	0	0	2	5	0	11	2	0	0	42	
3:40 PM	1	4	2	0	3	15	1	0	0	2	7	0	12	1	1	0	49	
3:45 PM	0	6	2	0	3	8	1	0	0	2	10	0	5	2	1	0	40	
3:50 PM	2	8	1	0	5	10	0	0	0	5	14	0	10	5	0	0	60	
3:55 PM	0	5	3	0	5	24	0	0	0	6	19	0	10	3	1	0	76	500
4:00 PM	0	7	1	0	3	27	1	0	0	7	16	0	8	3	0	0	73	541
4:05 PM	2	0	2	0	9	21	0	0	1	8	38	0	10	2	1	0	94	607
4:10 PM	0	3	5	0	5	31	2	0	0	19	32	0	18	2	3	0	120	690
4:15 PM	1	6	1	0	4	31	0	0	1	18	34	0	18	1	0	0	115	771
4:20 PM	2	2	9	0	2	34	0	0	1	24	37	0	26	1	0	0	138	868
4:25 PM	1	2	5	0	1	35	1	0	0	21	33	0	16	1	1	0	117	948
4:30 PM	1	3	2	0	1	22	1	0	1	6	22	0	13	0	2	0	74	998
4:35 PM	1	2	3	0	0	16	1	0	0	7	11	0	14	1	2	0	58	1014
4:40 PM	1	4	5	0	3	31	1	0	0	12	25	0	16	3	0	0	101	1066
4:45 PM	1	4	2	0	7	22	5	0	1	11	25	0	20	0	3	0	101	1127
4:50 PM	0	6	6	0	2	18	1	0	0	6	27	0	16	1	1	0	84	1151
4:55 PM	0	2	0	0	1	20	1	0	0	8	15	0	25	0	3	0	75	1150
5:00 PM	0	1	5	0	2	16	1	0	0	8	18	0	22	1	0	0	74	1151
5:05 PM	0	1	3	0	6	18	1	0	0	8	13	0	20	2	0	0	72	1129
5:10 PM	0	4	7	0	0	31	4	0	0	13	14	0	28	3	2	0	106	1115
5:15 PM	0	2	3	0	5	32	2	0	0	11	15	0	32	1	1	0	104	1104
5:20 PM	0	3	6	0	4	24	1	0	1	12	16	0	31	3	1	0	102	1068
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	12	44	60	0	44	384	8	0	8	244	412	0	248	16	12	0	1492	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	4				4				44				88				140	
Bicycles	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	
Railroad																		
Stopped Buses																		

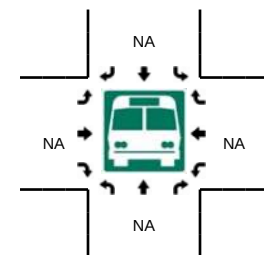
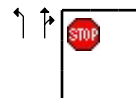
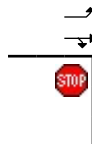
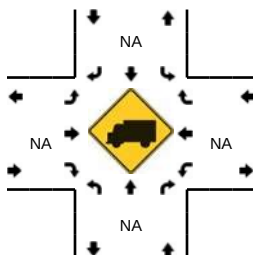
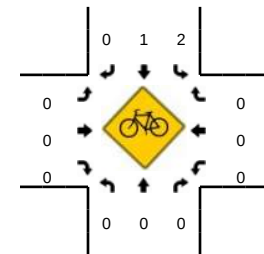
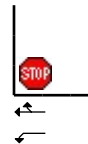
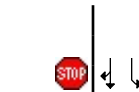
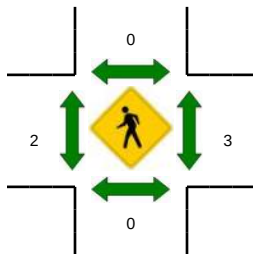
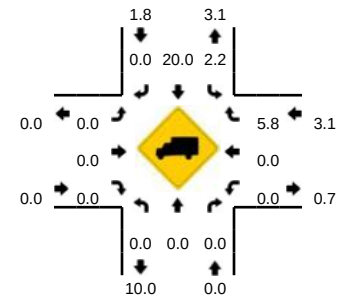
Comments: Summarize Count

LOCATION: RAP3 East Access Rd -- Intel Internal Rd (Tandem Way)
CITY/STATE: Hillsboro, OR

QC JOB #: 14736512
DATE: Thu, Jun 28 2018



Peak-Hour: 4:50 PM -- 5:50 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

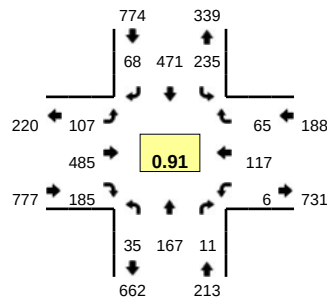


5-Min Count Period Beginning At	RAP3 East Access Rd (Northbound)				RAP3 East Access Rd (Southbound)				Intel Internal Rd (Tandem Way) (Eastbound)				Intel Internal Rd (Tandem Way) (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	3	0	1	0	11	0	4	0	8	24	0	0	0	5	7	0	63	476
4:05 PM	0	0	1	0	18	1	6	0	3	28	1	0	0	9	5	0	72	514
4:10 PM	0	0	0	0	13	0	7	0	2	28	1	0	0	3	3	0	57	542
4:15 PM	2	0	2	0	17	0	6	0	4	24	0	0	0	5	4	0	64	567
4:20 PM	1	1	0	0	18	0	4	0	1	33	0	0	0	6	4	0	68	602
4:25 PM	2	0	1	0	13	0	4	0	3	26	1	0	1	6	6	0	63	631
4:30 PM	0	0	1	0	8	0	4	0	1	13	0	0	0	2	6	0	35	629
4:35 PM	0	0	0	0	4	0	9	0	5	24	0	0	0	4	3	0	49	631
4:40 PM	2	0	0	0	8	0	7	0	4	23	0	0	0	6	3	0	53	638
4:45 PM	1	0	1	0	14	0	4	0	4	29	1	0	0	4	11	0	69	673
4:50 PM	0	0	0	0	13	0	5	0	2	22	0	0	0	3	11	0	56	690
4:55 PM	0	0	0	0	11	0	7	0	5	21	0	0	0	1	5	0	50	699
5:00 PM	1	0	1	0	10	2	3	0	6	21	2	0	0	4	3	0	53	689
5:05 PM	0	0	2	0	20	0	7	0	2	40	2	0	0	5	4	0	82	699
5:10 PM	0	1	1	0	17	0	11	0	4	39	0	0	0	11	8	0	92	734
5:15 PM	0	0	0	0	18	0	13	0	4	40	0	0	0	9	1	0	85	755
5:20 PM	0	0	0	0	12	1	5	0	4	38	0	0	0	4	9	0	73	760
5:25 PM	3	1	1	0	15	0	5	0	8	34	0	0	0	5	7	0	79	776
5:30 PM	0	0	0	0	27	0	12	0	1	30	0	0	1	6	4	0	81	822
5:35 PM	0	0	0	0	13	1	9	0	8	21	0	0	0	7	6	0	65	838
5:40 PM	1	0	0	0	14	0	8	0	8	27	0	0	0	2	4	0	64	849
5:45 PM	2	2	0	0	16	1	4	0	3	32	0	0	0	4	7	0	71	851
5:50 PM	0	0	0	0	7	0	3	0	3	28	0	0	0	3	4	0	48	843
5:55 PM	0	1	1	0	7	0	8	0	2	23	1	0	0	4	5	0	52	845
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	4	12	0	220	0	124	0	40	476	8	0	0	100	52	0	1036	
Heavy Trucks	0	0	0	0	4	0	0	0	0	0	0	0	0	0	8	0	12	
Pedestrians	0	0	0	0	0	0	0	0	0	8	0	0	0	4	0	0	12	
Bicycles	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
Railroad																		
Stopped Buses																		

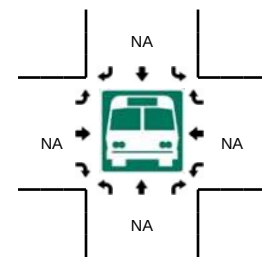
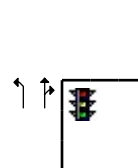
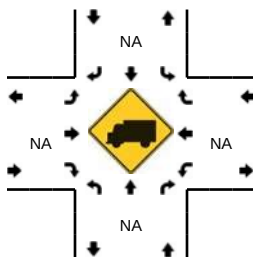
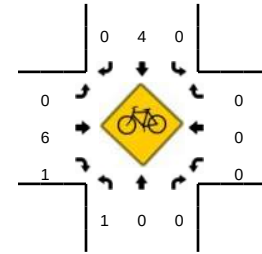
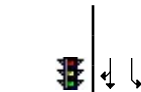
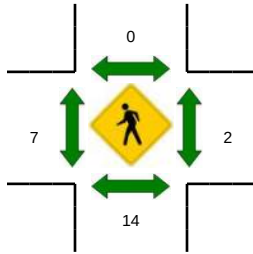
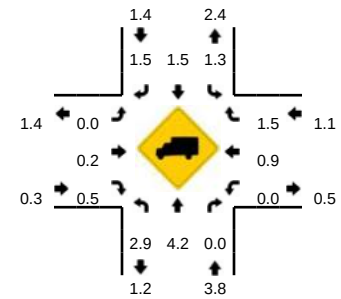
Comments: Please capture direction of pedestrian in crosswalk

LOCATION: NE Century Blvd -- NE Butler St
CITY/STATE: Hillsboro, OR

QC JOB #: 14854608
DATE: Wed, Nov 28 2018



Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

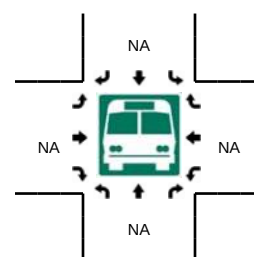
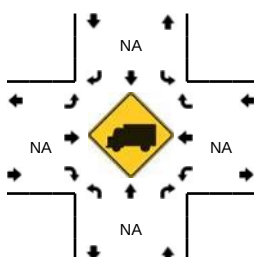
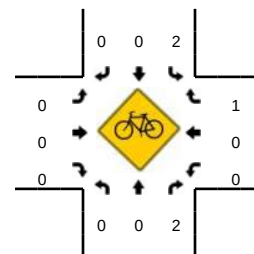
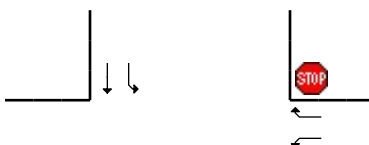
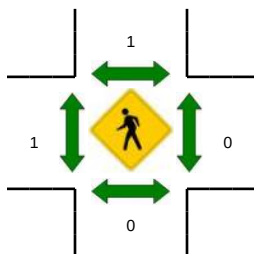
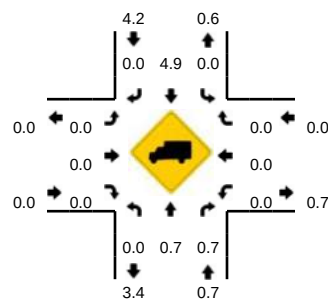
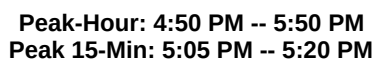


5-Min Count Period Beginning At	NE Century Blvd (Northbound)				NE Century Blvd (Southbound)				NE Butler St (Eastbound)				NE Butler St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:15 PM	1	16	0	0	14	25	7	0	15	47	11	0	1	16	8	0	161	1337
4:20 PM	1	15	0	0	17	32	5	0	24	58	19	0	1	5	1	0	178	1441
4:25 PM	2	18	1	0	13	45	3	0	4	48	21	0	1	8	6	0	170	1530
4:30 PM	1	10	0	0	15	42	6	0	14	42	10	0	0	12	7	0	159	1606
4:35 PM	0	11	2	0	8	34	6	0	11	30	12	0	2	15	6	0	137	1635
4:40 PM	3	24	0	0	17	30	6	0	12	33	15	0	0	7	9	0	156	1701
4:45 PM	2	22	0	0	14	29	8	0	10	50	14	0	0	14	6	0	169	1769
4:50 PM	1	12	2	0	15	23	4	0	10	47	7	0	2	13	3	0	139	1823
4:55 PM	2	7	1	0	12	28	2	0	12	35	15	0	0	10	12	0	136	1841
5:00 PM	1	15	1	0	23	42	7	0	9	24	12	0	0	3	4	0	141	1873
5:05 PM	3	20	0	0	27	54	6	0	10	24	13	0	0	9	3	0	169	1897
5:10 PM	2	6	1	0	18	53	4	0	9	48	24	0	2	9	6	0	182	1897
5:15 PM	5	16	4	0	19	53	7	0	7	41	16	0	0	8	3	0	179	1915
5:20 PM	7	11	1	0	30	49	5	0	5	42	15	0	0	5	6	0	176	1913
5:25 PM	2	17	1	0	17	37	5	0	7	38	22	0	1	13	6	0	166	1909
5:30 PM	5	10	0	0	17	43	6	0	10	47	18	0	0	9	3	0	168	1918
5:35 PM	1	12	0	0	27	34	6	0	9	40	16	0	1	9	4	0	159	1940
5:40 PM	4	19	0	0	16	26	8	0	9	49	13	0	0	15	9	0	168	1952
5:45 PM	2	3	1	0	11	29	2	0	8	44	15	0	0	16	1	0	132	1915
5:50 PM	2	15	2	0	9	18	5	0	6	34	10	0	2	10	8	0	121	1897
5:55 PM	2	12	4	0	10	20	4	0	3	19	9	0	0	8	5	0	96	1857
6:00 PM	2	18	1	0	12	32	7	0	6	43	13	0	0	7	2	0	143	1859
6:05 PM	1	12	0	0	10	28	1	0	11	40	8	0	1	9	6	0	127	1817
6:10 PM	5	19	3	0	7	22	5	0	5	32	16	0	1	11	3	0	129	1764
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	56	132	24	0	268	620	64	0	84	524	220	0	8	88	60	0	2148	
Heavy Trucks	0	8	0	0	0	8	0	0	0	0	0	0	0	0	4	0	20	
Pedestrians	24				0				4				4				32	
Bicycles	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2	
Railroad																		
Stopped Buses																		

Comments:

Method for determining peak hour: Total Entering Volume

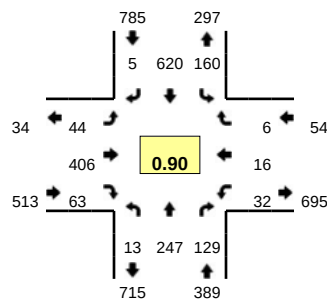
QC JOB #: 14736518
DATE: Thu, Jun 28 2018



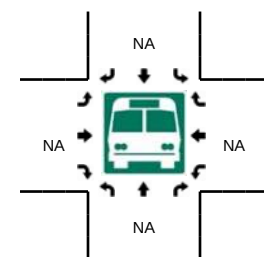
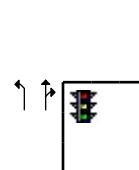
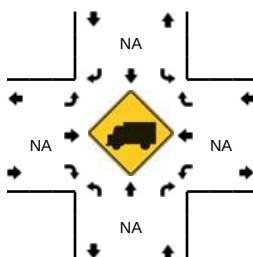
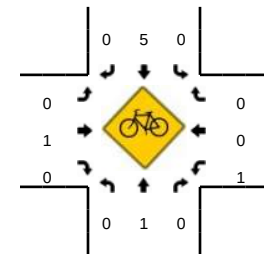
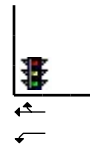
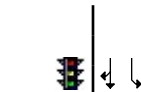
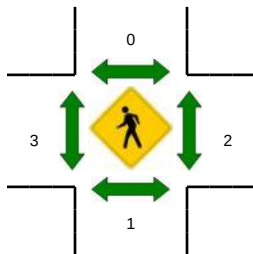
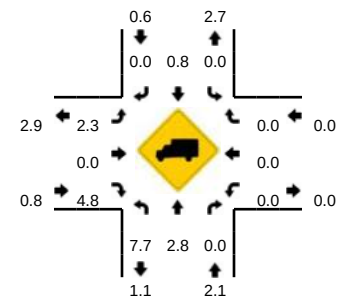
Comments:

LOCATION: NE Century Blvd -- NE Ronler Dr Access
CITY/STATE: Hillsboro, OR

QC JOB #: 14840014
DATE: Wed, Nov 07 2018



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

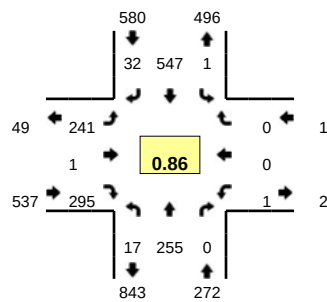


5-Min Count Period Beginning At	NE Century Blvd (Northbound)				NE Century Blvd (Southbound)				NE Ronler Dr Access (Eastbound)				NE Ronler Dr Access (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:45 PM	0	12	7	0	5	34	0	0	2	14	3	0	8	3	0	0	88	936
3:50 PM	3	15	4	0	8	42	2	0	0	4	2	0	2	1	0	0	83	948
3:55 PM	0	15	6	0	7	33	0	0	1	21	3	0	2	2	1	0	91	986
4:00 PM	3	13	14	0	6	32	2	0	1	20	4	0	3	3	0	0	101	1023
4:05 PM	0	20	9	0	13	53	0	0	1	29	2	0	1	0	0	0	128	1078
4:10 PM	1	17	14	0	14	60	0	0	3	20	3	0	2	1	0	0	135	1138
4:15 PM	2	21	21	0	14	41	0	0	3	39	9	0	5	1	1	0	157	1215
4:20 PM	1	23	16	0	7	45	1	0	6	50	6	0	4	1	1	0	161	1288
4:25 PM	1	23	17	0	12	48	0	0	6	26	5	0	2	0	1	0	141	1365
4:30 PM	3	19	5	0	15	50	1	0	2	19	5	0	0	2	0	0	121	1416
4:35 PM	2	23	6	0	26	49	0	0	3	31	1	0	1	1	0	0	143	1458
4:40 PM	1	24	11	0	11	49	1	0	2	28	4	0	1	3	2	0	137	1486
4:45 PM	1	18	16	0	14	54	0	0	2	27	6	0	1	2	0	0	141	1539
4:50 PM	1	18	7	0	7	54	0	0	5	40	4	0	1	1	1	0	139	1595
4:55 PM	0	19	6	0	6	48	0	0	3	27	5	0	3	2	0	0	119	1623
5:00 PM	0	20	8	0	13	55	1	0	4	28	3	0	4	1	0	0	137	1659
5:05 PM	1	21	4	0	13	73	1	0	3	46	7	0	3	1	0	0	173	1704
5:10 PM	0	18	12	0	22	54	0	0	5	45	8	0	7	1	0	0	172	1741
5:15 PM	2	10	8	0	16	46	0	0	2	40	4	0	4	0	0	0	132	1716
5:20 PM	1	20	8	0	12	55	0	0	6	27	5	0	3	2	1	0	140	1695
5:25 PM	2	18	13	0	20	51	1	0	0	38	3	0	1	0	0	0	147	1701
5:30 PM	0	15	5	0	11	35	1	0	5	44	8	0	1	3	1	0	129	1709
5:35 PM	1	19	3	0	8	40	1	0	4	29	2	0	5	3	0	0	115	1681
5:40 PM	2	24	9	0	7	52	1	0	3	23	8	0	3	1	1	0	134	1678
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	4	236	96	0	192	728	8	0	48	476	72	0	56	12	0	0	1928	
Heavy Trucks	0	8	0	0	0	4	0	0	4	0	0	0	0	0	0	0	16	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2	
Railroad																		
Stopped Buses																		

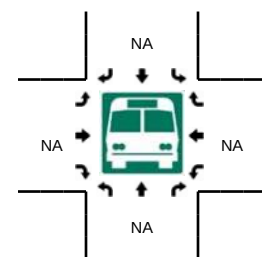
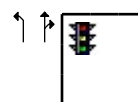
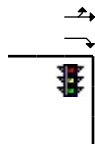
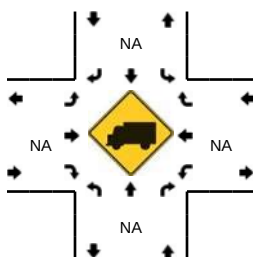
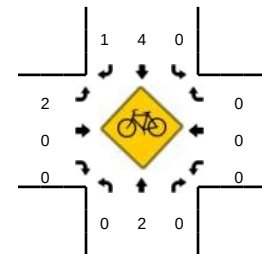
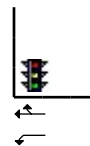
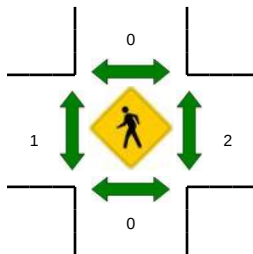
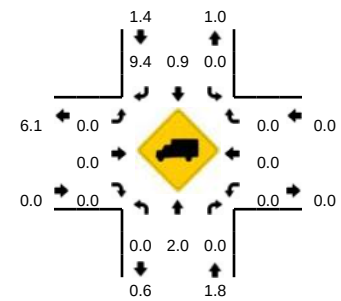
Comments:

LOCATION: NE Century Blvd -- RP1 Access
CITY/STATE: Hillsboro, OR

QC JOB #: 14840016
DATE: Wed, Nov 14 2018



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

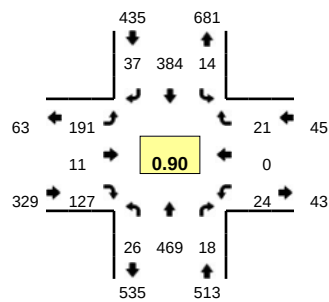


5-Min Count Period Beginning At	NE Century Blvd (Northbound)				NE Century Blvd (Southbound)				RP1 Access (Eastbound)				RP1 Access (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:55 PM	0	15	0	0	0	30	3	0	12	0	13	0	0	0	0	0	73	808
4:00 PM	1	19	0	0	0	39	1	0	3	0	18	0	0	0	0	0	81	811
4:05 PM	0	18	0	0	0	50	5	0	18	0	17	0	0	0	0	0	108	866
4:10 PM	0	19	0	0	0	41	5	0	19	0	23	0	0	0	0	0	107	895
4:15 PM	1	29	0	0	0	44	3	0	22	0	13	0	0	0	0	0	112	959
4:20 PM	5	21	0	0	0	27	2	0	27	0	16	0	0	0	0	0	98	993
4:25 PM	2	26	0	0	0	49	3	0	27	0	20	0	0	0	0	0	127	1055
4:30 PM	4	15	0	0	0	56	1	0	9	0	23	0	0	0	0	0	108	1105
4:35 PM	3	29	0	0	0	46	4	0	15	0	19	0	0	0	0	0	116	1139
4:40 PM	2	21	0	0	0	39	2	0	14	0	25	0	0	0	0	0	103	1170
4:45 PM	1	17	0	0	0	33	4	0	17	0	25	0	0	0	0	0	97	1201
4:50 PM	0	28	0	0	0	34	2	0	15	0	18	0	0	0	0	0	97	1227
4:55 PM	1	16	0	0	1	42	1	0	22	0	12	0	1	0	0	0	96	1250
5:00 PM	1	21	0	0	0	37	6	0	25	0	30	0	0	0	0	0	120	1289
5:05 PM	2	26	0	0	0	59	2	0	15	0	16	0	0	0	0	0	120	1301
5:10 PM	1	12	0	0	0	52	3	0	27	0	34	0	0	0	0	0	129	1323
5:15 PM	0	25	0	0	0	60	1	0	27	1	41	0	0	0	0	0	155	1366
5:20 PM	0	19	0	0	0	40	3	0	28	0	32	0	0	0	0	0	122	1390
5:25 PM	1	21	0	0	0	47	1	0	18	0	17	0	0	0	0	0	105	1368
5:30 PM	0	20	0	0	0	42	2	0	21	0	38	0	0	0	0	0	123	1383
5:35 PM	1	25	0	0	0	27	4	0	24	0	18	0	0	0	0	0	99	1366
5:40 PM	0	28	0	0	0	41	4	0	14	0	25	0	0	0	0	0	112	1375
5:45 PM	1	22	0	0	0	35	1	0	16	0	19	0	0	0	0	0	94	1372
5:50 PM	2	22	0	0	0	25	1	0	21	0	18	0	0	0	0	0	89	1364
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
	4	224	0	0	0	608	28	0	328	4	428	0	0	0	0	0	1624	
	0	8	0	0	0	4	4	0	0	0	0	0	0	0	0	0	16	
	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	8	
	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	3	
Stopped Buses																		

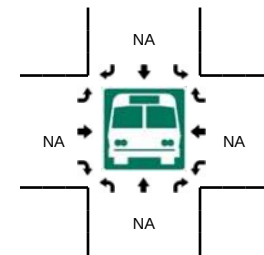
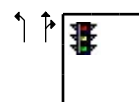
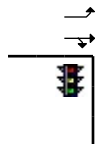
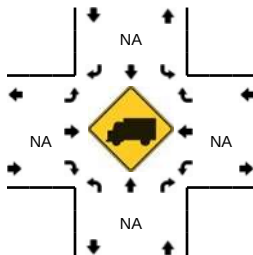
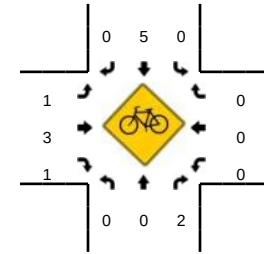
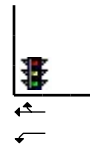
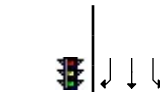
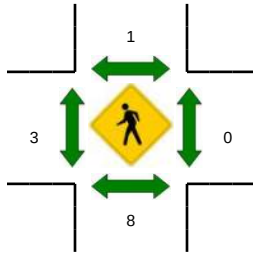
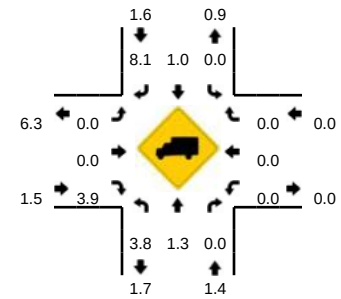
Comments:

LOCATION: NE Century Blvd -- RA1/2 Access
CITY/STATE: Hillsboro, OR

QC JOB #: 14840018
DATE: Wed, Nov 07 2018



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

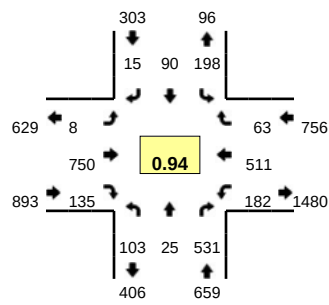


5-Min Count Period Beginning At	NE Century Blvd (Northbound)				NE Century Blvd (Southbound)				RA1/2 Access (Eastbound)				RA1/2 Access (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:55 PM	1	20	0	0	1	25	1	0	3	0	3	0	0	0	0	0	54	825
4:00 PM	2	33	0	0	1	21	1	0	15	0	10	0	1	1	1	0	86	841
4:05 PM	2	21	1	0	1	34	3	0	16	3	15	0	0	0	3	0	99	871
4:10 PM	1	33	3	0	1	35	1	0	21	7	9	0	0	1	3	0	115	933
4:15 PM	3	38	2	0	0	28	2	0	8	5	10	0	1	0	0	0	97	959
4:20 PM	2	46	4	0	0	28	1	0	19	0	11	0	0	0	2	0	113	1003
4:25 PM	2	46	0	0	2	25	3	0	18	0	13	0	1	0	3	0	113	1064
4:30 PM	0	35	1	0	1	31	2	0	10	1	9	0	4	0	3	0	97	1090
4:35 PM	0	37	2	0	0	44	4	0	12	0	9	0	0	0	5	0	113	1128
4:40 PM	6	33	1	0	3	21	2	0	18	0	7	0	3	0	1	0	95	1133
4:45 PM	4	27	2	0	2	22	2	0	17	0	9	0	5	0	0	0	90	1140
4:50 PM	3	43	1	0	2	35	5	0	11	0	7	0	0	0	0	0	107	1179
4:55 PM	3	37	0	0	0	24	3	0	16	0	12	0	2	0	1	0	98	1223
5:00 PM	4	39	2	0	0	41	1	0	21	1	12	0	3	0	3	0	127	1264
5:05 PM	0	47	2	0	0	42	3	0	13	2	11	0	2	0	2	0	124	1289
5:10 PM	1	45	1	0	1	36	2	0	13	4	12	0	0	0	0	0	115	1289
5:15 PM	1	37	3	0	1	31	7	0	18	1	15	0	4	0	2	0	120	1312
5:20 PM	2	43	3	0	2	32	3	0	24	2	11	0	0	0	1	0	123	1322
5:25 PM	2	26	0	0	1	36	2	0	11	2	11	0	2	0	1	0	94	1303
5:30 PM	4	42	2	0	0	22	0	0	14	3	4	0	2	0	1	0	94	1300
5:35 PM	1	40	1	0	0	28	2	0	11	0	8	0	3	0	0	0	94	1281
5:40 PM	0	36	2	0	1	28	2	0	14	0	11	0	1	0	2	0	97	1283
5:45 PM	2	43	3	0	0	33	4	0	4	0	7	0	0	1	2	0	99	1292
5:50 PM	5	39	1	0	3	22	4	0	13	2	12	0	0	0	1	0	102	1287
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	20	524	20	0	4	476	24	0	188	28	140	0	20	0	20	0	1464	
Heavy Trucks	4	8	0	0	0	0	4	0	0	0	4	0	0	0	0	0	20	
Pedestrians	8				4				0				0				12	
Bicycles	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
Railroad																		
Stopped Buses																		

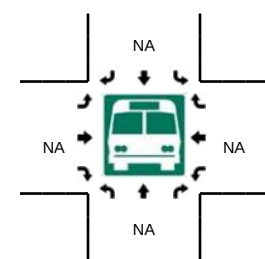
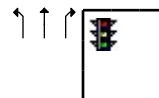
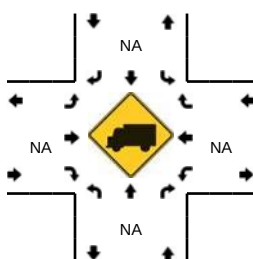
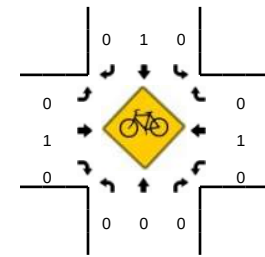
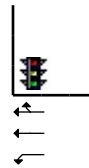
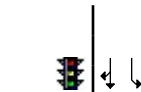
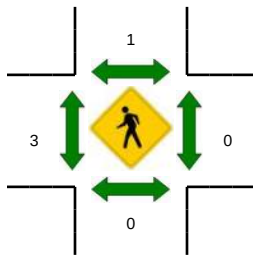
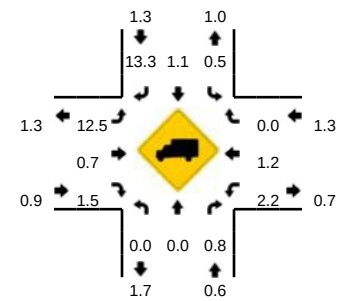
Comments:

LOCATION: NE Century Blvd -- NE Evergreen Pkwy
CITY/STATE: Hillsboro, OR

QC JOB #: 14854610
DATE: Wed, Nov 28 2018



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

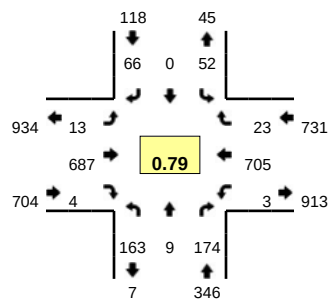


5-Min Count Period Beginning At	NE Century Blvd (Northbound)				NE Century Blvd (Southbound)				NE Evergreen Pkwy (Eastbound)				NE Evergreen Pkwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	6	1	29	0	12	12	0	0	0	47	10	0	17	45	9	0	188	2027
4:05 PM	5	3	37	0	21	11	1	0	2	56	12	0	13	49	6	0	216	2084
4:10 PM	11	3	40	0	18	3	1	0	0	72	7	0	15	34	7	0	211	2078
4:15 PM	11	1	48	0	9	10	0	0	3	79	5	0	14	44	9	0	233	2169
4:20 PM	8	0	38	0	8	4	0	0	0	97	6	0	18	43	7	0	229	2243
4:25 PM	5	3	34	0	9	5	0	0	1	79	7	0	13	32	7	0	195	2295
4:30 PM	10	2	48	0	18	6	0	0	0	66	7	0	14	38	5	1	215	2355
4:35 PM	13	2	28	0	45	11	2	0	1	57	10	0	11	41	5	0	226	2407
4:40 PM	4	2	49	0	20	8	2	0	0	52	8	0	15	43	12	0	215	2444
4:45 PM	13	3	40	0	16	4	1	0	0	56	4	0	15	34	10	0	196	2465
4:50 PM	9	0	52	0	14	5	1	0	0	71	11	0	14	34	8	0	219	2507
4:55 PM	8	2	50	0	5	4	0	0	1	43	5	0	15	44	3	0	180	2523
5:00 PM	10	3	33	0	13	7	2	0	0	61	16	0	23	52	5	0	225	2560
5:05 PM	7	3	48	0	23	14	2	0	1	59	18	0	9	56	2	0	242	2586
5:10 PM	8	1	43	0	16	11	1	0	1	70	12	0	12	54	1	0	230	2605
5:15 PM	11	1	49	0	10	8	1	0	1	54	11	0	11	35	3	0	195	2567
5:20 PM	9	2	43	0	13	8	0	0	1	80	16	0	27	35	3	0	237	2575
5:25 PM	1	4	48	0	5	4	3	0	2	81	17	0	15	45	6	0	231	2611
5:30 PM	7	1	42	0	17	5	1	0	1	76	18	0	17	27	3	0	215	2611
5:35 PM	5	1	44	0	8	5	2	0	1	54	7	0	16	45	2	0	190	2575
5:40 PM	7	1	47	0	12	1	0	0	0	65	11	0	15	47	2	0	208	2568
5:45 PM	2	4	22	0	10	2	0	0	1	70	7	0	15	45	3	0	181	2553
5:50 PM	6	0	34	0	3	3	1	0	1	57	9	0	21	49	6	0	190	2524
5:55 PM	11	1	36	0	10	3	0	0	1	52	11	0	17	46	4	0	192	2536
Peak 15-Min Flowrates																		
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Total	
All Vehicles	100	28	496	0	208	128	20	0	8	760	184	0	176	648	32	0	2788	
Heavy Trucks	0	0	4		0	0	4		0	8	4		4	12	0		36	
Pedestrians	0	0	0		0	0	0		0	4	0		0	0	0		4	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

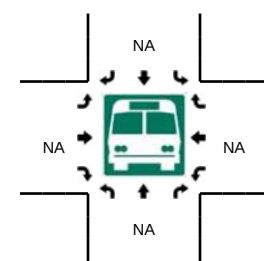
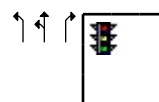
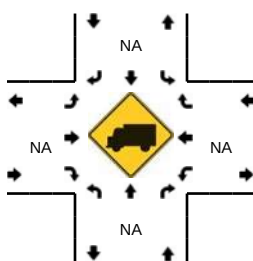
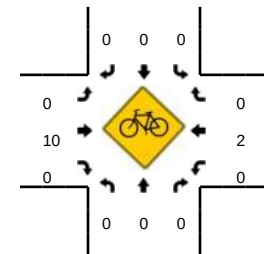
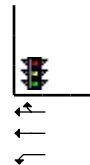
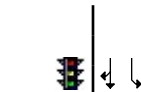
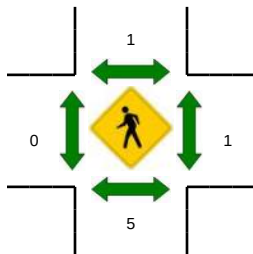
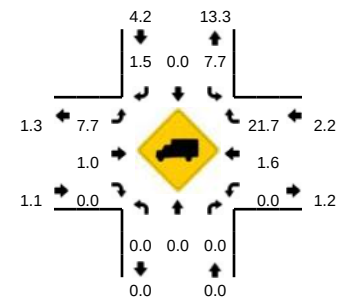
Comments:

LOCATION: NE 59th Ave Access -- NE Evergreen Pkwy
CITY/STATE: Hillsboro, OR

QC JOB #: 14840022
DATE: Wed, Nov 07 2018



Peak-Hour: 4:05 PM -- 5:05 PM
Peak 15-Min: 4:10 PM -- 4:25 PM

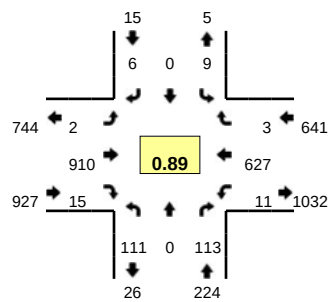


5-Min Count Period Beginning At	NE 59th Ave Access (Northbound)				NE 59th Ave Access (Southbound)				NE Evergreen Pkwy (Eastbound)				NE Evergreen Pkwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:35 PM	1	0	5	0	7	0	7	0	0	30	0	0	1	62	2	0	115	1108
3:40 PM	0	0	8	0	9	0	10	0	1	31	2	0	0	38	2	0	101	1113
3:45 PM	4	1	4	0	5	0	4	0	2	35	2	0	1	61	0	0	119	1158
3:50 PM	7	1	11	0	4	0	4	0	1	33	1	0	1	36	4	0	103	1161
3:55 PM	3	0	13	0	3	0	4	0	0	51	0	0	0	45	2	0	121	1209
4:00 PM	8	1	8	0	4	0	9	0	1	33	0	0	0	48	2	0	114	1237
4:05 PM	21	2	22	0	6	0	8	0	0	38	1	0	0	56	2	0	156	1314
4:10 PM	35	2	20	0	8	0	7	0	0	40	0	0	2	54	0	0	168	1392
4:15 PM	48	0	46	0	5	0	3	0	0	65	0	0	0	55	3	0	225	1501
4:20 PM	27	2	38	0	2	0	5	0	3	59	0	0	0	73	2	0	211	1636
4:25 PM	13	2	12	0	3	0	3	0	0	54	1	0	0	57	3	0	148	1683
4:30 PM	5	0	10	0	6	0	13	0	1	42	1	0	0	41	1	0	120	1701
4:35 PM	3	0	10	0	4	0	10	0	3	68	0	0	0	79	5	0	182	1768
4:40 PM	2	0	6	0	1	0	3	0	0	78	0	0	0	63	2	0	155	1822
4:45 PM	3	0	1	0	4	0	5	0	0	60	0	0	0	52	1	0	126	1829
4:50 PM	4	0	3	0	4	0	3	0	2	66	0	0	0	50	1	0	133	1859
4:55 PM	0	0	4	0	5	0	2	0	4	56	1	0	0	55	1	0	128	1866
5:00 PM	2	1	2	0	4	0	4	0	0	61	0	0	1	70	2	0	147	1899
5:05 PM	0	0	3	0	1	0	7	0	1	75	0	0	0	56	0	0	143	1886
5:10 PM	0	0	2	0	3	0	4	0	2	65	0	0	1	68	2	0	147	1865
5:15 PM	1	1	2	0	3	0	3	0	1	65	0	0	0	70	2	0	148	1788
5:20 PM	0	0	1	0	1	0	6	0	1	61	0	0	0	91	0	0	161	1738
5:25 PM	1	0	1	0	6	0	4	0	2	81	0	0	1	42	1	0	139	1729
5:30 PM	0	1	3	0	2	0	8	0	1	51	0	0	0	57	1	0	124	1733
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	440	16	416	0	60	0	60	0	12	656	0	0	8	728	20	0	2416	
Heavy Trucks	0	0	0		8	0	4		4	12	0		0	12	12		52	
Pedestrians																	0	
Bicycles	0	0	0		0	0	0		0	1	0		0	0	0		1	
Railroad																		
Stopped Buses																		

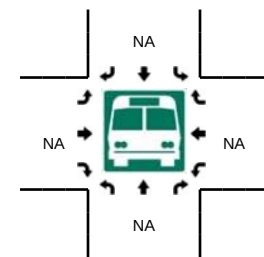
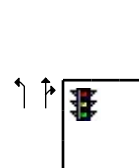
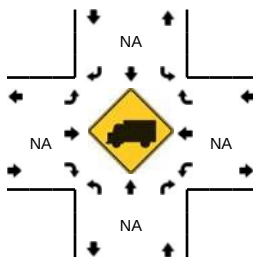
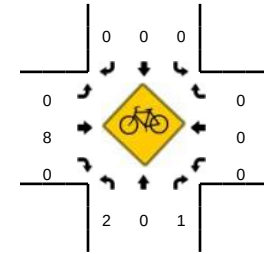
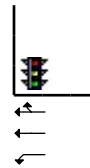
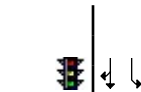
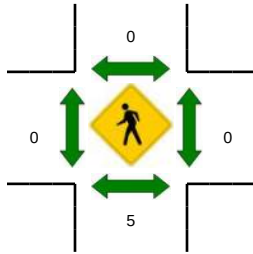
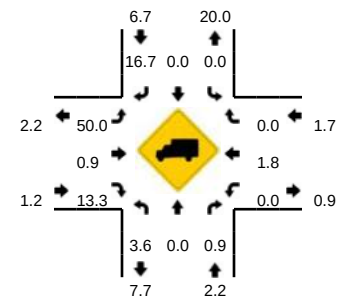
Comments:

LOCATION: Evergreen Main Entrance -- NE Evergreen Pkwy
CITY/STATE: Hillsboro, OR

QC JOB #: 14840020
DATE: Wed, Nov 07 2018



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



5-Min Count Period Beginning At	Evergreen Main Entrance (Northbound)				Evergreen Main Entrance (Southbound)				NE Evergreen Pkwy (Eastbound)				NE Evergreen Pkwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:45 PM	3	0	5	0	1	0	0	0	0	50	1	0	2	56	0	0	118	1171
3:50 PM	3	0	10	0	3	0	0	0	0	46	1	0	1	42	1	0	107	1187
3:55 PM	3	0	12	0	8	0	0	0	0	62	2	0	1	35	2	0	125	1230
4:00 PM	2	0	9	0	1	0	0	0	0	44	0	0	1	47	0	0	104	1245
4:05 PM	7	0	17	0	5	0	0	0	0	56	0	0	2	53	0	0	140	1316
4:10 PM	10	1	14	0	2	0	0	0	0	68	1	0	1	45	1	0	143	1363
4:15 PM	10	0	5	0	1	0	0	0	1	113	1	0	1	47	0	0	179	1426
4:20 PM	10	0	7	0	0	0	0	0	0	107	1	0	0	60	1	0	186	1520
4:25 PM	10	0	2	0	2	0	0	0	1	69	3	0	1	52	0	0	140	1557
4:30 PM	10	0	9	0	0	0	0	0	0	57	1	0	1	49	0	0	127	1585
4:35 PM	7	0	9	0	0	0	0	0	0	82	0	0	0	66	0	0	164	1627
4:40 PM	15	0	16	0	1	0	1	0	0	81	2	0	1	49	0	0	166	1699
4:45 PM	8	0	10	0	0	0	1	0	0	67	2	0	3	46	0	0	137	1718
4:50 PM	7	0	10	0	2	0	0	0	0	73	0	0	0	42	0	0	134	1745
4:55 PM	2	0	12	0	1	0	1	0	0	55	1	0	2	53	1	0	128	1748
5:00 PM	8	0	9	0	1	0	1	0	0	69	4	0	0	63	0	0	155	1799
5:05 PM	11	0	13	0	1	0	0	0	0	69	0	0	1	45	0	0	140	1799
5:10 PM	13	0	11	0	0	0	2	0	0	68	0	0	1	55	1	0	151	1807
5:15 PM	6	0	9	0	3	0	0	0	0	85	0	0	1	64	1	0	169	1797
5:20 PM	4	0	6	0	0	0	1	0	0	65	0	0	0	90	0	0	166	1777
5:25 PM	4	0	7	0	1	0	2	0	0	83	1	0	2	47	0	0	147	1784
5:30 PM	2	0	7	0	1	0	1	0	1	57	1	0	0	40	1	0	111	1768
5:35 PM	4	0	12	0	3	0	1	0	0	68	2	0	1	51	1	0	143	1747
5:40 PM	6	0	10	0	1	0	0	0	0	84	0	0	0	51	0	0	152	1733
Peak 15-Min Flowrates																		
	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	120	0	56	0	12	0	0	0	8	1156	20	0	8	636	4	0	2020	
Heavy Trucks	12	0	0	0	0	0	0	0	4	16	4	0	0	16	0	0	52	
Pedestrians		4				0				0				0			4	
Bicycles	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	
Railroad																		
Stopped Buses																		

Comments:

APPENDIX E.
CRASH DATA

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CITY OF HILLSBORO, WASHINGTON COUNTY

SHUTE RD and EVERGREEN PKY, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016

1 - 5 of 40 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	MOVE			A	S									
INVEST	E	A	U	C	O	DAY	FIRST STREET	(MEDIAN)	TRAF-	RNDBT	SURF	COLL	OWNER	FROM			G	E	LICNS	PED							
RD DPT	E	L	G	H	R	TIME	SECOND STREET	LEGS	CONTL																		
UNLOC?	D	C	S	L	K	LAT	LONG	LRS	LOCTN	(#LANES)			V#	TYPE	TO		P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE
00474	N	N	N			01/27/2014	16	NW EVERGREEN PKY	INTER	CROSS	N	CLR	S-1TURN	01	NONE	0										08,14	
NONE						MO	0	NW SHUTE RD	N			TRF SIGNAL	N	DRY	TURN	PRVTE	N -W								000	00	
N						10A			06	3							01	DRVR	NONE	21	M	OR-Y		006,003	000	08,14	
N						45 33	-122 55																				
						3.2984639	34.892472																				
													02	NONE	0	STOP									011	00	
														PRVTE	N -S		01	DRVR	NONE	20	F	OR-Y		000	000	00	
														PSNGR CAR													
08148	N	N	N			Y 11/28/2016	16	NW EVERGREEN PKY	INTER	CROSS	N	RAIN	S-STRGHT	01	NONE	0									29		
CITY						MO	0	NW SHUTE RD	N			TRF SIGNAL	N	WET	REAR	PRVTE	S -N								000	00	
N						6A			05	3							01	DRVR	NONE	30	F	OR-Y		042	000	29	
N						45 33 3.3	-122 55																				
							34.89							02	NONE	0	STRGHT								006	00	
															PRVTE	S -N	01	DRVR	INJC	38	M	OR-Y		000	000	00	
															PSNGR CAR												
03591	N	N	N			07/05/2013	16	NW EVERGREEN PKY	INTER	CROSS	N	CLR	S-1STOP	01	NONE	0									07		
NONE						FR	0	NW SHUTE RD	NE			YIELD	N	DRY	REAR	PRVTE	SW-NE								000	00	
N						12P			09	2							01	DRVR	NONE	31	F	OR-Y		026	000	07	
N						45 33	-122 55																				
						3.2984639	34.8924359																				
													02	NONE	0	STOP									011	00	
															PRVTE	SW-NE	01	DRVR	INJC	57	F	OR-Y		000	000	00	
															PSNGR CAR												
01831	N	N	N			04/10/2012	16	NW EVERGREEN PKY	INTER	CROSS	N	CLR	S-1STOP	01	NONE	0									07		
NONE						TU	0	NW SHUTE RD	E			L-GRN-SIG	N	DRY	REAR	PRVTE	E -W								000	00	
N						4P			06	3							01	DRVR	NONE	33	M	OR-Y		026	000	07	
N						45 33	-122 55																				
						3.2984755	34.8924682																				
													02	NONE	0	STOP									012	00	
															PRVTE	E -W	01	DRVR	INJC	25	F	OR-Y		000	000	00	
															PSNGR CAR												
02330	N	N	N			05/06/2013	16	NW EVERGREEN PKY	INTER	CROSS	N	CLR	S-1STOP	01	NONE	0									07		
NONE						MO	0	NW SHUTE RD	E			TRF SIGNAL	N	DRY	REAR	PRVTE	E -W								000	00	
N						4P			06	2							01	DRVR	NONE	57	M	OR-Y		026	000	07	
N						45 33	-122 55																				
						3.2984639	34.8924359																				
													02	NONE	0	STOP									011	00	
															PRVTE	E -W	01	DRVR	INJC	40	M	OR-Y		000	000	00	
															PSNGR CAR												

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TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CITY OF HILLSBORO, WASHINGTON COUNTY

SHUTE RD and EVERGREEN PKY, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016

15 - 19 of 40 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	MOVE	A	S	PED	ERROR	ACT	EVENT	CAUSE
INVEST	E	A	U	C	O DAY	DIST	FIRST STREET	(MEDIAN)	TRAF -	RNDBT	SURF	COLL	OWNER	FROM	G	E	LICNS	LOC			
RD DPT	E	L	G	H	R TIME	FROM	SECOND STREET	LEGS	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	X	RES				
UNLOC?	D	C	S	L	K LAT	LONG	LRS	(#LANES)													
													02 NONE	0	STOP						
													PRVTE	NE-SW							
													PSNGR CAR								
																01	DRVR	NONE	44	F	OR-Y
																					OR<25
																		000		011	00
																			000		00
03996	N	N	N	N	07/16/2015	16	NW EVERGREEN PKY	INTER	CROSS	N	CLR	S-1STOP	01 NONE	0	TURN-R						
CITY					TH	0	NW SHUTE RD	NW			DRY	SS-0	PRVTE	N -W						000	00
N					5P			09	3	N	DAY	PDO	PSNGR CAR								00
N					45 33 3.3	-122 55 34.89										01	DRVR	NONE	36	F	NONE
																					OR<25
																		045		000	13
													02 NONE	0	STOP						
													PRVTE	N -W							00
													PSNGR CAR								00
																01	DRVR	NONE	26	F	OR-Y
																					OR<25
																		000		013	00
																			000		00
04579	Y	Y	N	N	09/03/2012	16	NW EVERGREEN PKY	INTER	CROSS	N	CLR	FIX OBJ	01 NONE	0	STRGHT					055,050	01
COUNTY					MO	0	NW SHUTE RD	CN			DRY	FIX	PRVTE	S -N						000	055,050
N					4A			02	3	N	DLIT	PDO	PSNGR CAR								00
N					45 33 3.2984755	-122 55 34.8924682										01	DRVR	NONE	23	M	UNK
																					OR<25
																		047,080,081	017		01
04108	N	N	N	N	07/27/2013	16	NW EVERGREEN PKY	INTER	CROSS	N	CLR	ANGL-OTH	01 NONE	0	TURN-R						
CITY					SA	0	NW SHUTE RD	CN			DRY	TURN	PRVTE	S -E						000	00
N					10P			04	1	N	DLIT	PDO	PSNGR CAR								00
N					45 33 3.2984639	-122 55 34.8924359										01	DRVR	NONE	20	M	NONE
																					OR<25
													02 NONE	0	STRGHT						
													RENTL	W -E							00
													PSNGR CAR								00
																01	DRVR	NONE	64	F	OTH-Y
																					N-RES
																		000		000	00
																					00
02394	N	N	N	N	04/27/2014	16	NW EVERGREEN PKY	INTER	CROSS	N	RAIN	ANGL-OTH	01 NONE	0	STRGHT						
CITY					SU	0	NW SHUTE RD	CN			WET	ANGL	PRVTE	S -N						000	00
N					3A			04	2	N	DLIT	INJ	PSNGR CAR								00
N					45 33 3.3	-122 55 34.89										01	DRVR	INJC	31	M	OR-Y
																					OR<25
																		016,020	038		27,04
													02 NONE	0	STRGHT						
													PRVTE	W -E							00
													PSNGR CAR								00
																01	DRVR	NONE	62	M	OR-Y
																					OR<25
																		000		000	00
																					00
00266	N	N	N	N	01/16/2015	16	NW EVERGREEN PKY	INTER	CROSS	N	CLR	ANGL-OTH	01 NONE	0	STRGHT						
CITY					FR	0	NW SHUTE RD	CN			DRY	TURN	PRVTE	N -S						000	00
N					7P			03	0	N	DLIT	INJ	PSNGR CAR								00
N					45 33 3.3	-122 55 34.89										01	DRVR	INJC	35	F	OTH-Y
																					N-RES
																		020		000	04
													01 NONE	0	STRGHT						
													PRVTE	N -S							00
													PSNGR CAR								00
																02	PSNG	INJC	42	M	
																					00
																		000		000	00

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CITY OF HILLSBORO, WASHINGTON COUNTY

SHUTE RD and EVERGREEN PKY, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016

20 - 23 of 40 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	INT-TYPE	SPCL USE	INVEST	E	A	U	C	O	DAY	DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE	OWNER	FROM	PRTC	INJ	A	S	G	E	LICNS	PED	ERROR	ACT	EVENT	CAUSE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
RD DPT	E	L	G	H	R	TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
UNLOC?	D	C	S	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																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF HILLSBORO, WASHINGTON COUNTY

SHUTE RD and EVERGREEN PKY, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016
24 - 27 of 40 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	MOVE	PRTC	INJ	A	S	PED	ERROR	ACT	EVENT	CAUSE								
INVEST	E	A	U	C	O	DAY	DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	OWNER	FROM	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE		
RD DPT	E	L	G	H	R	TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	V#	TYPE	FROM	TO													
UNLOC?	D	C	S	L	K	LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	02	NONE	0	TURN-R													
																PRVTE	E - N			01	DRVR	NONE	48	F	OR-Y		000	000	00	00	
																PSNGR	CAR														
01814	N	N	N	N	Y	03/18/2016	16	NW EVERGREEN PKY	INTER	CROSS	N	N	CLR	0-1 L-TURN	01	NONE	0	TURN-L											04		
CITY					FR		0	NW SHUTE RD	CN			TRF SIGNAL	N	DRY	TURN	PRVTE	E - S											000	00		
N					10P				03	3		N	DLIT	INJ		PSNGR	CAR			01	DRVR	NONE	18	M	OR-Y		020	000	04		
N					45 33 3.3		-122 55 34.89																								
																02	NONE	0	STRGHT									000	000	00	00
																PRVTE	W - E			01	DRVR	INJC	44	M	OR-Y		000	000	00	00	
																PSNGR	CAR														
03687	N	N	N	N	N	07/10/2013	16	NW SHUTE RD	ALLEY		N	N	CLR	S-OTHER	01	NONE	0	TURN-R											07		
CITY					WE		1006	NW EVERGREEN PKY	N	(NONE)	UNKNOWN	N	DRY	TURN		PRVTE	E - N											018	00		
N					11A				07			N	DAY	PDO		PSNGR	CAR			01	DRVR	NONE	56	M	OR-Y		042	000	07		
N					45 33 13.689936		-122 55 34.7450159			(04)																					
																02	NONE	1	TURN-R									018	00		
																PRVTE	E - N			01	DRVR	NONE	50	M	OTH-Y		000	000	00	00	
																SEMI	TOW														
02903	N	N	N	N	N	05/30/2015	16	NW SHUTE RD	STRGHT		N	N	CLR	S-STRGHT	01	NONE	0	STRGHT											013	07	
CITY					SA		40	NW EVERGREEN PKY	N	(NONE)	UNKNOWN	N	DRY	REAR		PRVTE	N - S											000	00		
N					1P				06			N	DAY	INJ		PSNGR	CAR			01	DRVR	NONE	28	F	OR-Y		043	000	07		
N					45 33 4.1		-122 55 34.92			(04)																					
																02	NONE	0	STRGHT									006	013	00	00
																PRVTE	N - S			01	DRVR	INJC	60	M	OR-Y		000	000	00	00	
																PSNGR	CAR														
																03	NONE	0	STOP									022	00		00
																PRVTE	N - S			01	DRVR	INJC	57	M	OR-Y		000	000	00	00	
																PSNGR	CAR														
																03	NONE	0	STOP									022	00		00
																PRVTE	N - S			02	PSNG	INJC	14	M			000	000	00	00	
																PSNGR	CAR														
																03	NONE	0	STOP									022	00		00
																PRVTE	N - S			03	PSNG	INJB	03	M			000	000	00	00	
																PSNGR	CAR														

not at intersection or related

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URBAN NON-SYSTEM CRASH LISTING

CITY OF HILLSBORO, WASHINGTON COUNTY

SHUTE RD and EVERGREEN PKY, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016

28 - 32 of 40 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	MOVE			A	S									
INVEST	E	A	U	C	O DAY	DIST	FIRST STREET		(MEDIAN)					TLR QTY				G	E	LICNS	PED							
RD DPT	E	L	G	H	R TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDT	SURF	COLL	OWNER	FROM													
UNLOC?	D	C	S	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
01269	N	N	N		03/11/2013	16	NW SHUTE RD	STRGHT		N	N	CLR	S-1STOP	01 NONE 0	STRGHT												07	
NONE					MO	100	NW EVERGREEN PKY	N	(NONE)	UNKNOWN	N	DRY	REAR	PRVTE	N - S											000	00	
N					7A			08			N	DAY	INJ	PSNGR CAR			01	DRVR	NONE	70	M	OR-Y		026		000	07	
N					45 33	-122 55			(04)																			
					4.5998999	34.896828																						
														02 NONE 0	STOP													
														PRVTE	N - S			01	DRVR	INJB	69	M	OR-Y		000		011	00
														PSNGR CAR												000	000	00
01527	N	Y	N	N	N 03/17/2014	16	NW SHUTE RD	STRGHT		Y	N	CLR	S-1STOP	01 NONE 0	STRGHT												29	
CITY					MO	100	NW EVERGREEN PKY	N	(NONE)	UNKNOWN	N	DRY	REAR	PRVTE	N - S											000	00	
N					5P			08			N	DAY	INJ	PSNGR CAR			01	DRVR	INJC	25	M	OR-Y		026		000	29	
N					45 33	-122 55			(04)																			
					3.2984639	34.8899879																						
														02 NONE 0	STOP													
														PRVTE	N - S			01	DRVR	NONE	54	M	OR-Y		000		011	00
														PSNGR CAR												000	000	00
														02 NONE 0	STOP													
														PRVTE	N - S			02	PSNG	INJC	53	F	OR-Y		000		011	00
														PSNGR CAR												000	000	00
03398	N	N	N		05/24/2016	16	NW SHUTE RD	STRGHT		N	N	CLR	S-1STOP	01 NONE 0	STRGHT												29	
NONE					TU	100	NW EVERGREEN PKY	N	(NONE)	UNKNOWN	N	DRY	REAR	PRVTE	S - N											000	00	
N					5P			07			N	DAY	INJ	PSNGR CAR			01	DRVR	INJB	18	F	OR-Y		026		000	29	
N					45 33 5	-122 55			(04)																			
					34.88																							
														02 NONE 0	STOP													
														PRVTE	S - N			01	DRVR	INJC	53	M	OR-Y		000		011	00
														PSNGR CAR												000	000	00
04242	Y	N	N	N	N 08/04/2013	16	NW SHUTE RD	STRGHT		N	Y	CLR	FIX OBJ	01 NONE 0	STRGHT											040,010	01	
CITY					SU	325	NW EVERGREEN PKY	N	(NONE)	UNKNOWN	N	DRY	FIX	PRVTE	S - N										000	040,010	00	
Y					9A			07			N	DAY	PDO	PSNGR CAR			01	DRVR	NONE	30	M	OR-Y		047,081		000	01	
N					45 33	-122 55			(04)																			
					7.0199999	34.841388																						
01834	N	N	N		04/02/2014	16	NW SHUTE RD	STRGHT		N	N	CLR	S-1STOP	01 NONE 0	STRGHT												07	
NO RPT					WE	500	NW EVERGREEN PKY	N	(NONE)	UNKNOWN	N	DRY	REAR	PRVTE	S - N											000	00	
N					5P			07			N	DAY	INJ	PSNGR CAR			01	DRVR	NONE	23	M	OR-Y		026		000	07	
N					45 33 8.64	-122 55			(04)																			
					34.82																							
														02 NONE 0	STOP													
														PRVTE	S - N			01	DRVR	INJC	39	M	OR-Y		000		011	00
														PSNGR CAR												000	000	00

NB crash north of intersection

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

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING
CITY OF HILLSBORO, WASHINGTON COUNTY
SHUTE RD and EVERGREEN PKY, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016
38 - 40 of 40 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	INT-TYPE	SPCL USE	MOVE	PRTC	INJ	A	S	PED	ERROR	ACT	EVENT	CAUSE							
INVEST	E	A	U	C	O DAY	DIST	FIRST STREET	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	OWNER	FROM											
RD DPT	E	L	G	H	R TIME	FROM	SECOND STREET	LEGS	TRAF-	RNDBT	SURF	COLL	V#	TYPE	TO											
UNLOC?	D	C	S	L	K LAT	LONG	LRS	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY														
07011	N	N	N		12/02/2013	16	NW SHUTE RD	STRGHT	N	N	CLR	S-STRGHT	01	NONE	0	STRGHT			13							
NONE					MO	245	NW EVERGREEN PKY	S	(NONE)	UNKNOWN	N	DRY	SS-0	PRVTE	S -N			000	00							
N					2P			08		N	DAY	PDO		PSNGR CAR			01	DRVR	NONE	34	F	OR-Y	045	000	13	
N					45 33	-122 55		(04)														OR<25				
					.3901319	35.0448239																				
														02	NONE	0	STRGHT									
														PRVTE	S -N									000	00	
														PSNGR CAR				01	DRVR	NONE	00	F	OR-Y	000	000	00
																						OR<25				
02419	N	N	N	N	05/12/2013	16	NW SHUTE RD	STRGHT	N	Y	CLR	FIX OBJ	01	NONE	0	STRGHT			044,040,062	32						
CITY					SU	400	NW EVERGREEN PKY	S	(DIVMD)	UNKNOWN	N	DRY	FIX	PRVTE	N -S			000	044,040,062	00						
Y					12A			07		N	DLIT	PDO		PSNGR CAR			01	DRVR	NONE	22	M	SUSP	052,080,081	010	32	
N					45 32	-122 55		(04)														OR<25				
					58.870536	35.325048																				
02594	N	N	N		05/19/2012	16	NW SHUTE RD	CURVE	N	N	CLR	S-STRGHT	01	NONE	0	STRGHT									13,02	
NONE					SA	500	NW EVERGREEN PKY	S	(DIVMD)	UNKNOWN	N	DRY	SS-0	PRVTE	S -N									000	00	
N					8A			08		N	DAY	PDO		PSNGR CAR				01	DRVR	NONE	39	M	OR-Y	045,028	000	13,02
N					45 32	-122 55		(04)															OR<25			
					57.6945584	35.7051962																				
														01	NONE	0	STRGHT								000	00
														PRVTE	S -N									000	00	
														PSNGR CAR				02	PSNG	NO<5	02	M		000	000	00
														02	NONE	0	STRGHT								000	00
														PRVTE	S -N									000	00	
														PSNGR CAR				01	DRVR	NONE	41	M	OR-Y	000	000	00
																						OR<25				

not at intersection or related

SB south of intersection

not at intersection or related

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TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CITY OF HILLSBORO, WASHINGTON COUNTY

SHUTE RD and EVERGREEN RD, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016

1 - 5 of 22 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	MOVE			A	S										
INVEST	E	A	U	C	O	DAY	FIRST STREET	(MEDIAN)	TRAF-	RND BT	SURF	COLL	OWNER	FROM			G	E	LICNS	PED								
RD DPT	E	L	G	H	R	TIME	SECOND STREET	LEGS	CONTL					TO														
UNLOC?	D	C	S	L	K	LAT	LRS	(#LANES)		DRVWY	LIGHT	SVRTY	V#	TYPE														
00264	N	N	N	N	N	01/15/2013	16	NW EVERGREEN RD	CROSS	N	N	CLD	S-1STOP	01	NONE	0										27,07		
CITY						TU	0	NW SHUTE RD				TRF SIGNAL	N	DRY	REAR	PRVTE	N -S								000	00		
N						5P			06	3	N	DLIT	INJ		PSNGR CAR					01	DRVR	NONE	49	F	OR-Y	016,043,026	038	27,07
N						45 33	-122 55																					
						3.2984639	34.8924359																					
															02	NONE	0	STOP										
															PRVTE	N -S												
															PSNGR CAR					01	DRVR	INJC	20	F	OR-Y	000	011	00
																										00		
05521	N	N	N	N	N	09/29/2013	16	NW EVERGREEN RD	CROSS	N	Y	RAIN	FIX OBJ	01	NONE	0										092,055	26	
CITY						SU	0	NW SHUTE RD				TRF SIGNAL	N	WET	FIX	PRVTE	N -S								007	092,055	26	
N						4P			06	1	N	DAY	PDO		PSNGR CAR					01	DRVR	NONE	22	M	OR-Y	081	000	26
N						45 33	-122 55																					
						3.2984639	34.8924359																					
05523	N	N	N	N	N	09/29/2013	16	NW EVERGREEN RD	CROSS	N	N	RAIN	S-1STOP	01	NONE	0											07	
CITY						SU	0	NW SHUTE RD				TRF SIGNAL	N	WET	REAR	PRVTE	N -S								000	00		
N						4P			06	1	N	DAY	PDO		PSNGR CAR					01	DRVR	NONE	35	M	OR-Y	043,026	000	07
N						45 33	-122 55																					
						3.2984639	34.8924359																					
															02	NONE	0	STOP										
															PRVTE	N -S												
															PSNGR CAR					01	DRVR	NONE	36	M	OR-Y	000	011	00
																										00		
															02	NONE	0	STOP										
															PRVTE	N -S												
															PSNGR CAR					02	PSNG	NO<5	04	M		000	011	00
																										00		
08356	N	N	N	N	N	12/06/2016	16	NW EVERGREEN RD		N	N	CLR	S-1STOP	01	NONE	0											29	
NONE						TU	0	NW SHUTE RD	E			TRF SIGNAL	N	DRY	REAR	PRVTE	E -W								000	00		
N						6P			06	3	N	DLIT	INJ		PSNGR CAR					01	DRVR	NONE	44	F	OR-Y	026	000	29
N						45 33 3.3	-122 55																					
							34.89																					
															02	NONE	0	STOP										
															PRVTE	E -W												
															PSNGR CAR					01	DRVR	INJC	38	F	OR-Y	000	011	00
																										00		
02410	N	N	N	N	N	05/10/2012	16	NW EVERGREEN RD	CROSS	N	N	CLR	ANGL-OTH	01	NONE	0										02,08		
CITY						TH	0	NW SHUTE RD				TRF SIGNAL	N	DRY	TURN	PRVTE	NE-W								000	00		
N						6P			05	3	N	DAY	PDO		PSNGR CAR					01	DRVR	NONE	55	M	OR-Y	024,001,007	088	02,08
N						45 33	-122 55																					
						3.2984755	34.8924682																					
															02	NONE	0	STRGHT										
															PUBLIC	W -E												
															TRUCK					01	DRVR	NONE	24	F	OR-Y	000	031	00
																										00		

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TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CITY OF HILLSBORO, WASHINGTON COUNTY

SHUTE RD and EVERGREEN RD, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016

6 - 9 of 22 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	MOVE												
INVEST	E	A	U	C	O	DAY	FIRST STREET	(MEDIAN)	TRAF-	RND	SURF	COLL	TRLR QTY	FROM												
RD DPT	E	L	G	H	R	TIME	SECOND STREET	LEGS	CONTL	RND	SURF	COLL	OWNER	FROM												
UNLOC?	D	C	S	L	K	LAT	LRS	(#LANES)		DRVWY	LIGHT	SVRTY	V# TYPE	TO												
05971	N	N	N			10/18/2013	NW EVERGREEN RD	CROSS	N	N	CLR	S-1STOP	01 NONE	0	STRGHT	P# TYPE	SVRTY	A	S							
																		E	X	LICNS	PED	ERROR	ACT	EVENT	CAUSE	
NO RPT						FR	NW SHUTE RD				DRY	REAR	PRVTE	W -E									000	00		
N						7A		06	1	N	DAY	INJ	PSNGR CAR			01	DRVR	NONE	56	M	OR-Y		026	000	07	
N						45 33														OR<25						
						3.2984639	34.8924359																			
													02 NONE	0	STOP									011	00	
													PRVTE	W -E									000	000	00	
													PSNGR CAR			01	DRVR	INJB	35	M	OR-Y		000	000	00	
																				OR<25						
07378	Y	N	N			12/08/2014	NW EVERGREEN RD	CROSS	N	N	CLD	S-1STOP	01 NONE	0	STRGHT								013	01,32		
CITY						MO	NW SHUTE RD				DRY	REAR	PRVTE	W -E									000	00		
N						6P		06	3	N	DLIT	INJ	PSNGR CAR			01	DRVR	NONE	30	M	OR-Y		026,047,052	000	01,32	
N						45 33 3.3														OR<25						
													02 NONE	0	STOP									011	013	00
													PRVTE	W -E									000	000	00	
													PSNGR CAR			01	DRVR	INJC	50	M	OR-Y		000	000	00	
																				OR<25						
													03 NONE	0	STOP									022	00	
													PRVTE	W -E									000	000	00	
													PSNGR CAR			01	DRVR	NONE	54	M	OR-Y		000	000	00	
																				OR<25						
02645	N	N	N			05/15/2015	NW EVERGREEN RD	CROSS	N	N	UNK	S-1STOP	01 NONE	0	STRGHT									29		
CITY						FR	NW SHUTE RD				UNK	REAR	PRVTE	W -E									000	00		
N						12P		06	0	N	DAY	PDO	PSNGR CAR			01	DRVR	NONE	18	F	OR-Y		026	038	29	
N						45 33 3.3														OR<25						
													02 NONE	0	STOP									011	00	
													PRVTE	W -E									000	000	00	
													PSNGR CAR			01	DRVR	NONE	27	M	OR-Y		000	000	00	
																				OR<25						
00573	N	N	N			01/12/2016	NW EVERGREEN RD	CROSS	N	N	RAIN	S-1STOP	01 NONE	9	STRGHT									29		
NONE						TU	NW SHUTE RD				WET	REAR	N/A	W -E									000	00		
N						5P		06	3	N	DUSK	PDO	PSNGR CAR			01	DRVR	NONE	00	Unk	UNK		000	000	00	
N						45 33 3.3														UNK						
													02 NONE	9	STOP									011	00	
													N/A	W -E									000	000	00	
													PSNGR CAR			01	DRVR	NONE	00	Unk	UNK		000	000	00	
																				UNK						
04299	N	N	N			08/19/2012	NW EVERGREEN RD	CROSS	N	N	CLR	ANGL-OTH	01 NONE	0	STRGHT									04		
CITY						SU	NW SHUTE RD				DRY	ANGL	RENTL	N -S									000	00		
N						11P		03	3	N	DLIT	PDO	PSNGR CAR			01	DRVR	NONE	56	F	OTH-Y		020	000	04	
N						45 33														N-RES						
						3.2984755	34.8924682																			

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TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CITY OF HILLSBORO, WASHINGTON COUNTY

SHUTE RD and EVERGREEN RD, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016

10 - 13 of 22 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	MOVE	PRTC	INJ	A	S	PED	ERROR	ACT	EVENT	CAUSE		
INVEST	E	A	U	C	O DAY	DIST	FIRST STREET	(MEDIAN)	INT-REL	RNDBT	SURF	COLL	OWNER	FROM			E	X	LICNS	LOC					
RD DPT	E	L	G	H	R TIME	FROM	SECOND STREET	LEGS	TRAF-																
UNLOC?	D	C	S	L	K LAT	LONG	LRS	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V# TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE
													02 NONE PRVTE PSNGR CAR	0 STRGHT W -E	01	DRVR	NONE	35	M	OR-Y OR<25		000	000	00	
00094	N	N	N		01/07/2013	16	NW EVERGREEN RD	INTER	CROSS	N	N	CLR	ANGL-0TH	01 NONE PRVTE PSNGR CAR	0 TURN-L W -N								04		
NO RPT					MO	0	NW SHUTE RD	CN			TRF SIGNAL	N	DRY	TURN	PRVTE	W -N						000	00		
N					6P			02	3	N	DLIT	INJ	PSNGR CAR		01	DRVR	NONE	47	F	OR-Y OR<25	020	000	04		
N					45 33 3.2984639	-122 55 34.8924359																			
													02 NONE PRVTE PSNGR CAR	0 STRGHT S -N	01	DRVR	INJB	41	F	OR-Y OR>25	000	000	00		
													02 NONE PRVTE PSNGR CAR	0 STRGHT S -N	02	PSNG	NO<5	03	M		000	000	00		
00680	N	Y	N	N	N	02/06/2015	16	NW EVERGREEN RD	INTER	CROSS	N	N	CLR	ANGL-0TH	01 NONE PRVTE PSNGR CAR	0 STRGHT W -E						000	00		
CITY					FR	0	NW SHUTE RD	CN			TRF SIGNAL	N	DRY	ANGL	PRVTE	W -E						000	00		
N					7P			03	3	N	DLIT	INJ	PSNGR CAR		01	DRVR	INJB	29	M	OR-Y OR<25	051,000	000	33		
N					45 33 3.3	-122 55 34.89																			
													02 NONE PRVTE PSNGR CAR	0 STRGHT N -S	01	DRVR	INJB	45	F	OR-Y OR<25	000	000	00		
													03 NONE PRVTE PSNGR CAR	0 STRGHT N -S	01	DRVR	INJC	23	F	OR-Y OR<25	000	000	00		
00670	N	N	N	N	N	02/05/2015	16	NW EVERGREEN RD	INTER	CROSS	N	N	RAIN	0-1 L-TURN	01 NONE PRVTE PSNGR CAR	0 STRGHT W -E						000	00		
CITY					TH	0	NW SHUTE RD	CN			TRF SIGNAL	N	WET	TURN	PRVTE	W -E						000	00		
N					5A			03	0	N	DLIT	PDO	PSNGR CAR		01	DRVR	NONE	40	M	OR-Y OR<25	000	000	00		
N					45 33 3.3	-122 55 34.89																			
													02 NONE PRVTE PSNGR CAR	0 TURN-L E -S	01	DRVR	NONE	40	M	EXP OR>25	004,028	000	00		
07813	N	N	N	N	N	11/14/2016	16	NW EVERGREEN RD	INTER	CROSS	N	N	CLD	ANGL-0TH	01 NONE PRVTE PSNGR CAR	0 STRGHT W -E						093	27,04		
CITY					MO	0	NW SHUTE RD	CN			TRF SIGNAL	N	WET	ANGL	PRVTE	W -E						000	00		
N					9A			04	2	N	DAY	INJ	PSNGR CAR		01	DRVR	NONE	54	F	OR-Y OR<25	000	000	00		
N					45 33 3.3	-122 55 34.89																			

[illegible]

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

CITY OF HILLSBORO, WASHINGTON COUNTY
SHUTE RD and EVERGREEN RD, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016
19 - 22 of 22 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	MOVE	PRTC	INJ	A	S	PED	ERROR	ACT	EVENT	CAUSE	
INVEST	E	A	U	C	O	DAY	FIRST STREET	DIST	(MEDIAN)	TRAFFIC	RNDT	SURF	COLL	OWNER	FROM	TYPE	SVRTY	E	X	LICNS	LOC				
RD DPT	E	L	G	H	R	TIME	SECOND STREET	DIRECT	LEGS	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO									
UNLOC?	D	C	S	L	K	LAT	LONG	LRS	(#LANES)																
														02	NONE	0	STOP								
														PRVTE	W - E										
														PSNGR	CAR			01	DRVR	NONE	27	M	OR-Y	00	
																						011	00	00	
																						000	000	00	
07679	N	N	N	N		11/08/2016	16	NW EVERGREEN RD	STRGHT	N	N	CLR	S-1STOP	01	NONE	9	STRGHT							29	
NO RPT						TU	100	NW SHUTE RD	W	(NONE)	UNKNOWN	N	DRY	REAR	N/A	W - E							000	00	
N						9A		08			N	DAY	PDO	PSNGR	CAR			01	DRVR	NONE	00	Unk	UNK	000	00
N						45 33 3.31	-122 55 37.02		(04)																
														02	NONE	9	STOP								
														N/A	W - E								011	00	
														PSNGR	CAR			01	DRVR	NONE	00	Unk	UNK	000	00
07355	N	N	N	N	N	12/16/2013	16	NW EVERGREEN RD	STRGHT	N	N	FOG	S-STRGHT	01	NONE	1	STRGHT							13	
CITY						MO	123	NW SHUTE RD	W	(NONE)	UNKNOWN	N	WET	SS-0	PRVTE	E - W							000	00	
N						1P		07			N	DAY	PDO	SEMI	TOW			01	DRVR	NONE	44	M	OTH-Y	13	
N						45 33 3.309624	-122 55 37.179984		(04)																
														02	NONE	0	STRGHT								
														PRVTE	E - W								000	00	
														PSNGR	CAR			01	DRVR	NONE	33	F	OTH-Y	000	00
03083	N	N	N	N		05/10/2016	16	NW EVERGREEN RD	STRGHT	N	N	CLR	S-1STOP	01	NONE	9	STRGHT							29	
NONE						TU	500	NW SHUTE RD	W	(NONE)	UNKNOWN	N	DRY	REAR	N/A	W - E							000	00	
N						5P		08			N	DAY	PDO	PSNGR	CAR			01	DRVR	NONE	00	Unk	UNK	000	00
N						45 33 3.36	-122 55 42.6		(04)																
														02	NONE	9	STOP								
														N/A	W - E								011	00	
														PSNGR	CAR			01	DRVR	NONE	00	Unk	UNK	000	00

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TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CITY OF HILLSBORO, WASHINGTON COUNTY

BROOKWOOD PKY and SHUTE RD, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016

1 - 5 of 30 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	MOVE			A	S								
INVEST	E	A	U	C	O	DAY	FIRST STREET	(MEDIAN)	TRAF-	RNDBT	SURF	COLL	OWNER	FROM			G	E	LICNS	PED						
RD DPT	E	L	G	H	R	TIME	SECOND STREET	LEGS	CONTL					TO												
UNLOC?	D	C	S	L	K	LAT	LRS	(#LANES)		DRVWY	LIGHT	SVRTY	V#	TYPE												
02532	N	N	N	N	N	05/16/2012	16	NE BROOKWOOD PKY	INTER	N	CLR	S-1STOP	01	NONE	0	STRGHT									07	
CITY						WE	0	NE SHUTE RD	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE-SW							000	00	
N						4P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	37	M	OR-Y	043,026	000	07
N						45 32 53.7461301	-122 55 38.1533919																			
														02	NONE	0	STOP	NE-SW						011	00	00
														PSNGR CAR				01	DRVR	INJC	29	F	OR-Y	000	000	00
06166	Y	N	N	N	N	10/20/2014	16	NE BROOKWOOD PKY	INTER	N	RAIN	S-1STOP	01	NONE	0	STRGHT									01,07	
CITY						MO	0	NE SHUTE RD	NE		TRF SIGNAL	N	WET	REAR		PRVTE	NE-SW							000	00	
N						8A			06	0	N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	18	M	OR-Y	047,043,026	000	01,07	
N						45 32 53.75	-122 55 38.15																			
														02	NONE	0	STOP	NE-SW						012	00	00
														PSNGR CAR				01	DRVR	NONE	46	M	OTH-Y	000	000	00
02613	N	N	N	N	N	05/14/2015	16	NE BROOKWOOD PKY	INTER	N	CLR	S-STRGHT	01	NONE	0	STRGHT									13	
CITY						TH	0	NE SHUTE RD	NE		TRF SIGNAL	N	DRY	SS-0		PRVTE	NE-SW							000	00	
N						9P			06	0	N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	30	F	OR-Y	000	000	00	
N						45 32 53.75	-122 55 38.15																			
														02	NONE	0	STRGHT	NE-SW						000	00	13
														RENTL				01	DRVR	NONE	66	M	OTH-Y	045	000	13
03546	N	N	N	N		05/31/2016	16	NE BROOKWOOD PKY	INTER	N	CLR	S-1STOP	01	NONE	9	STRGHT									29	
NONE						TU	0	NE SHUTE RD	NE		TRF SIGNAL	N	DRY	REAR		N/A	NE-SW							000	00	
N						11A			06	0	N	DAY	PDO		MTRCYCLE		01	DRVR	NONE	00	Unk	UNK	000	000	00	
N						45 32 53.75	-122 55 38.15																			
														02	NONE	9	STOP	NE-SW						011	00	00
														N/A				01	DRVR	NONE	00	Unk	UNK	000	000	00
														PSNGR CAR												
08092	N	N	N	N	Y	11/26/2016	16	NE BROOKWOOD PKY	INTER	N	RAIN	S-STRGHT	01	NONE	9	STRGHT									29	
CITY						SA	0	NE SHUTE RD	NE		UNKNOWN	N	WET	REAR		N/A	NE-SW							000	00	
N						5P			06	0	N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	000	000	00	
N						45 32 53.75	-122 55 38.15																			
														02	NONE	9	STRGHT	NE-SW						000	00	00
														N/A				01	DRVR	NONE	00	Unk	UNK	000	000	00
														PSNGR CAR												

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[illegible]

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TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CITY OF HILLSBORO, WASHINGTON COUNTY

BROOKWOOD PKY and SHUTE RD, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016

21 - 25 of 30 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	INT-TYPE	SPCL USE	MOVE			A	S													
INVEST	E	A	U	C	O	DAY	FIRST STREET	(MEDIAN)	TRLR QTY	FROM			G	E	LICNS	PED	ERROR	ACT	EVENT								
RD DPT	E	L	G	H	R	TIME	SECOND STREET	LEGS	OWNER	TO			E	X	RES	LOC	ERROR	ACT	EVENT								
UNLOC?	D	C	S	L	K	LAT	LRS	(#LANES)	V#	TYPE																	
02922	N	N	N	Y	05/04/2016	16	NE BROOKWOOD PKY	STRGHT	01	NONE	9	STRGHT						065	13								
NONE				WE		100	NE SHUTE RD	(RSDMD)	CHANNEL	N	DRY	SS-0	N/A	NE-SW				000	00								
N				10A				08		N	DAY	PDO	PSNGR CAR				01	DRVR	NONE	00	Unk	UNK		000	000	00	
N				45 32 55.09		-122 55 37.07		(04)																			
									02	NONE	9	STRGHT															
									N/A			NE-SW															
									PSNGR CAR				01	DRVR	NONE	00	Unk	UNK		000	000	00	000	000	00		
00205	Y	N	N	N	01/12/2013	16	NE SHUTE RD	STRGHT	01	NONE	0	STRGHT						124,062	01								
CITY				SA		348	NE BROOKWOOD PKY	NE	(RSDMD)	UNKNOWN	N	ICE	FIX	PRVTE	SW-NE			001	124,062	00							
Y				7A				07		N	DAY	INJ	PSNGR CAR				01	DRVR	INJC	51	M	OR-Y	OR<25	047,081	000	01	
N				45 32 57.1806239		-122 55 35.8935599		(04)																			
08036	N	N	N	Y	11/23/2016	17	NE SHUTE RD	STRGHT	01	NONE	9	STRGHT							29								
NO RPT				WE		50	NE BROOKWOOD PKY	SE	(RSDMD)	UNKNOWN	N	WET	REAR	N/A	SE-NW				000	00							
N				10A				06		N	DAY	PDO	PSNGR CAR					01	DRVR	NONE	00	Unk	UNK		000	000	00
N				45 32 53.3		-122 55 37.17		(05)																			
									02	NONE	9	STRGHT															
									N/A			SE-NW															
									PSNGR CAR				01	DRVR	NONE	00	Unk	UNK		000	000	00	000	000	00		
03810	N	Y	N	Y	06/10/2016	16	NE SHUTE RD	STRGHT	01	NONE	0	STRGHT							29,33								
NO RPT				FR		200	NE BROOKWOOD PKY	S	(NONE)	UNKNOWN	N	WET	REAR	PRVTE	S -N				000	00							
N				9P				08		N	DLIT	INJ	PSNGR CAR					01	DRVR	INJC	53	M	OR-Y	OR<25	026,051	000	29,33
N				45 33 22.94		-122 55 34.63		(04)																			
									02	NONE	0	STOP															
									PRVTE			S -N															
									PSNGR CAR				01	DRVR	INJB	44	M	OR-Y	OR<25	000	011	000	00	000	00		
00355	N	N	N	N	01/20/2013	16	NE BROOKWOOD PKY	STRGHT	01	NONE	0	STRGHT							124,044,062	26,05							
CITY				SU		164	NE SHUTE RD	SW	(DIVMD)	NONE	N	ICE	FIX	PRVTE	SW-NE				007	124,044,062	26						
Y				5A				08		N	DARK	INJ	PSNGR CAR					01	DRVR	INJC	36	M	OR-Y	OR<25	081,083	017	26,05
N				45 32 52.09692		-122 55 40.035288		(04)																			
06701	N	N	N	Y	11/19/2013	16	NE BROOKWOOD PKY	STRGHT	01	NONE	0	STRGHT							13								
CITY				TU		164	NE SHUTE RD	SW	(DIVMD)	WARNING	N	WET	SS-0	PRVTE	SW-NE				000	00							
N				9A				08		N	DAY	PDO	PSNGR CAR					01	DRVR	NONE	22	M	OR-Y	OR<25	045	000	13
N				45 32 52.2090239		-122 55 39.888516		(04)																			

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CITY OF HILLSBORO, WASHINGTON COUNTY

BROOKWOOD PKY and SHUTE RD, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016

26 - 30 of 30 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	MOVE	PRTC	INJ	A	S	PED	ERROR	ACT	EVENT	CAUSE			
INVEST	E	A	U	C	O	DAY	FIRST STREET		(MEDIAN)					TRLR QTY				E	X	LICNS	LOC						
RD DPT	E	L	G	H	R	TIME	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM												
UNLOC?	D	C	S	L	K	LAT	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE
														01	NONE	0											
														PRVTE	SW-NE												
														PSNGR	CAR		02	PSNG	NO<5	03	F			000	000	00	00
														02	NONE	1											
														PRVTE	SW-NE		01	DRVR	NONE	53	M	OR-Y		000	000	00	00
														SEMI	TOW							OR<25		000	000	00	00
03724	Y	N	N		07/03/2014	19	NE SHUTE RD	STRGHT		N	N	CLR	S-STRGHT	01	NONE	0	STRGHT							013	01,07		
NONE					TH	122	NE BROOKWOOD PKY	NW	(RSDMD)	UNKNOWN	N	WET	REAR	PRVTE	NW-SE								000	00	00	00	
N					9A			08			N	DAY	PDO	PSNGR	CAR		01	DRVR	NONE	54	M	OR-Y		047,042	000	01,07	
N					45 32 55.06	-122 55 37.24			(04)													OR<25					
														02	NONE	0	STRGHT										
														PRVTE	NW-SE		01	DRVR	NONE	54	M	OR-Y		006	013	00	00
														PSNGR	CAR							OR<25	000	022		00	
														03	UNKN	0	STRGHT										
														UNKN	NW-SE		01	DRVR	NONE	00	Unk	UNK		006	000	00	00
														PSNGR	CAR							UNK	000	000		00	00
02459	Y	N	N	N	N	05/06/2015	16	NE BROOKWOOD PKY	CURVE		N	Y	CLD	FIX OBJ	01	NONE	0	STRGHT						062	30		
CITY					WE	10	NE SHUTE RD	NE	(RSDMD)	UNKNOWN	N	DRY	FIX	PRVTE	SW-NE								000	062	00	00	
Y					12A			05			N	DLIT	INJ	PSNGR	CAR		01	DRVR	NONE	00	M	UNK		050,080,081	000	30	
N					45 32 54.14	-122 55 37.75			(04)													UNK					
														01	NONE	0	STRGHT										
														PRVTE	SW-NE		02	PSNG	INJB	35	F			000	000	00	00
														PSNGR	CAR												
01576	N	Y	N		03/27/2012	17	NE SHUTE RD	CURVE		N	Y	RAIN	FIX OBJ	01	NONE	0	STRGHT							054,062,040	10		
CITY					TU	330	NE BROOKWOOD PKY	SE	(DIVMD)	NONE	N	WET	FIX	PRVTE	SE-NW								000	054,062,040	00	00	
Y					8P			08			N	DLIT	INJ	PSNGR	CAR		01	DRVR	INJC	26	M	OR-Y		080,081	088	10	
N					45 32 51.2788825	-122 55 34.2854452	not intersection-related		(04)													OR<25					
05980	Y	Y	N	N	N	10/25/2014	17	NE SHUTE RD	CURVE		N	Y	RAIN	FIX OBJ	01	NONE	0	STRGHT						040,062,058	30		
CITY					SA	417	NE BROOKWOOD PKY	SE	(RSDMD)	NONE	N	WET	FIX	PRVTE	SE-NW								000	040,062,058	00	00	
Y					3A			08			N	DLIT	FAT	PSNGR	CAR		01	DRVR	KILL	51	M	OR-Y		050,079,081	017	30	
N					45 32 50.61	-122 55 34.01	not intersection-related		(04)													OR<25					

[illegible]

[illegible]

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

CITY OF HILLSBORO, WASHINGTON COUNTY

SHUTE RD and BUTLER ST, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016
1 - 4 of 5 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	MOVE										
INVEST	E	A	U	C	O	DAY	FIRST STREET	DIST	(MEDIAN)	TRAFFIC	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	A	S	PED	ERROR	ACT	EVENT	CAUSE	
UNLOC?	D	C	S	L	K	LAT	SECOND STREET	DIRECT	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	#	TYPE	SVRTY	E	X	RES	LOC			
04150	N	N	N	N	N	06/24/2016	NE BUTLER ST	INTER	CROSS	N	Y	CLR	FIX OBJ	01 NONE	9	TURN-R							062	26	
CITY						FR	NE SHUTE RD	N		TRF SIGNAL	N	DRY	FIX	N/A	E -N							000	00		
N						8P			0		N	DAY	PDO	PSNGR CAR			01	DRVR	NONE	00	Unk UNK	000	000	00	
N						45 32 17.31	-122 55 33.93																		
04650	N	N	N	N	N	08/13/2014	NE BUTLER ST	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE	0	STRGHT							013	07	
CITY						WE	NE SHUTE RD	E		TRF SIGNAL	N	DRY	REAR	PRVTE	E -W							000	00		
N						12P		06	0		N	DAY	PDO	PSNGR CAR			01	DRVR	NONE	25	M	OR-Y	043,026	000	07
N						45 32 17.31	-122 55 33.93																		
														02 NONE	0	STOP							011	013	00
														PRVTE	E -W							000	022	00	
														PSNGR CAR			01	DRVR	NONE	31	F	OR-Y	000		00
														03 NONE	0	STOP							011	013	00
														PRVTE	E -W							000	022	00	
														PSNGR CAR			01	DRVR	NONE	44	F	OR-Y	000		00
														04 NONE	0	STOP							011		00
														PRVTE	E -W							000	000	00	
														PSNGR CAR			01	DRVR	NONE	52	M	OR-Y	000		00
00681	N	N	N	N	N	02/09/2013	NE BUTLER ST	INTER	CROSS	N	N	CLD	O-1 L-TURN	01 NONE	0	STRGHT								02	
CITY						SA	NE SHUTE RD	CN		FLASHBCN-A	N	WET	TURN	PRVTE	S -N							000	00		
N						2P		04	0		N	DAY	PDO	PSNGR CAR			01	DRVR	NONE	40	M	OR-Y	000	000	00
N						45 32 17.305692	-122 55 33.9313799																		
														02 NONE	0	TURN-L							000		00
														PRVTE	N -E							000	000	02	
														PSNGR CAR			01	DRVR	NONE	60	F	OR-Y	028,004		00
03925	N	N	N	N	N	07/12/2014	NE BUTLER ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01 NONE	0	STRGHT							010,087	04	
CITY						SA	NE SHUTE RD	CN		TRF SIGNAL	N	DRY	ANGL	PRVTE	S -N							000	087	00	
N						3P		04	0		N	DAY	INJ	PSNGR CAR			01	DRVR	INJC	26	F	OR-Y	020	000	04
N						45 32 17.31	-122 55 33.93																		
														02 NONE	0	STRGHT							000	010,087	00
														PRVTE	W -E							000	000	00	
														PSNGR CAR			01	DRVR	INJB	42	F	OR-Y	000		00
05475	N	N	N	N	N	09/27/2013	NE SHUTE RD	STRGHT		N	N	RAIN	S-1TURN	01 NONE	0	STRGHT								08	
CITY						FR	NE BUTLER ST	N	(NONE)	UNKNOWN	N	WET	TURN	PRVTE	S -N							000		00	
N						10A		07			N	DAY	INJ	PSNGR CAR			01	DRVR	INJB	52	F	OR-Y	000	000	00
N						45 32 19.569948	-122 55 33.9768479		(04)																

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CITY OF HILLSBORO, WASHINGTON COUNTY

SHUTE RD and BUTLER ST, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016

[illegible]

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CITY OF HILLSBORO, WASHINGTON COUNTY

SHUTE RD and AIRPORT RD, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016

1 - 2 of 2 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	MOVE													
INVEST	E	A	U	C	O DAY	DIST	FIRST STREET		(MEDIAN)					TRLR QTY		A	S											
RD DPT	E	L	G	H	R TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM			G	E	LICNS	PED							
UNLOC?	D	C	S	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	
08614	N	N	N	N	12/14/2016	17	NE AIRPORT RD	INTER	CROSS	N	N	SNOW	ANGL-STP	01 NONE	9	TURN-R									124	08		
NONE					WE	0	NE SHUTE RD	N		TRF SIGNAL	N	ICE	TURN	N/A		E -N								000	00	00		
N					3P			06	0		N	DAY	PDO	PSNGR CAR			01	DRVR	NONE	00	Unk	UNK	000	000	00	00		
N					45 32 17.31	-122 55 33.93																						
														02 NONE	9	STOP									012	00	00	
														N/A		N -S								000	000	00	00	
														PSNGR CAR			01	DRVR	NONE	00	Unk	UNK	000	000	00	00		
01732	N	N	N	N	04/05/2012	17	NE AIRPORT RD	INTER	CROSS	N	N	CLR	O-1 L-TURN	01 NONE	0	TURN-L										02		
NONE					TH	0	NE SHUTE RD	CN		TRF SIGNAL	N	DRY	TURN	PRVTE		S -W								000	00	00		
N					9P			01	0		N	DLIT	PDO	PSNGR CAR			01	DRVR	NONE	27	F	OR-Y	004,028	000	00	02		
N					45 32 17.3057221	-122 55 33.9313976																						
														02 NONE	0	STRGHT									000	000	00	00
														PRVTE		N -S												
														PSNGR CAR			01	DRVR	NONE	42	F	OR-Y	000	000	00	00		

CITY OF HILLSBORO, WASHINGTON COUNTY

BUTLER ST and 60TH PL, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016

S		D																																
SER#	P	R	S	W	DATE	CLASS	CITY STREET			INT-TYPE							SPCL USE																	
INVEST	E	A	U	C	O	DAY	DIST	FIRST STREET			(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH						TRLR	QTY	MOVE						A	S				
RD DPT	E	L	G	H	R	TIME	FROM	SECOND STREET			DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL						OWNER	FROM						PRTC	INJ	G	E	LICNS	PED
UNLOC?	D	C	S	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	

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[illegible]

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[illegible]

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TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CITY OF HILLSBORO, WASHINGTON COUNTY

BUTLER ST and 229TH AVE, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016

5 - 9 of 17 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	MOVE	PRTC	INJ	A	S	PED	ERROR	ACT	EVENT	CAUSE			
INVEST	E	A	U	C	O	DAY	FIRST STREET	DIST	(MEDIAN)	TRAF-	RNDBT	SURF	COLL	OWNER	FROM			E	X	RES	LOC						
RD DPT	E	L	G	H	R	TIME	SECOND STREET	FROM	LEGS	TRAF-																	
UNLOC?	D	C	S	L	K	LAT	LRS	LONG	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	G	RES	LOC					
														02	NONE	0											
														PRVTE		STRGHT											
														PSNGR	CAR	NE-SW	01	DRVR	NONE	38	M	OR-Y	020	000	00		
																				OR<25		000		04			
07000	N	N	N	N	N	10/15/2016	17		NE BUTLER ST	INTER	CROSS	N	RAIN	ANGL-OTH	01	NONE	0							04			
CITY						SA	0		NW 229TH AVE	CN			ANGL		PRVTE	W - E							000	00			
N						4P				03	0	N	DAY	INJ		PSNGR	CAR		01	DRVR	INJC	54	F	OR-Y	097	000	00
N						45 32 19.92	-122 54 31.18													OR<25							
														02	NONE	0											
														PRVTE		STRGHT							000	00			
														PSNGR	CAR	N - S	01	DRVR	INJC	34	F	OR-Y	097	000	00		
																				OR<25							
08936	N	N	N	N	N	12/26/2016	17		NE BUTLER ST	INTER	CROSS	N	FOG	ANGL-OTH	01	NONE	0							04			
CITY						MO	0		NW 229TH AVE	CN			ANGL		PRVTE	E - W							000	00			
N						10A				02	0	N	DAY	INJ		PSNGR	CAR		01	DRVR	NONE	27	M	OR-Y	020	000	04
N						45 32 19.92	-122 54 31.18													OR<25							
														02	NONE	0											
														PRVTE		STRGHT							000	000	00		
														PSNGR	CAR	S - N	01	DRVR	INJB	58	F	OR-Y	000	000	00		
																				OR<25							
														02	NONE	0							000	000	00		
														PRVTE		STRGHT							000	000	00		
														PSNGR	CAR	S - N	02	PSNG	INJB	06	M						
02948	N	N	N	N	N	06/06/2013	17		NW 229TH AVE	ALLEY		N	CLR	S-1STOP	01	NONE	0							07			
NONE						TH	1639		NE BUTLER ST	NE	(NONE)	L-TURN REF	N	DRY	REAR		PRVTE	SW-NE					000	00			
N						6P				07		N	DAY	INJ		PSNGR	CAR		01	DRVR	NONE	00	F	OR-Y	026	000	07
N						45 32 34.5625079	-122 54 31.458096			(03)										OR<25							
														02	NONE	0											
														PRVTE		STOP							012	00			
														PSNGR	CAR	SW-NE	01	DRVR	INJC	39	M	OR-Y	000	000	00		
																				OR<25							
03961	N	N	N	N	N	07/22/2013	17		NW 229TH AVE	ALLEY		N	CLR	ANGL-OTH	01	NONE	0							04			
CITY						MO	1707		NE BUTLER ST	NE	(NONE)	TRF SIGNAL	N	DRY	TURN		PRVTE	NE-SW					000	00			
N						5P				08		N	DAY	INJ		PSNGR	CAR		01	DRVR	INJC	28	F	OR-Y	020	000	04
N						45 32 35.100672	-122 54 32.3988479			(02)										OR<25							
														02	NONE	0											
														PRVTE		TURN-L							018	00			
														PSNGR	CAR	W - NE	01	DRVR	NONE	29	M	OR-Y	000	000	00		
																				OR<25							

not at intersection - RAP1 Access

not at intersection - RAP1 Access

[illegible]

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TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CITY OF HILLSBORO, WASHINGTON COUNTY

BUTLER ST and 229TH AVE, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016

13 - 16 of 17 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	MOVE	A	S	PED	ERROR	ACT	EVENT	CAUSE							
INVEST	E	A	U	C	O DAY	DIST	FIRST STREET	RD CHAR	(MEDIAN)	RNDBT	SURF	COLL	OWNER	FROM														
RD DPT	E	L	G	H	R TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-																		
UNLOC?	D	C	S	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	
														03	NONE	0	STOP									011	00	
														PRVTE	NE-SW										000	000	00	
														PSNGR	CAR		01	DRVR	NONE	34	M	OR-Y		000	000	00		
04752	N	N	N		08/14/2012	17	NW 229TH AVE	STRGHT		Y	N	CLR	S-1STOP	01	NONE	0	STRGHT										07	
NONE					TU	100	NE BUTLER ST	NE	(NONE)	UNKNOWN	N	DRY	REAR		PRVTE	NE-SW									000	00		
N					5P			08			N	DAY	INJ		PSNGR	CAR		01	DRVR	NONE	52	M	OR-Y		026	000	07	
N					45 32	-122 54			(02)																			
					21.2683563	30.1952443																						
														02	NONE	0	STOP									011	00	
														PRVTE	NE-SW				01	DRVR	INJC	37	M	OR-Y		000	000	00
														PSNGR	CAR													
02244	N	N	N		05/03/2013	17	NW 229TH AVE	STRGHT		N	N	CLR	S-STRGHT	01	NONE	0	STRGHT										07,05	
CITY					FR	970	NE BUTLER ST	NE	(NONE)	UNKNOWN	N	DRY	REAR		PRVTE	NE-SW									007	00		
N					6P			07			N	DAY	INJ		MTRCYCLE				01	DRVR	INJB	37	M	OR-Y		042,039	022	07,05
N					45 32	-122 54			(02)																			
					29.1301079	26.787528																						
														02	NONE	1	STRGHT									000	00	
														PRVTE	NE-SW				01	DRVR	NONE	29	M	OR-Y		000	000	00
														SEMI TOW														
														03	NONE	0	STRGHT									022	00	
														PRVTE	SW-NE				01	DRVR	INJC	61	M	OR-Y		000	022	00
														PSNGR	CAR													
03057	N	N	N		05/09/2016	17	NE BUTLER ST	STRGHT		N	N	CLR	S-1STOP	01	NONE	9	STRGHT										29	
NONE					MO	100	NW 229TH AVE	E	(NONE)	UNKNOWN	N	DRY	REAR		N/A	E -W									000	00		
N					7A			08			N	DAY	PDO		PSNGR	CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00	
N					45 32 19.64	-122 54 29.31			(03)																			
														02	NONE	9	STOP									011	00	
														N/A	E -W				01	DRVR	NONE	00	Unk	UNK		000	000	00
														PSNGR	CAR													
03376	N	N	N	N	06/24/2013	17	NW 229TH AVE	STRGHT		Y	N	CLD	S-1STOP	01	NONE	0	STRGHT										013	07
CITY					MO	100	NE BUTLER ST	SW	(NONE)	UNKNOWN	N	DRY	REAR		PRVTE	SW-NE										000	00	
N					6P			08			N	DAY	PDO		PSNGR	CAR		01	DRVR	NONE	31	F	OR-Y		043,026	000	07	
N					45 32	-122 54			(02)																			
					18.828888	31.9466519																						
														02	NONE	0	STOP									011	013	00
														PRVTE	SW-NE				01	DRVR	NONE	39	M	OR-Y		000	000	00
														PSNGR	CAR													

not at Butler intersection - Ronler Drive Intersection

CITY OF HILLSBORO, WASHINGTON COUNTY

BUTLER ST and 229TH AVE, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016

[illegible]

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TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CITY OF HILLSBORO, WASHINGTON COUNTY

229TH AVE and RONLER DR, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016

1 - 5 of 9 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	MOVE												
INVEST	E	A	U	C	O DAY	DIST	FIRST STREET	DIRECT	(MEDIAN)	TRAFFIC	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	A	S	LICNS	PED	ERROR	ACT	EVENT	CAUSE		
RD DPT	E	L	G	H	R TIME	FROM	SECOND STREET	DIRECT	LEGS	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE
UNLOC?	D	C	S	L	K LAT	LONG	LRS	LOCTN	(#LANES)																		
06017	N	N	N	N	N	09/07/2016	17	RONLER DR	INTER	3-LEG	N	Y	CLR	FIX OBJ	01	NONE	9	TURN-R							040	08	
CITY					WE	0	NW 229TH AVE	S		TRF SIGNAL	N	DRY	FIX	N/A	W-S									000	00		
N					9A			05	0		Y	DAY	PDO	PSNGR CAR			01	DRVR	NONE	00	Unk	UNK		000	000	00	
N					45 32 27.99	-122 54 26.78																					
01535	N	N	N	N	N	03/17/2014	17	RONLER DR	INTER	3-LEG	N	N	CLR	S-1TURN	01	NONE	0	STRGHT								08	
CITY					MO	0	NW 229TH AVE	CN		TRF SIGNAL	N	DRY	TURN	PRVTE	N-S									000	00		
N					3P			01	0		Y	DAY	PDO	PSNGR CAR			01	DRVR	NONE	52	M	OR-Y		000	000	00	
N					45 32 27.99	-122 54 26.78																					
														02	NONE	0	TURN-R										
														PRVTE	N-W			01	DRVR	NONE	22	M	OR-Y		019	00	
														OTH BUS									001	000	08		
03416	N	N	N	N	N	06/18/2014	17	RONLER DR	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE	0	STRGHT								27,04	
NONE					WE	0	NW 229TH AVE	CN		TRF SIGNAL	N	DRY	ANGL	PRVTE	N-S									000	00		
N					3P			03	0		Y	DAY	INJ	PSNGR CAR			01	DRVR	INJC	24	M	OR-Y		016,020	038	27,04	
N					45 32 27.99	-122 54 26.78																					
														02	NONE	0	STRGHT										
														PRVTE	W-E			01	DRVR	INJC	29	M	OR-Y		018	00	
														PSNGR CAR									000	000	00		
														02	NONE	0	STRGHT										
														PRVTE	W-E			02	PSNG	INJC	30	M		000	000	00	
02721	N	N	N	N	N	05/19/2015	17	RONLER DR	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE	0	STRGHT								04	
CITY					TU	0	NW 229TH AVE	CN		TRF SIGNAL	N	DRY	ANGL	PRVTE	N-S									000	00		
N					3P			03	0		N	DAY	INJ	PSNGR CAR			01	DRVR	NONE	47	F	OR-Y		020	000	04	
N					45 32 27.99	-122 54 26.78																					
														02	NONE	0	STRGHT										
														PRVTE	W-E			01	DRVR	INJC	35	F	OR-Y		000	000	00
														PSNGR CAR											00		
04828	N	N	N	N	N	08/24/2015	17	RONLER DR	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE	0	STRGHT								04	
CITY					MO	0	NW 229TH AVE	CN		TRF SIGNAL	N	DRY	TURN	PRVTE	N-S									000	00		
N					4P			03	0		Y	DAY	INJ	PSNGR CAR			01	DRVR	NONE	58	M	OR-Y		020	000	04	
N					45 32 27.99	-122 54 26.78																					
														02	NONE	0	TURN-L										
														PRVTE	W-N			01	DRVR	INJC	32	F	OR-Y		018	00	
														PSNGR CAR									000	000	00		

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[illegible]

Plus one crash incorrectly included in the Butler/229th intersection summary

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TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CITY OF HILLSBORO, WASHINGTON COUNTY

229TH AVE and Intersectional Crashes at 229TH AVE, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016

6 - 9 of 114 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	MOVE			A	S						
INVEST	E	A	U	C	O	DAY	DIST	FIRST STREET	(MEDIAN)	TRAF-	RNDBT	SURF	COLL	TRLR QTY	FROM			E	X	RES	PED	ERROR	ACT	EVENT	CAUSE
RD DPT	E	L	G	H	R	TIME	FROM	SECOND STREET	LEGS	TRAF-	RNDBT	SURF	COLL	OWNR	TO					LICNS	LOC				
UNLOC?	D	C	S	L	K	LAT	LONG	LRS	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE										
00157	N	N	N	N	N	01/10/2012	17	NW 229TH AVE	ALLEY	N	N	CLR	0-1 L-TURN	01 NONE	0	STRGHT									02
CITY						TU	800	NE ATKESON LN	N	(NONE)	N	DRY	TURN	PRVTE	N -S								000	00	
N						5P			08		N	DLIT	INJ	PSNGR CAR			01	DRVR	INJB	41	M	OR-Y	000	000	00
N						45 32	-122 54			(04)												OR<25			
						47.3299407	35.3617393																		
														01 NONE	0	STRGHT							000	00	
														PRVTE	N -S							000	000	00	
														PSNGR CAR			02	PSNG	INJB	16	F		000	000	00
														02 NONE	0	TURN-L							019	00	
														PRVTE	S -W							004,028	000	02	
														PSNGR CAR			01	DRVR	INJB	23	M	OR-Y			
																						OR<25			
04844	N	N	N	N	N	09/14/2012	17	NW BENNETT ST	INTER	2-LEG	N	CLR	ANGL-OTH	01 NONE	0	TURN-R								02	
CITY						FR	0	NW 229TH AVE	CN	NONE	N	DRY	TURN	PRVTE	N -W								018	00	
N						7P			01	0	Y	DUSK	PDO	PSNGR CAR			01	DRVR	NONE	18	M	OR-Y	028	000	02
N						45 33 14.79	-122 54																		
						38.1400006																			
														02 NONE	0	TURN-L							000	00	
														RENTL	S -W							000	000	00	
														PSNGR CAR			01	DRVR	NONE	57	M	OTH-Y	000	000	00
																						N-RES			
04823	N	N	N	N	N	09/12/2012	17	NW 229TH AVE	ALLEY	N	N	CLR	ANGL-OTH	01 NONE	0	TURN-L								02	
NO RPT						WE	686	NW BENNETT ST	S	(NONE)	N	DRY	TURN	PRVTE	E -S								018	00	
N						7P			08		N	DAY	PDO	PSNGR CAR			01	DRVR	NONE	18	M	OR-Y	028	000	02
N						45 33	-122 54			(02)													OR<25		
						7.6500104	33.5380871																		
														02 NONE	0	STRGHT							000	00	
														RENTL	S -N							000	000	00	
														PSNGR CAR			01	DRVR	NONE	57	M	OTH-Y	000	000	00
																						N-RES			
06982	N	N	N	N	N	10/13/2016	17	NE BUTLER ST	INTER	CROSS	N	RAIN	ANGL-STP	01 NONE	9	TURN-L								08	
NONE						TH	0	NW 229TH AVE	E	TRF SIGNAL	N	WET	TURN	N/A	NE-E								000	00	
N						8P			06	0	N	DLIT	PDO	PSNGR CAR			01	DRVR	NONE	00	Unk	UNK	000	000	00
N						45 32 19.92	-122 54																		
						31.18																			
														02 NONE	9	STOP							011	00	
														N/A	E -W							000	000	00	
														PSNGR CAR			01	DRVR	NONE	00	Unk	UNK			
																							UNK		
01274	N	N	N	N	N	03/12/2012	17	NE BUTLER ST	INTER	CROSS	N	RAIN	S-1STOP	01 NONE	0	STRGHT								07	
CITY						MO	0	NW 229TH AVE	SW	TRF SIGNAL	N	WET	REAR	PRVTE	SW-NE								000	00	
N						1P			06	0	N	DAY	INJ	PSNGR CAR			01	DRVR	NONE	38	F	OR-Y	043,026	000	07
N						45 32	-122 54																OR<25		
						19.9158401	31.1827611																		

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100 - 103 of 114 Crash records shown.

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[illegible]

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TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CITY OF HILLSBORO, WASHINGTON COUNTY

EVERGREEN PKY and 229TH AVE, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016

5 - 9 of 58 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	MOVE			A	S								
INVEST	E	A	U	C	O	DAY	FIRST STREET	DIST	(MEDIAN)	TRAFFIC	RNDBT	SURF	COLL	OWNER	FROM			E	X	LICNS	PED	ERROR	ACT	EVENT	CAUSE		
RD DPT	E	L	G	H	R	TIME	SECOND STREET	FROM	LEGS	TRAF-																	
UNLOC?	D	C	S	L	K	LAT	LONG	LRS	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	RES	LOC	ERROR	ACT	EVENT	CAUSE	
														02	NONE	1											
														PRVTE	SE-NW												
														SEMI TOW			01	DRVR	NONE	24	M	OR-Y	000	011	00		
																							000	000	00		
00907	N	N	N	N	N	02/18/2015	16	NW EVERGREEN PKY	INTER	CROSS	N	CLR	S-1STOP	01	NONE	0	STRGHT								07		
CITY						WE	0	NW 229TH AVE	SE			TRF SIGNAL	N	DRY	REAR	PRVTE	SE-NW							000	00		
N						5P		06	0		N	DAY	INJ		PSNGR CAR			01	DRVR	NONE	40	F	OR-Y	043	000	07	
N						45 33 1.36	-122 54 35.61																				
														02	NONE	0	STOP										
														PRVTE	SE-NW									011	00		
														PSNGR CAR			01	DRVR	INJC	28	F	OR-Y	000	000	00		
07347	N	N	N	N	N	12/03/2015	16	NW EVERGREEN PKY	INTER	CROSS	N	CLD	O-1STOP	01	NONE	0	STRGHT							092	26		
CITY						TH	0	NW 229TH AVE	SE			TRF SIGNAL	N	WET	SS-M	PRVTE	NW-SE							007	092	26	
N						5A		06	0		N	DLIT	INJ		PSNGR CAR			01	DRVR	NONE	26	F	OR-Y	039,026	022	092	26
N						45 33 1.36	-122 54 35.61																				
														02	NONE	0	STOP										
														PRVTE	SE-NW									012	00		
														PSNGR CAR			01	DRVR	NONE	42	M	OR-Y	000	000	00		
														03	NONE	0	TURN-R										
														PRVTE	SW-SE									022	00		
														PSNGR CAR			01	DRVR	INJB	26	F	OR-Y	000	022	00		
																								00	00		
00745	N	N	N	N	N	02/02/2016	16	NW EVERGREEN PKY	INTER	CROSS	N	CLD	ANGL-0TH	01	NONE	0	STRGHT								08		
CITY						TU	0	NW 229TH AVE	SE			TRF SIGNAL	N	DRY	TURN	PRVTE	NW-SE							000	00		
N						7A		05	0		N	DARK	INJ		PSNGR CAR			01	DRVR	INJC	42	M	OR-Y	000	000	00	
N						45 33 1.36	-122 54 35.61																				
														02	NONE	0	TURN-R										
														PRVTE	SW-SE									000	00		
														PSNGR CAR			01	DRVR	NONE	31	F	0TH-Y	007	000	08		
02000	N	N	N	N	N	04/19/2012	17	NW EVERGREEN PKY	INTER	CROSS	N	RAIN	S-1STOP	01	NONE	0	STRGHT								10		
NONE						TH	0	NW 229TH AVE	SW			TRF SIGNAL	N	WET	REAR	PRVTE	SW-NE							000	00		
N						12P		06	0		N	DAY	PDO		PSNGR CAR			01	DRVR	NONE	67	M	OR-Y	014,026	088	10	
N						45 33	-122 54 1.3604084																				
														02	NONE	0	STOP										
														PRVTE	SW-NE									011	00		
														PSNGR CAR			01	DRVR	NONE	65	F	OR-Y	000	000	00		

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TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CITY OF HILLSBORO, WASHINGTON COUNTY

EVERGREEN PKY and 229TH AVE, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016

14 - 18 of 58 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	MOVE			A	S							
INVEST	E	A	U	C	O	DAY	FIRST STREET	DIST	(MEDIAN)	TRAF-	RNDBT	SURF	COLL	OWNER	FROM			G	E	LICNS	PED					
RD DPT	E	L	G	H	R	TIME	SECOND STREET	FROM	LEGS	CONTL	DRVWY	LIGHT	SVRTY		TO						LOC	ERROR	ACT	EVENT	CAUSE	
UNLOC?	D	C	S	L	K	LAT	LRS	LOCTN	(#LANES)					V#	TYPE			P#	TYPE	SVRTY						
														02	NONE	0	STOP									
														PRVTE	SW-NE			01	DRVR	NONE	00	M	OR-Y	000	00	
														PSNGR	CAR										00	
07311	N	N	N			10/26/2016	16	NW EVERGREEN PKY	INTER	CROSS	N	CLR	S-1TURN	01	NONE	9	STRGHT							29		
NONE						WE	0	NW 229TH AVE	SW			TRF SIGNAL	N	DRY	REAR	N/A	SW-NE							000	00	
N						3P		06	0		N	DAY	PDO		PSNGR	CAR		01	DRVR	NONE	00	Unk	UNK	000	00	
N						45 33 1.36	-122 54 35.61																		00	
														02	NONE	9	TURN-R								00	
														N/A	SW-SE			01	DRVR	NONE	00	Unk	UNK	000	00	
														PSNGR	CAR										00	
02393	N	N	N			05/09/2013	16	NW EVERGREEN PKY	INTER	CROSS	N	CLR	S-1STOP	01	NONE	0	STRGHT							07		
NONE						TH	0	NW 229TH AVE	NW			TRF SIGNAL	N	DRY	REAR	PRVTE	NW-SE							000	00	
N						7P		06	0		N	DAY	PDO		PSNGR	CAR		01	DRVR	NONE	39	M	OR-Y	026	000	07
N						45 33 1.360404	-122 54 35.613144																	000	00	
														02	NONE	0	STOP							011	00	
														PRVTE	NW-SE			01	DRVR	NONE	39	M	OR-Y	000	00	
														PSNGR	CAR										00	
05930	N	N	N			10/10/2014	16	NW EVERGREEN PKY	INTER	CROSS	N	CLR	S-1STOP	01	NONE	0	STRGHT							10		
NONE						FR	0	NW 229TH AVE	NW			TRF SIGNAL	N	DRY	REAR	PRVTE	NW-SE							000	00	
N						2P		06	0		N	DAY	INJ		PSNGR	CAR		01	DRVR	NONE	33	M	OR-Y	014,026	000	10
N						45 33 1.36	-122 54 35.61																	000	00	
														02	NONE	0	STOP							011	00	
														PRVTE	NW-SE			01	DRVR	INJC	45	F	OR-Y	000	00	
														PSNGR	CAR										00	
05355	N	N	N			09/15/2014	16	NW EVERGREEN PKY	INTER	CROSS	N	CLR	S-1STOP	01	NONE	0	STRGHT							07		
NONE						MO	0	NW 229TH AVE	NW			TRF SIGNAL	N	DRY	REAR	PRVTE	NW-SE							000	00	
N						5P		06	0		N	DAY	PDO		PSNGR	CAR		01	DRVR	NONE	00	F	UNK	026	000	07
N						45 33 1.36	-122 54 35.61																	000	00	
														02	NONE	0	STOP							011	00	
														PRVTE	NW-SE			01	DRVR	NONE	39	M	OR-Y	000	00	
														PSNGR	CAR										00	
05434	N	N	N	N	N	08/15/2016	16	NW EVERGREEN PKY	INTER	CROSS	N	CLR	O-1 L-TURN	01	NONE	0	STRGHT							02		
CITY						MO	0	NW 229TH AVE	NW			TRF SIGNAL	N	DRY	TURN	PRVTE	NW-SE							000	00	
N						7P		06	0		N	DAY	INJ		PSNGR	CAR		01	DRVR	NONE	29	M	OR-Y	004,028	000	02
N						45 33 1.36	-122 54 35.61																	000	00	

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING
CITY OF HILLSBORO, WASHINGTON COUNTY
EVERGREEN PKY and 229TH AVE, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016
19 - 22 of 58 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	MOVE	A	S	PED	ERROR	ACT	EVENT	CAUSE
INVEST	E	A	U	C	O	DAY	FIRST STREET	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	OWNER	G	E	LOC				
RD DPT	E	L	G	H	R	TIME	SECOND STREET	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	E	X	RES	LOC			
UNLOC?	D	C	S	L	K	LAT	LONG	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY			
													02	NONE	0	TURN-L					
													PRVTE	SE-SW							
													PSNGR	CAR		01	DRVR	INJB	33	M	OR-Y
																				000	000
																				000	00
01673	N	N	N	N	N	04/03/2012	16	NW EVERGREEN PKY	INTER	CROSS	N	RAIN	0-1 L-TURN	01	NONE	0	STRGHT				02
CITY						TU	0	NW 229TH AVE	CN		TRF SIGNAL	N	WET	TURN	PRVTE	NW-SE				000	00
N						11A		03	0	N	DAY	PDO	PSNGR	CAR		01	DRVR	NONE	36	F	OR-Y
N						45 33	-122 54													000	000
						1.3604084	35.6131621													000	00
													02	NONE	0	TURN-L					
													PRVTE	E-S		01	DRVR	NONE	62	M	OR-Y
													PSNGR	CAR						004,028	000
																				000	02
													03	NONE	0	STOP					
													PRVTE	E-W		01	DRVR	NONE	43	M	OR-Y
													PSNGR	CAR						000	022
																				000	00
01970	N	N	N	N	N	04/17/2012	16	NW EVERGREEN PKY	INTER	CROSS	N	CLD	ANGL-0TH	01	NONE	0	STRGHT				04
CITY						TU	0	NW 229TH AVE	CN		TRF SIGNAL	N	DRY	ANGL	PRVTE	SE-NW				000	00
N						12P		02	0	N	DAY	INJ	PSNGR	CAR		01	DRVR	INJB	47	F	OR-Y
N						45 33	-122 54													020	000
						1.3604084	35.6131621													000	04
													02	NONE	0	STRGHT					
													PRVTE	SW-NE		01	DRVR	INJB	41	F	OR-Y
													PSNGR	CAR						000	000
																				000	00
03736	N	N	N	N	N	07/20/2012	16	NW EVERGREEN PKY	INTER	CROSS	N	RAIN	0-1 L-TURN	01	NONE	0	STRGHT				02
CITY						FR	0	NW 229TH AVE	CN		TRF SIGNAL	N	WET	TURN	PRVTE	NW-SE				000	00
N						7A		03	0	N	DAY	INJ	PSNGR	CAR		01	DRVR	INJB	22	F	OTH-Y
N						45 33	-122 54													000	000
						1.3604084	35.6131621													000	00
													01	NONE	0	STRGHT					
													PRVTE	NW-SE		02	PSNG	INJC	25	M	
													PSNGR	CAR						000	000
													02	NONE	0	TURN-L					
													PRVTE	SE-SW		01	DRVR	INJC	39	F	OR-Y
													PSNGR	CAR						004,028	000
																				000	02
04108	N	N	N	N	N	08/09/2012	16	NW EVERGREEN PKY	INTER	CROSS	N	CLR	0-1 L-TURN	01	NONE	0	TURN-L				02
CITY						TH	0	NW 229TH AVE	CN		TRF SIGNAL	N	DRY	TURN	PRVTE	SE-SW				000	00
N						7P		03	0	N	DAY	INJ	PSNGR	CAR		01	DRVR	INJC	27	M	OR-Y
N						45 33	-122 54													004,028	000
						1.3604084	35.6131621													000	02

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

CITY OF HILLSBORO, WASHINGTON COUNTY

EVERGREEN PKY and 229TH AVE, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016
27 - 31 of 58 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	MOVE	PRTC	INJ	A	S	PED	ERROR	ACT	EVENT	CAUSE			
INVEST	E	A	U	C	O	DAY	FIRST STREET	DIST	(MEDIAN)	TRAFFIC	RNDT	SURF	COLL	OWNER	FROM	TYPE	SVRTY	E	X	LICNS	LOC						
RD DPT	E	L	G	H	R	TIME	SECOND STREET	DIRECT	LEGS	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE
UNLOC?	D	C	S	L	K	LAT	LONG	LRS																			
														02	NONE	0	TURN-L										
														PRVTE		SE-SW											
														PSNGR	CAR		01	DRVR	INJC	34	M	OR-Y		028	000	010	00
																										02	
06200	N	N	N	N	N	10/25/2013	16	NW EVERGREEN PKY	INTER	CROSS	N	RAIN	0-1 L-TURN	01	NONE	0	TURN-L									04	
CITY						FR	0	NW 229TH AVE	CN		TRF	SIGNAL	N	WET	TURN	PRVTE	SE-SW								000	00	
N						1P			03	0	N	DAY	INJ		PSNGR	CAR		01	DRVR	INJC	74	F	OR-Y	020,004	000	04	
N						45 33	-122 54																				
						1.360404	35.613144																				
														02	NONE	0	STRGHT									00	
														PRVTE		NW-SE									000	00	
														PSNGR	CAR		01	DRVR	INJB	55	F	OR-Y	000	000	000	00	
																										00	
04455	N	N	N	N	N	08/05/2014	16	NW EVERGREEN PKY	INTER	CROSS	N	CLR	0-1 L-TURN	01	NONE	0	TURN-L									04	
CITY						TU	0	NW 229TH AVE	CN		TRF	SIGNAL	N	DRY	TURN	PRVTE	SE-SW								000	00	
N						4P			03	0	N	DAY	PDO		PSNGR	CAR		01	DRVR	NONE	44	M	OR-Y	097,004	000	00	
N						45 33 1.36	-122 54																			00	
							35.61																				00
														01	NONE	0	TURN-L									00	
														PRVTE		SE-SW									000	00	
														PSNGR	CAR		02	PSNG	NO<5	04	M			000	000	00	
																										00	
														02	NONE	0	STRGHT									00	
														PRVTE		NW-SE									000	00	
														PSNGR	CAR		01	DRVR	NONE	44	M	OR-Y	097	000	000	00	
																										00	
06276	N	N	N	N	N	10/24/2014	16	NW EVERGREEN PKY	INTER	CROSS	N	CLD	0-1 L-TURN	01	NONE	0	STRGHT									02	
CITY						FR	0	NW 229TH AVE	CN		TRF	SIGNAL	N	WET	TURN	PRVTE	NW-SE								000	00	
N						7A			03	0	N	DAY	PDO		PSNGR	CAR		01	DRVR	NONE	43	F	OR-Y	000	000	00	
N						45 33 1.36	-122 54																			00	
							35.61																				00
														02	NONE	0	TURN-L									00	
														PRVTE		SE-SW									000	02	
														PSNGR	CAR		01	DRVR	NONE	44	M	OR-Y	004,028	000	000	00	
																										00	
06407	N	N	N	N	N	10/28/2014	16	NW EVERGREEN PKY	INTER	CROSS	N	CLD	0-1 L-TURN	01	NONE	0	STRGHT									02	
CITY						TU	0	NW 229TH AVE	CN		TRF	SIGNAL	N	DRY	TURN	PRVTE	NW-SE								000	00	
N						10A			03	0	N	DAY	INJ		PSNGR	CAR		01	DRVR	INJC	33	M	OR-Y	000	000	00	
N						45 33 1.36	-122 54																			00	
							35.61																				00
														02	NONE	0	TURN-L									00	
														PRVTE		SE-SW									000	02	
														PSNGR	CAR		01	DRVR	NONE	52	M	OR-Y	004,028	000	000	00	
																										00	

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

CITY OF HILLSBORO, WASHINGTON COUNTY
EVERGREEN PKY and 229TH AVE, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016
32 - 34 of 58 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	MOVE										
INVEST	E	A	U	C	O	DAY	DIST	FIRST STREET	(MEDIAN)	TRAF-	RNDT	SURF	COLL	TRLR QTY	FROM	PRTC	INJ	A	S	PED	ERROR	ACT	EVENT	CAUSE	
RD DPT	E	L	G	H	R	TIME	FROM	SECOND STREET	LEGS	CONTL	DRVWY	LIGHT	SVRTY	OWNER	TO	#	TYPE	E	X	LICNS	LOC				
UNLOC?	D	C	S	L	K	LAT	LONG	LRS	(#LANES)					V#	TYPE										
07282	N	N	N	N	N	12/04/2014	16	NW EVERGREEN PKY	INTER	CROSS	N	RAIN	O-1 L-TURN	01 NONE	0	TURN-L							02		
CITY						TH	0	NW 229TH AVE	CN	FLASHBCN-A	N	WET	TURN	PRVTE	SE-SW							000	00		
N						7A			03	0	N	DAY	INJ	PSNGR CAR			01	DRVR	INJB	23	F	OR-Y	028,004	000	02
N						45 33 1.36	-122 54 35.61																		
														02 NONE	0	STRGHT									
														PRVTE	NW-SE							000	00		
														PSNGR CAR			01	DRVR	INJB	24	F	OR-Y	000	000	00

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

CITY OF HILLSBORO, WASHINGTON COUNTY

EVERGREEN PKY and 229TH AVE, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016
35 - 39 of 58 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	MOVE	PRTC	INJ	A	S	PED	ERROR	ACT	EVENT	CAUSE	
INVEST	E	A	U	C	O	DAY	FIRST STREET	DIST	(MEDIAN)	TRAF-	RNDBT	SURF	COLL	TRLR QTY	FROM			E	X	LICNS	LOC				
RD DPT	E	L	G	H	R	TIME	SECOND STREET	DIRECT	LEGS	CONTL	DRVWY	LIGHT	SVRTY	OWNER	TO	P#	TYPE	SVRTY	G	E	RES				
UNLOC?	D	C	S	L	K	LAT	LRS	LOCTN	(#LANES)					V#	TYPE										
														02	NONE	0	TURN-L								
														PRVTE	SE-SW										
														PSNGR	CAR	01	DRVR	INJC	41	F	OR-Y	028,004	000	00	
																				OR<25	000		02		
07283	N	N	N	N	N	12/01/2015	16	NW EVERGREEN PKY	INTER	CROSS	N	RAIN	ANGL-OTH	01	NONE	0	STRGHT						02		
CITY						TU	0	NW 229TH AVE	CN		TRF SIGNAL	N	WET	TURN	PRVTE	NW-SE						000	00		
N						10A		04	0		N	DAY	INJ	PSNGR	CAR		01	DRVR	INJC	20	F	OR-Y	000	000	00
N						45 33 1.36	-122 54 35.61													OR<25					
														02	NONE	0	TURN-R								
														RENTL	SW-SE							000	00		
														PSNGR	CAR	01	DRVR	NONE	00	F	OTH-Y	028	000	02	
																				N-RES					
05916	N	N	N	N	N	10/08/2015	16	NW EVERGREEN PKY	INTER	CROSS	N	CLR	0-1 L-TURN	01	NONE	0	TURN-L						02		
NONE						TH	0	NW 229TH AVE	CN		TRF SIGNAL	N	DRY	TURN	PRVTE	SE-SW						000	00		
N						7A		03	0		N	DAWN	PDO	PSNGR	CAR		01	DRVR	NONE	00	M	OR-Y	004,028	000	02
N						45 33 1.36	-122 54 35.61													OR<25					
														02	NONE	0	STRGHT								
														PRVTE	NW-SE							000	00		
														PSNGR	CAR	01	DRVR	NONE	43	F	OR-Y	000	000	00	
																				OR<25					
00409	N	N	N	N	N	01/18/2016	16	NW EVERGREEN PKY	INTER	CROSS	N	RAIN	0-1 L-TURN	01	NONE	0	STRGHT						02		
CITY						MO	0	NW 229TH AVE	CN		TRF SIGNAL	N	WET	TURN	PRVTE	NW-SE						000	00		
N						4P		03	0		N	DAY	INJ	PSNGR	CAR		01	DRVR	INJC	20	F	OR-Y	000	000	00
N						45 33 1.36	-122 54 35.61													OR<25					
														02	NONE	0	TURN-L								
														PRVTE	SE-SW							000	00		
														PSNGR	CAR	01	DRVR	INJB	61	F	OR-Y	004,028	000	02	
																				OR<25					
00930	N	N	N	N	N	02/10/2016	16	NW EVERGREEN PKY	INTER	CROSS	N	CLD	0-1 L-TURN	01	NONE	0	STRGHT						02		
CITY						WE	0	NW 229TH AVE	CN		L-GRN-SIG	N	DRY	TURN	PRVTE	NW-SE						000	00		
N						4P		03	0		N	DAY	INJ	PSNGR	CAR		01	DRVR	INJC	18	M	OTH-Y	000	000	00
N						45 33 1.36	-122 54 35.61													N-RES					
														02	NONE	0	TURN-L								
														PRVTE	SE-SW							000	00		
														PSNGR	CAR	01	DRVR	NONE	53	F	OR-Y	004,028	000	02	
																				OR<25					
07271	N	N	N	N	N	10/25/2016	16	NW EVERGREEN PKY	INTER	CROSS	N	RAIN	0-1 L-TURN	01	NONE	0	STRGHT						02		
CITY						TU	0	NW 229TH AVE	CN		TRF SIGNAL	N	WET	TURN	PRVTE	NW-SE						000	00		
N						7A		03	0		N	DLIT	INJ	PSNGR	CAR		01	DRVR	INJC	23	F	EXP	000	000	00
N						45 33 1.36	-122 54 35.61													OR>25					

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TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CITY OF HILLSBORO, WASHINGTON COUNTY

EVERGREEN PKY and 229TH AVE, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016

40 - 44 of 58 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	MOVE			A	S								
INVEST	E	A	U	C	O	DAY	FIRST STREET	DIST	(MEDIAN)	TRAFFIC	RNDBT	SURF	COLL	OWNER	FROM			G	E	LICNS	PED	ERROR	ACT	EVENT	CAUSE		
RD DPT	E	L	G	H	R	TIME	SECOND STREET	DIRECT	LEGS	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE
UNLOC?	D	C	S	L	K	LAT	LRS	LOCTN	(#LANES)																		
														02	NONE	0	TURN-L										
														PRVTE		SE-SW											
														PSNGR	CAR		01	DRVR	NONE	36	M	OR-Y		004,028	000	00	
																									02		
08137	N	N	N	N	N	11/28/2016	16	NW EVERGREEN PKY	INTER	CROSS	N	CLD	S-1TURN	01	NONE	0	TURN-L									08,32	
CITY						MO	0	NW 229TH AVE	CN		UNKNOWN	N	WET	TURN		RENTL	SE-SW							000	00		
N						6P		02	0		N	DLIT	INJ		PSNGR	CAR		01	DRVR	NONE	25	M	OR-Y		006,052	000	08,32
N						45 33 1.36	-122 54																N-RES				
							35.61																				
														02	NONE	0	STRGHT										
														PRVTE		SE-NW								000	00		
														PSNGR	CAR		01	DRVR	INJC	38	F	OR-Y		000	000	00	
																									00		
03157	N	N	N	N	N	05/14/2016	16	NW EVERGREEN PKY	INTER	CROSS	N	CLD	O-1 L-TURN	01	NONE	9	TURN-L									02	
CITY						SA	0	NW 229TH AVE	CN		TRF SIGNAL	N	WET	TURN		N/A	SE-SW							000	00		
N						11A		03	0		N	DAY	PDO		PSNGR	CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N						45 33 1.36	-122 54																UNK			00	
							35.61																				
														02	NONE	9	STRGHT										
														N/A		NW-SE								000	000	00	
														PSNGR	CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00	
																									00		
07067	N	N	N	N	N	10/17/2016	16	NW EVERGREEN PKY	INTER	CROSS	N	RAIN	O-1 L-TURN	01	NONE	9	STRGHT									02	
CITY						MO	0	NW 229TH AVE	CN		TRF SIGNAL	N	WET	TURN		N/A	NW-SE							000	00		
N						7A		03	0		N	DAY	PDO		PSNGR	CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N						45 33 1.36	-122 54																UNK			00	
							35.61																				
														02	NONE	9	TURN-L										
														N/A		SE-SW								000	000	00	
														PSNGR	CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00	
																									00		
03839	N	N	N			07/08/2015	17	NW 229TH AVE	STRGHT		N	CLR	S-1STOP	01	NONE	0	STRGHT									29	
NONE						WE	500	NW EVERGREEN PKY	NE	(NONE)	UNKNOWN	N	DRY	REAR		PRVTE	SW-NE							000	00		
N						12P		07			N	DAY	PDO		PSNGR	CAR		01	DRVR	NONE	39	F	OR-Y		026	000	29
N						45 33 6.45	-122 54			(02)													OR<25				
							33.52																				
														02	NONE	0	STOP										
														PRVTE		SW-NE								011	000	00	
														PSNGR	CAR		01	DRVR	NONE	00	M	UNK		000	000	00	
02930	N	N	N			05/12/2015	16	NW EVERGREEN PKY	STRGHT		N	RAIN	S-STRGHT	01	NONE	0	STRGHT									29	
NONE						TU	50	NW 229TH AVE	SE	(NONE)	UNKNOWN	N	WET	REAR		PRVTE	SE-NW							000	00		
N						5A		08			N	DAWN	INJ		PSNGR	CAR		01	DRVR	NONE	42	F	OR-Y		042	000	29
N						45 33 .86	-122 54			(04)													OR<25				
							34.59																				

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TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CITY OF HILLSBORO, WASHINGTON COUNTY

EVERGREEN PKY and 229TH AVE, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016

45 - 48 of 58 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	MOVE	PRTC	INJ	A	S	PED	ERROR	ACT	EVENT	CAUSE		
INVEST	E	A	U	C	O DAY	DIST	FIRST STREET		(MEDIAN)					TLRLR QTY												
RD DPT	E	L	G	H	R TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM			E	X	LICNS	LOC					
UNLOC?	D	C	S	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	
														02 NONE 0	STRGHT SE-NW											
														PRVTE PSNGR CAR		01	DRVR	INJC	43	M	OTH-Y N-RES		000	006 000	00 00	
01194	N	N	N	N		03/05/2015	16	NW EVERGREEN PKY	STRGHT	N	N	CLR	S-STRGHT	01 NONE 0	STRGHT									21		
NO RPT						TH	150	NW 229TH AVE	SE	(NONE)	UNKNOWN	N	DRY	SS-0	PRVTE	NW-SE							000	21		
N						6A			07		N	DAY	PDO	PSNGR CAR									017	017	00	
N						45 33 .27	-122 54 33.56		(04)																	
														02 NONE 0	STRGHT NW-SE									000	00 00	
														PRVTE PSNGR CAR		01	DRVR	NONE	52	M	OR-Y OR<25		000	000	00 00	
06421	N	N	N	N	N	09/22/2016	17	NW 229TH AVE	STRGHT	Y	N	CLR	S-STRGHT	01 NONE 0	STRGHT									13		
CITY						TH	25	NW EVERGREEN PKY	SW	(NONE)	UNKNOWN	N	DRY	SS-0	PRVTE	SW-NE							000	00		
N						8P			06		N	DLIT	INJ	PSNGR CAR									045	000	13	
N						45 33 .64	-122 54 36.14		(03)																	
														02 NONE 0	STRGHT SW-NE									000	00 00	
														PRVTE PSNGR CAR		01	DRVR	INJC	45	M	OR-Y OR<25		000	000	00 00	
														02 NONE 0	STRGHT SW-NE									000	000	00 00
														PRVTE PSNGR CAR		02	PSNG	INJC	45	F			000	000	00 00	
01273	N	N	N	N		03/11/2013	17	NW 229TH AVE	STRGHT	Y	N	UNK	S-1STOP	01 NONE 0	STRGHT									27,07		
NONE						MO	48	NW EVERGREEN PKY	SW	(NONE)	UNKNOWN	N	UNK	REAR	PRVTE	SW-NE							000	00		
N						4P			06		N	DAY	PDO	PSNGR CAR									016,026	038	27,07	
N						45 33 .538992	-122 54 36.2173319		(02)																	
														02 NONE 0	STOP SW-NE									011	00 00	
														PRVTE PSNGR CAR		01	DRVR	NONE	00	M	OR-Y UNK		000	000	00 00	
06620	N	N	N			11/24/2012	17	NW 229TH AVE	STRGHT	N	Y	CLD	FIX OBJ	01 NONE 0	STRGHT									040,062	16	
CITY						SA	800	NW EVERGREEN PKY	SW	(NONE)	UNKNOWN	N	WET	FIX	PRVTE	NE-SW							000	040,062	00	
Y						5P			07		N	DUSK	FAT	PSNGR CAR									016,081	025	16	
N						45 32 53.3469524	-122 54 36.3895263		(02)																	
														01 NONE 0	STRGHT NE-SW									000	040,062	00 00
														PRVTE PSNGR CAR		02	PSNG	KILL	32	F			000	000	00 00	
not at intersection or intersection-related driver drowsy FATALITY																										

not at intersection or intersection-related
driver drowsy
FATALITY

CITY OF HILLSBORO, WASHINGTON COUNTY

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

CITY OF HILLSBORO, WASHINGTON COUNTY

EVERGREEN PKY and Intersectional Crashes at EVERGREEN PKY, City of Hillsboro, Washington County, 01/01/2016 to 12/31/2016

90 - 95 of 101 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	MOVE	PRTC	INJ	A	S	PED	ERROR	ACT	EVENT	CAUSE			
INVEST	E	A	U	C	O	DAY	FIRST STREET	(MEDIAN)	TRAFFIC	RNDT	SURF	COLL	OWNER	FROM			E	X	LICNS	LOC						
RD DPT	E	L	G	H	R	TIME	SECOND STREET	LEGS	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	G	E	RES	LOC				
UNLOC?	D	C	S	L	K	LAT	LONG	(#LANES)																		
													02	NONE	0	TURN-L										
													PRVTE		SE-SW	01	DRVR	NONE	36	M	OR-Y		000	02		
													PSNGR	CAR						OR<25	004,028	000				
08137	N	N	N	N	N	11/28/2016	16	NW EVERGREEN PKY	INTER	CROSS	N	CLD	S-1TURN	01	NONE	0	TURN-L						08,32			
CITY						MO	0	NW 229TH AVE	CN		UNKNOWN	WET	TURN		RENTL	SE-SW						000	00			
N						6P		02	0			DLIT	INJ		PSNGR	CAR		01	DRVR	NONE	25	M	OR-Y	08,32		
N						45 33 1.36	-122 54 35.61														N-RES	006,052	000			
													02	NONE	0	STRGHT										
													PRVTE		SE-NW	01	DRVR	INJC	38	F	OR-Y		000	00		
													PSNGR	CAR							OR<25	000	000	00		
03157	N	N	N	N	N	05/14/2016	16	NW EVERGREEN PKY	INTER	CROSS	N	CLD	0-1 L-TURN	01	NONE	9	TURN-L						02			
CITY						SA	0	NW 229TH AVE	CN		TRF SIGNAL	WET	TURN		N/A	SE-SW						000	00			
N						11A		03	0			DAY	PDO		PSNGR	CAR		01	DRVR	NONE	00	Unk	UNK	00		
N						45 33 1.36	-122 54 35.61														UNK	000	000	00		
													02	NONE	9	STRGHT										
													N/A		NW-SE	01	DRVR	NONE	00	Unk	UNK	000	000	00		
													PSNGR	CAR							UNK	000	000	00		
07067	N	N	N	N	N	10/17/2016	16	NW EVERGREEN PKY	INTER	CROSS	N	RAIN	0-1 L-TURN	01	NONE	9	STRGHT						02			
CITY						MO	0	NW 229TH AVE	CN		TRF SIGNAL	WET	TURN		N/A	NW-SE						000	00			
N						7A		03	0			DAY	PDO		PSNGR	CAR		01	DRVR	NONE	00	Unk	UNK	00		
N						45 33 1.36	-122 54 35.61														UNK	000	000	00		
													02	NONE	9	TURN-L										
													N/A		SE-SW	01	DRVR	NONE	00	Unk	UNK	000	000	00		
													PSNGR	CAR							UNK	000	000	00		
06058	N	N	N	N	N	09/09/2016	16	NW EVERGREEN PKY	ALLEY		N	CLR	ANGL-OTH	01	NONE	0	STRGHT						02			
CITY						FR	1000	NW 235TH AVE	E	(NONE)	TRF SIGNAL	DRY	TURN		PRVTE	E-W						000	00			
N						7P		08				DUSK	INJ		PSNGR	CAR		01	DRVR	NONE	71	F	OR-Y	02		
N						45 33 3.15	-122 54 51.42		(04)													OR<25	028	000		
													02	NONE	0	TURN-L										
													PRVTE		N-E	01	DRVR	INJC	52	F	OR-Y		018	00		
													PSNGR	CAR							OR<25	000	000	00		
03706	N	N	N	N	N	06/07/2016	16	NW EVERGREEN PKY	STRGHT		N	CLR	FIX OBJ	01	NONE	0	STRGHT						040,062,010 16			
CITY						TU	150	NW 235TH AVE	E	(NONE)	NONE	DRY	FIX		PRVTE	W-E						000	040,062,010 00			
Y						3A		07																		
N						45 33 3.33	-122 55 3.22		(04)			DARK	INJ		PSNGR	CAR		01	DRVR	INJB	22	M	OR-Y	081	025	16
																						OR<25				

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

CITY OF HILLSBORO, WASHINGTON COUNTY

EVERGREEN PKY and Intersectional Crashes at EVERGREEN PKY, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2012

91 - 94 of 102 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	MOVE			A	S								
INVEST	E	A	U	C	O	DAY	FIRST STREET	DIST	(MEDIAN)	INT-REL	RND BT	SURF	COLL	OWNER	FROM			E	X	RES	PED	ERROR	ACT	EVENT	CAUSE		
RD DPT	E	L	G	H	R	TIME	SECOND STREET	DIRECT	LEGS	TRAF-																	
UNLOC?	D	C	S	L	K	LAT	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE
														02	NONE	0											
														PRVTE		STRGHT											
														PSNGR	CAR	NW-SE	01	DRVR	INJB	23	M	OR-Y		000	000	00	
05865	N	N	N			10/27/2012	16	NW EVERGREEN PKY	CURVE	N	N	RAIN	S-1STOP	01	NONE	0	STRGHT									07	
CITY						SA	200	NW 229TH AVE	NW	(NONE)	NONE	N	WET	REAR	PRVTE	SE-NW									000	00	
N						4P		07			N	DAY	PDO	PSNGR	CAR		01	DRVR	NONE	29	F	SUSP		043,026	000	07	
N						45 33	-122 54		(04)																		
						2.4702569	38.8050522							02	NONE	0	STOP									26	
														PRVTE		SE-NW									011 092	00	
														PSNGR	CAR		01	DRVR	NONE	30	F	OR-Y		000	000	00	
														02	NONE	0	STOP									26	
														PRVTE		SE-NW									011 092	00	
														PSNGR	CAR		02	PSNG	NO<5	01	F			000	000	00	
02692	N	N	N	N	N	05/24/2012	16	NW EVERGREEN PKY	INTER	CROSS	N	N	CLD	S-1STOP	01	NONE	0	STRGHT								07	
CITY						TH	0	NW 235TH AVE	W	TRF SIGNAL	N	WET	REAR	PRVTE	W -E										000	00	
N						3P		06	0		N	DAY	PDO	PSNGR	CAR		01	DRVR	NONE	38	M	OR-Y		043,026	000	07	
N						45 33	-122 55																				
						3.336338	6.1707432							02	NONE	0	STOP									011	00
														PRVTE		W -E									000	00	
														PSNGR	CAR		01	DRVR	NONE	42	F	OR-Y		000	000	00	
07320	N	N	N	N	N	12/20/2012	16	NW EVERGREEN PKY	INTER	CROSS	N	N	RAIN	0-1 L-TURN	01	NONE	0	TURN-L								02	
CITY						TH	0	NW 235TH AVE	CN	TRF SIGNAL	N	WET	TURN	PRVTE	E -S										000	00	
N						6A		03	0		N	DLIT	INJ	PSNGR	CAR		01	DRVR	INJB	25	M	OR-Y		004,028	000	02	
N						45 33	-122 55																				
						3.336338	6.1707432							02	NONE	0	STRGHT									000	00
														PRVTE		W -E									000	00	
														PSNGR	CAR		01	DRVR	INJB	30	F	OR-Y		000	000	00	
														02	NONE	0	STRGHT									000	00
														PRVTE		W -E									000	00	
														PSNGR	CAR		02	PSNG	INJB	29	M			000	000	00	
06847	N	N	N	N	N	12/04/2012	16	NW EVERGREEN PKY	ALLEY	N	N	CLD	0-1 L-TURN	01	NONE	0	TURN-L									02	
NO RPT						TU	990	NW 235TH AVE	E	(NONE)	TRF SIGNAL	N	WET	TURN	PRVTE	E -S									019	00	
N						5A		07			N	DLIT	INJ	PSNGR	CAR		01	DRVR	INJB	37	M	OR-Y		004,028	000	02	
N						45 33	-122 54		(04)																		
						3.1457698	51.3598664																				

95 - 98 of 102 Crash records shown.

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CITY OF HILLSBORO, WASHINGTON COUNTY

EVERGREEN PKY and Intersectional Crashes at EVERGREEN PKY, City of Hillsboro, Washington County, 01/01/2014 to 12/31/2014

100 - 104 of 107 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	MOVE	A	S	PED	ERROR	ACT	EVENT	CAUSE										
INVEST	E	A	U	C	O DAY	DIST	FIRST STREET	(MEDIAN)	TRAF-	RNDBT	SURF	COLL	OWNER	FROM																	
RD DPT	E	L	G	H	R TIME	FROM	SECOND STREET	LEGS	TRAF-																						
UNLOC?	D	C	S	L	K LAT	LONG	LRS	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO																
06276	N	N	N	N	N	10/24/2014	16	NW EVERGREEN PKY	INTER	CROSS	N	N	CLD	0-1 L-TURN	01	NONE	0	STRGHT		02											
CITY						FR	0	NW 229TH AVE	CN					PRVTE	NW-SE				000	00											
N						7A			03	0								01	DRVR	NONE	43	F	OR-Y	OR<25	000	000	00	00			
N						45 33 1.36	-122 54 35.61							02	NONE	0	TURN-L								000	000	00	02			
														PRVTE	SE-SW			01	DRVR	NONE	44	M	OR-Y	OR<25	004,028	000	000	00	02		
06407	N	N	N	N	N	10/28/2014	16	NW EVERGREEN PKY	INTER	CROSS	N	N	CLD	0-1 L-TURN	01	NONE	0	STRGHT		02											
CITY						TU	0	NW 229TH AVE	CN					PRVTE	NW-SE					000	00										
N						10A			03	0				PSNGR	CAR			01	DRVR	INJC	33	M	OR-Y	OR<25	000	000	000	00	00		
N						45 33 1.36	-122 54 35.61							02	NONE	0	TURN-L								000	000	000	00	02		
														PRVTE	SE-SW			01	DRVR	NONE	52	M	OR-Y	OR<25	004,028	000	000	000	00	02	
07282	N	N	N	N	N	12/04/2014	16	NW EVERGREEN PKY	INTER	CROSS	N	N	RAIN	0-1 L-TURN	01	NONE	0	TURN-L		02											
CITY						TH	0	NW 229TH AVE	CN					PRVTE	SE-SW					000	00										
N						7A			03	0				PSNGR	CAR			01	DRVR	INJB	23	F	OR-Y	OR<25	028,004	000	000	000	00	02	
N						45 33 1.36	-122 54 35.61							02	NONE	0	STRGHT								000	000	000	00	00		
														PRVTE	NW-SE			01	DRVR	INJB	24	F	OR-Y	OR<25	000	000	000	000	00	00	
02320	N	Y	N	N	N	04/23/2014	16	NW EVERGREEN PKY	STRGHT		N	Y	RAIN	FIX OBJ	01	NONE	0	STRGHT		040,062	10										
CITY						WE	300	NW 229TH AVE	NW		(DIVMD)	UNKNOWN	N	WET	FIX			PRVTE	NW-SE	000	040,062	00									
Y						1A			08					PSNGR	CAR			01	DRVR	INJB	49	M	OR-Y	OR<25	081	000	000	000	10	00	
N						45 33 2.73	-122 54 39.92				(04)																				
05215	N	N	N	N	N	09/08/2014	16	NW EVERGREEN PKY	ALLEY		N	N	CLR	BIKE	01	NONE	0	TURN-R		04											
CITY						MO	1037	NW 235TH AVE	E		(NONE)	TRF SIGNAL	N	DRY	TURN			PRVTE	S -E		018	00									
N						3P			07					PSNGR	CAR					01	DRVR	NONE	55	M	OR-Y	OR<25	000	000	000	00	00
N						45 33 3.14	-122 54 51.02																								
																		-	STRGHT		01	BIKE	INJB	27	F		MDBLK	020	000	04	04
																		E	W												

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[illegible]

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CITY OF HILLSBORO, WASHINGTON COUNTY

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING
EVERGREEN PKY and 235TH AVE, City of Hillsboro, Washington County, 01/01/2012 to 12/31/2016
5 - 8 of 9 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	MOVE	A	S	PED	ERROR	ACT	EVENT	CAUSE
INVEST	E	A	U	C	O	DAY	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE	G	E	LOC			
RD DPT	E	L	G	H	R	TIME	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	E	X	RES	LOC		
UNLOC?	D	C	S	L	K	LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	SVRTY				
														02 NONE	0	TURN-L					
														PRVTE	N	-E					
														PSNGR	CAR			01 DRVR	INJC	52 F	OR-Y OR<25
05215	N	N	N	N	N	09/08/2014	16	NW EVERGREEN PKY	ALLEY	N	N	CLR	BIKE	01 NONE	0	TURN-R					018 000
CITY						M0	1037	NW 235TH AVE	E	(NONE)	TRF SIGNAL	N	DRY	TURN	PRVTE	S -E					00
N						3P		07			N	DAY	INJ	PSNGR	CAR			01 DRVR	NONE	55 M	OR-Y OR<25
N						45 33 3.14	-122 54 51.02			(04)											000 000
not at intersection - RA1&2 Access															-	STRGHT		01 BIKE	INJB	27 F	MDBLK XWK
03706	N	N	N	N	N	06/07/2016	16	NW EVERGREEN PKY	STRGHT	N	Y	CLR	FIX OBJ	01 NONE	0	STRGHT					040,062,010 000
CITY						TU	150	NW 235TH AVE	E	(NONE)	NONE	N	DRY	FIX	PRVTE	W -E					000 040,062,010
Y						3A		07			N	DARK	INJ	PSNGR	CAR			01 DRVR	INJB	22 M	OR-Y OR<25
N						45 33 3.33	-122 55 3.22			(04)											081 025
08989	N	N	N	N	N	12/29/2016	16	NW EVERGREEN PKY	STRGHT	N	N	CLD	O-STRGHT	01 NONE	0	STRGHT					013 000
CITY						TH	300	NW 235TH AVE	E	(NONE)	UNKNOWN	N	DRY	HEAD	PRVTE	W -E					013 000
N						12P		08			N	DAY	INJ	PSNGR	CAR			01 DRVR	INJA	39 F	SUSP OR<25
N						45 33 3.33	-122 55 1.25			(04)											039 028
not at intersection - vehicles traveling opposite direction															02 NONE	0	STRGHT				
														PRVTE	E -W			01 DRVR	INJB	54 M	OR-Y OR<25
														PSNGR	CAR						000 000
														02 NONE	0	STRGHT					
														PRVTE	E -W			02 PSNG	INJB	11 F	
														PSNGR	CAR						000 000
														02 NONE	0	STRGHT					
														PRVTE	E -W			03 PSNG	INJB	27 F	
														PSNGR	CAR						000 000
														03 NONE	0	STRGHT					
														PRVTE	E -W			01 DRVR	NONE	41 M	OR-Y OR<25
														PSNGR	CAR						000 000
06677	N	N	N	N	N	11/28/2012	16	NW EVERGREEN PKY	STRGHT	N	N	CLD	S-STRGHT	01 NONE	0	STRGHT					013 000
CITY						WE	500	NW 235TH AVE	E	(NONE)	UNKNOWN	N	WET	REAR	PRVTE	E -W					000 000
N						5P		08			N	DLIT	INJ	PSNGR	CAR			01 DRVR	INJB	57 F	OR-Y OR<25
N						45 33 3.2030472	-122 54 58.2606656			(04)											026 000

CITY OF HILLSBORO, WASHINGTON COUNTY

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APPENDIX F.

**BACKGROUND
TRAFFIC ESTIMATES**

AM	Existing Traffic				Estimated RA Traffic				Other Traffic				Background Growth			
					RA Site Accesses				Excluded Local Traffic Movements				4	@	2%	8%
NE Evergreen Parkway/ NE Brookwood Parkway	524 1145 84				377 39				524 768 45				42	61	4	
	264			40				8	264			32	21			3
	393			282	182			59	211			223	17	6.2%		18
	123			130	40			43	83			87	7			7
	1	75	602	160	1	11	90	24	1	64	512	136	1	5	41	11
NE Shute Road/ NE Brookwood Parkway	798 650				460				798 190				64 15			
	1			230				125	1			105	0	6.0%		8
				4								4				0
NE Shute Road/ RS5 Access	28 512 187				273 187				239				19			
	35			19				19						2.4%		
	3				3			0								
NE Shute Road/ Creek Drive/RS6 Access	74 427 69				220 69				74 207				6 17			
	2			9				9	2				0	4.0%		
	43			1	0			1	43				3			
NE Shute Road/ D1X Access	450 27				205 27				245				20			
				22				22						4.1%		
				2				2								
NE Shute Road/ NE Tandem Way	7 345 100				107 100				238				19			
	15			18				18						3.8%		
	9			3	9			3								
NE Shute Road/ NE Brookwood Parkway	433 12				198 12				235				19			
	6	9	409	3	6	192	3		6	217			6	17		

AM	Existing Traffic				Estimated RA Traffic			Other Traffic				Background Growth			
					RA Site Accesses			Excluded Local Traffic Movements				4	@	2%	8%
NE Shute Road/NE Airport Road/NE Butler Street	32 212 90				1 29 77			31 183 13				2 15 1			
	51 115 5				-51 98			57 18 34				51 15 29			
	108 33 63				8 1 0			102 17 5				8 1 0			
	3.4%				34			29				3.4%			
NE Butler Street/NE 60th Avenue	7 4 216 195				7 189 166			7 4 27 29				7 0 2 2			
	40 3				40 0 3										
	154 234 15				10 154 192 187			10 69 47				4 2.1% 10			
	10 192 1				8 5 2 3			8 123				8			
NE Butler Street/NE 65th Avenue	8 5 2 3				8 2			8				8			
	69 17 134				69 17 134										
	187 85 5				617 187 105 3			617 10 82				7 1.1% 8			
	617 105 3				9 6 113 9			9 95				9			
NE Tandem Way/NE 65th Avenue	9 6 113 9				9 113			9				9			
	10				10			10				10			
NE Tandem Way/RA3&RA4 Access															
	11				11			11				11			
NE Century Boulevard/NE Butler Street	61 133 40				28 121 37			33 12 3				3 1 0			
	64 123 37				270 23 463 88 4 26			205 41 35 11				65 3 3 1			
	270 463 4				12 161 315			12 9 100 4				12 1 8 0			
	12 170 415 4				12 161 315			12 9 100 4				12 1 8 0			

AM	Existing Traffic				Estimated RA Traffic				Other Traffic				Background Growth			
					RA Site Accesses				Excluded Local Traffic Movements				4 @ 2% 8%			
Internal Circulation/ NE Ronler Drive																
NE Century Boulevard/ NE Ronler Drive	13				13				13				13			
	37 201 42				37 168				33 42				3 3			
	6 59 18	52 386 100			6 59 18	386			52 100				2.1% 4 8			
	14	148	552	44	14	148	395			14	157	44	14	13	4	
NE Century Boulevard/ RAP1 Access	364 177				364 91				86				7			
	75 114				75 114								1.9%			
	15	206	428	1	15	206	195			15	233		15	19		
	281 458 7				281 409				49				4			
NE Century Boulevard/ RA1&2 Access	66 4 46	11 20			66 4 46	11 20							1.2%			
	16	166	260	22	16	166	104			16	156		16	12		
	3 15 32				15				3 32				0 3			
	9 422 113	252 545 572			68 111	189 564			9 354 2	252 356 8		1 28 0	4.2% 20 28 1			
NE Evergreen Parkway/ RA1&2 North Access	17	74	52	244	17	34	24	112	17	40	28	132	17	3	2	11
	2 1 5				1											
	3 534 93	37 516 129			146 93	94 129			422				31	4.7% 34		
	18	25	1	33	18	25	1	33	18				18			

AM	Existing Traffic				Estimated RA Traffic				Other Traffic				Background Growth			
					RA Site Accesses				Excluded Local Traffic Movements				4	@	2%	8%
NE Evergreen Parkway/ NE 59th Avenue	42 4 28				4				42 28				3		2	
	67			51					67		51	5				4
	590			480	228			102	362		378	29	5.5%			30
	17			17	17			17								
	19	8	2	11	19	8	2	11	19			19				
Parking Access/ NE Ronler Drive																
	20				20				20			20				

PM	Existing Traffic				Estimated RA Traffic				Other Traffic				Background Growth			
					RA Site Accesses				Excluded Local Traffic Movements				4	@	2%	8%
NE Evergreen Parkway/ NE Brookwood Parkway	286 816 48				36 3				286 780 45				23 62 4			
	723			165				90	723			75	58			6
	492			490	36			266	456			224	36	5.9%		18
	115			210	5			9	110			201	9			16
	1	173	1194	151	1	97	673	85	1	76	521	66	1	6	42	5
NE Shute Road/ NE Brookwood Parkway	1 1005 222				50				1 1005 172				0 80 14			
	2			936				855	2			81	0			6
	2								2				0	5.5%		
	1			39					1			39	0			3
	2	714	16		2				2	714	16		2	57	1	
NE Shute Road/ RS5 Access	12 220 9				41 9				179				14			
	12			215				215								
				1								1		2.3%		0
	8			73				73								
	3	17	882	8	3	640	8		3	242			3	19		
NE Shute Road/NE Dawson Creek Drive/RS6 Access	10 289 3				111 3				10 178				1 14			
	33			159				159	33				3			
				9	0			9						3.4%		
	152			121				121	152				12			
	4	66	711	19	4	489	19		4	66	222		4	5	18	
NE Shute Road/ D1X Access	545 8				224 8				321				26			
				176				176								
				16				16						3.5%		
	5	609	1		5	332	1		5	277			5	22		
NE Shute Road/ NE Tandem Way	18 558 6				234 6				324				26			
	4			155				155								
				5	0			5						3.8%		
	14			12				12								
	6	37	449	1	6	178	1		6	271			6	22		

PM	Existing Traffic				Estimated RA Traffic			Other Traffic				Background Growth			
					RA Site Accesses			Excluded Local Traffic Movements				4	@	2%	8%
NE Shute Road/NE Airport Road/NE Butler Street	86 330 150				34 176 24			52 154 126				4			
												4	12	10	
	36			205	-36		150	72		55	6				4
	94			185	15		135	79		50	6		4.2%		4
NE Butler Street/NE 60th Avenue	12			172			125	12		47	1				4
	7	11	192	34	7	65	5	7	11	127	29	7	1	10	2
NE Butler Street/NE 65th Avenue	177 79				177 79										
	17			2	17		2								
	262			364	27		233	235		131	19		3.0%		10
	30			5											
NE Tandem Way/NE 65th Avenue	8	19	1	3	8			8				8			
	233 45 598				233 45 598										
	27			51	27		51								
NE Tandem Way/NE 65th Avenue	280			160	79		2	201		158	16		2.0%		13
	16			4											
	9	7	4	2	9	4		9				9			
NE Tandem Way/RA3&RA4 Access															
	10				10			10				10			
NE Century Boulevard/NE Butler Street															
	11				11			11				11			
NE Century Boulevard/NE Butler Street	68 471 235				10 308 153			58 163 82				5 13 7			
	107			65	50		16	57		49	5				4
	485			117	454		33	31		84	2		2.9%		7
NE Century Boulevard/NE Butler Street	185			6	173			12		6	1				0
	12	35	167	11	12	10	40	12	25	127	11	12	2	10	1

PM	Existing Traffic				Estimated RA Traffic				Other Traffic				Background Growth			
					RA Site Accesses				Excluded Local Traffic Movements				4 @ 2% 8%			
Internal Circulation/ NE Ronler Drive																
	13				13				13				13			
NE Century Boulevard/ NE Ronler Drive	5 620 160				5 408				212 160				17 13			
	44 406 63		6 16 32	44 406 63		16			6 32			3.2%		0 3		
	14 13 247 129				14 13 93				14 154 129				14 12 10			
NE Century Boulevard/ RAP1 Access	32 547 1				32 118				429				34			
	241 1 295		1	241 295				1				0 3.2%				
	15 17 255				15 17 120				15 135				15 11			
NE Century Boulevard/ RA1&2 Access	37 384 14				37 23				361				29			
	191 11 127		21 24	191 11 127		0 24						3.0%				
	16 26 469 18				16 26 335				16 134				16 11			
NE Evergreen Parkway/ NE Century Boulevard	15 90 198				13				15 77 198				1 6 16			
	8 750 135		63 511 182	372 20		23 27		8 378 115		63 488 155		1 30 9 5.0%		5 39 12		
	17 103 25 531				17 82 20 424				17 21 5 107				17 2 0 9			
NE Evergreen Parkway/ RA1&2 North Access	6 9				0											
	2 910 15		3 627 11	279 15		94 11		631		533		50 5.1%		43		
	18 111 113				18 111 0 113				18				18			

PM	Existing Traffic				Estimated RA Traffic				Other Traffic				Background Growth			
					RA Site Accesses				Excluded Local Traffic Movements							
													4 @ 2% 8%			
NE Evergreen Parkway/ NE 59th Avenue	66 52				0				66 52				5 4			
	13 23								13 23				1 2			
	687 705 120				202				567 503				45 5.1% 40			
	4 3				4				3							
	19 163 9 174				19 163 9 174				19				19			
Parking Access/ NE Ronler Drive																
	20				20				20				20			

APPENDIX G.
IN-PROCESS TRAFFIC

[illegible]

AM	Brookwood 2		Synopsisys Phase I		Synopsisys Phase 2		Synopsisys Phase 3		In-Process Total		
	109		110		111		112		113		
NE Evergreen Parkway/ NE Brookwood Parkway		19 12							12 168 16		
		63	2		0 8		0 5		0 26 21		70 21 7
	1	63	1		1		1		1	144	
NE Shute Road/ NE Brookwood Parkway		19								175	
	2	63	2		2		2		2	144	
NE Shute Road/ RS5 Access		0									
	3	0	3		3		3		3		
NE Shute Road/NE Dawson Creek Drive/RS6 Access		0									
									2		
	4	0	4		4		4		4	12	
NE Shute Road/ D1X Access		0								2	
	5	0	5		5		5		5	12	
NE Shute Road/ NE Tandem Way		0								2	
	6	0	6		6		6		6	12	

AM	Brookwood 2		Synopsisys Phase I		Synopsisys Phase 2		Synopsisys Phase 3		In-Process Total	
	109		110		111		112		113	
NE Shute Road/NE Airport Road/NE Butler Street		0							1	1
									2	4
	7	0	7		7		7		7	6
NE Butler Street/NE 60th Avenue										
	0	0							1	4
	8		8		8		8		8	
NE Butler Street/NE 65th Avenue										
	0	0							1	4
	9		9		9		9		9	
NE Tandem Way/NE 65th Avenue										
	10		10		10		10		10	
NE Tandem Way/RA3&RA4 Access										
	11		11		11		11		11	
NE Century Boulevard/NE Butler Street				2		8		5		15
	0	0							1	4
	12		12	0	12	0	12	0	12	

AM	Brookwood 2		Synopsisys Phase I		Synopsisys Phase 2		Synopsisys Phase 3		In-Process Total	
	109		110		111		112		113	
Internal Circulation/ NE Ronler Drive										
	13		13		13		13		13	
NE Century Boulevard/ NE Ronler Drive		0		2		8		5		15
	14	0	14	0	14	0	14	0	14	
NE Century Boulevard/ RAP1 Access		0		2		8		5		15
	15	0	15	0	15	0	15	0	15	
NE Century Boulevard/ RA1&2 Access		0		2		8		5		15
	16	0	16	0	16	0	16	0	16	
NE Evergreen Parkway/ NE Century Boulevard		0								
	15		84	2	8		5		60	169
	17	0	17	0	17	0	17	0	17	
NE Evergreen Parkway/ RA1&2 North Access										
	15		84	2	0	8	0	5	0	75
	18		18		18		18		18	

AM	Brookwood 2		Synopsisys Phase I		Synopsisys Phase 2		Synopsisys Phase 3		In-Process Total	
	109		110		111		112		113	
NE Evergreen Parkway/ NE 59th Avenue		3								38
	12	21 63	2	0	8	0	5	0	37	71 98
	19		19		19		19		19	
Parking Access/ NE Ronler Drive										
	20		20		20		20		20	

PM	QTS All Phases	First Tech Office Building 50% Occupied	Fairground Event Center	DFT Data Center	Staybridge Suites	Brookwood 1 Combined	Gutenberg	JSR Micro
	101	102	103	104	105	106	107	108
NE Evergreen Parkway/ NE 59th Avenue						43		5
	3	1	0	7	0	0	17	0
	19	19	19	19	19	19	19	19
Parking Access/ NE Ronler Drive								
	20	20	20	20	20	20	20	20

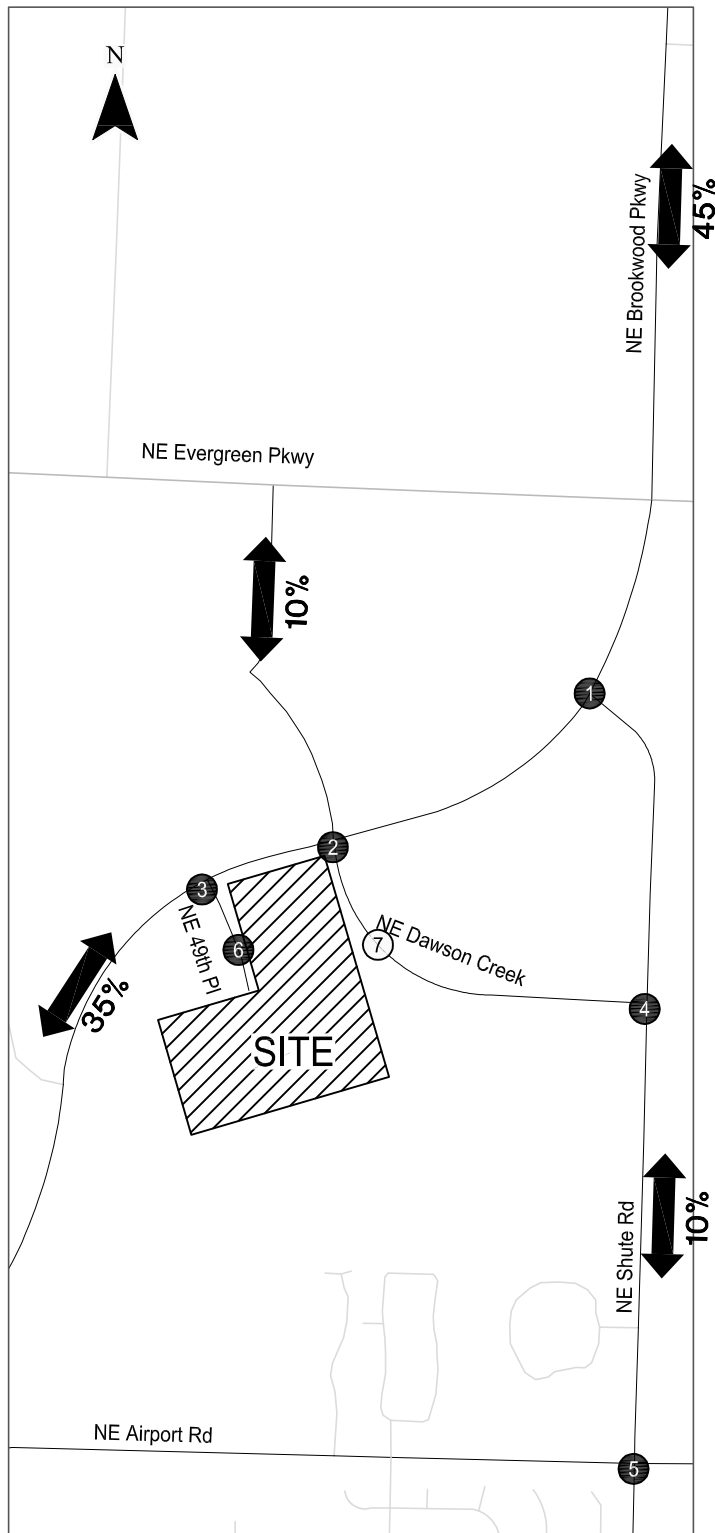
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	109		110		111		112		113		
NE Evergreen Parkway/ NE Brookwood Parkway		101 60							17 202 69		
			11	0	2	1	7	1	4	32 19	14 23
	1	12	1		1		1		1	158 7	
NE Shute Road/ NE Brookwood Parkway		101								202	
	2	12	2		2		2		2	165	
NE Shute Road/ RS5 Access		0									
	3	0	3		3		3		3		
NE Shute Road/NE Dawson Creek Drive/RS6 Access		0									
									11		
	4	0	4		4		4		4	2	
NE Shute Road/ D1X Access		0								11	
	5	0	5		5		5		5	2	
NE Shute Road/ NE Tandem Way		0								11	
	6	0	6		6		6		6	2	

PM	Brookwood 2		Synopsis Phase I		Synopsis Phase 2		Synopsis Phase 3		In-Process Total		
	109		110		111		112		113		
NE Shute Road/NE Airport Road/NE Butler Street		0							1	7	3
											1
	7	0	7		7		7		7	1	
NE Butler Street/NE 60th Avenue											
	0		0						3		1
	8		8		8		8		8		
NE Butler Street/NE 65th Avenue											
	0		0						3		1
	9		9		9		9		9		
NE Tandem Way/NE 65th Avenue											
	10		10		10		10		10		
NE Tandem Way/RA3&RA4 Access											
	11		11		11		11		11		
NE Century Boulevard/NE Butler Street				0		1		1		2	
	0		0						3		1
	12		12	2	12	7	12	4	12	13	

PM	Brookwood 2		Synopsisys Phase I		Synopsisys Phase 2		Synopsisys Phase 3		In-Process Total	
	109		110		111		112		113	
Internal Circulation/ NE Ronler Drive										
	13		13		13		13		13	
NE Century Boulevard/ NE Ronler Drive		0		0		1		1		2
	14	0	14	2	14	7	14	4	14	13
NE Century Boulevard/ RAP1 Access		0		0		1		1		2
	15	0	15	2	15	7	15	4	15	13
NE Century Boulevard/ RA1&2 Access		0		0		1		1		2
	16	0	16	2	16	7	16	4	16	13
NE Evergreen Parkway/ NE Century Boulevard		0								
	81		15	0	1		1		162	78
	17	0	17	2	17	7	17	4	17	13
NE Evergreen Parkway/ RA1&2 North Access										
	81		15	0	2	1	7	1	4	164
	18		18		18		18		18	

PM	Brookwood 2		Synopsisys Phase I		Synopsisys Phase 2		Synopsisys Phase 3		In-Process Total	
	109		110		111		112		113	
NE Evergreen Parkway/ NE 59th Avenue		21								69
	60	4 11	0	2	1	7	1	4	95	54 37
	19		19		19		19		19	
Parking Access/ NE Ronler Drive										
	20		20		20		20		20	

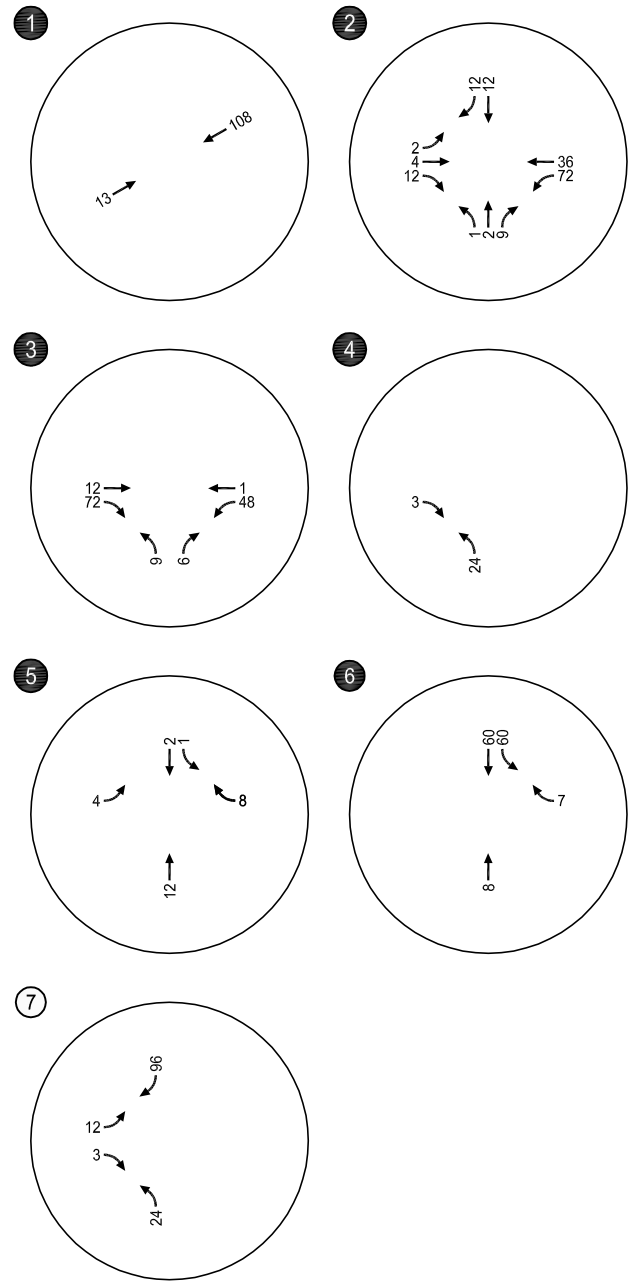
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- EXISTING INTERSECTION

- PROPOSED DRIVEWAY

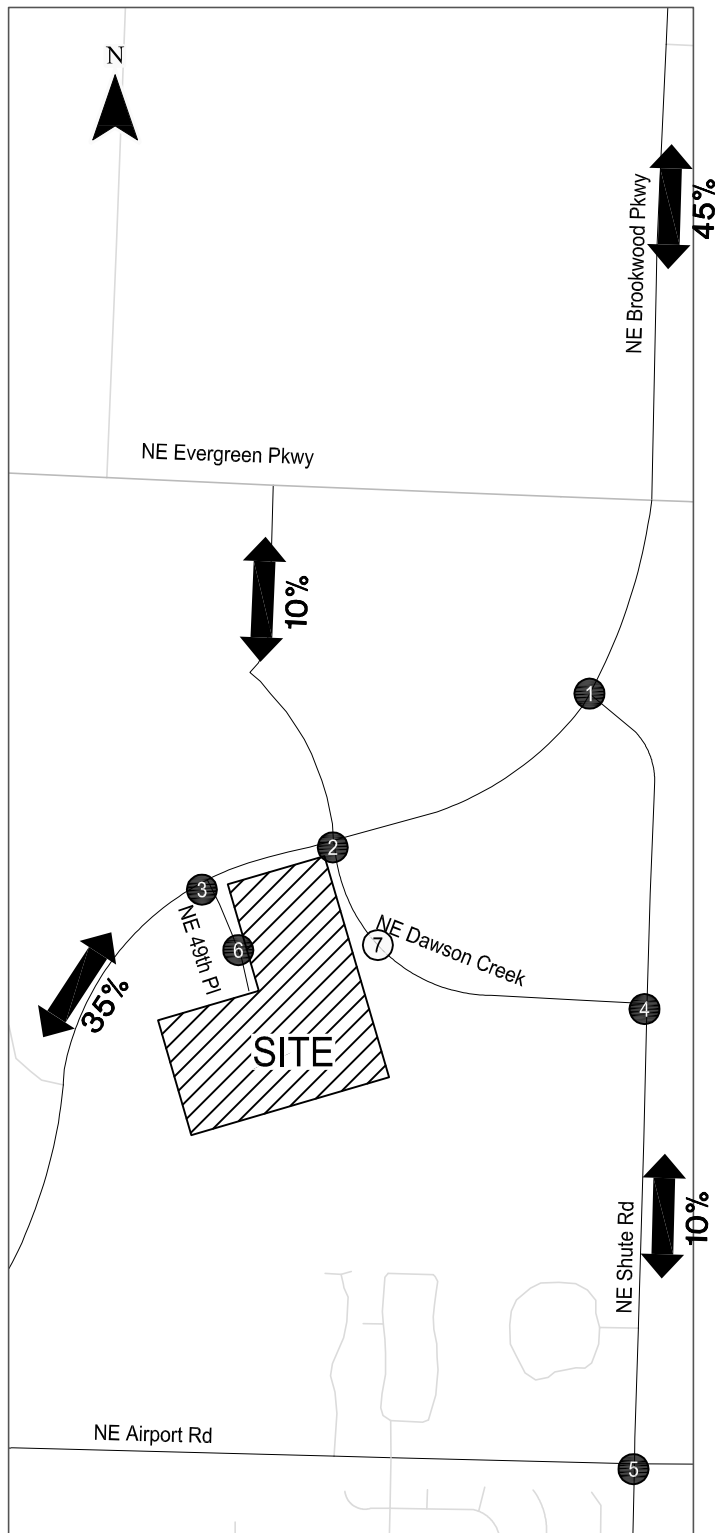
XX% - ESTIMATED TRIP DISTRIBUTION



Estimated Trip Distribution and Site-Generated Trips
Weekday AM Peak Hour
Hillsboro, Oregon

Figure
8

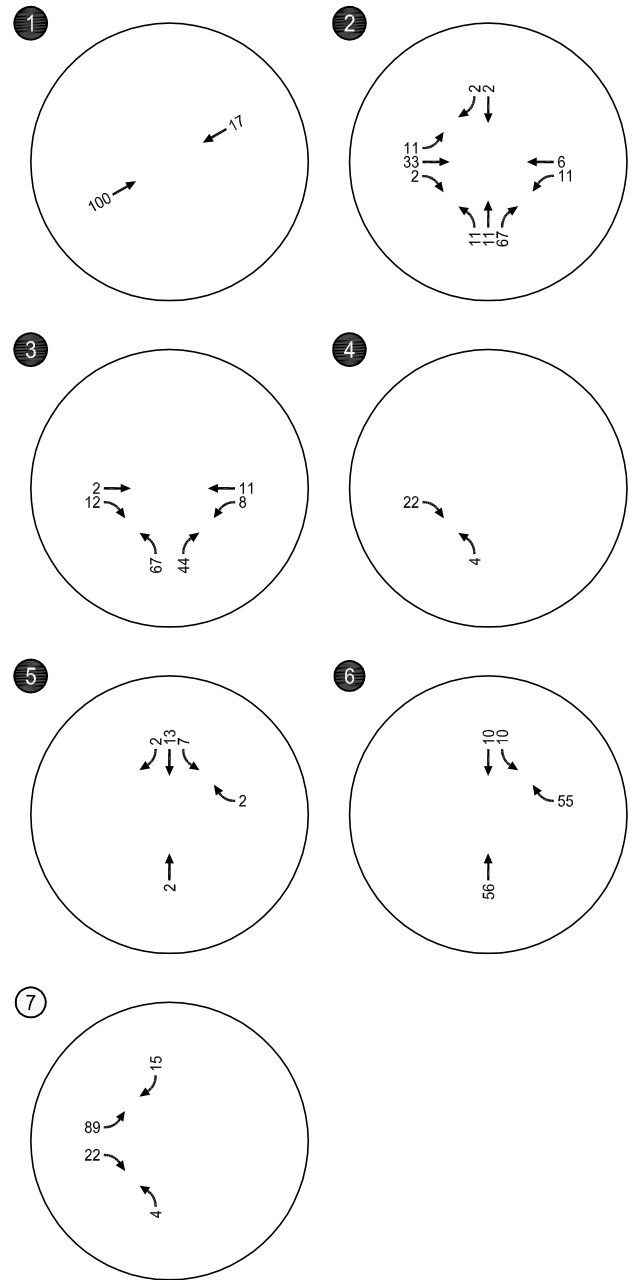
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- EXISTING INTERSECTION

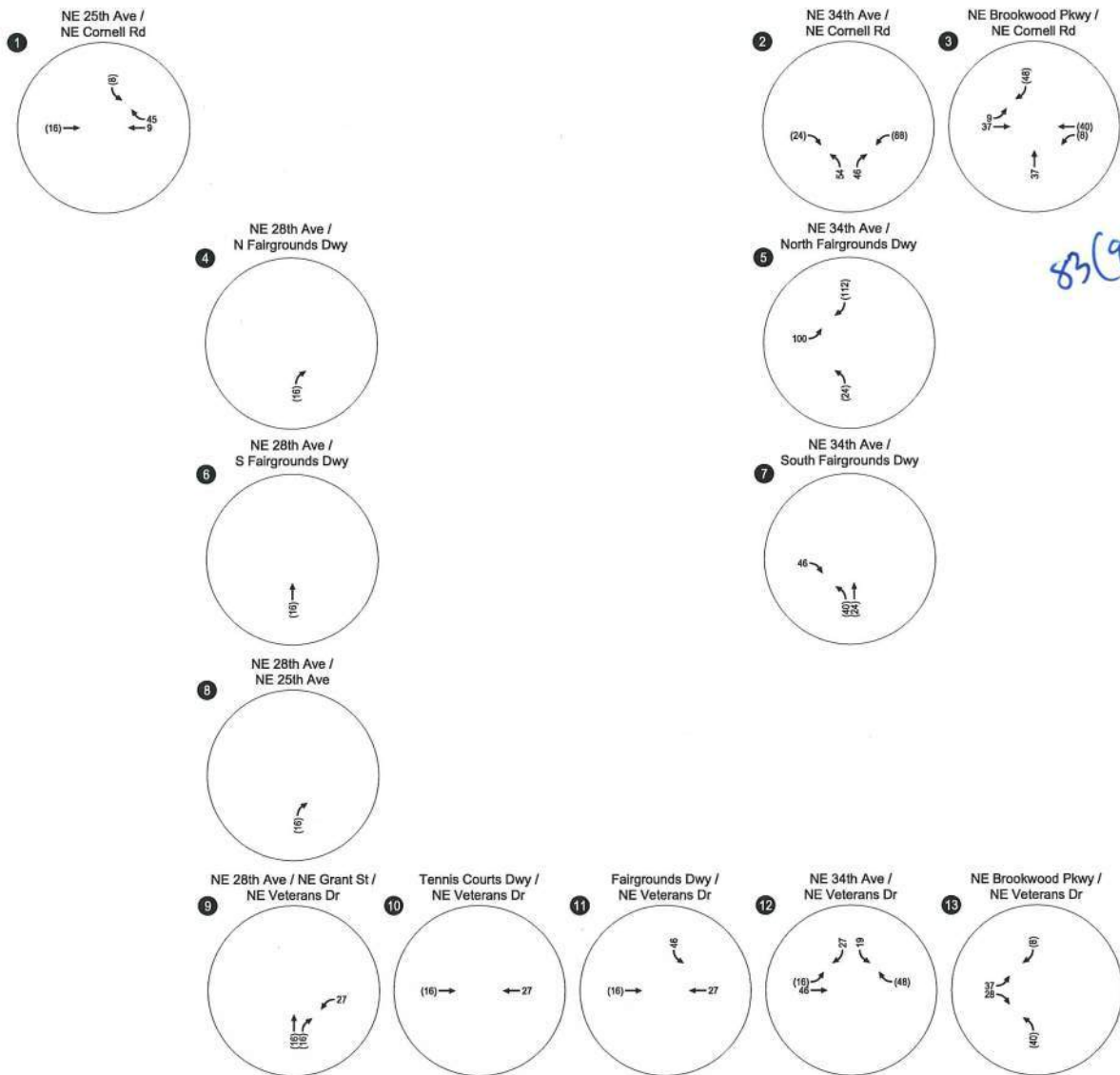
- PROPOSED DRIVEWAY

- ESTIMATED TRIP DISTRIBUTION

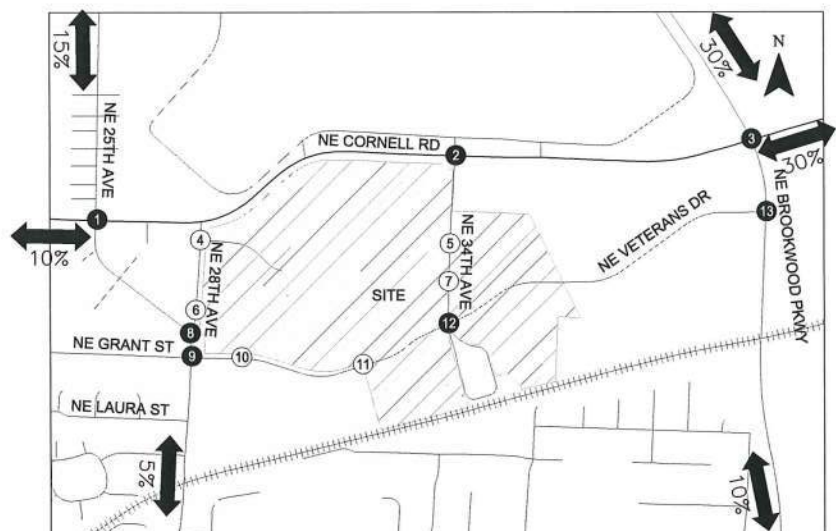


Estimated Trip Distribution and Site-Generated Trips
Weekday PM Peak Hour
Hillsboro, Oregon

Figure
9



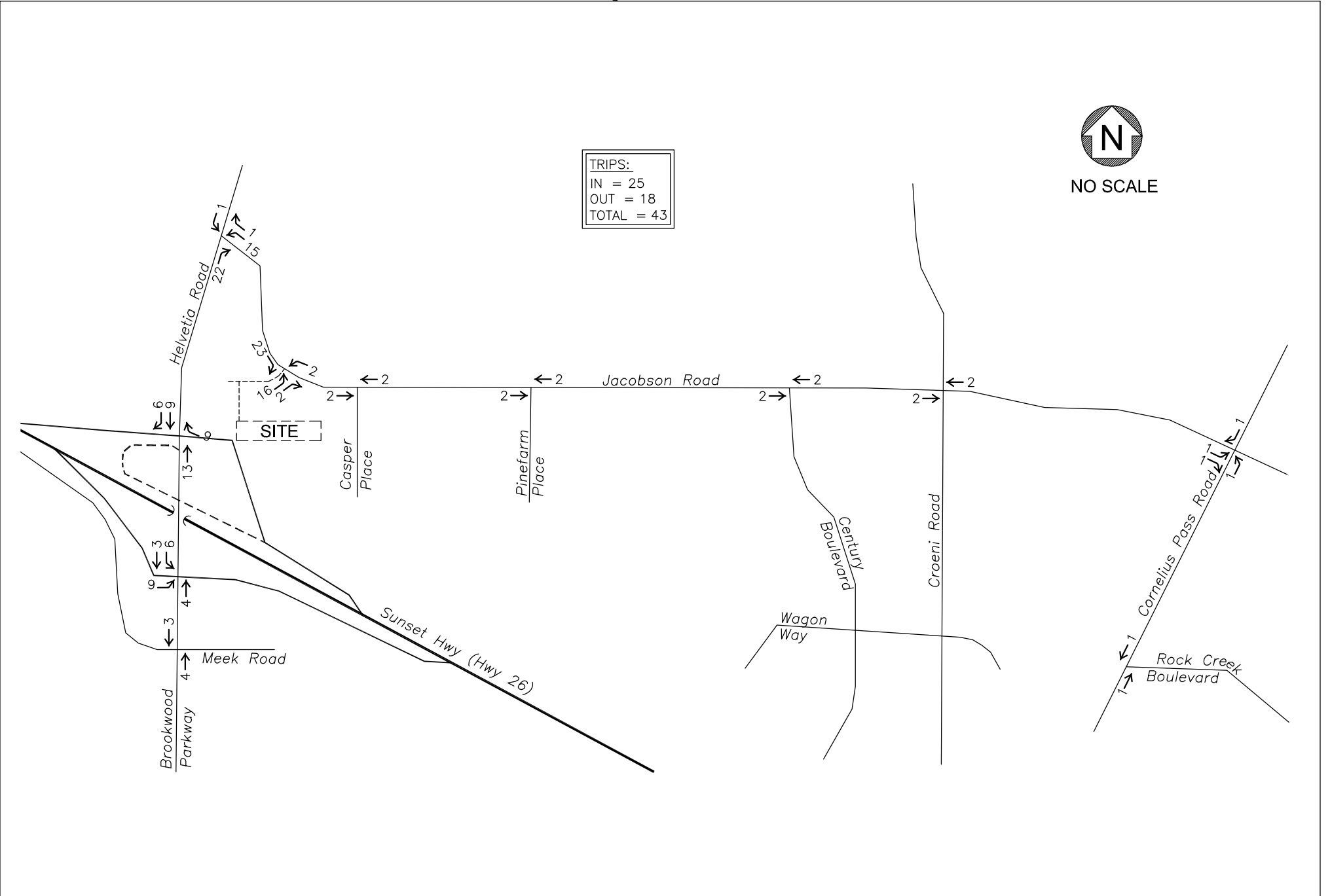
83(96)



AM TRIPS - (XX)
PM TRIPS - XX

Event-Based Traffic
Weekday AM and PM Peak Hours
Hillsboro, Oregon

Figure
1



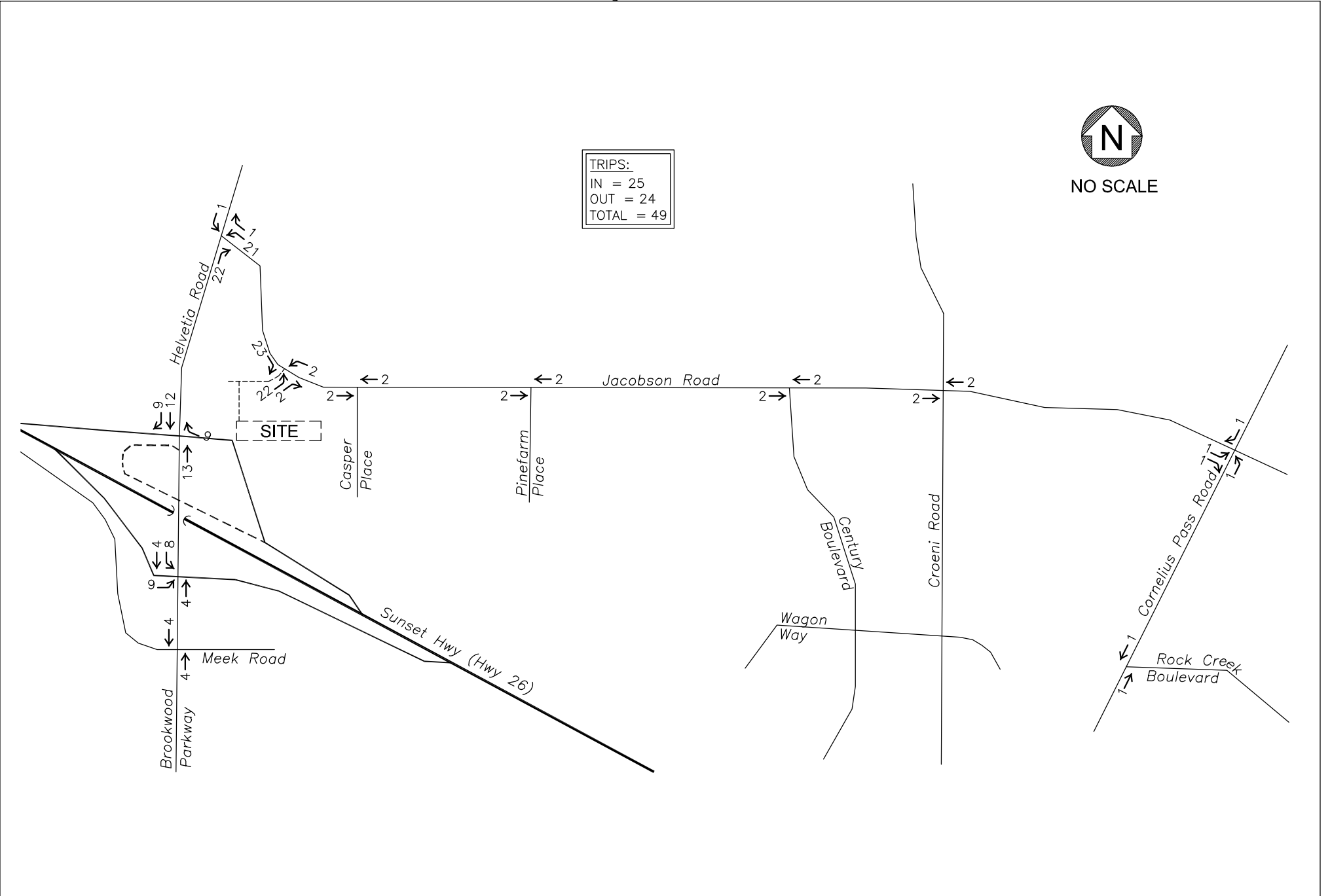


Table 9. Building 2 (Phases 3 and 4) Cumulative Trip Generation Summary

Time Period	Size	Rate ¹	Project Trips		
			Total	In ¹	Out
<u>Building 1 Total (Phases 1 and 2)²</u>					
Daily		0.99	790	395	395
Weekday AM Peak Hour	798,024	0.09	72	38	34
Weekday PM Peak Hour		0.09	72	15	57
<u>Phase 3</u>					
Daily		0.99	438	219	219
Weekday AM Peak Hour	442,450 sf	0.09	40	21	19
Weekday PM Peak Hour		0.09	40	8	32
<u>Phase 4</u>					
Daily		0.99	352	176	176
Weekday AM Peak Hour	355,574 sf	0.09	32	17	15
Weekday PM Peak Hour		0.09	32	7	25
<u>Building 2 Total (Phases 3 and 4)</u>					
Daily		0.99	806	403	403
Weekday AM Peak Hour	798,024	0.09	74	39	35
Weekday PM Peak Hour		0.09	74	15	59
<u>Buildings 1 and 2 Total (Phases 1 through 4)</u>					
Daily		0.99	1,580	790	790
Weekday AM Peak Hour	1,596,048	0.09	144	76	68
Weekday PM Peak Hour		0.09	144	30	114

Note: sf = square-feet

1. Trips rates and inbound percentages are from ITE Trip Generation Manual, 9th Edition.

2. See Table 8 for Phases 1 and 2 trip generation.

With both Buildings 1 and 2, the proposed development is expected to generate a total of 1,580 weekday daily trips, with 144 trips occurring during both the weekday AM and PM peak hours.

Trip Distribution and Assignment

The distribution of project traffic was based on a review of weekday AM and PM peak hour distribution patterns observed through turning movement counts conducted at arterial intersections in the project vicinity. Trip distribution patterns were reviewed and approved by City of Hillsboro and Washington County staff. Figures 3 and 4 illustrate the estimated trip distribution for the proposed data center development for the completion of Building 1 (2020) and the completion of Building 2, respectively. As shown in the Figures, approximately 5 percent is anticipated to/from the north and 55 percent to/from the south along Helvetia and the remaining 40 percent to/from the east along NW Jacobson Road. The project trip assignments for Building 1 (Phases 1 & 2) and Buildings 1 & 2 (Phases 1 through 4) are shown in Figures 13 and 14, respectively.

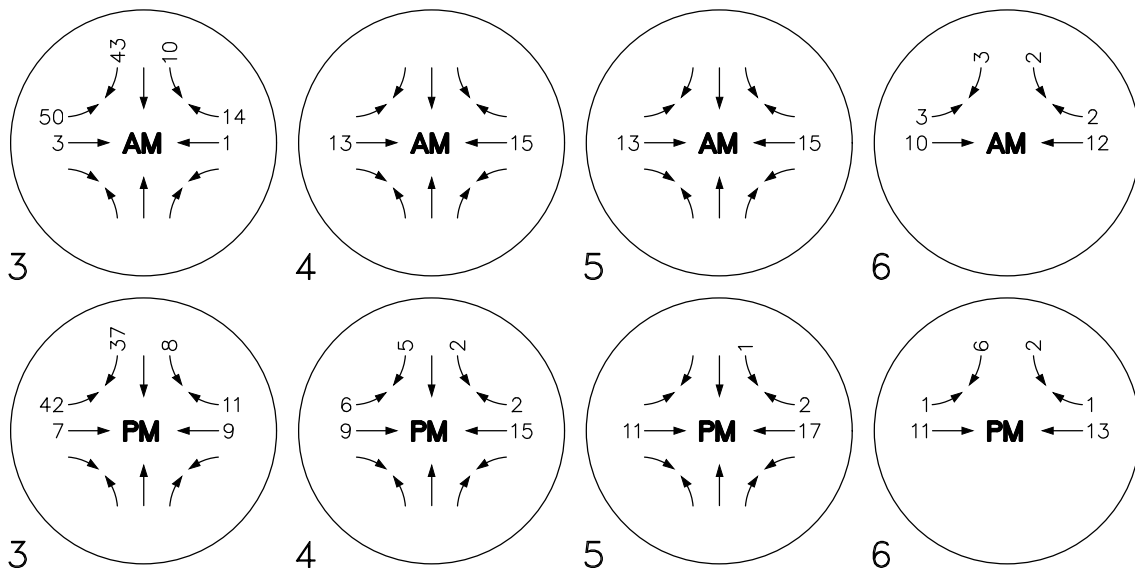
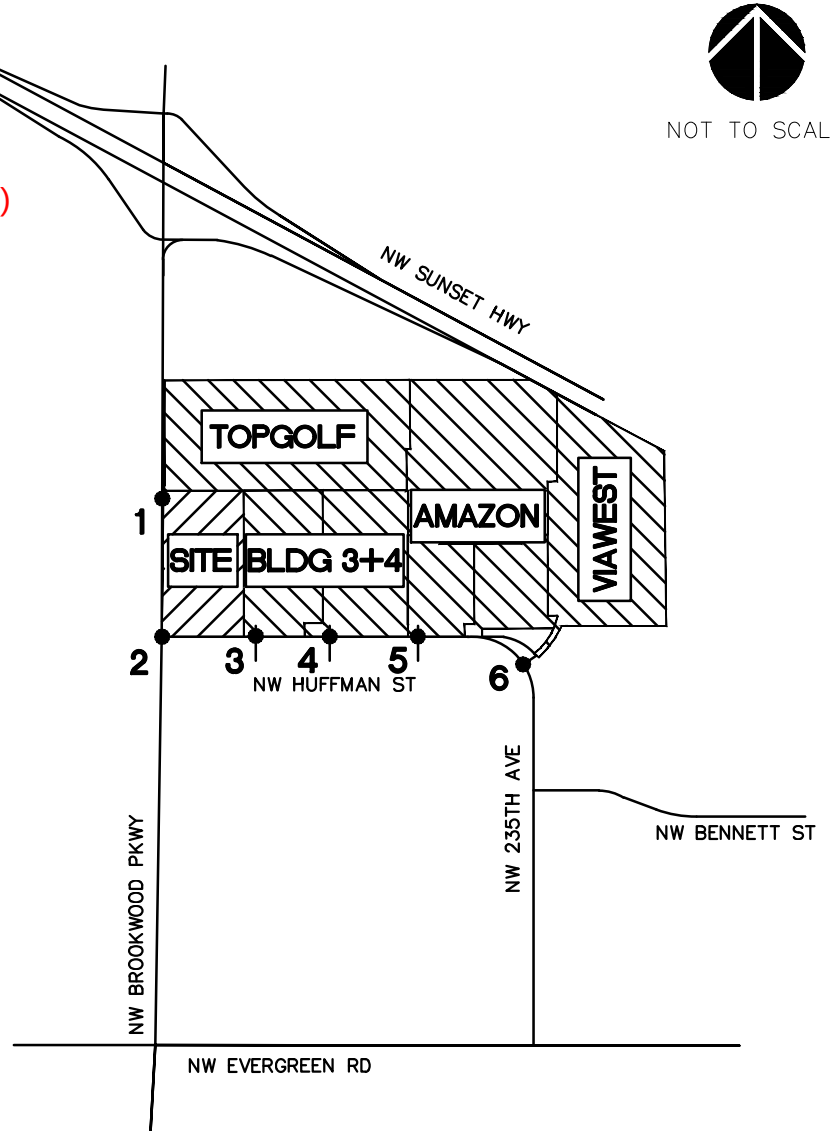
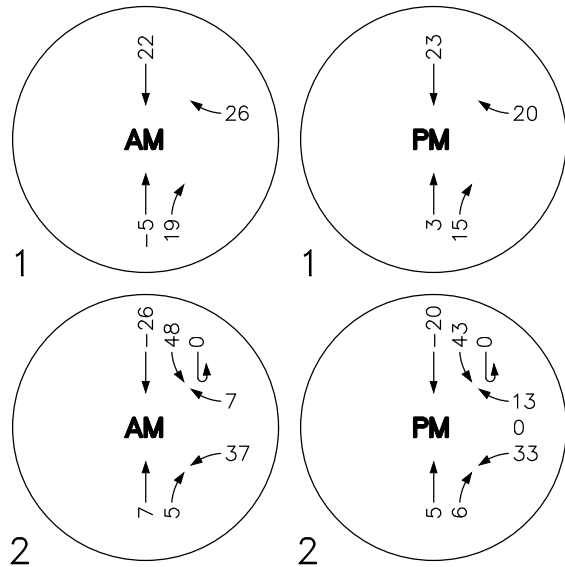
Traffic Volumes

Future 2020 and 2022 with-project traffic volumes were estimated by adding site-generated traffic volumes to the 2020 and 2022 without-project traffic volumes, respectively. The resulting weekday AM and PM peak hour 2020 and 2022 with-project traffic volumes are illustrated in Figures 15 and Figure 16, respectively.



NOT TO SCALE

- o ViaWest Phase 2 (approved)
- o K-1 in Building 3 (approved)
- o Lot 2 - 7,000 SF building (under review)



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IN-PROCESS TRIPS - AM AND PM PEAK HOUR

MAJESTIC BROOKWOOD, HYATT HOTEL
HILLSBORO, OREGON

FIGURE

6

Project: Brookwood Lot 2 - Master Plan
 Job #: 2130183.39
 Date: 3/26/2018
 Subject: Trip Generation Estimates based on ITE 9th Edition - Proposed

DETAILED USE IN 7KSF BUILDING (50% SHOPPING/50% QSR) WITH AVERAGE RETAIL RATES

Use	Size	Units	Trip Type	AM			PM			Daily	Average Rates
				In	Out	Total	In	Out	Total		
Retail/Shopping	9.5	KSF	Total	6	3	9	17	18	35	406	
			Pass-By	1	1	2	6	6	12	70	
			Primary	5	2	7	11	12	23	336	
Quick Service Restaurant	6.5	KSF	Total	150	145	295	110	102	212	3,225	
			Pass-by	73	73	146	53	53	106	1,614	
			Primary	77	72	149	57	49	106	1,611	
Hotel	115	Rooms	Total	36	25	61	35	34	69	940	
Gas + Convenience	16	VFP	Total	82	81	163	108	108	216	2,604	
			Pass-by	51	51	102	61	61	122	1,460	
			Primary	31	30	61	47	47	94	1,144	
Total			Total	274	254	528	270	262	532	7,175	
			Pass-by	125	125	250	120	120	240	3,144	
			Primary	149	129	278	150	142	292	4,031	

o Hyatt Hotel - 115 Rooms

- AM: 36 In + 25 Out = 61 trips
- PM: 35 In + 34 Out = 69 trips

o Gasoline & Convenience Market - 16 Vehicle Fueling Positions

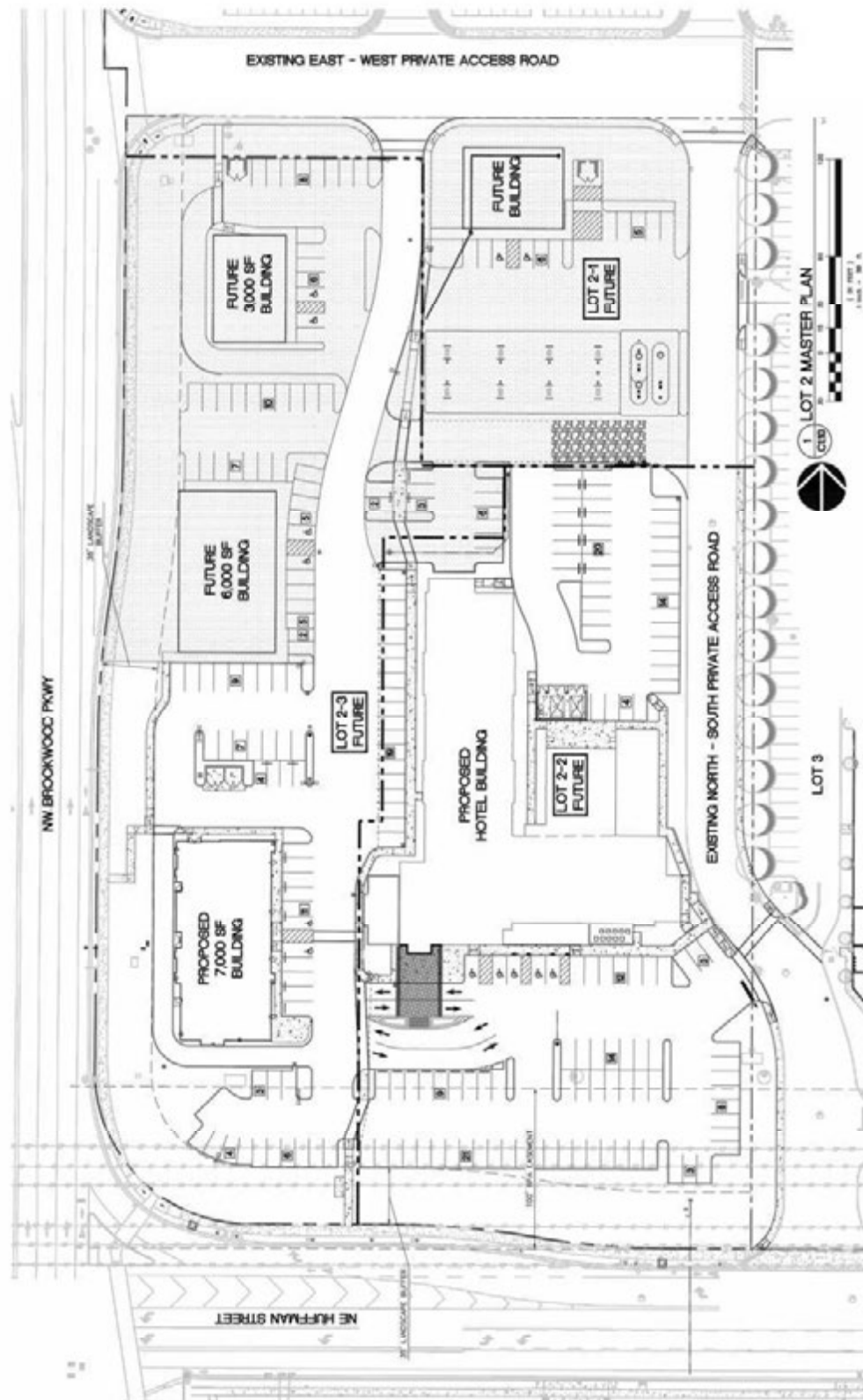
- AM: 51 In + 51 Out = 102 pass-by trips
- PM: 61 In + 61 Out = 122 pass-by trips
- AM: 31 In + 30 Out = 61 primary trips
- PM: 47 In + 47 Out = 94 primary trips

Project: Brookwood Lot 2 - remaining retail
 Job #: 2130183.39
 Date: 3/26/2018
 Subject: **Trip Generation Estimates based on ITE 9th Edition - Proposed**

Use	Size	Units	Trip Type	AM			PM			Daily
				In	Out	Total	In	Out	Total	
Shopping Center	6.0	KSF	Total	4	2	6	11	11	22	256
			Pass-By	1	1	2	4	4	8	44
			Primary	3	1	4	7	7	14	212
Quick Service Restaurant	3	KSF	Total	69	67	136	51	47	98	1,488
			Pass-by	34	34	68	25	25	50	744
			Primary	35	33	68	26	22	48	744
Total			Total	73	69	142	62	58	120	1,744
			Pass-by	35	35	70	29	29	58	788
			Primary	38	34	72	33	29	62	956

Average Rates

- o Remaining Retail - 6 KSF Shopping + 3 KSF QSR
 - AM: 35 In + 35 Out = 70 pass-by trips
 - PM: 29 In + 29 Out = 58 pass-by trips
 - AM: 38 In + 34 Out = 72 primary trips
 - PM: 33 In + 29 Out = 62 primary trips



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SITE PLAN

MAJESTIC BROOKWOOD, HYATT HOTEL
HILLSBORO, OREGON

FIGURE

2

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o Hyatt Hotel



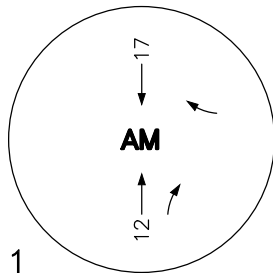
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AM Peak Hour

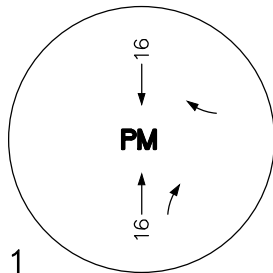
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Exit - 25
Total - 61

PM Peak Hour

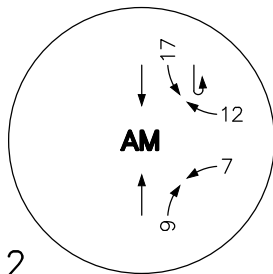
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Total - 69



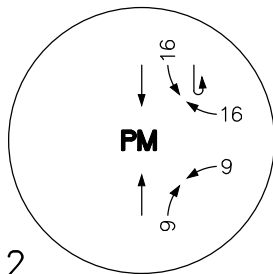
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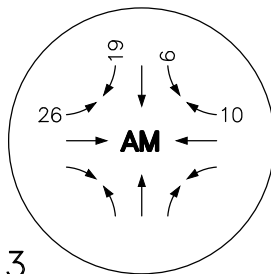
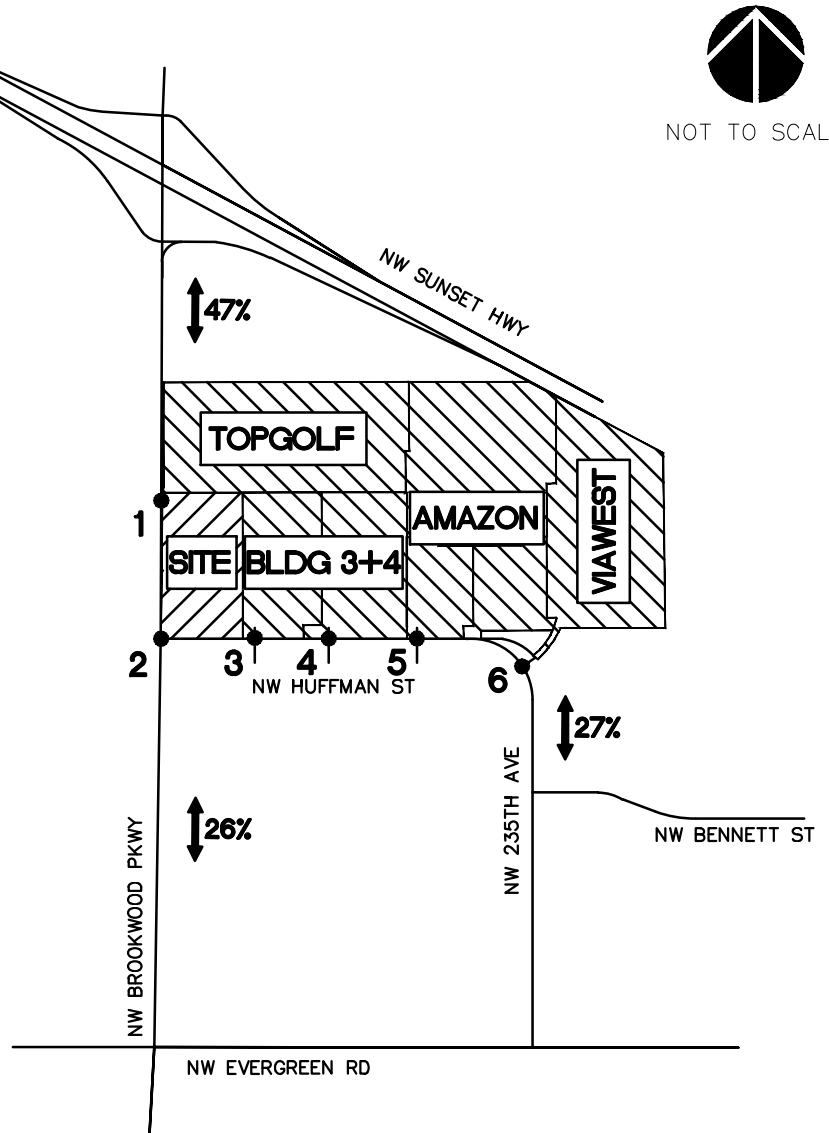
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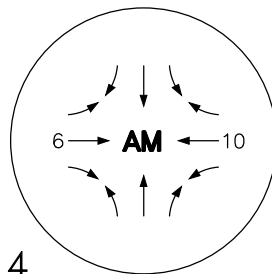
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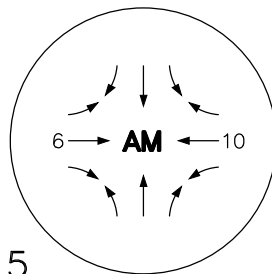
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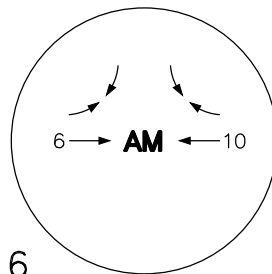
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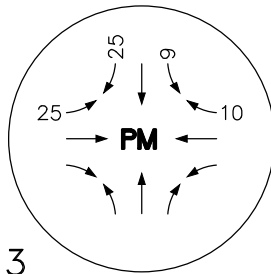
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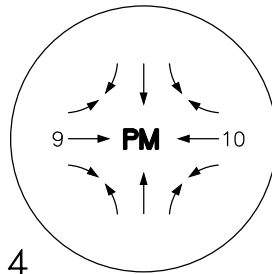
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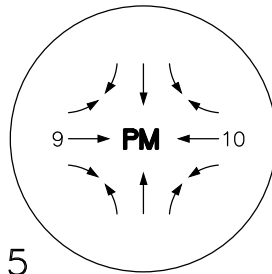
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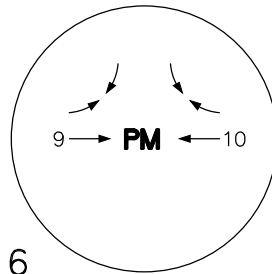
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4



5



6



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PRIMARY TRIP ASSIGNMENT
AM AND PM PEAK HOUR

MAJESTIC BROOKWOOD, HYATT HOTEL
HILLSBORO, OREGON

FIGURE

8

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o Gasoline and Convenience
Market (Pass-by)



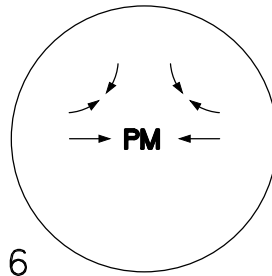
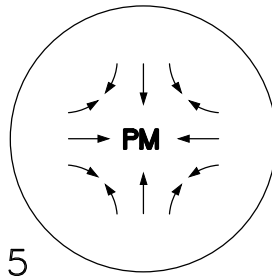
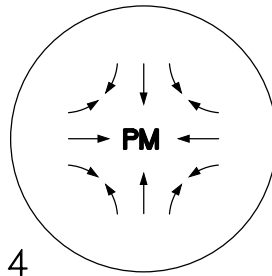
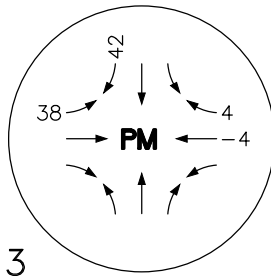
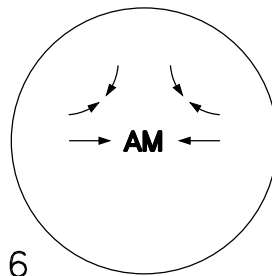
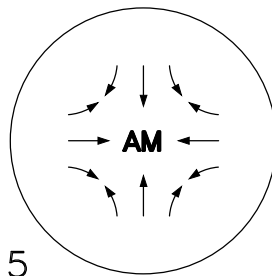
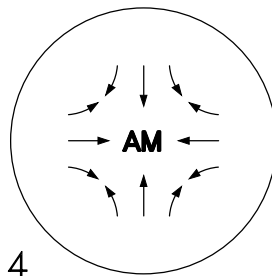
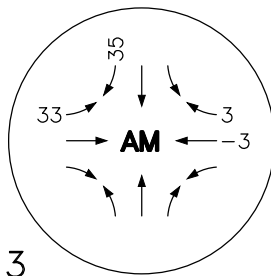
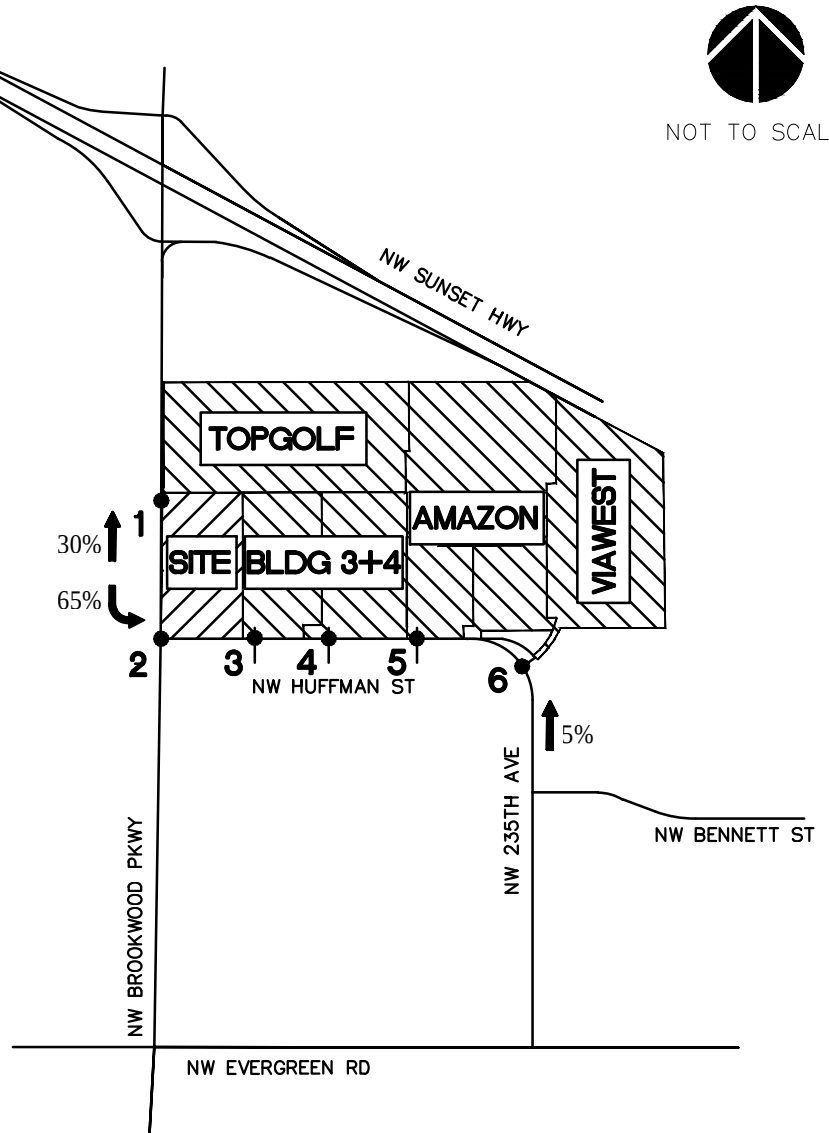
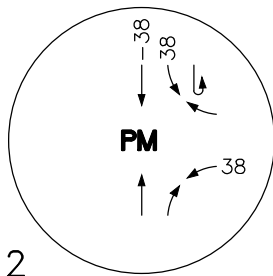
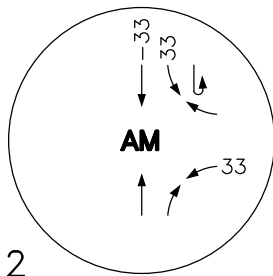
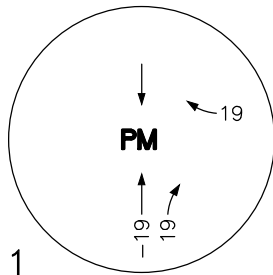
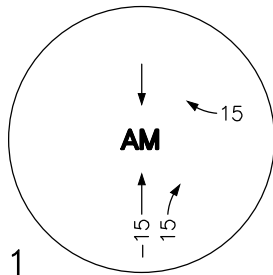
NOT TO SCALE

AM Peak Hour

Enter - 51
Exit - 51
Total - 102

PM Peak Hour

Enter - 61
Exit - 61
Total - 122



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PASS-BY TRIP ASSIGNMENT -
GASOLINE SERVICE STATION +
CONVINIENCE MARKET -
AM AND PM PEAK HOUR

MAJESTIC BROOKWOOD
HILLSBORO, OREGON

FIGURE

o Gasoline & Convenience
Market (Primary)



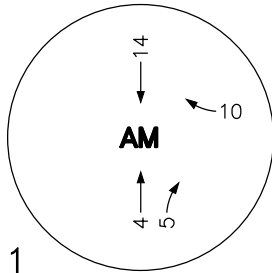
NOT TO SCALE

AM Peak Hour

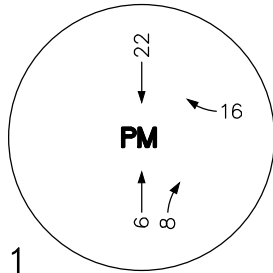
Enter - 31
Exit - 30
Total - 61

PM Peak Hour

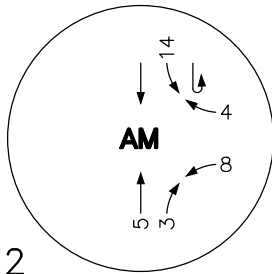
Enter - 47
Exit - 47
Total - 94



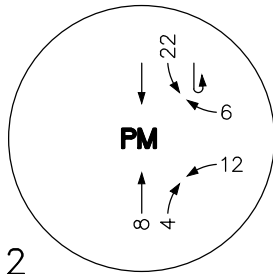
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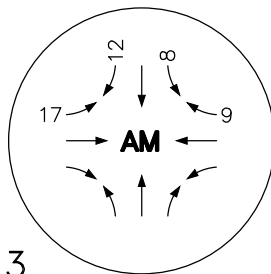
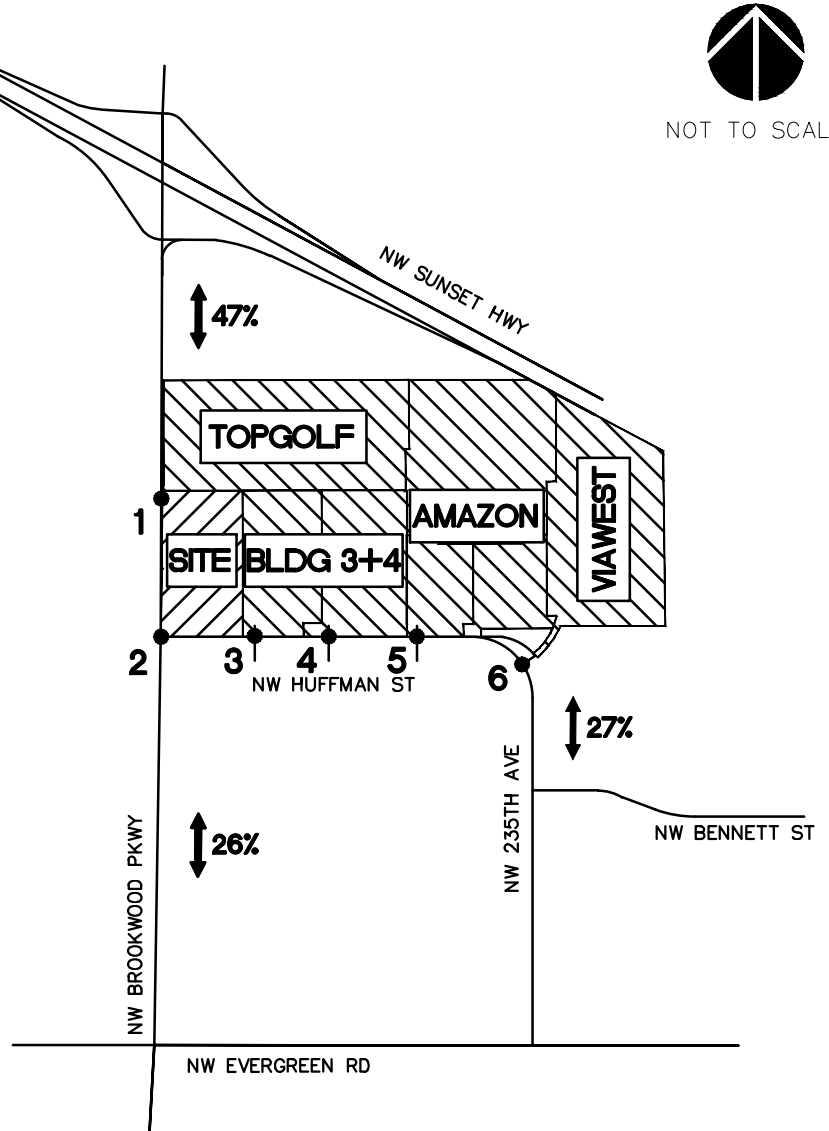
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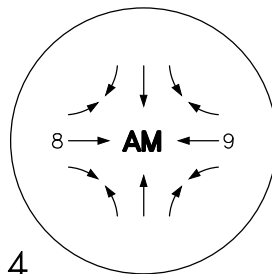
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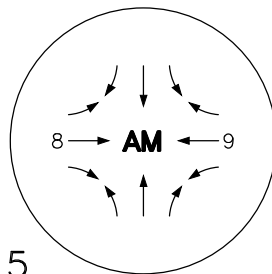
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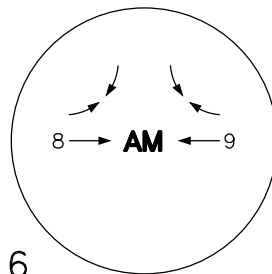
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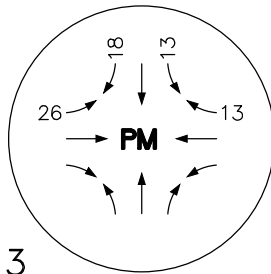
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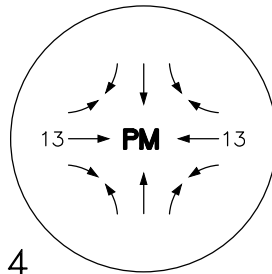
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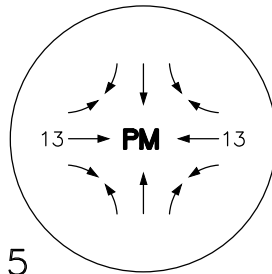
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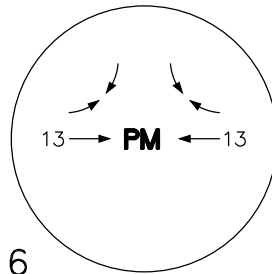
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4



5



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JOB NO:
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PRIMARY TRIP ASSIGNMENT -
GASOLINE SERVICE STATION +
CONVINIENCE MARKET -
AM AND PM PEAK HOUR

MAJESTIC BROOKWOOD
HILLSBORO, OREGON

FIGURE

o Remaining Retail (Pass-by)



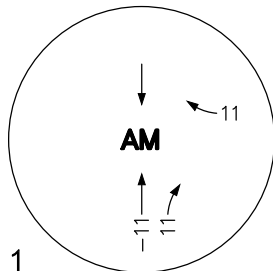
NOT TO SCALE

AM Peak Hour

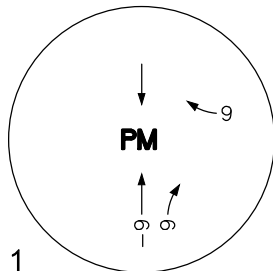
Enter - 35
Exit - 35
Total - 70

PM Peak Hour

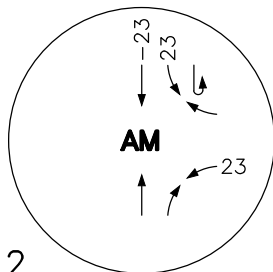
Enter - 29
Exit - 29
Total - 58



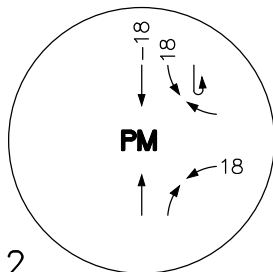
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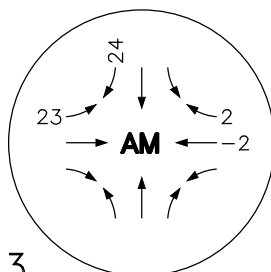
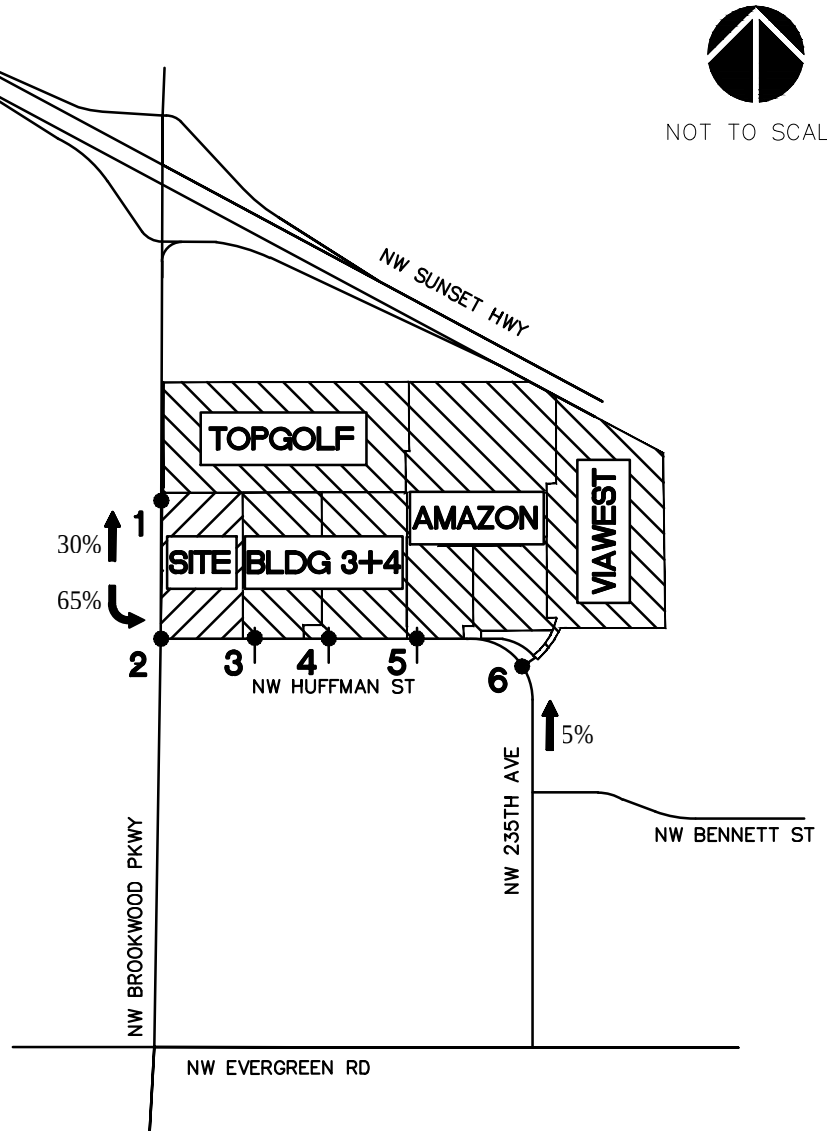
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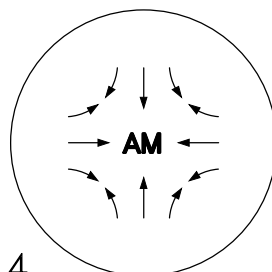
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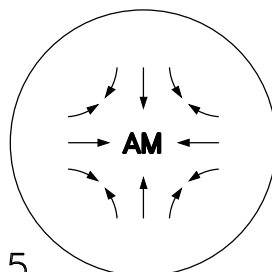
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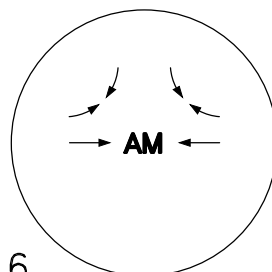
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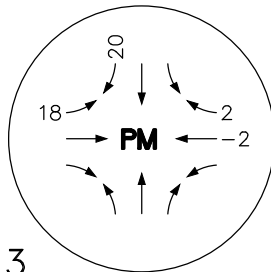
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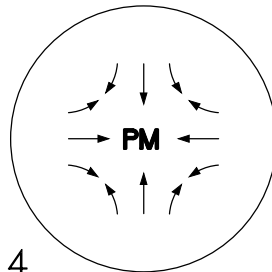
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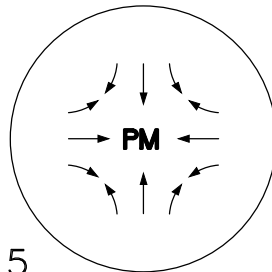
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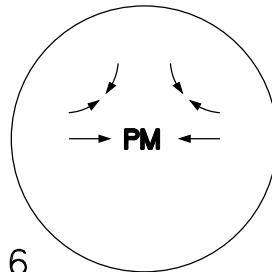
3



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PASS-BY TRIP ASSIGNMENT -
RETAIL BUILDINGS -
AM AND PM PEAK HOUR

MAJESTIC BROOKWOOD
HILLSBORO, OREGON

FIGURE

o Remaining Retail (Primary)



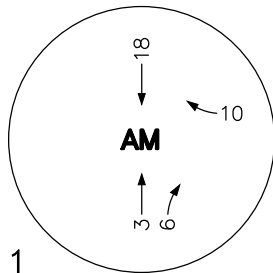
NOT TO SCALE

AM Peak Hour

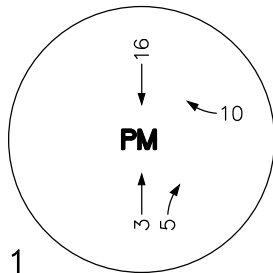
Enter - 38
Exit - 34
Total - 72

PM Peak Hour

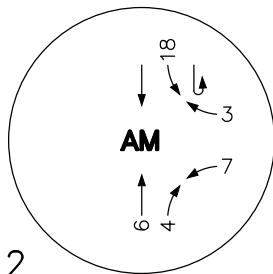
Enter - 33
Exit - 29
Total - 62



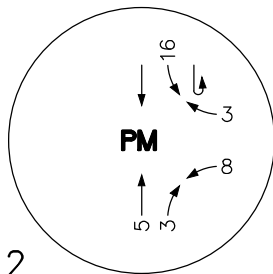
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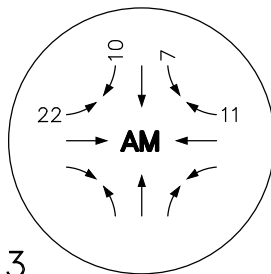
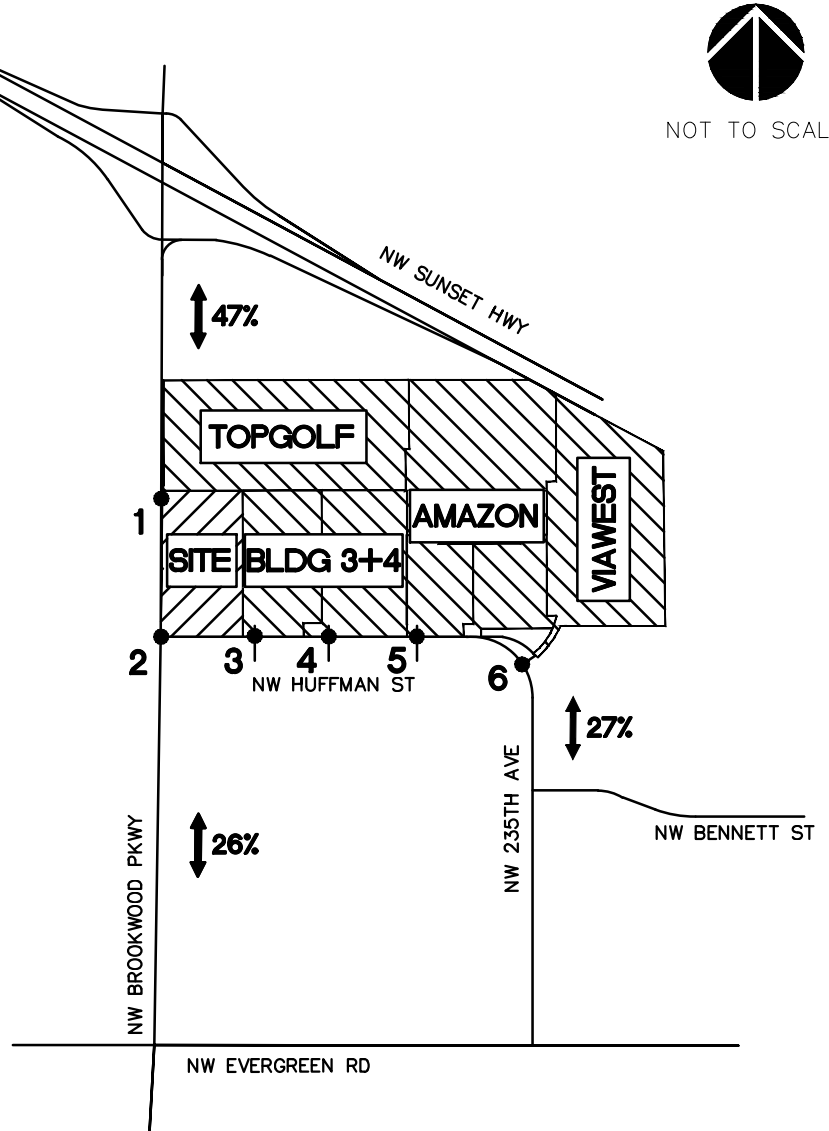
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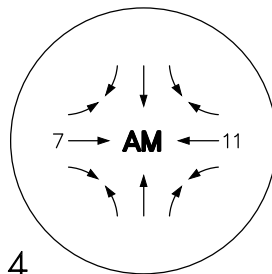
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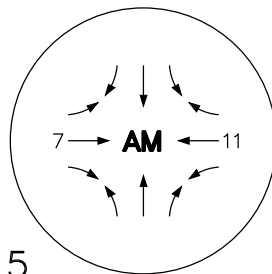
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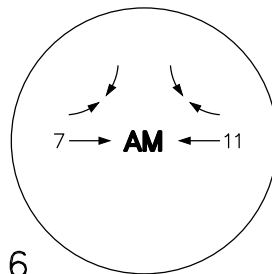
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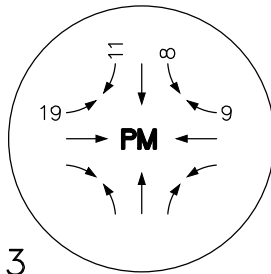
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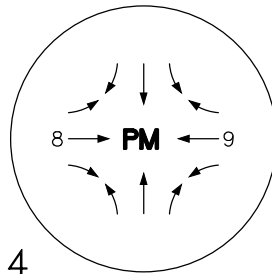
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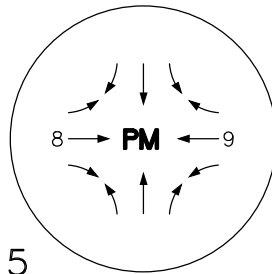
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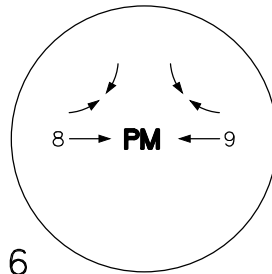
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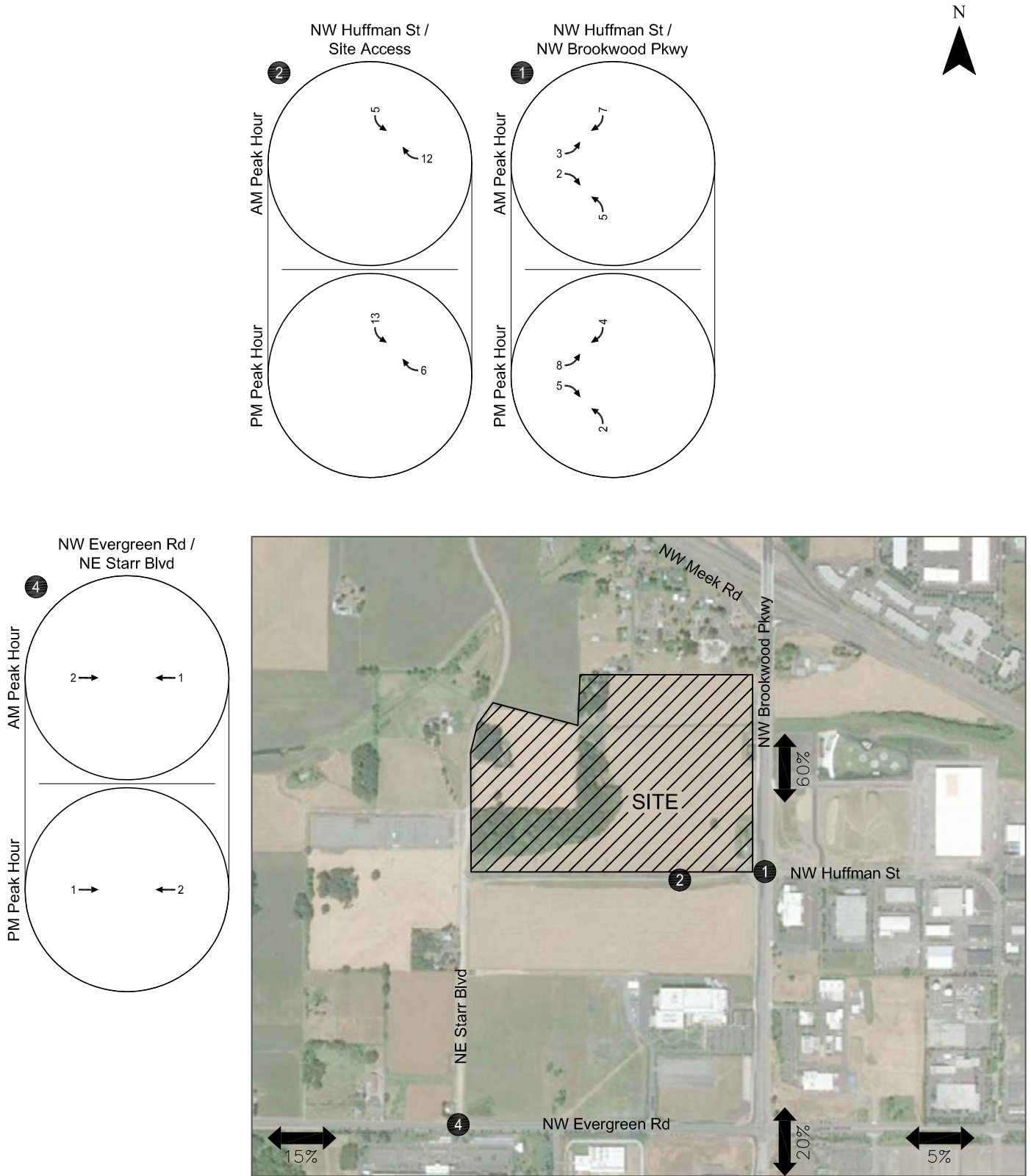
CHECKED BY: BTA

JOB NO:
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PRIMARY TRIP ASSIGNMENT -
RETAIL BUILDINGS -
AM AND PM PEAK HOUR

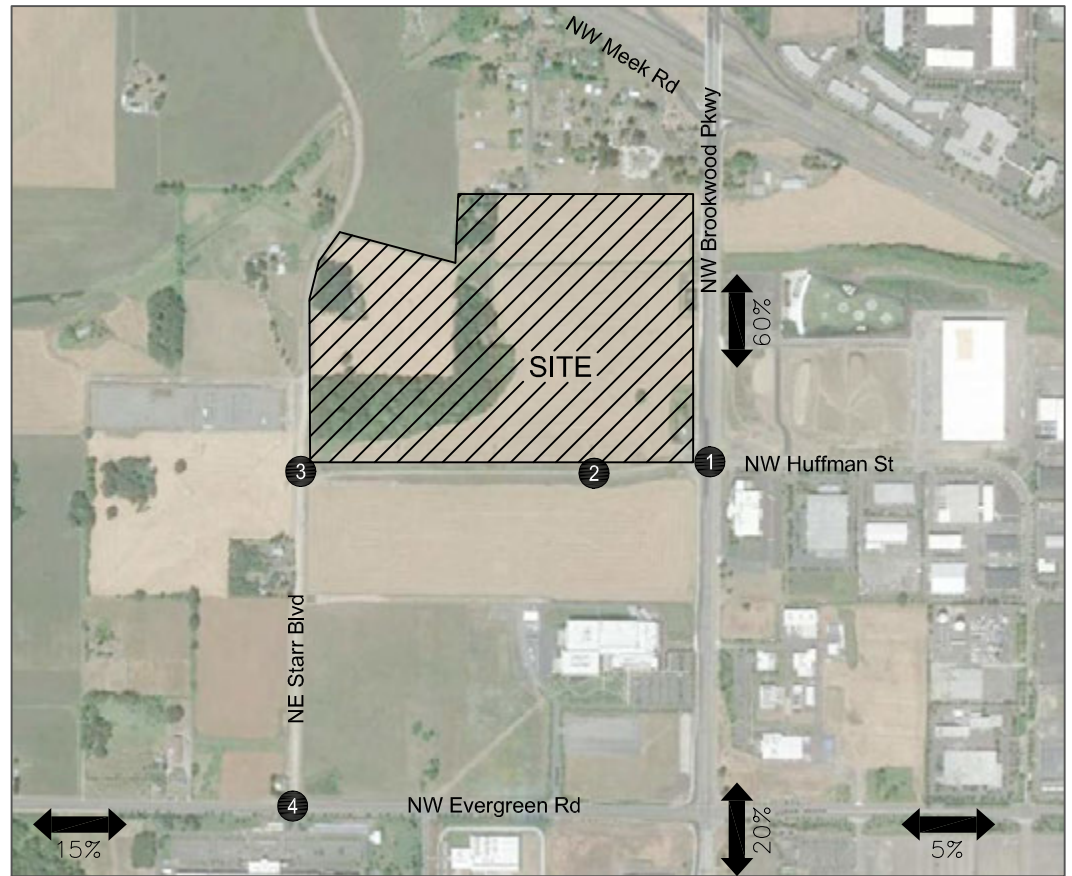
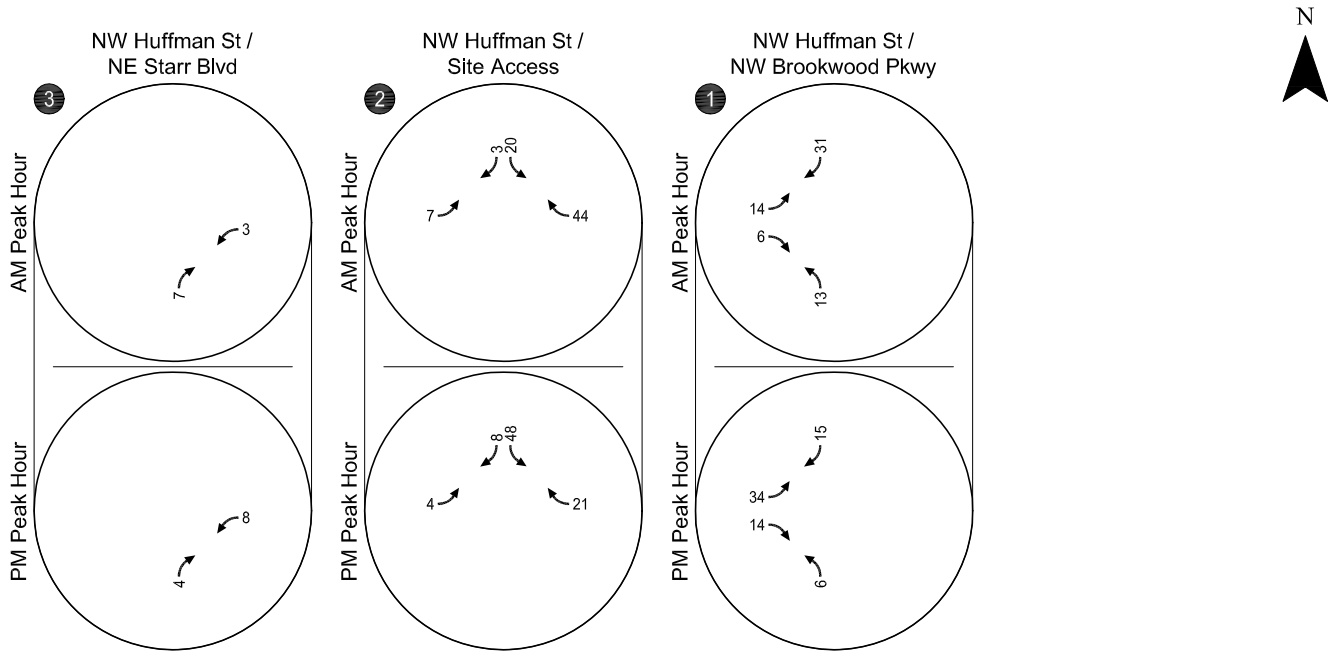
MAJESTIC BROOKWOOD
HILLSBORO, OREGON

FIGURE



Phase 1 Trips
Weekday AM and PM Peak Hours
Hillsboro, Oregon

Figure
6

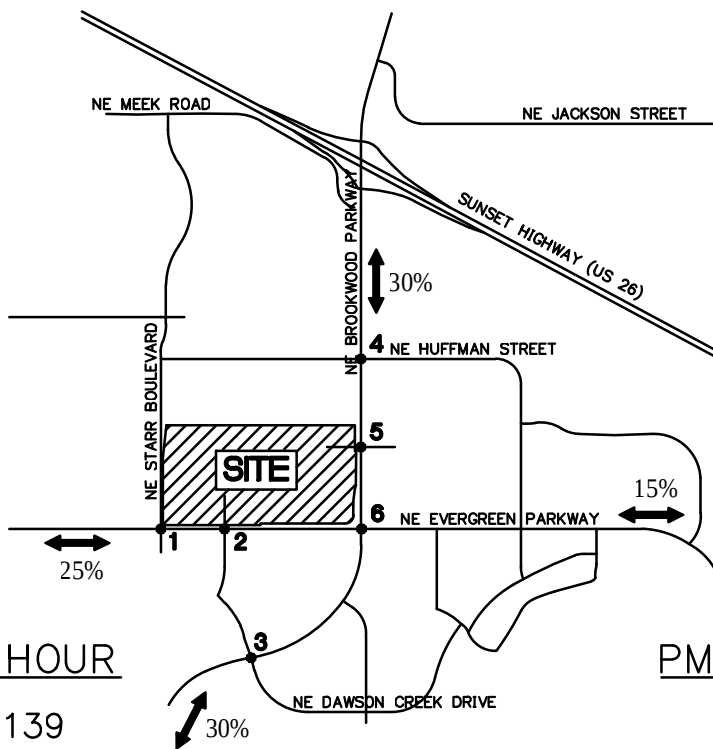


Phases 2-5 Trips
Weekday AM and PM Peak Hours
Hillsboro, Oregon

Figure
9



NOT TO SCALE

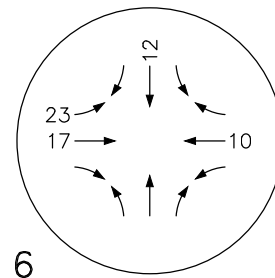
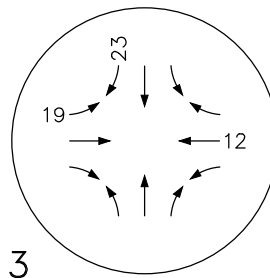
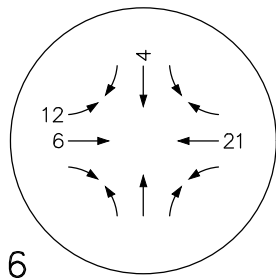
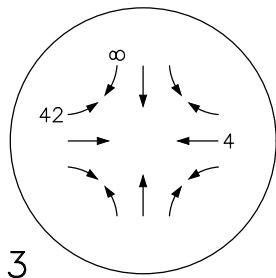
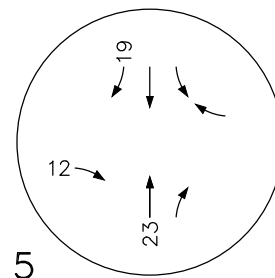
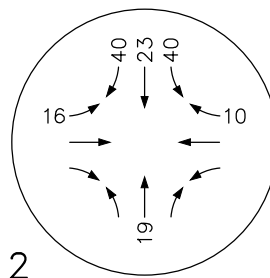
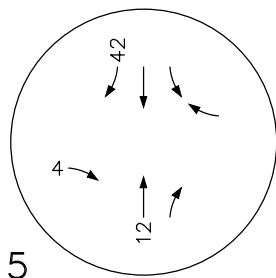
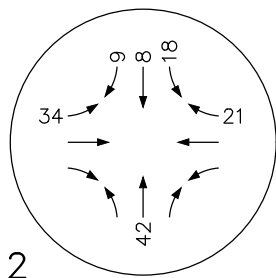
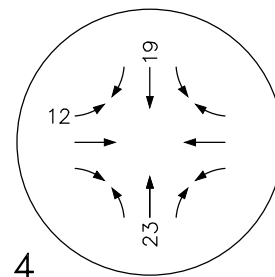
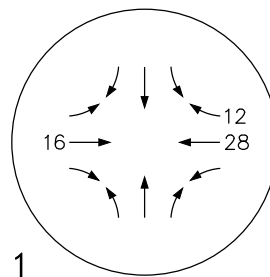
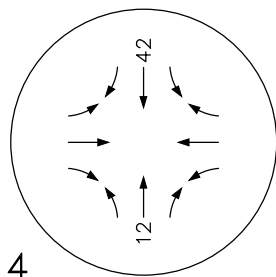
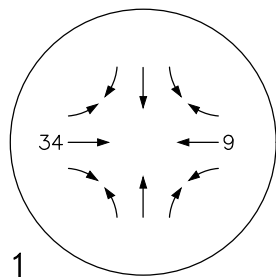


AM PEAK HOUR

Enter - 139
Exit - 39
Total - 178

PM PEAK HOUR

Enter - 64
Exit - 115
Total - 179



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HILLSBORO, OREGON

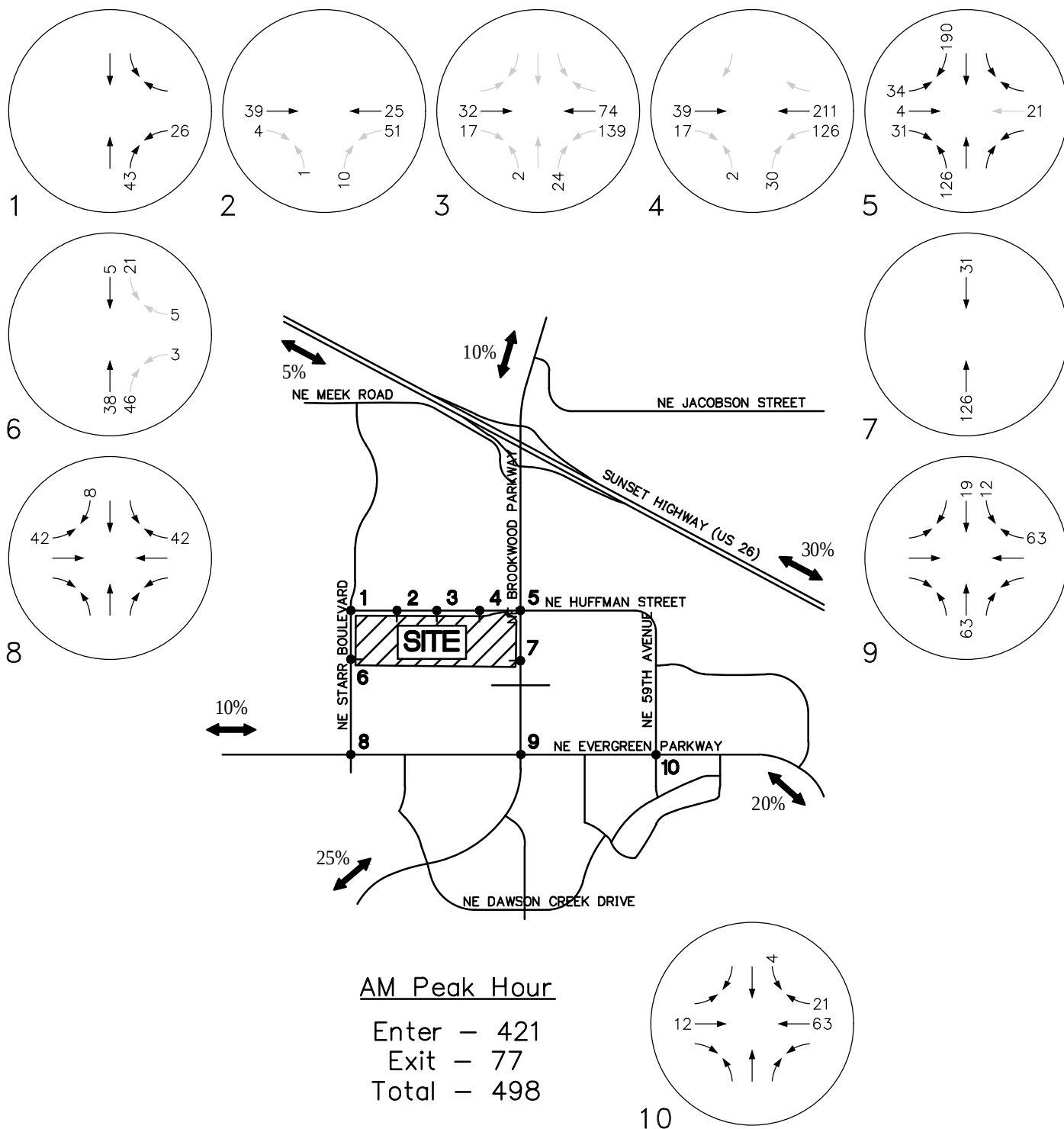
FIGURE

8

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AND ASSIGNMENT W/O RIRO -
AM PEAK HOUR

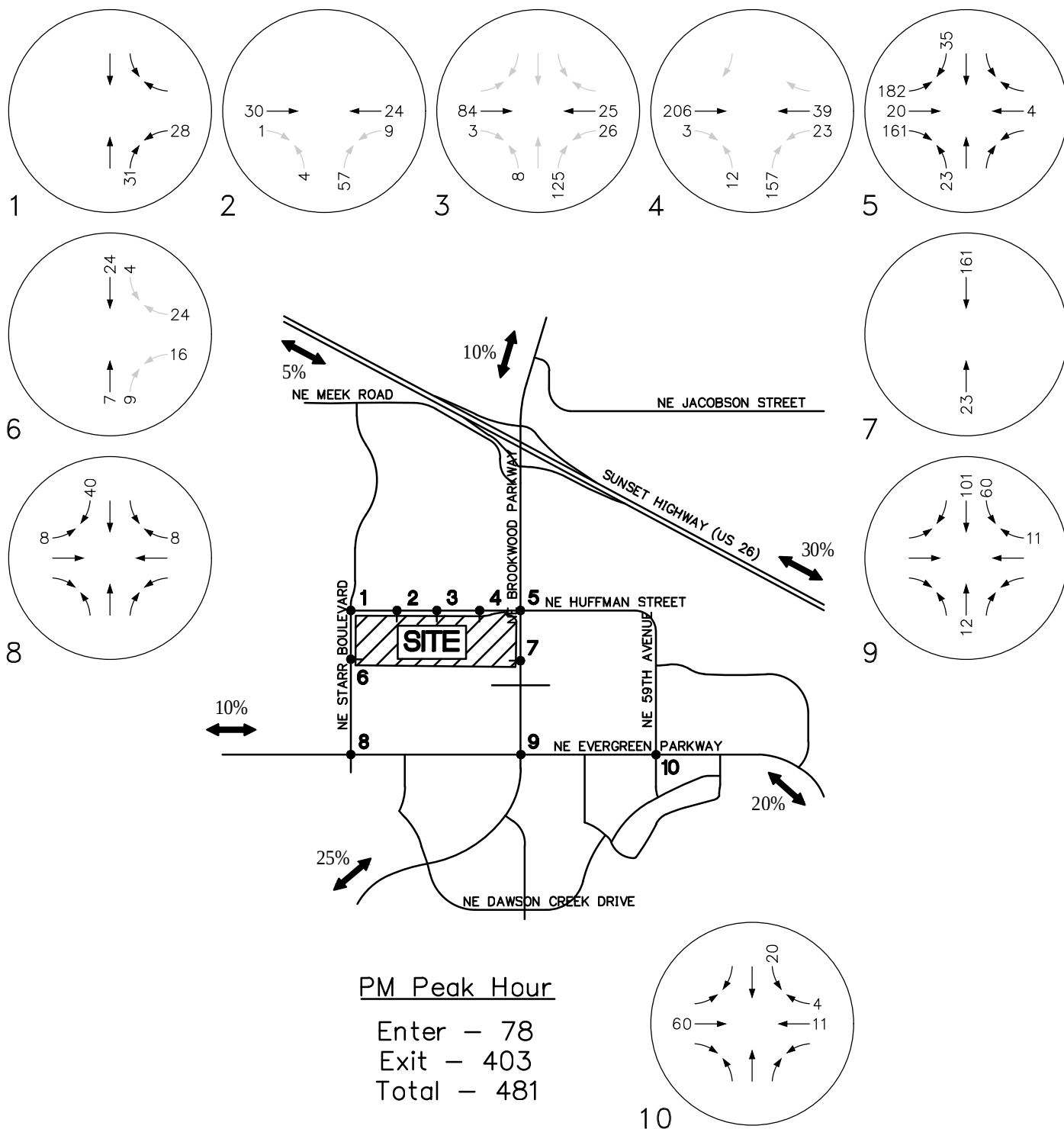
BROOKWOOD II: TIA UPDATE II
HILLSBORO, OREGON

FIGURE
9A

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PROJECT TRIP DISTRIBUTION
AND ASSIGNMENT W/O RIRO -
PM PEAK HOUR

BROOKWOOD II: TIA UPDATE II
HILLSBORO, OREGON

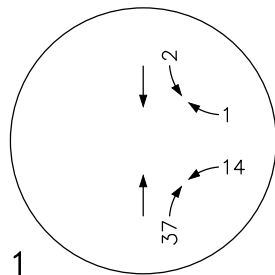
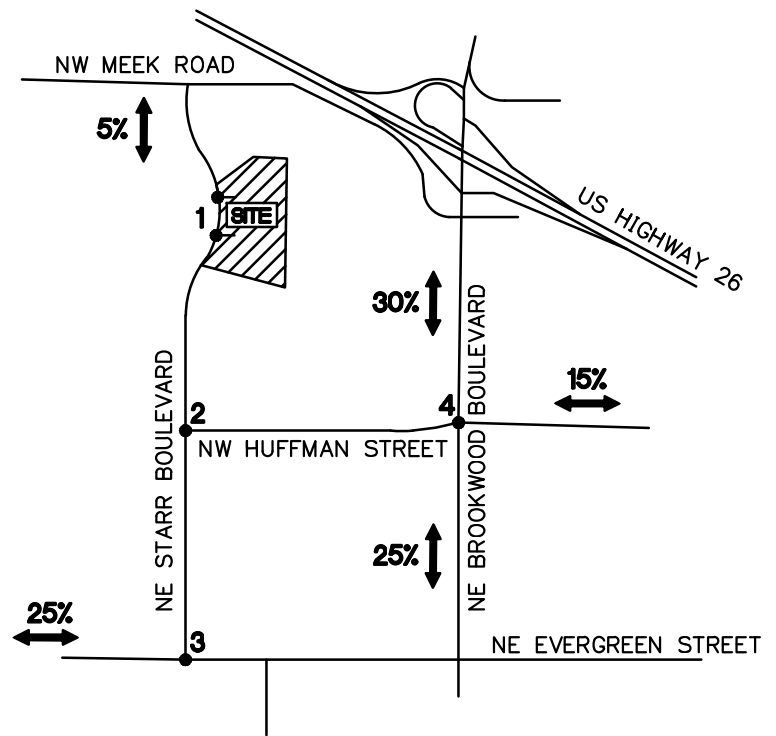
FIGURE
9B

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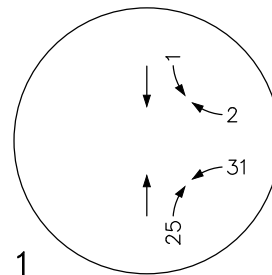
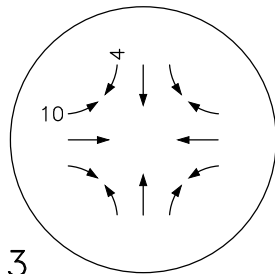
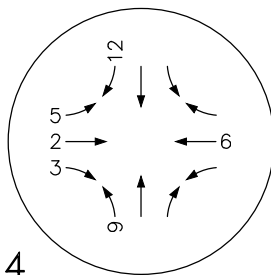
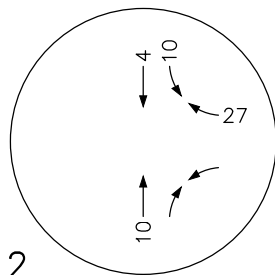
NOT TO SCALE

Note: Traffic volumes at site driveways have been combined into a single intersection for analysis.



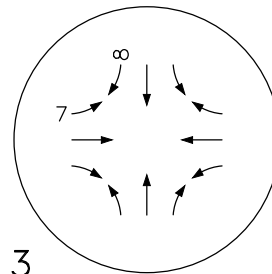
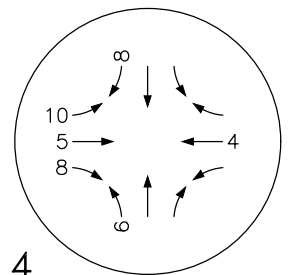
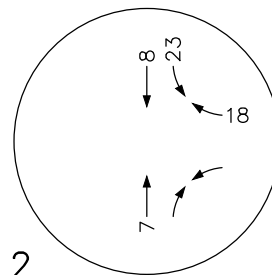
AM Peak Hour

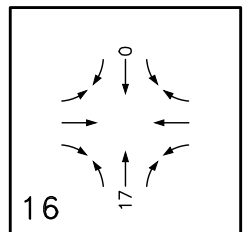
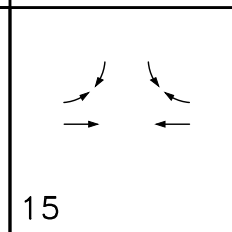
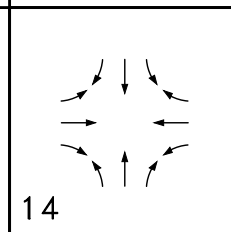
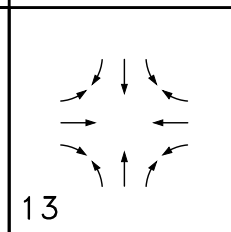
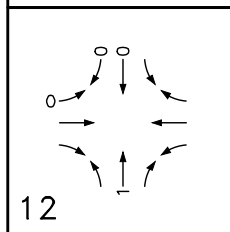
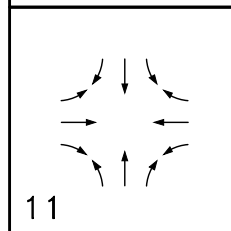
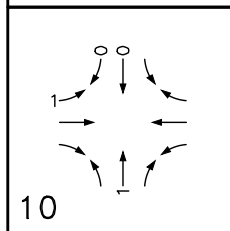
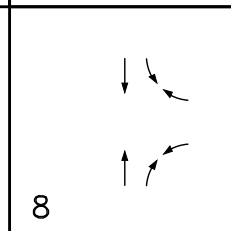
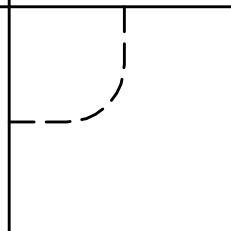
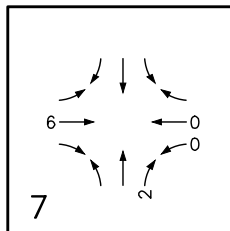
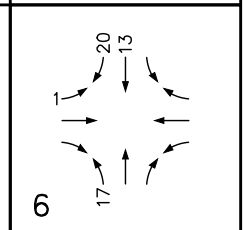
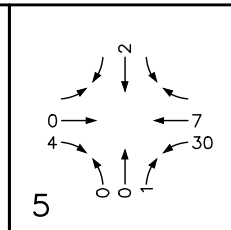
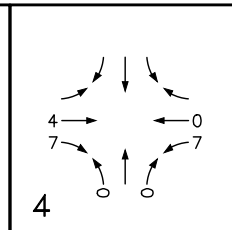
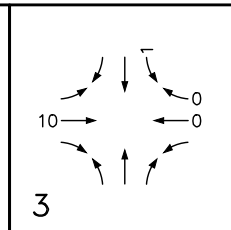
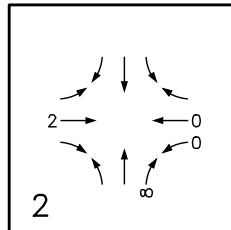
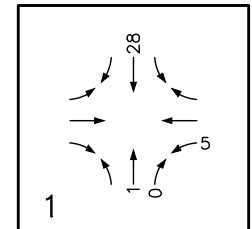
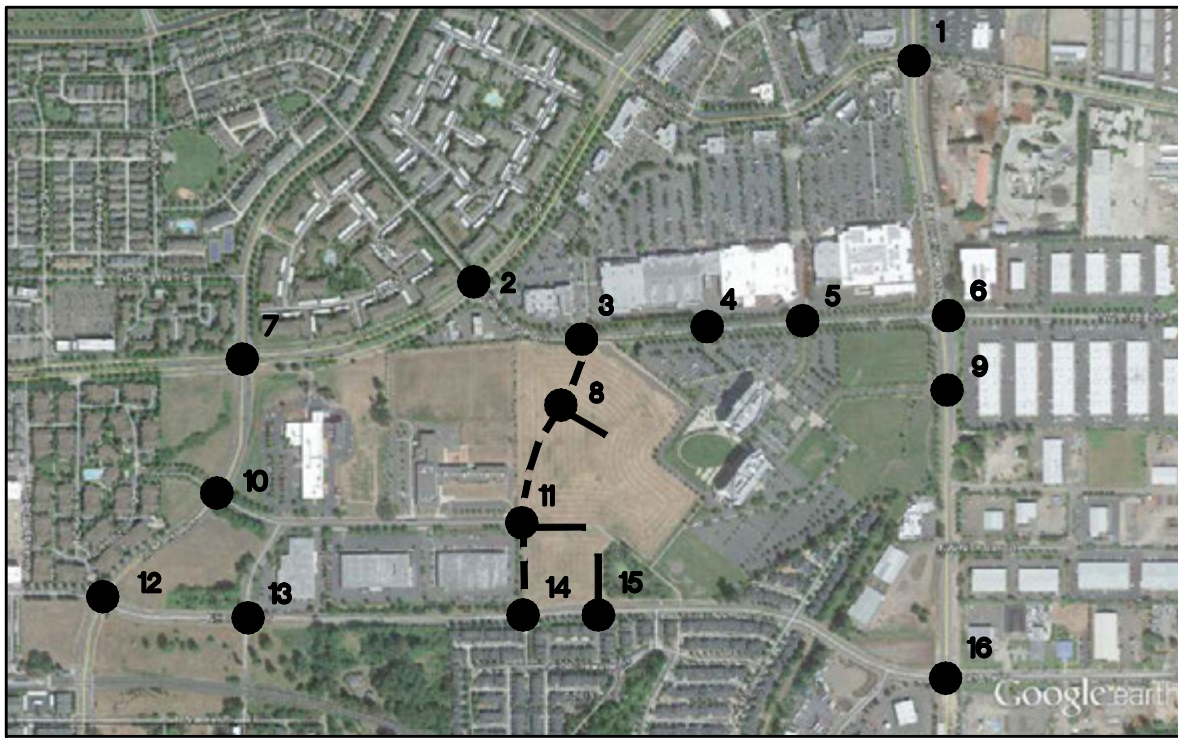
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Exit - 15
Total - 54



PM Peak Hour

Enter - 26
Exit - 33
Total - 59





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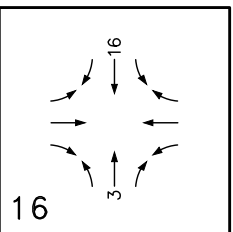
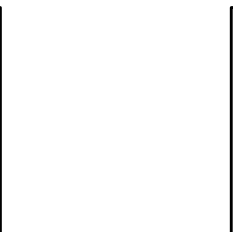
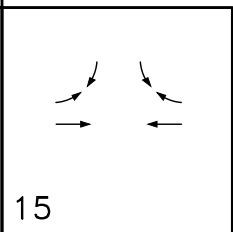
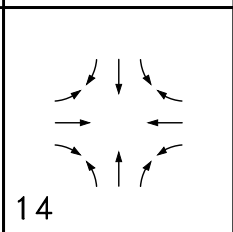
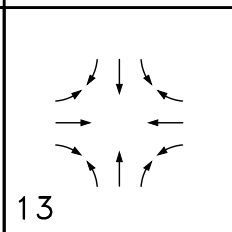
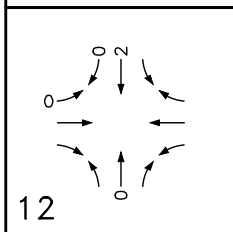
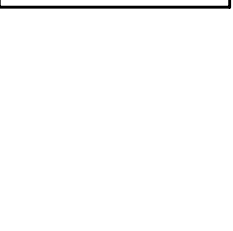
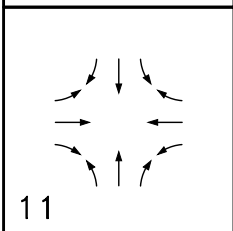
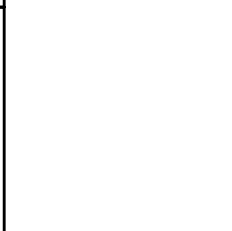
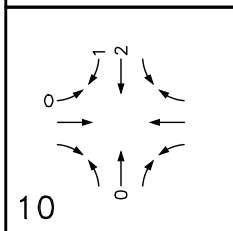
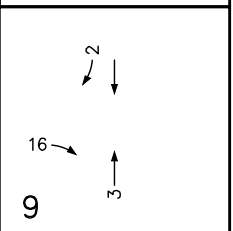
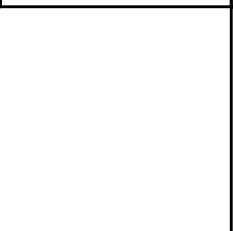
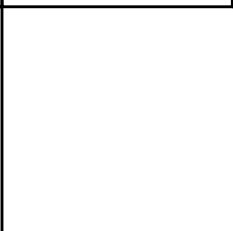
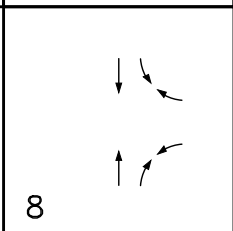
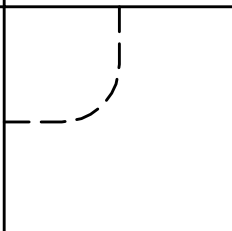
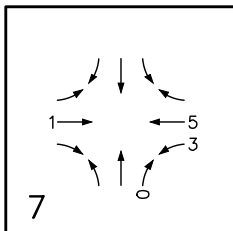
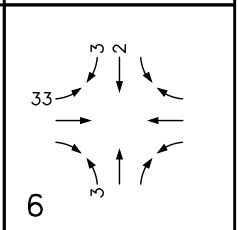
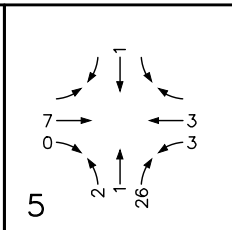
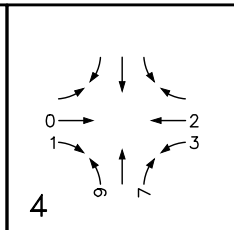
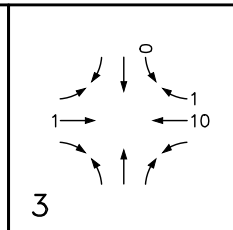
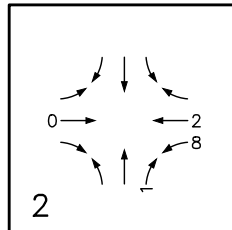
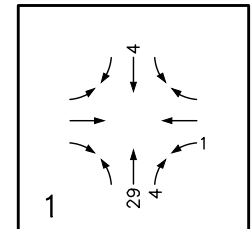
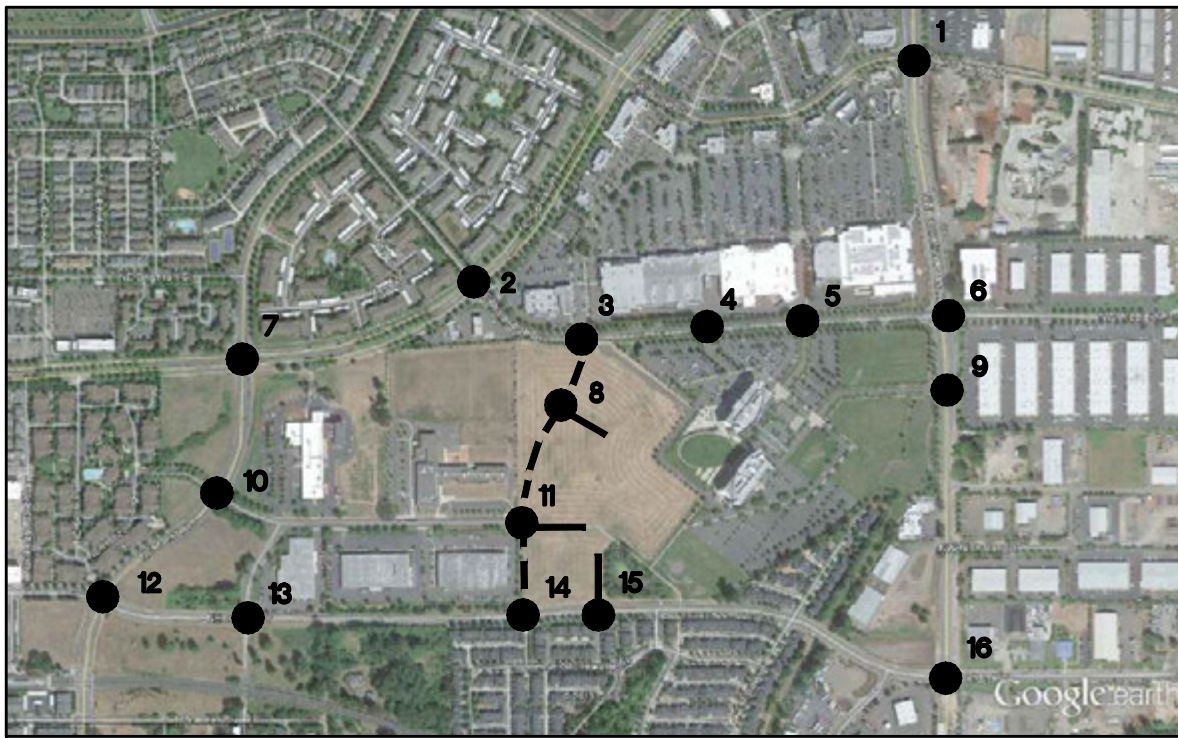
SYNOPSIS REMAINING PHASE 1
SITE TRIPS -
WEEKDAY AM PEAK HOUR

SYNOPSIS ENTITLEMENT EXTENSION
HILLSBORO, OREGON

FIGURE

8a

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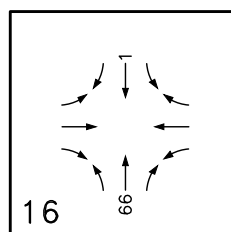
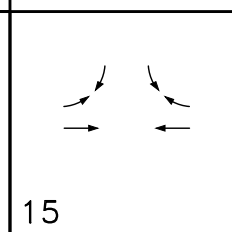
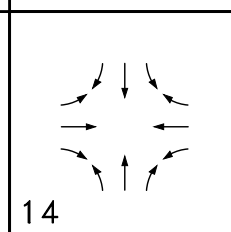
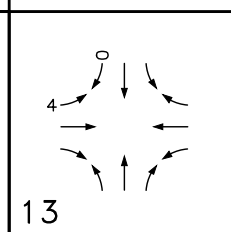
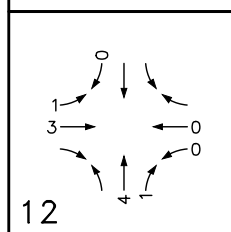
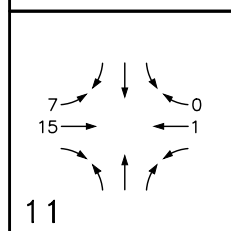
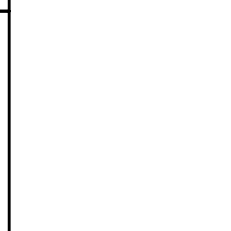
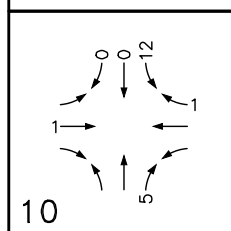
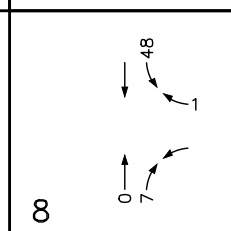
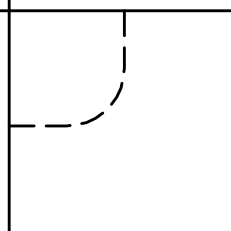
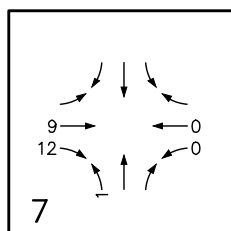
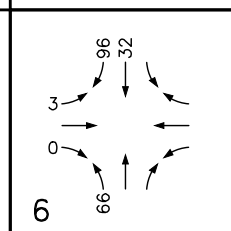
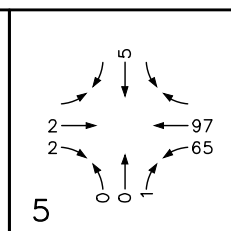
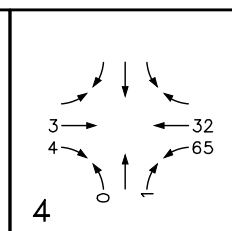
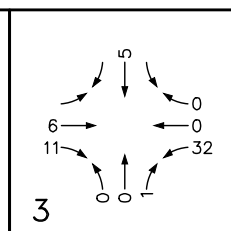
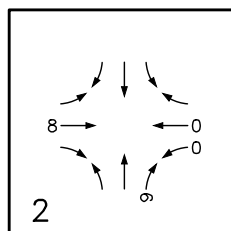
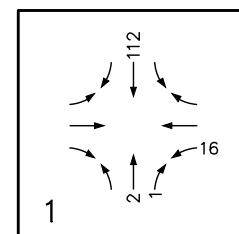
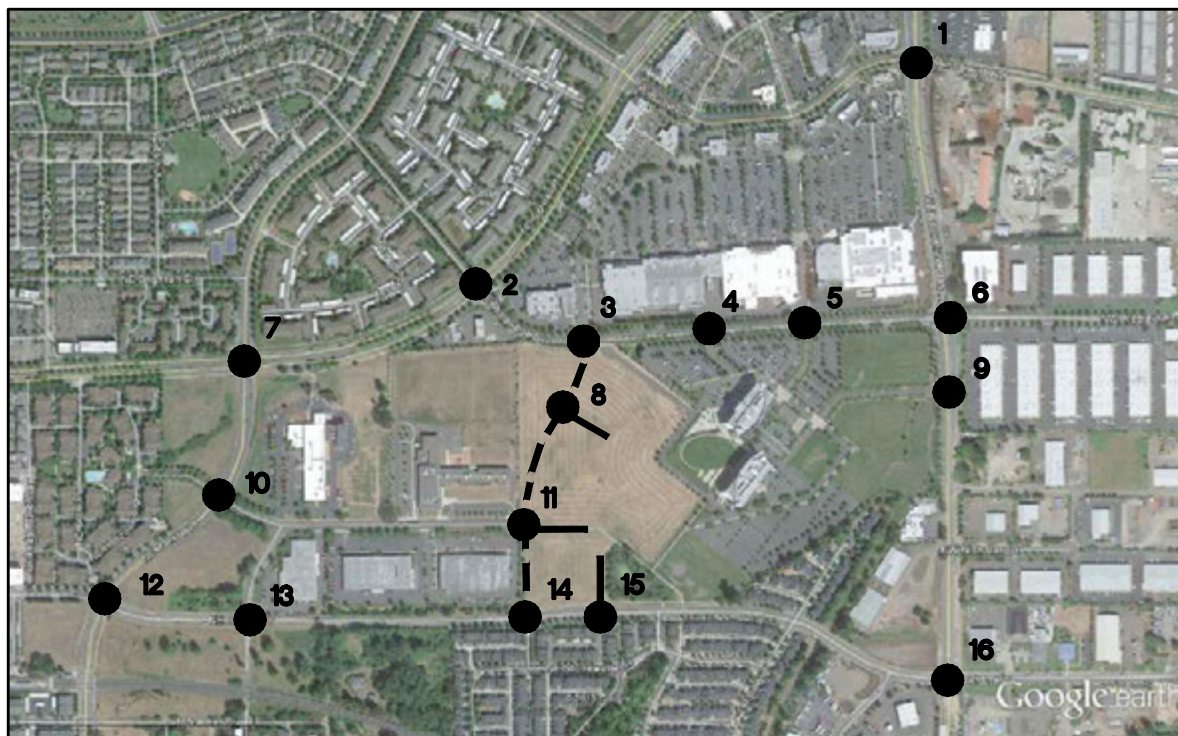
SYNOPSIS REMAINING PHASE 1
SITE TRIPS -
WEEKDAY PM PEAK HOUR

SYNOPSIS ENTITLEMENT EXTENSION
HILLSBORO, OREGON

FIGURE

8b

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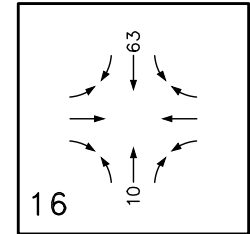
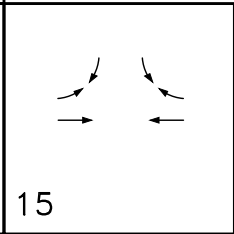
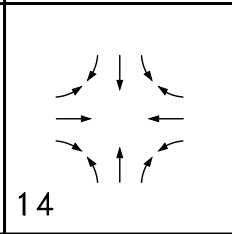
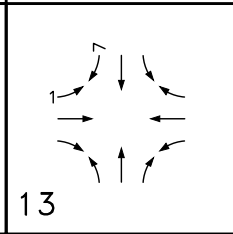
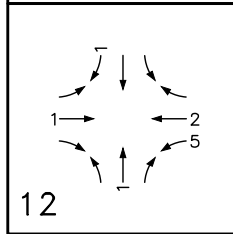
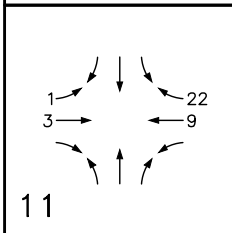
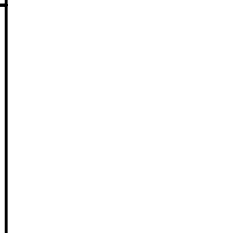
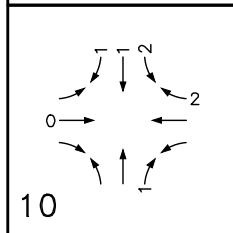
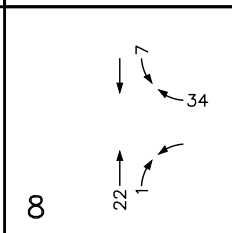
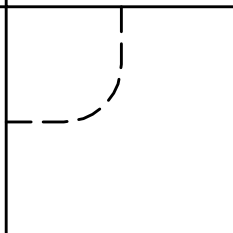
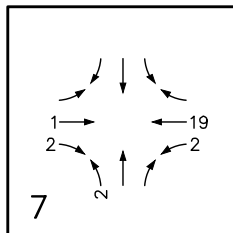
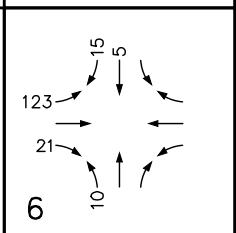
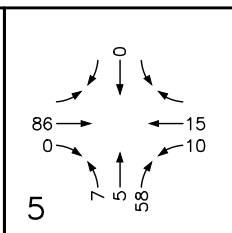
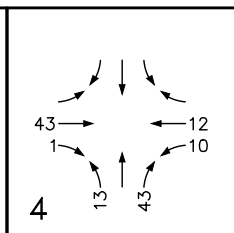
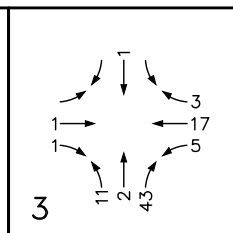
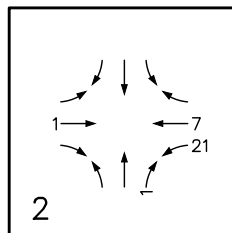
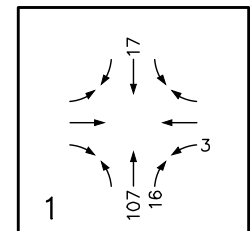
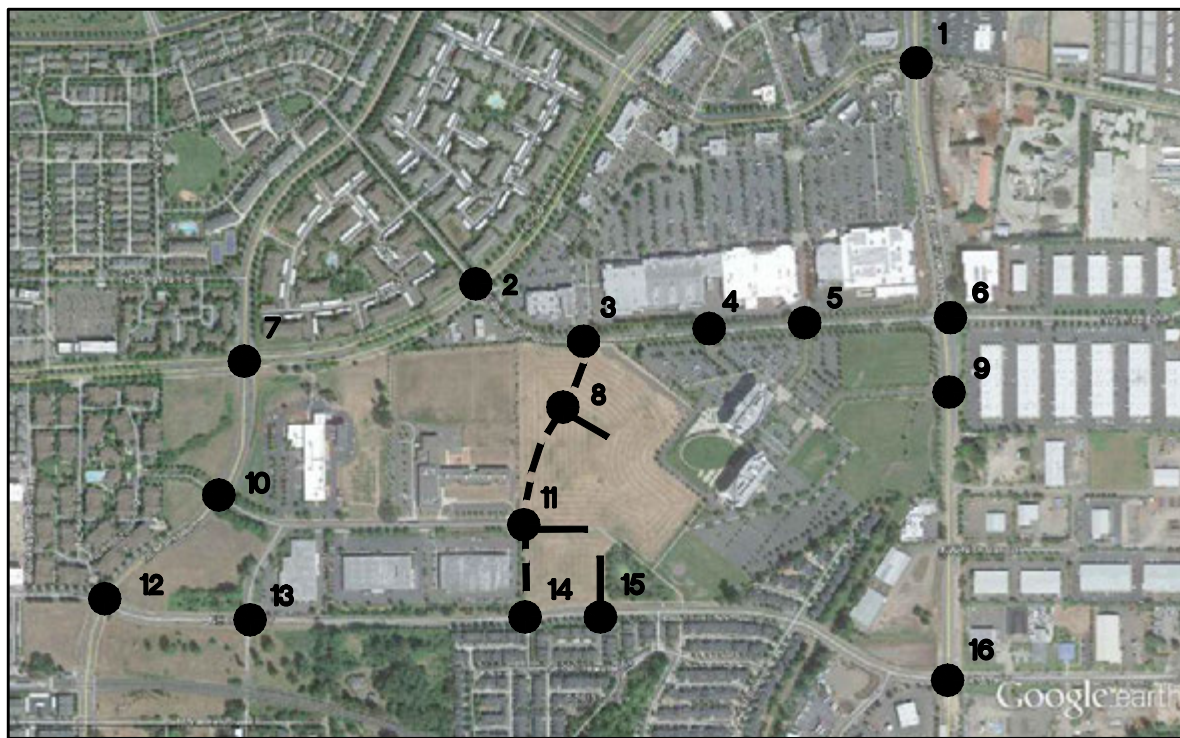
SYNOPSIS PHASE 2 TRIPS -
WEEKDAY AM PEAK HOUR

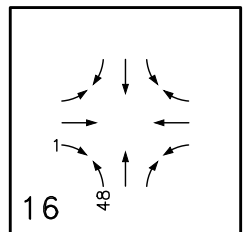
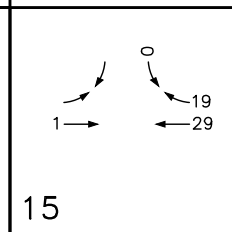
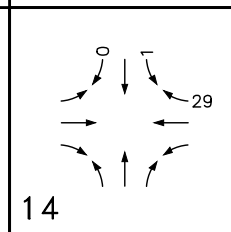
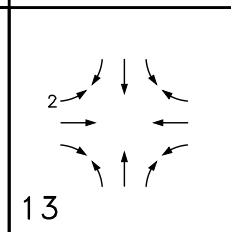
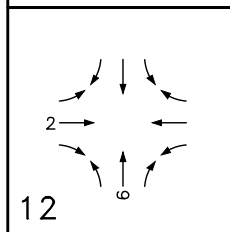
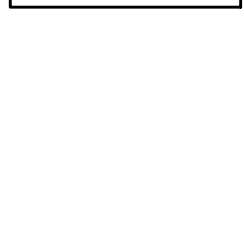
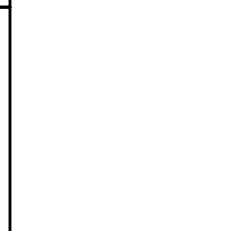
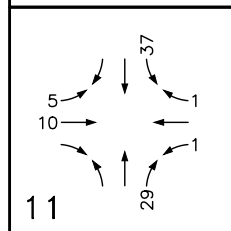
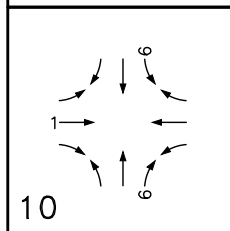
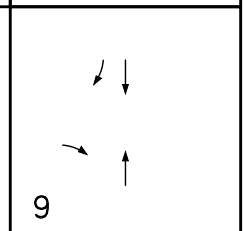
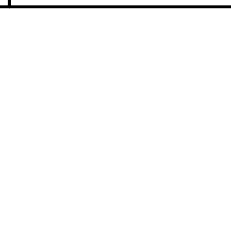
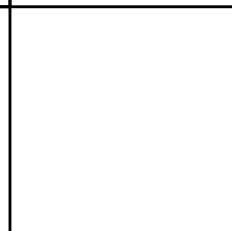
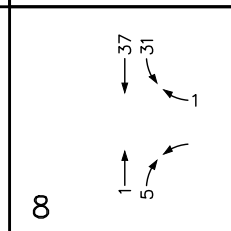
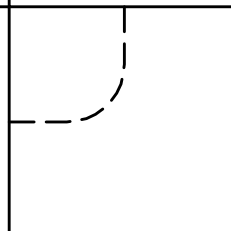
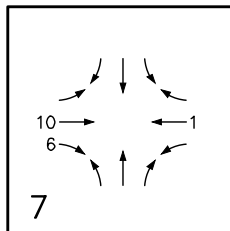
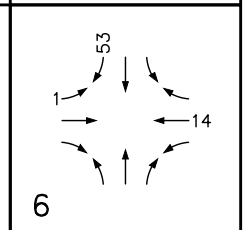
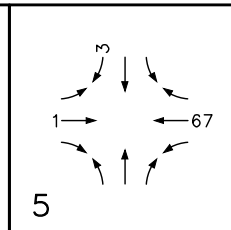
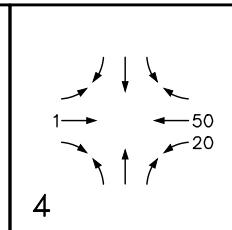
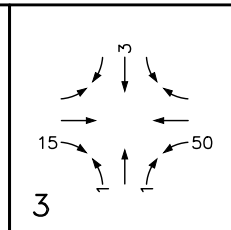
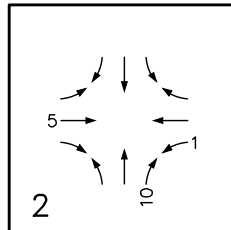
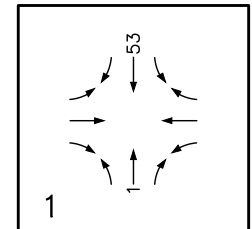
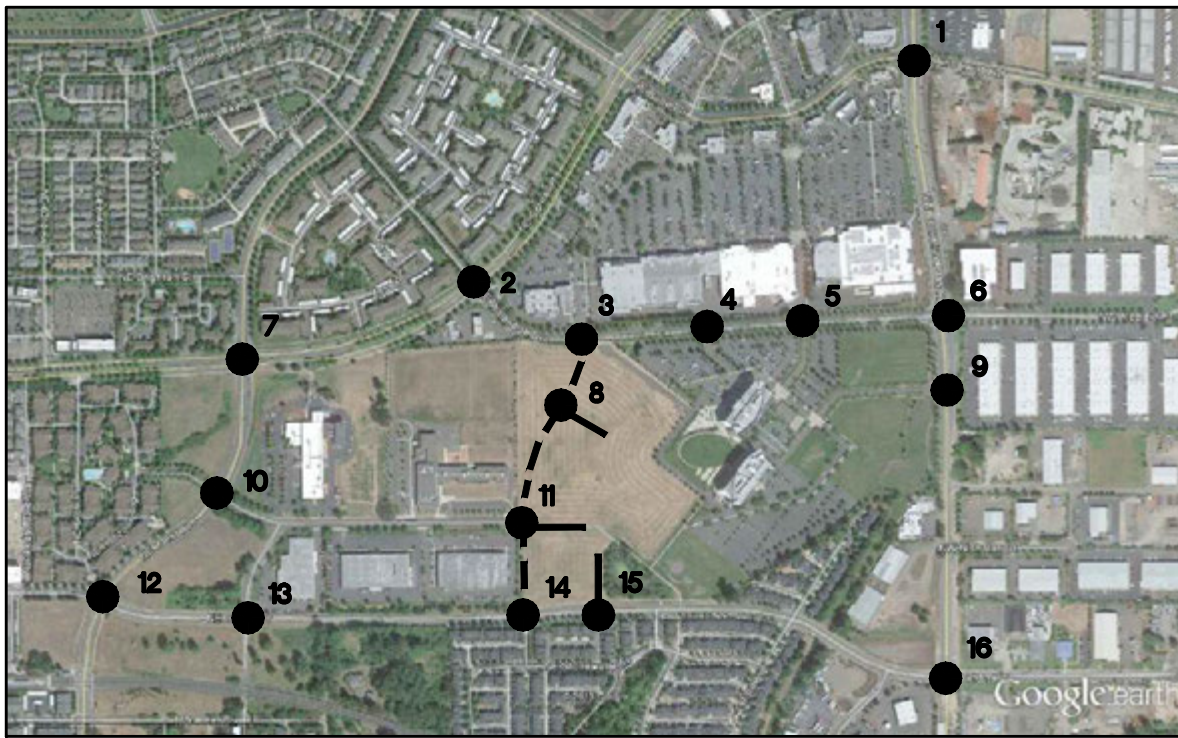
SYNOPSIS ENTITLEMENT EXTENSION
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FIGURE

10a

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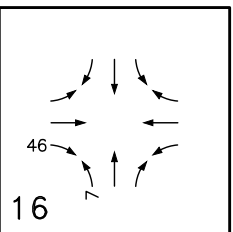
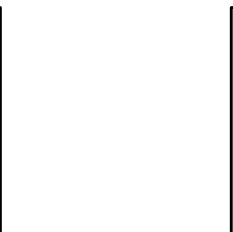
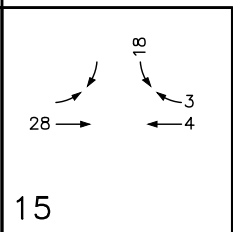
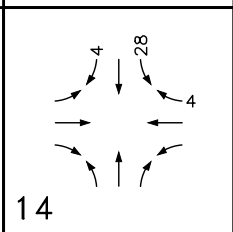
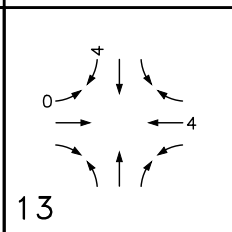
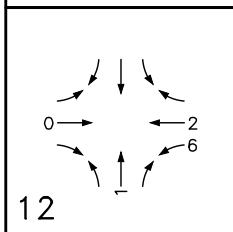
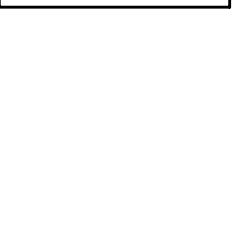
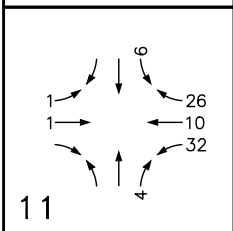
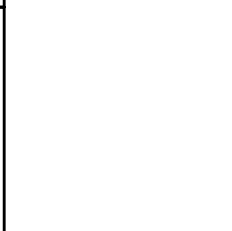
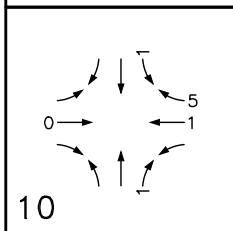
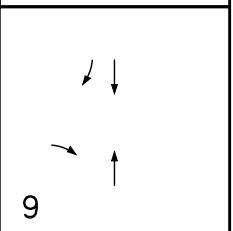
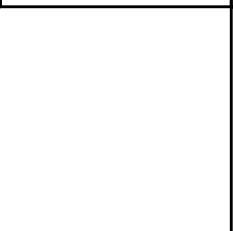
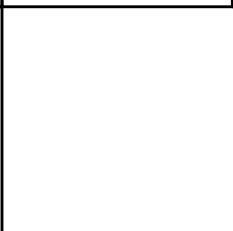
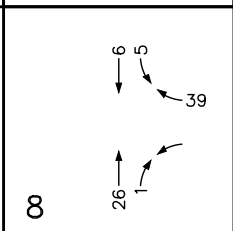
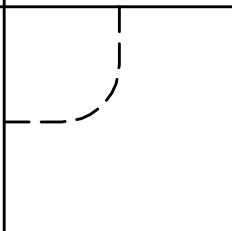
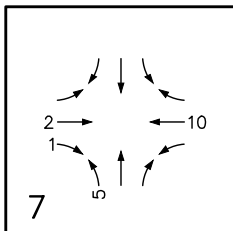
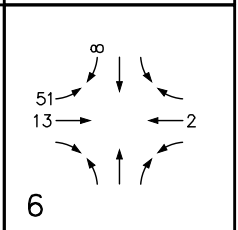
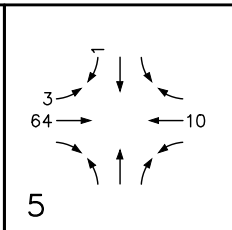
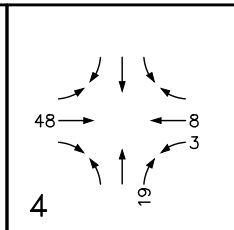
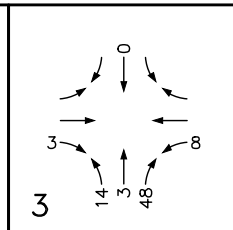
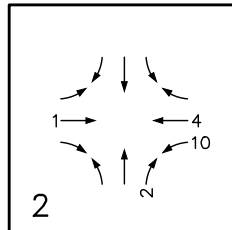
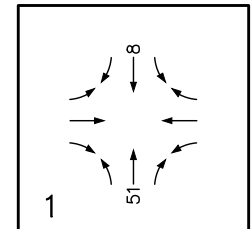
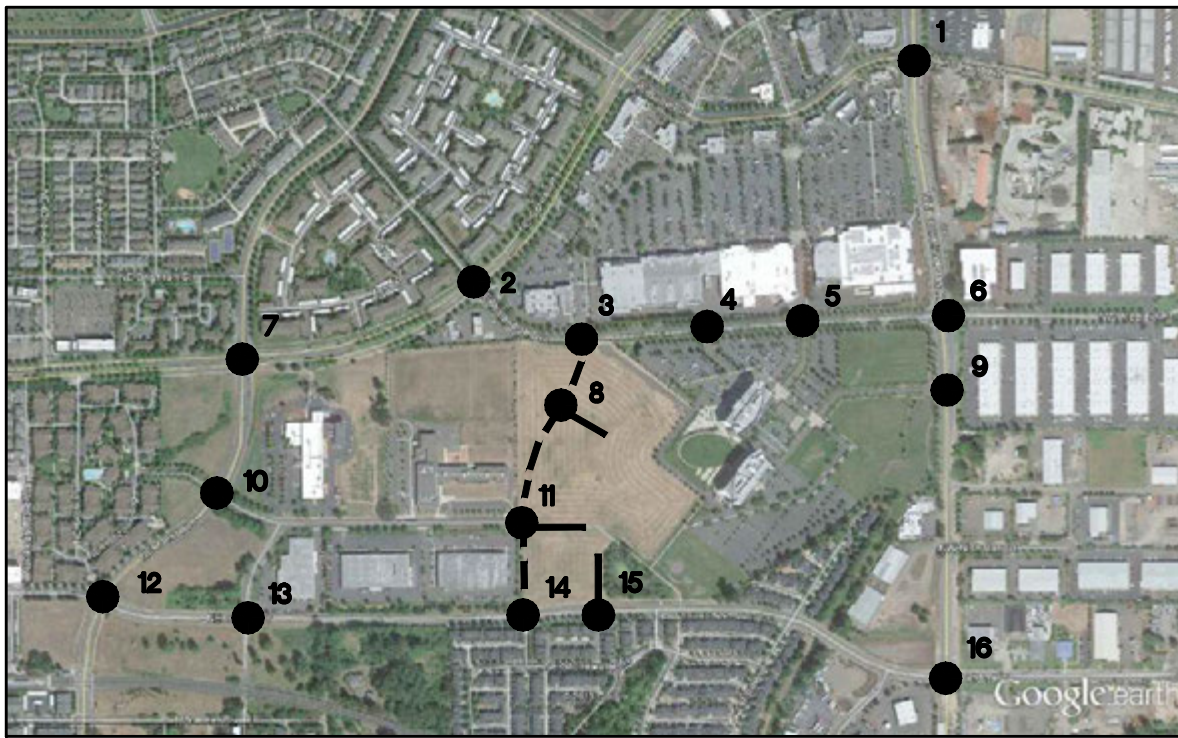
SYNOPSIS PHASE 3 TRIPS -
WEEKDAY AM PEAK HOUR

SYNOPSIS ENTITLEMENT EXTENSION
HILLSBORO, OREGON

FIGURE

16a

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DATE: 12.19.13

DRAWN BY: KLA

CHECKED BY: DAH

JOB NO:
2130221.00

SYNOPSIS PHASE 3 TRIPS -
WEEKDAY PM PEAK HOUR

SYNOPSIS ENTITLEMENT EXTENSION
HILLSBORO, OREGON

FIGURE

16b

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APPENDIX H.
**MODEL PLOTS FOR
CENTURY
BOULEVARD
EXTENSION**

2015 PM Peak Hour Traffic Volume Difference

The map displays the following data series:

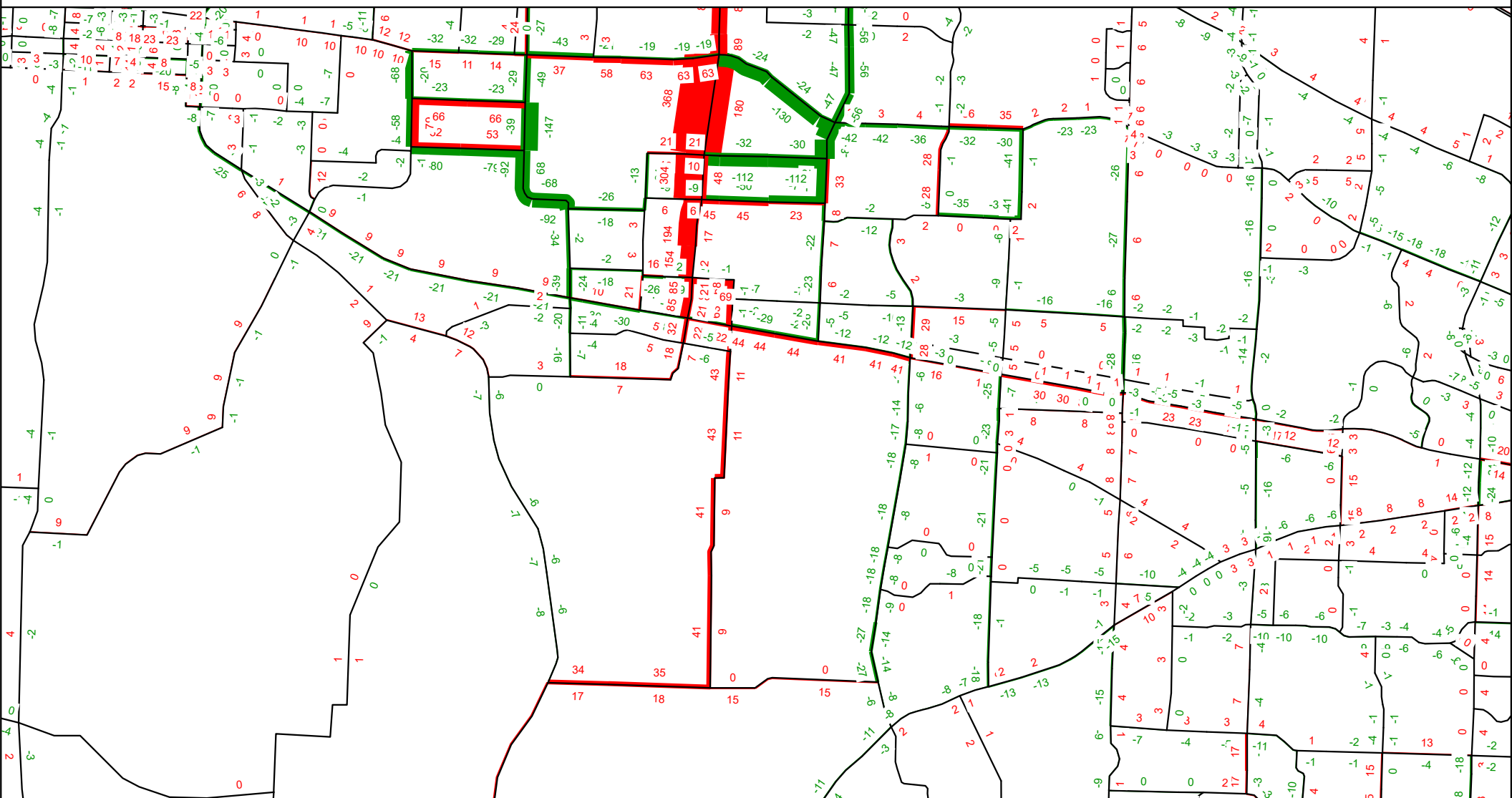
- Volume Difference:** Numerical values on road segments, color-coded from dark green (negative) to dark red (positive).
- Major Highways:** I-5, I-10, I-405, and SR-10 are highlighted in red.
- Other Roads:** Green and black lines represent other road types.
- Airports:** LAX, BUR, and ONT are marked with their respective symbols.
- San Diego Border:** Indicated by a dashed line on the right side of the map.

KAI

2015 Net unadjusted_disagg_01072019.ver

1/9/2019

2015 PM Peak Hour Traffic Volume Difference



Washington County	Westside Focus Model	2015 PM 1-Hour
KAI	2015 Net unadjusted_disagg_01072019.ver	1/9/2019

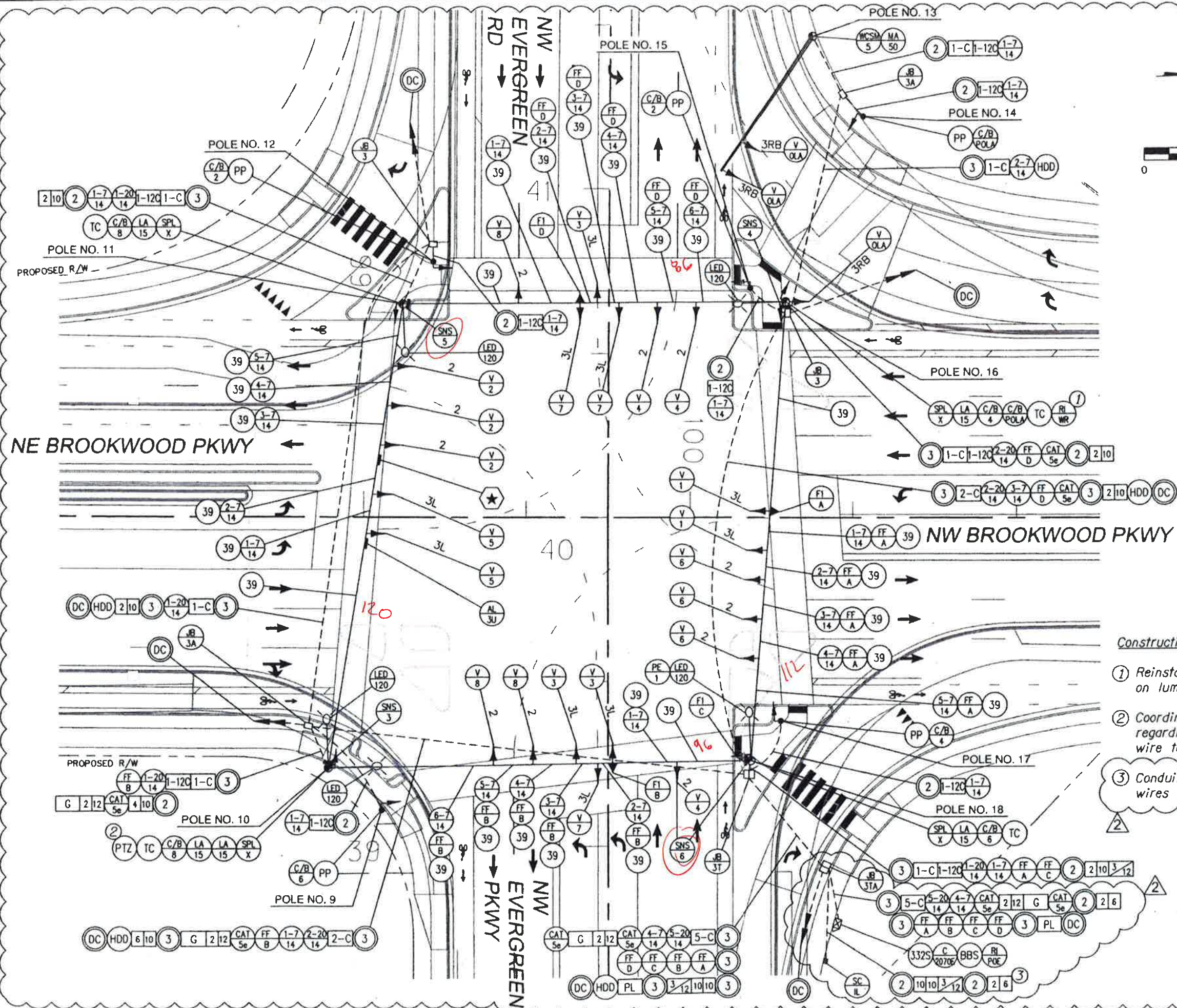
[illegible]

KAI

2015 Net unadjusted_disagg_01072019.ver

1/9/2019

APPENDIX I.
SIGNAL TIMINGS



Construction Notes:

- ① Reinstall wireless interconnect radio unit on luminaire arm.
- ② Coordinate with PTZ camera vendor regarding field splicing of smaller gauge wire to 12-gauge wire at camera.
- ③ Conduit also contains additional power wires for ITS cabinet. See sheet IC-11.

"UTILITIES NOT SHOWN"
Contractor to contact utility companies for field locations.

NOTE:
See Sheet TS-1 for Legend

NOTE:
Field Verify Measurements Before Construction

REGISTERED PROFESSIONAL ENGINEER
19283PE
Ch. C. Radost
OREGON
JULY 17, 1997
CHARLES W. RADOSTA
11/16/15
EXPIRES 12/31/16

KITTELSON & ASSOCIATES, INC.
DEPARTMENT OF LAND USE & TRANSPORTATION ENGINEERING
WASHINGTON COUNTY, OREGON

PLOT STAMP: 11/03/15 1:47P JHEMIRKEN
CAD: 13563_SIG1.DWG, TAB: TS-7
NO. REVISIONS
ADDENDUM 1
SB DUAL RIGHT MODIFICATION

NW BROOKWOOD PARKWAY IMPROVEMENTS
(NW MEEK ROAD - NE SHUTE ROAD)
WASHINGTON COUNTY
SIGNAL PLAN
NW BROOKWOOD PKWY AT
NW EVERGREEN PKWY

PROJECT NUMBER
100202
SHEET NO. OF
SHEET TITLE
TS-7

LOOP NUMBER	DISTANCE (FEET)	PHASE	SLOT	2070 DET.
1	320	6	J3U	VD19
2	320	6	J3L	VD20
3	320	6	J4U	VD21
4	160			
5	160	6	J4L	VD22
6	160			
7	BIKE	6	J5U	VD23
8	75	1	I1U	VD1
9	75	1	I1L	VD2
10	15			
11	5	1	I2U	VD29
12	15			
13	5			
14	320	8	J8U	VD24
15	320			
16	160	8	J8L	VD25
17	160			
18	140	8	J9U	VD26
19	15			
20	5	8	J9L	VD27
21	15			
22	5			
23	BIKE	8	J10U	VD28
24	BIKE	8	J10L	VD40
25	75	3	I6U	VD3
26	75	3	I6L	VD4
27	15			
28	5	3	I7U	VD31
29	15			
30	5			
31	320	2	I3U	VD9
32	320	2	I3L	VD10
33	320	2	I4U	VD11
34	160			
35	160	2	I4L	VD12
36	160			
37	140			
38	140	2	I5U	VD13
39	BIKE	2	I5L	VD37
40	75	5	J1U	VD5
41	75	5	J1L	VD6
42	15			
43	5	5	J2U	VD33
44	15			
45	5			
46	320	4	I8U	VD14
47	320			
48	160	4	I8L	VD15
49	160			
50	140	4	I9U	VD16
51	15			
52	5	4	I9L	VD17
53	15			
54	5			
55	BIKE	4	I10U	VD18
56	BIKE	4	I10L	VD34
57	75	7	J6U	VD7
58	75	7	J6L	VD8
59	15			
60	5	7	J7U	VD35
61	15			
62	5			

LOOP DETECTOR WIRING DIAGRAM
DISTANCE IS FROM THE STOP BAR TO THE END OF DETECTION ZONE IN FEET.

DESIGN APPROACH SPEEDS

STREET	DESIGN SPEED
NW EVERGREEN PKWY/RD	45 MPH
NW/NE BROOKWOOD PKWY	45 MPH

CONTROLLER CABINET

NE BROOKWOOD PKWY

NW EVERGREEN RD

NW BROOKWOOD PKWY

NOTE:
Field Verify Measurements Before Construction

Ph. 2
Ph. 5

Ph. 7
Ph. 4

Ph. 1
Ph. 6

Ph. 3
Ph. 8

CHANNEL A

CHANNEL B

CHANNEL C

CHANNEL D

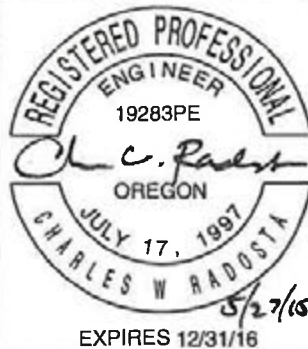
FIRE PREEMPTION OPERATION

POLA INPUT ON
C11-24 (I2U)



"UTILITIES NOT SHOWN"
Contractor to contact utility companies for field locations.

NOTE:
See Sheet TS-1 for Legend



KUTTELSON & ASSOCIATES, INC.

DEPARTMENT OF
LAND USE &
TRANSPORTATION
ENGINEERING



PLOT STAMP: 05/27/15 11:14A ANAKA
CAD: 13563_SIG1.DWG, TAB: TS-8

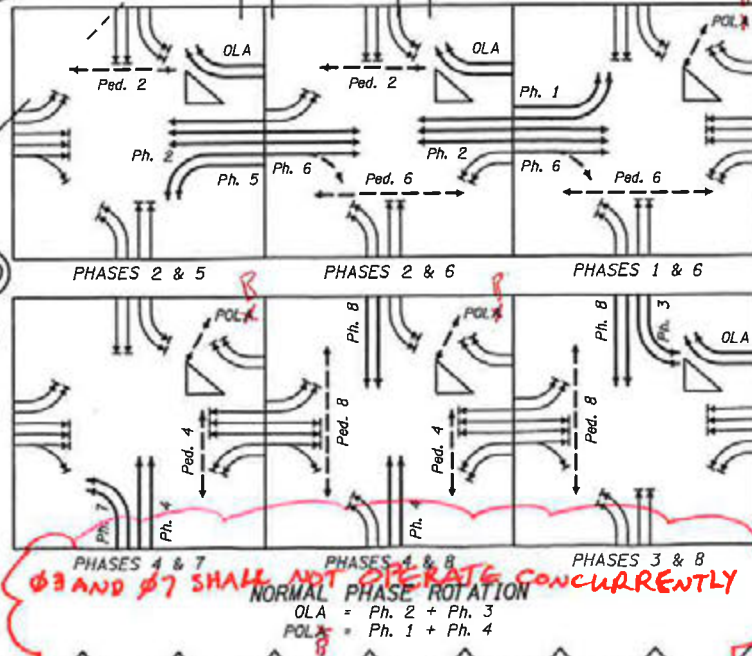
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NO. REVISIONS
ADDITION 1

NW BROOKWOOD PARKWAY IMPROVEMENTS
(NW MEEK ROAD - NE SHUTE ROAD)
WASHINGTON COUNTY

DETECTOR PLAN
NW BROOKWOOD PKWY AT
NW EVERGREEN PKWY

PROJECT NUMBER
100202
SHEET NO.
OF
SHEET TITLE
TS-8



Controller Function and Timing

Security, Sequence and Timing (Next/2/1, Next/2/2/3/A, Next/2/2/5)				
Security Code	0	0 = disabled, or 1000-9999	First All Red	6.0 0.0 to 25.5 seconds
Sequence	7	0 = sequential, 1 = quad left turn, 2-6 = special A-E, 7 = lead lag		
Power up Flash	0.0	0.0 - 25.5 seconds		

Initialization (Next/2/2/5)			Lead Lag (Next/2/2/3/A)			
Ring 1	Ring 2	Interval	Phases 1 - 2	Phases 3 - 4	Phases 5 - 6	Phases 7 - 8
1	5	0	2	2	2	2
Phase 1 - 8		0 = Red, 1 = Yel, 2 = Grn	0 = no reversal, 1 = reversal, 2 = by coord plan or clock			

(Next/2/2/3)		Phase Functions		(Next/2/2/1)	
Phase Used	1 2 3 4 5 6 7 8		Yellow Lock	- - - - - - - -	
Restricted Phases	- - 3 - - - 7 -		Min Recall	- 2 - - - 6 -	
Exclusive Phases	- - - - - - - -		Max Recall	- - - - - - - -	
			Ped Recall	- - - - - - - -	
			Red Lock	- - - - - - - -	
			Max Out Recall Inhibit	1 - 3 4 5 - 7 8	
			Soft Recall	- - - - - - - -	
			Free Walk Rest	- - - - - - - -	
			Conditional Ped	- - - - - - - -	
			Disable Inhibit Max Termination	- - - - - - - -	
			Call To Non-Act 1	- - - - - - - -	
			Call To Non-Act 2	- - - - - - - -	

Phase Times (Next/2/2/2)									
Phase	1	2	3	4	5	6	7	8	
Movement	NBL	SB	EBL	WB	SBL	NB	WBL	EB	
Minimum Green	8	10	8	10	8	10	8	10	0 - 255 sec.
Passage	2.0	3.0	2.0	2.0	2.0	3.0	2.0	3.0	0.0 - 25.5 sec.
Yellow	3.5	4.5	3.5	4.5	3.5	4.5	3.5	4.5	0.0 - 25.5 sec.
Red Clearance	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0 - 25.5 sec. or 0 - 255 sec.
Max 1	15	45	20	30	15	45	20	40	0 - 255 sec.
Max 2	15	35	35	25	10	45	20	35	0 - 255 sec.
Walk	0	5	0	7	0	7	0	7	0 - 255 sec.
Ped Clear	0	21	0	28	0	23	0	30	0 - 255 sec.
Seconds Per Actuation	0.0	1.3	0.0	1.3	0.0	1.3	0.0	1.3	0.0 - 25.5 sec.
Time Before Reduction	0	0	0	0	0	0	0	0	0 - 255 sec.
Time to Reduce	0	0	0	0	0	0	0	0	0 - 255 sec.
Minimum Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
Max Variable Initial	0	25	0	20	0	25	0	20	0 - 255 sec.
Max Extend	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0 - 25.5 sec.
Auto Max	0	0	0	0	0	50	0	0	0 - 255 sec.
Advanced walk	0	0	0	0	0	0	0	0	0 - 255 sec.

Phase Times (Next/2/2/9/5)									
Inhibit Min Yellow									X = On
Red Decimal Off									X = On

Dual Entry (Next/2/2/9/3)

Mode	1	0 = off, 1 = on, 2 = Not Used, 3 = by coord plan, 4 = by time clock circuit 61

Dual Entry Ph -->	1	2	3	4	5	6	7	8	
Phase	0	0	8	8	0	0	4	4	0 = none, 1-8 = phase 1-8

Cond Service (Next/2/2/9/3/A)			5 Sec Head Logic (Next/2/2/9/4)						
	Mode	CS Max Time	X Omits Y		Anti-Trap		Yellow Blanking LT		
Phase 1	0	0	X:Y		Trap Protected Phase	Next Phase	Phase		
Phase 3	0	0	6:1	0	1	0	< (5)	1	0
Phase 5	0	0	8:3	0	3	0	< (7)	3	0
Phase 7	0	0	2:5	0	5	0	< (1)	5	0
0 = off, 1 = C.S.On. 2 = C.S. on by TOD circuit 57, 3 = N/A, 4 = C.S. and C.R. On, 5 = C.R. on by TOD circuit 57.			4:7	0	7	0	< (3)	7	0
			0 = off, 1 = side call, 2 = no side call		X = On				

Other Controller Functions (Next/2/2/9/1, Next/2/2/9/5)

Inhibit Simultaneous Gap Out	1 - 3 - 5 - 7 -	
Last Car Passage	2	0 = recall phase, 1 = last car passage, 2 = NOT recall - Not last car passage
Red Revert (+2seconds)	3.0	0 - 25.5 sec.
Auto Ped Clear	Off	X = On
FDW thru Yellow	Off	X = On
Red Rest Delay	0.0	0 - 25.5 sec.
Change Sequence	Off	X = On (After a download without a power on - off cycle)
Advanced Flash Rate	60 FPM	0 = Disabled (60 FPM), 1 = 120 FPM
Ped Push Button Time	null	0 = Disable, 0 - 5 Seconds

Phase -->	1	2	3	4	5	6	7	8	
Red Clear Extension Detector	0	0	0	0	0	0	0	0	0 = none 1 - 32 = detector 1 - 32
Red Clear Extension Red Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec.

CoordinationData		
Coordination Modes (Next/2/3/1)		
Flash Mode	35	0=off, 1=on, 33=time clock, 34=comm, 35=hardwire
Coordination Plan Mode	33	0=free, 1-32 = coord plan 1-32, 33=time clock, 34=comm, 35=hardwire
Offset Seeking Mode	2	0=add only, 1=dwell, 2=fastway
Late Ped	0	0 = off, 1 = on
Coord Walk Rest	0	0 = off, 1 = on, 2 = by tod circuit 160, 3 = end of walk, 4 = coord ped during perms
Zero Mode(TS2 only)	0	0=start of main street, 1=end of main street, 2=by TOD circuit 144, 3 = first green
(Next/2/3/4/1)		
Repeated Ped Service	0	0=off, 1=on (no coord ped), 2=on (beginning green coord ped), 3=on (coord ped always)
Omit Phase During Repeated Phase	- - - - -	-- = service allowed ; # = service prevented

Coordination Plans (Next/2/3/2)								
Coord Plan	Coordination Phases		Cycle Length	Offset Time	Min Cycle Len Dwell Time	Permissive	Service Plan	Max Plan
	Ring 1	Ring 2						
1	2	6	120	109	0	0	0	0
2	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0
	0 - 8		0 - 255 sec				0 - 8	

Coordination Plans cont. (Next/2/3/2)

Coord Plan	Use FO for timing	Force Off / Split Times (TS2)								Yield Points / Actuated Times (TS2)	
		1	2	3	4	5	6	7	8	Ring 1	Ring 2
1		15	42	20	43	17	40	20	43	0	0
2		0	0	0	0	0	0	0	0	0	0
3		0	0	0	0	0	0	0	0	0	0
4		0	0	0	0	0	0	0	0	0	0
5		0	0	0	0	0	0	0	0	0	0
6		0	0	0	0	0	0	0	0	0	0
7		0	0	0	0	0	0	0	0	0	0
8		0	0	0	0	0	0	0	0	0	0
9		0	0	0	0	0	0	0	0	0	0
10		0	0	0	0	0	0	0	0	0	0
11		0	0	0	0	0	0	0	0	0	0
12		0	0	0	0	0	0	0	0	0	0
13		0	0	0	0	0	0	0	0	0	0
14		0	0	0	0	0	0	0	0	0	0
15		0	0	0	0	0	0	0	0	0	0
16		0	0	0	0	0	0	0	0	0	0
17		0	0	0	0	0	0	0	0	0	0
18		0	0	0	0	0	0	0	0	0	0
19		0	0	0	0	0	0	0	0	0	0
20		0	0	0	0	0	0	0	0	0	0
21		0	0	0	0	0	0	0	0	0	0
22		0	0	0	0	0	0	0	0	0	0
23		0	0	0	0	0	0	0	0	0	0
24		0	0	0	0	0	0	0	0	0	0
25		0	0	0	0	0	0	0	0	0	0
26		0	0	0	0	0	0	0	0	0	0
27		0	0	0	0	0	0	0	0	0	0
28		0	0	0	0	0	0	0	0	0	0
29		0	0	0	0	0	0	0	0	0	0
30		0	0	0	0	0	0	0	0	0	0
31		0	0	0	0	0	0	0	0	0	0
32		0	0	0	0	0	0	0	0	0	0
0 - 255 sec * = force offs and yield points											

Time of Day Data (Next/2/4/1)

Day Program

	Day Prog	Time	Coord Plan or Circuit	Coord Plan # or Circuit #	Circuit Abbrev	State On/Off
1	1	06:00	Coord Plan	1	CL1	
2	1	08:30	Coord Plan	0	None / Coord Plan	
3	1	15:00	Circuit	13	MX2	X
4	1	18:00	Circuit	13	MX2	
5	0	00:00	Circuit	0	None / Coord Plan	
6	0	00:00	Circuit	0	None / Coord Plan	
7	0	00:00	Circuit	0	None / Coord Plan	
8	0	00:00	Circuit	0	None / Coord Plan	
9	0	00:00	Circuit	0	None / Coord Plan	
10	0	00:00	Circuit	0	None / Coord Plan	
11	0	00:00	Circuit	0	None / Coord Plan	
12	0	00:00	Circuit	0	None / Coord Plan	
13	0	00:00	Circuit	0	None / Coord Plan	
14	0	00:00	Circuit	0	None / Coord Plan	
15	0	00:00	Circuit	0	None / Coord Plan	
16	0	00:00	Circuit	0	None / Coord Plan	
17	0	00:00	Circuit	0	None / Coord Plan	
18	0	00:00	Circuit	0	None / Coord Plan	
19	0	00:00	Circuit	0	None / Coord Plan	
20	0	00:00	Circuit	0	None / Coord Plan	
21	0	00:00	Circuit	0	None / Coord Plan	
22	0	00:00	Circuit	0	None / Coord Plan	
23	0	00:00	Circuit	0	None / Coord Plan	
24	0	00:00	Circuit	0	None / Coord Plan	
25	0	00:00	Circuit	0	None / Coord Plan	
26	0	00:00	Circuit	0	None / Coord Plan	
27	0	00:00	Circuit	0	None / Coord Plan	
28	0	00:00	Circuit	0	None / Coord Plan	
29	0	00:00	Circuit	0	None / Coord Plan	
30	0	00:00	Circuit	0	None / Coord Plan	
31	0	00:00	Circuit	0	None / Coord Plan	
32	0	00:00	Circuit	0	None / Coord Plan	
33	0	00:00	Circuit	0	None / Coord Plan	
34	0	00:00	Circuit	0	None / Coord Plan	
35	0	00:00	Circuit	0	None / Coord Plan	
36	0	00:00	Circuit	0	None / Coord Plan	
37	0	00:00	Circuit	0	None / Coord Plan	
38	0	00:00	Circuit	0	None / Coord Plan	
39	0	00:00	Circuit	0	None / Coord Plan	
40	0	00:00	Circuit	0	None / Coord Plan	
	1 - 15	hh:mm	X = On = Coord Plan	coord plan 0 - 32 or circuit 1-199		X = On



KITTELSON & ASSOCIATES, INC.

DEPARTMENT OF
LAND USE &
TRANSPORTATION
ENGINEERING



PLOT STAMP: 11/03/15 1:46P JHENRIKSEN
CAD: 13563_SG1.DWG, TAB: TS-3

NO.	REVISIONS
1	1

ADDENDUM 1	
SERIAL RIGHT MODIFICATION	

11 NW BROOKWOOD PARKWAY IMPROVEMENTS
(NW MEEK ROAD - NE SHUTE ROAD)

WASHINGTON COUNTY

SIGNAL FLAN
NW BROOKWOOD PKWY AT
NE SHUTE RD

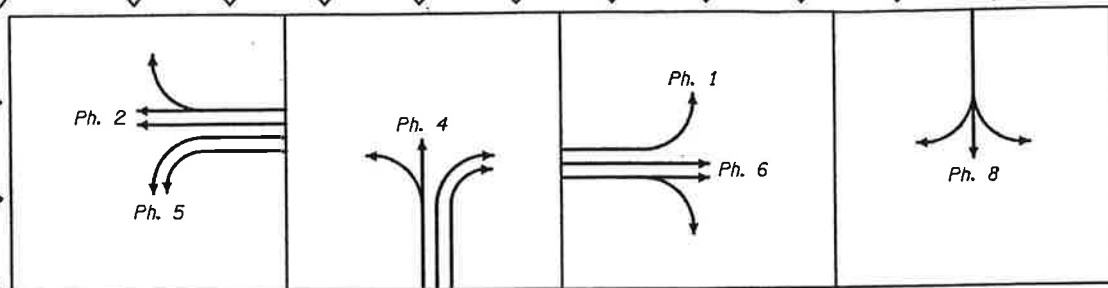
PROJECT NUMBER
100202

SHEET NO.
OF
SHEET TITLE
TS-3

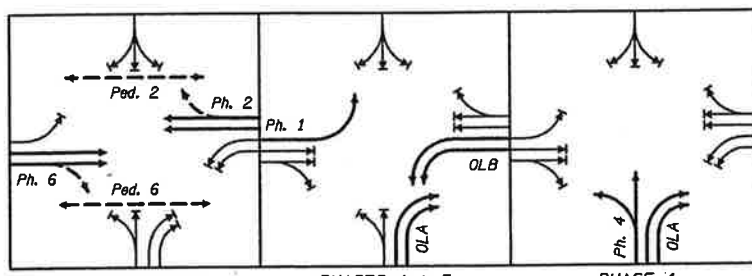
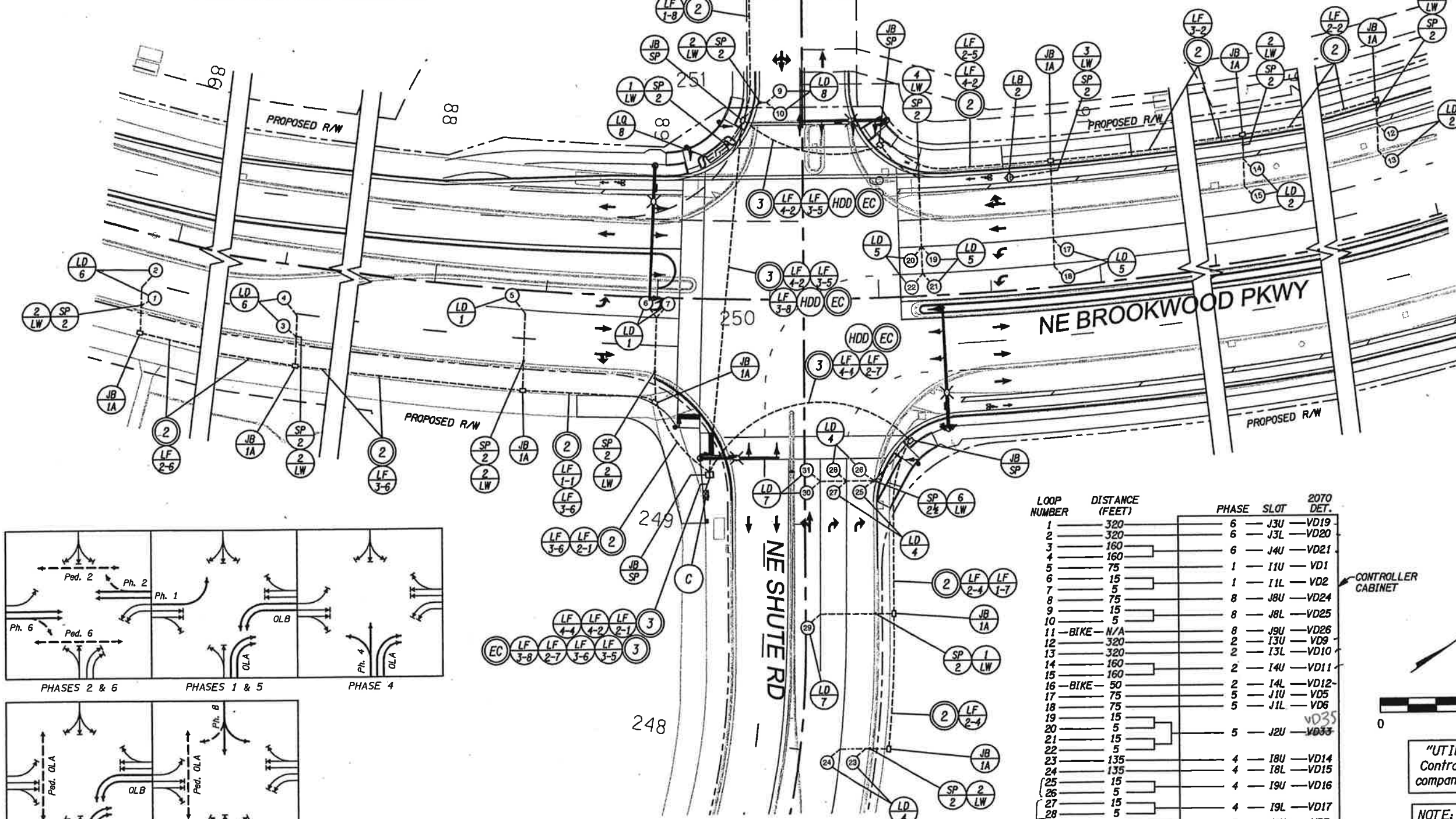
"UTILITIES NOT SHOWN"
Contractor to contact utility
companies for field locations.

NOTE:
See Sheet TS-1 for Legend

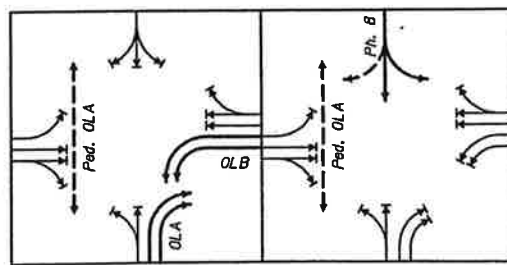
NOTE:
Field Verify Measurements Before
Construction



CHANNEL A CHANNEL B CHANNEL C CHANNEL D
FIRE PREEMPTION OPERATION



PHASES 2 & 6 PHASES 1 & 5 PHASE 4



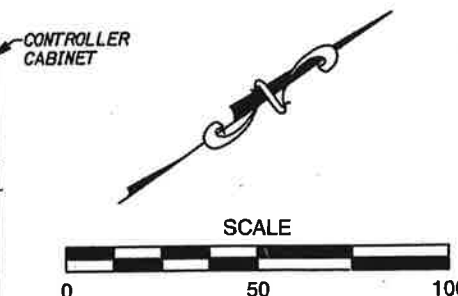
PHASE 7 PHASE 8

NORMAL PHASE ROTATION
OLA = Ph. 4 + Ph. 5 + Ph. 7
POLA = Ph. 7 + Ph. 8
OLB = Ph. 5 + Ph. 7

DESIGN APPROACH SPEEDS	
STREET	DESIGN SPEED
NE SHUTE RD	45 MPH
NE BROOKWOOD PKWY	45 MPH

LOOP NUMBER	DISTANCE (FEET)	PHASE	SLOT	2070 DET.
1	320	6	J3U	VD19
2	320	6	J3L	VD20
3	160	6	J4U	VD21
4	160	1	I1U	VD1
5	75	1	I1L	VD2
6	15	8	J8U	VD24
7	75	8	J8L	VD25
8	15	8	J9U	VD26
9	15	2	I3U	VD9
10	5	2	I3L	VD10
11	BIKE	2	I4U	VD11
12	320	2	I4L	VD12
13	320	5	J1U	VD5
14	160	5	J1L	VD6
15	160	5	J2U	VD35
16	BIKE	5	J2L	VD33
17	5	4	I8U	VD14
18	15	4	I8L	VD15
19	15	4	I9U	VD16
20	15	4	I9L	VD17
21	15	7	J6U	VD7
22	15	7	J6L	VD8
23	135			
24	135			
25	15			
26	5			
27	15			
28	15			
29	75			
30	15			
31	5			

LOOP DETECTOR WIRING DIAGRAM
DISTANCE IS FROM THE STOP BAR TO THE END OF DETECTION ZONE IN FEET.



"UTILITIES NOT SHOWN"
Contractor to contact utility companies for field locations.

NOTE:
See Sheet TS-1 for Legend

NOTE:
Field Verify Measurements Before Construction

REGISTERED PROFESSIONAL
ENGINEER
19283PE
Charles W. Radosta
OREGON
JULY 17, 1997
CHARLES W. RADOSTA
5/27/15
EXPIRES 12/31/16

KITTELSON & ASSOCIATES, INC.
WASHINGTON COUNTY
DEPARTMENT OF
LAND USE &
TRANSPORTATION
ENGINEERING

PLOT STAMP: 05/27/15 11:14A ATANKA
CAD: 13563_SIG1.DWG, TAB: TS-4
PATH:
NO. REVISIONS
ADDENDUM 1

NW BROOKWOOD PARKWAY IMPROVEMENTS
(NW MEEK ROAD - NE SHUTE ROAD)
WASHINGTON COUNTY
DETECTOR PLAN
NE BROOKWOOD PKWY AT
NE SHUTE RD

PROJECT NUMBER
100202
SHEET NO.
OF
SHEET TITLE
TS-4

Controller Function and Timing

Security, Sequence and Timing (Next/2/1, Next/2/2/3/A, Next/2/2/5)				
Security Code	0	0 = disabled, or 1000-9999	First All Red	6.0 0.0 to 25.5 seconds
Sequence	2	0 = sequential, 1 = quad left turn, 2-6 = special A-E, 7 = lead lag		
Power up Flash	0.0	0.0 - 25.5 seconds		

Initialization (Next/2/2/5)			Lead Lag (Next/2/2/3/A)			
Ring 1	Ring 2	Interval	Phases 1 - 2	Phases 3 - 4	Phases 5 - 6	Phases 7 - 8
1	5	0	2	0	2	0
Phase 1 - 8		0 = Red, 1 = Yel, 2 = Grn	0 = no reversal, 1 = reversal, 2 = by coord plan or clock			

(Next/2/2/3)		Phase Functions		(Next/2/2/1)	
Phase Used	1 2 - 4 5 6 7 8		Yellow Lock	- - - - - - - -	
Restricted Phases	- - - - - - - -		Min Recall	- 2 - - - 6 -	
Exclusive Phases	- - - - - - - -		Max Recall	- - - - - - - -	
			Ped Recall	- - - - - - - -	
			Red Lock	- - - - - - 7 -	
			Max Out Recall Inhibit	1 - - 4 5 - 7 8	
			Soft Recall	- - - - - - - -	
			Free Walk Rest	- - - - - - - -	
			Conditional Ped	- - - - - - - -	
			Disable Inhibit Max Termination	- - - - - - - -	
			Call To Non-Act 1	- - - - - - - -	
			Call To Non-Act 2	- - - - - - - -	

Phase Times (Next/2/2/2)									
Phase	1	2	3	4	5	6	7	8	
Movement									
Minimum Green	5	10	0	8	8	10	5	8	0 - 255 sec.
Passage	1.5	3.0	0.0	2.0	2.0	3.0	2.0	2.0	0.0 - 25.5 sec.
Yellow	3.0	4.5	0.0	3.5	3.5	4.5	3.0	3.5	0.0 - 25.5 sec.
Red Clearance	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0 - 25.5 sec. or 0 - 255 sec.
Max 1	10	50	0	25	35	40	15	10	0 - 255 sec.
Max 2	10	60	0	15	50	30	15	10	0 - 255 sec.
Walk	0	5	0	0	0	5	0	0	0 - 255 sec.
Ped Clear	0	13	0	0	0	17	0	0	0 - 255 sec.
Seconds Per Actuation	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0 - 25.5 sec.
Time Before Reduction	0	10	0	0	0	10	0	0	0 - 255 sec.
Time to Reduce	0	10	0	0	0	10	0	0	0 - 255 sec.
Minimum Gap	0.0	2.5	0.0	0.0	0.0	2.5	0.0	0.0	0.0 - 25.5 sec.
Max Variable Initial	0	15	0	0	0	15	0	0	0 - 255 sec.
Max Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
Auto Max	0	0	0	0	0	0	0	0	0 - 255 sec.
Advanced walk	0	0	0	0	0	0	0	0	0 - 255 sec.

Phase Times (Next/2/2/9/5)									
Inhibit Min Yellow									X = On
Red Decimal Off									X = On

Dual Entry (Next/2/2/9/3)

Mode	1	0 = off, 1 = on, 2 = Not Used, 3 = by coord plan, 4 = by time clock circuit 61

Dual Entry Ph -->	1	2	3	4	5	6	7	8	
Phase	6	0	0	0	2	0	0	0	0 = none, 1-8 = phase 1-8

Cond Service (Next/2/2/9/3/A)			5 Sec Head Logic (Next/2/2/9/4)						
	Mode	CS Max Time	X Omits Y		Anti-Trap		Yellow Blanking LT		
Phase 1	0	0	X:Y		Trap Protected Phase	Next Phase	Phase		
Phase 3	0	0	6:1	0	1	0	< (5)	1	0
Phase 5	0	0	8:3	0	3	0	< (7)	3	0
Phase 7	0	0	2:5	0	5	0	< (1)	5	0
0 = off, 1 = C.S.On. 2 = C.S. on by TOD circuit 57, 3 = N/A, 4 = C.S. and C.R. On, 5 = C.R. on by TOD circuit 57.			4:7	0	7	0	< (3)	7	0
			0 = off, 1 = side call, 2 = no side call		X = On				

Other Controller Functions (Next/2/2/9/1, Next/2/2/9/5)

Inhibit Simultaneous Gap Out	1 - - 4 - - 7 8	
Last Car Passage	2	0 = recall phase, 1 = last car passage, 2 = NOT recall - Not last car passage
Red Revert (+2seconds)	3.0	0 - 25.5 sec.
Auto Ped Clear	Off	X = On
FDW thru Yellow	Off	X = On
Red Rest Delay	0.0	0 - 25.5 sec.
Change Sequence	Off	X = On (After a download without a power on - off cycle)
Advanced Flash Rate	60 FPM	0 = Disabled (60 FPM), 1 = 120 FPM
Ped Push Button Time	null	0 = Disable, 0 - 5 Seconds

Phase -->	1	2	3	4	5	6	7	8	
Red Clear Extension Detector	0	0	0	0	0	0	0	0	0 = none 1 - 32 = detector 1 - 32
Red Clear Extension Red Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec.

CoordinationData		
Coordination Modes (Next/2/3/1)		
Flash Mode	33	0=off, 1=on, 33=time clock, 34=comm, 35=hardwire
Coordination Plan Mode	33	0=free, 1-32 = coord plan 1-32, 33=time clock, 34=comm, 35=hardwire
Offset Seeking Mode	2	0=add only, 1=dwell, 2=fastway
Late Ped	0	0 = off, 1 = on
Coord Walk Rest	0	0 = off, 1 = on, 2 = by tod circuit 160, 3 = end of walk, 4 = coord ped during perms
Zero Mode(TS2 only)	0	0=start of main street, 1=end of main street, 2=by TOD circuit 144, 3 = first green
(Next/2/3/4/1)		
Repeated Ped Service	1	0=off, 1=on (no coord ped), 2=on (beginning green coord ped), 3=on (coord ped always)
Omit Phase During Repeated Phase	- - - - -	-- = service allowed ; # = service prevented

Coordination Plans (Next/2/3/2)								
Coord Plan	Coordination Phases		Cycle Length	Offset Time	Min Cycle Len Dwell Time	Permissive	Service Plan	Max Plan
	Ring 1	Ring 2						
1	2	6	120	95	0	0	1	1
2	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0
	0 - 8		0 - 255 sec				0 - 8	

Coordination Plans cont. (Next/2/3/2)

Coord Plan	Use FO for timing	Force Off / Split Times (TS2)								Yield Points / Actuated Times (TS2)	
		1	2	3	4	5	6	7	8	Ring 1	Ring 2
1		12	59	0	14	42	29	20	15	0	5
2		0	0	0	0	0	0	0	0	0	0
3		0	0	0	0	0	0	0	0	0	0
4		0	0	0	0	0	0	0	0	0	0
5		0	0	0	0	0	0	0	0	0	0
6		0	0	0	0	0	0	0	0	0	0
7		0	0	0	0	0	0	0	0	0	0
8		0	0	0	0	0	0	0	0	0	0
9		0	0	0	0	0	0	0	0	0	0
10		0	0	0	0	0	0	0	0	0	0
11		0	0	0	0	0	0	0	0	0	0
12		0	0	0	0	0	0	0	0	0	0
13		0	0	0	0	0	0	0	0	0	0
14		0	0	0	0	0	0	0	0	0	0
15		0	0	0	0	0	0	0	0	0	0
16		0	0	0	0	0	0	0	0	0	0
17		0	0	0	0	0	0	0	0	0	0
18		0	0	0	0	0	0	0	0	0	0
19		0	0	0	0	0	0	0	0	0	0
20		0	0	0	0	0	0	0	0	0	0
21		0	0	0	0	0	0	0	0	0	0
22		0	0	0	0	0	0	0	0	0	0
23		0	0	0	0	0	0	0	0	0	0
24		0	0	0	0	0	0	0	0	0	0
25		0	0	0	0	0	0	0	0	0	0
26		0	0	0	0	0	0	0	0	0	0
27		0	0	0	0	0	0	0	0	0	0
28		0	0	0	0	0	0	0	0	0	0
29		0	0	0	0	0	0	0	0	0	0
30		0	0	0	0	0	0	0	0	0	0
31		0	0	0	0	0	0	0	0	0	0
32		0	0	0	0	0	0	0	0	0	0
		0 - 255 sec * = force offs and yield points									

Time of Day Data (Next/2/4/1)

Day Program

	Day Prog	Time	Coord Plan or Circuit	Coord Plan # or Circuit #	Circuit Abbrev	State On/Off
1	1	06:00	Coord Plan	1	CL1	
2	1	08:30	Coord Plan	0	None / Coord Plan	
3	0	00:00	Circuit	0	None / Coord Plan	
4	0	00:00	Circuit	0	None / Coord Plan	
5	0	00:00	Circuit	0	None / Coord Plan	
6	0	00:00	Circuit	0	None / Coord Plan	
7	0	00:00	Circuit	0	None / Coord Plan	
8	0	00:00	Circuit	0	None / Coord Plan	
9	0	00:00	Circuit	0	None / Coord Plan	
10	0	00:00	Circuit	0	None / Coord Plan	
11	0	00:00	Circuit	0	None / Coord Plan	
12	0	00:00	Circuit	0	None / Coord Plan	
13	0	00:00	Circuit	0	None / Coord Plan	
14	0	00:00	Circuit	0	None / Coord Plan	
15	0	00:00	Circuit	0	None / Coord Plan	
16	0	00:00	Circuit	0	None / Coord Plan	
17	0	00:00	Circuit	0	None / Coord Plan	
18	0	00:00	Circuit	0	None / Coord Plan	
19	0	00:00	Circuit	0	None / Coord Plan	
20	0	00:00	Circuit	0	None / Coord Plan	
21	0	00:00	Circuit	0	None / Coord Plan	
22	0	00:00	Circuit	0	None / Coord Plan	
23	0	00:00	Circuit	0	None / Coord Plan	
24	0	00:00	Circuit	0	None / Coord Plan	
25	0	00:00	Circuit	0	None / Coord Plan	
26	0	00:00	Circuit	0	None / Coord Plan	
27	0	00:00	Circuit	0	None / Coord Plan	
28	0	00:00	Circuit	0	None / Coord Plan	
29	0	00:00	Circuit	0	None / Coord Plan	
30	0	00:00	Circuit	0	None / Coord Plan	
31	0	00:00	Circuit	0	None / Coord Plan	
32	0	00:00	Circuit	0	None / Coord Plan	
33	0	00:00	Circuit	0	None / Coord Plan	
34	0	00:00	Circuit	0	None / Coord Plan	
35	0	00:00	Circuit	0	None / Coord Plan	
36	0	00:00	Circuit	0	None / Coord Plan	
37	0	00:00	Circuit	0	None / Coord Plan	
38	0	00:00	Circuit	0	None / Coord Plan	
39	0	00:00	Circuit	0	None / Coord Plan	
40	0	00:00	Circuit	0	None / Coord Plan	
	1 - 15	hh:mm	X = On = Coord Plan	coord plan 0 - 32 or circuit 1-199		X = On

C													
Monday, August 22, 2016 16:15													
Intersection Name		2 - nw shute rd-ne butler st						Local ID		2			
Intersection Telephone Number													
System Name		127 - hillsboro-stucki-shute						System ID		127			
Controller Type		Voyage - C1-C11											
Controller Serial Number										Installation Date			
Programmed by										Programmed Date			
Graphic Map Background							Phase Rotation Diagram						
Control Data (next/2/2)													
Controller Function and Timing (next/2/1, next/2/2)													
Security, Sequence, Initialization													
Security Code		****		0 = disabled, or 1000-9999									
Sequence		7		0 = sequential, 1 = quad left turn, 2-6 = special A-E, 7 = lead lag									
				Lead Lag (next/2/2/3)									
				Phases 1 - 2		Phases 3 - 4		Phases 5 - 6		Phases 7 - 8			
				2		2		2		2			
				0 = no reversal, 1 = reversal, 2 = by coord plan or clock									
Initialization and Flash (next/2/2/5)													
	Initialization			Flash Entry			Flash Exit						
Ring 1 Phase	1			0			1			phase 1-8			
Ring 2 Phase	5			0			5			phase 1-8			
Interval	0			0			0			0 = red, 1 = yellow, 2 = green			
Power up Flash	0.0		0.0 - 25.5 seconds				First All Red		8.0		0.0 - 25.5 seconds		
Soft Flash (next/2/2/5)													
Phase	1	2	3	4	5	6	7	8	0 = dark, 1=flash yel WIG, 2 = flash yel WAG, 3 = flash red WIG, 4 = flash red WAG				
	3	4	3	4	3	4	3	4					
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	same as phase
	3	4	3	4	3	4	3	4	3	4	3	4	
Internal Logic Output	1	2	3	4	5	6	7	8	9	10	11	12	0 = normal, 1 = dark, 2 = flash WIG
	0	0	0	0	0	0	0	0	0	0	0	0	

Per Phase Functions (next/2/2/3, next/2/2/1)									
	1	2	3	4	5	6	7	8	
Phases Used	X	X	X	X	X	X	X	X	X = on
Restricted Phases									X = on (Sequence 2, 6, 7 only)
Exclusive Phases									X = on (Sequence 7 only)
Yellow Lock									X = on
Min Recall		X				X			
Max Recall									
Ped Recall									
Red Lock									
Max Out Recall Inhibit	X		X	X	X		X	X	
Soft Recall									
Free Walk Rest									
Conditional Ped									
Disable Inhibit Max Termination									
Call to Non Act 1									
Call to Non Act 2									
Dual Entry (next/2/2/9/3)									
Mode	1	0 = off, 1 = on, 2 = Not Used, 3 = by coord plan, 4 = by time clock circuit 61							
Dual Entry Phase -->	1	2	3	4	5	6	7	8	
Phase	0	0	0	8	0	0	0	4	0 = none, 1-8 = phase 1-8
Conditional Service, Five Section Head									
Conditional Service (next/2/2/9/3)			5 Section Head Logic (next/2/2/9/4)						
			Anti-Trap				Yellow Blanking LT		
	Mode	CS Max Time	X Omits Y		Trap Protected Phase		Next Phase	Phase	
Phase 1	0	0	X : Y		1		< (5)	1	
Phase 3	0	0	6 : 1	0	3		< (7)	3	
Phase 5	0	0	8 : 3	0	5		< (1)	5	
Phase 7	0	0	2 : 5	0	7		< (3)	7	
0 = off, 1 = C.S.On. 2 = C.S. on by TOD circuit 57, 3 = N/A, 4 = C.S. and C.R. On, 5 = C.R. on by TOD circuit 57.			0=off, 1=side call, 2=no side call		X = On				

Phase Times (next/2/2/2, next/2/2/9/5)								
	1	2	3	4	5	6	7	8
Movement	<i>NBL</i>	<i>SB</i>		<i>WB</i>	<i>SBL</i>	<i>NB</i>		<i>WB</i>
Minimum Green	5	10	5	8	5	10	5	8
Passage	1.0	3.0	2.5	2.5	1.0	3.0	2.5	2.5
Yellow	3.0	4.5	3.0	4.0	3.0	4.5	3.0	4.0
Red Clearance	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Max 1	30	60	30	30	30	60	30	30
Max 2	30	60	30	30	30	60	30	30
Walk	0	7	0	7	0	7	0	7
Ped Clear	0	15	0	22	0	15	0	20
Seconds Per Actuation	0.0	1.5	0.0	0.0	0.0	1.5	0.0	0.0
Time Before Reduction	0	20	0	0	0	20	0	0
Time to Reduce	0	10	0	0	0	10	0	0
Minimum Gap	1.0	2.5	2.5	2.5	1.0	2.5	2.5	1.0
Max Variable Initial	5	19	5	8	5	19	5	8
Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auto Max Limit	0	0	0	0	0	0	0	0
Inhibit Min Yellow								X = On
Red Decimal Off								X = On
Advance Walk	0	0	0	0	0	0	0	0
Other Controller Functions (next/2/2/9)								
Phase -->	1	2	3	4	5	6	7	8
Inhibit Simultaneous Gap Out	X		X	X	X		X	X
Last Car Passage	2	0 = recall phase, 1 = last car passage, 2 = NOT recall - Not last car passage						
Red Revert (+2 seconds)	0.0	0 - 25.5 sec						
Auto Ped Clear	X	X = On						
Flashing Don't Walk Into Yellow		X = On						
Soft Recall / Red Rest Delay	0.0	0 - 25.5 sec						
Ped Pushbutton	0	0 - 5 sec, 0 = disable						
Advance Flash Rate	0	0 = disable, 1 = 120 FPM						
Change Sequence		X = On (After a download with a power on - off cycle)						
Phase -->	1	2	3	4	5	6	7	8
Red Clear Extension Detector	0	0	0	0	0	0	0	0
Red Clear Extension Red Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Coordination Data (next/2/3)										
Coordination Modes (next/2/3/1, next/2/3/4/1, next/2/3/4/3)										
Flash Mode	33	0=off, 1=on, 33=time clock, 34=comm, 35=hardwire, 36=NWS Set only, 37=AB3								
Coordination Plan Mode	0	0=free, 1-32 = coord plan 1-32, 33=time clock, 34=comm, 35=hardwire, 36=NW								
Offset Seeking Mode	0	0=add only, 1=dwel, 2=fastway								
Late Ped	0	0 = off, 1 = on								
Coord Walk Rest	0	0 = off, 1 = on, 2 = by TOD circuit 160, 3 = end of walk, 4 = coord ped during pe								
Repeated Phase Service	0	0=off, 1=on (no coord ped), 2=on (beginning green coord ped), 3=on (coord ped								
Zero Mode (TS2 only)	0	0=start of main street, 1=end of main street, 2=by TOD circuit 144								
Phase -->		1	2	3	4	5	6	7	8	0 = service allowed 1 = service prevented
Omit Phase During Repeated Phase Service		0	0	0	0	0	0	0	0	
Auto Permissive Min Green		0	0	0	0	0	0	0	0	0 - 255 seconds
Coordination Plans (next/2/3/2)										
Coord Plan	Coordination Phases		Cycle Length	Offset Time	Min Cycle Length Dwell Time	Permissive	Service Plan	Max Plan		
	Ring 1	Ring 2								
1 -	0	0	0	0	0	0	0	0		
2 -	0	0	0	0	0	0	0	0		
3 -	0	0	0	0	0	0	0	0		
4 -	0	0	0	0	0	0	0	0		
5 -	0	0	0	0	0	0	0	0		
6 -	0	0	0	0	0	0	0	0		
7 -	0	0	0	0	0	0	0	0		
8 -	0	0	0	0	0	0	0	0		
9 -	0	0	0	0	0	0	0	0		
10 -	0	0	0	0	0	0	0	0		
11 -	0	0	0	0	0	0	0	0		
12 -	0	0	0	0	0	0	0	0		
13 -	0	0	0	0	0	0	0	0		
14 -	0	0	0	0	0	0	0	0		
15 -	0	0	0	0	0	0	0	0		
16 -	0	0	0	0	0	0	0	0		
17 -	0	0	0	0	0	0	0	0		
18 -	0	0	0	0	0	0	0	0		
19 -	0	0	0	0	0	0	0	0		
20 -	0	0	0	0	0	0	0	0		
21 -	0	0	0	0	0	0	0	0		
22 -	0	0	0	0	0	0	0	0		
23 -	0	0	0	0	0	0	0	0		
24 -	0	0	0	0	0	0	0	0		
25 -	0	0	0	0	0	0	0	0		
26 -	0	0	0	0	0	0	0	0		
27 -	0	0	0	0	0	0	0	0		
28 -	0	0	0	0	0	0	0	0		
29 -	0	0	0	0	0	0	0	0		
30 -	0	0	0	0	0	0	0	0		
31 -	0	0	0	0	0	0	0	0		
32 -	0	0	0	0	0	0	0	0		
		0 - 8		0 - 255 sec.				0 - 8		

Coordination Plans cont.										
Coord Plan	* = Force Offs / Split Times (TS2)								* = Yield Points / Actuated Times (TS2)	
	1	2	3	4	5	6	7	8	Ring 1	Ring 2
1 -	0	0	0	0	0	0	0	0	0	0
2 -	0	0	0	0	0	0	0	0	0	0
3 -	0	0	0	0	0	0	0	0	0	0
4 -	0	0	0	0	0	0	0	0	0	0
5 -	0	0	0	0	0	0	0	0	0	0
6 -	0	0	0	0	0	0	0	0	0	0
7 -	0	0	0	0	0	0	0	0	0	0
8 -	0	0	0	0	0	0	0	0	0	0
9 -	0	0	0	0	0	0	0	0	0	0
10 -	0	0	0	0	0	0	0	0	0	0
11 -	0	0	0	0	0	0	0	0	0	0
12 -	0	0	0	0	0	0	0	0	0	0
13 -	0	0	0	0	0	0	0	0	0	0
14 -	0	0	0	0	0	0	0	0	0	0
15 -	0	0	0	0	0	0	0	0	0	0
16 -	0	0	0	0	0	0	0	0	0	0
17 -	0	0	0	0	0	0	0	0	0	0
18 -	0	0	0	0	0	0	0	0	0	0
19 -	0	0	0	0	0	0	0	0	0	0
20 -	0	0	0	0	0	0	0	0	0	0
21 -	0	0	0	0	0	0	0	0	0	0
22 -	0	0	0	0	0	0	0	0	0	0
23 -	0	0	0	0	0	0	0	0	0	0
24 -	0	0	0	0	0	0	0	0	0	0
25 -	0	0	0	0	0	0	0	0	0	0
26 -	0	0	0	0	0	0	0	0	0	0
27 -	0	0	0	0	0	0	0	0	0	0
28 -	0	0	0	0	0	0	0	0	0	0
29 -	0	0	0	0	0	0	0	0	0	0
30 -	0	0	0	0	0	0	0	0	0	0
31 -	0	0	0	0	0	0	0	0	0	0
32 -	0	0	0	0	0	0	0	0	0	0
0 - 255 sec * = force offs and yield points										

Time of Day Data (next/2/4)

Day Program (next/2/4/1)

	Day Prog	Time	Coord Plan	Coord Plan or Circuit	State On / Off		Day Prog	Time	Coord Plan	Coord Plan or Circuit	State On/Off
1						51					
2						52					
3						53					
4						54					
5						55					
6						56					
7						57					
8						58					
9						59					
10						60					
11						61					
12						62					
13						63					
14						64					
15						65					
16						66					
17						67					
18						68					
19						69					
20						70					
21						71					
22						72					
23						73					
24						74					
25						75					
26						76					
27						77					
28						78					
29						79					
30						80					
31						81					
32						82					
33						83					
34						84					
35						85					
36						86					
37						87					
38						88					
39						89					
40						90					
41						91					
42						92					
43						93					
44						94					
45						95					
46						96					
47						97					
48						98					
49						99					

DETECTOR PLAN

ALL DETECTOR LOOPS TO BE CENTERED IN TRAVEL LANE
OR AD LANE.

FF (SEE 202nd PLAIN)

9000 (500, 5000, 10,000, 50,000, 100,000)

7 1/8" x 10 1/2" PRECAST CONCRETE JUNCTION BOX.

MAXI (Pn) 4" x 4" DIAMOND (OR 6" ROUND) PREPARED OR
HOLE DETECTOR LOG.

PHASE (PH) 3° & 5° DIAMONDS (CUT & SOUND) PHOTOGRAPHY OF PHASE DETECTOR LOOP.

WATERBURY STATE COLLEGE (1943)

① 例題 (3) : 100 以下の素数を求めよ。

5) PAIR OF LOOP WIRES

DRIED DRY-BLOCKED WITH A PVC SHEET.

CONDUCT (SEE SIGNAL PLANE)

NON-ELECTRICAL CONDUIT

PROJECT CHAIRMAN (SEE INTRODUCTION/PROJECT PLAN)

1992

F CABLES SHOWN

SP-2000



2. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO CITY OF HILLSBORO, OREGON, AND STANDARD SPECIFICATIONS, THE 2005 OREGON DEPARTMENT OF TRANSPORTATION (ODOT) STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND THE ODOT STANDARD DRAINAGE.

GRAPHIC SCALE



PO126.5

NAL LEGEND CODE

40"x12" (min. dimension) PRECAST CONCRETE JUNCTION BOX

4"x12"x12" (min. dimension) PRECAST CONCRETE JUNCTION BOX

NO. 8 TYP. THIN WIRES (SIGNAL SYSTEM COMMON)

NO. (6) TYP. THIN WIRES

AL SHIELD TYPE PODESTRAN SIGNAL

USE (14) 1/4" WIRELESS STYLE PODESTRAN IN SITUATION WITH INSTRUCTION SIGN

UNBEL. (C4) DEL-AY FIRE PRE-EMPTION DETECTOR UNIT

UNBEL. (C4) FIRE PRE-EMPTION DETECTOR FEEDER CABLE

OX (SEE DETECTOR PLAN)

BRADHEAD STYLE LUMINAIRE, 350 WATT HIGH PRESSURE SODIUM, BALLAST SET AT 240 VOLT, MAG-RIG BALLAST, P.E. INTERCEPT, 1/4" CLOUTY TAP & DISTRIBUTION

STEELCONE COIL ON POLE (RM - 10M ABOVE POLE BASE)

USE (74) VEHICLE SIGNAL WITH 8" COVERED BACK PLATE

1/8" 160" BASE MOUNTED SERVICE CABINET, 120/240 VOLT FOR LAMP AND ALUMINATION DROUPTS. SEE DETAIL ON SHEET 21

240 VOLT 16" 24" BASE

MINI. CABINET

PEDESTRIAN SIGNAL PEDESTAL WITH TRAVELER BASE

NOTE POWER SERVICE POST

SECTION, 12" P, 12" X, 12" G SIGNAL

VERED BACK PLATE

DEL 170 CONTROLLER (CONTRACTOR SUPPLIED BATTERY SOFTWARE) 22 CABINET WITH RISER FRAME. ORIENT FRONT DOOR AS SHOWN

1" AND RISER FRAME ON CONCRETE FOUNDATION

1" (1) STANDARD TRAFFIC SIGNAL MAST ARM WITH 1/2" EXTENSION (40 FT. MOUNTING HT.)

1" SET NAME SIGN "NW 229TH AVENUE" ON MAST ARM

1" AND POLE NO. 5. SEE SIGNING AND STRIPING PLAN FOR DETAIL

1" SET NAME SIGN "NE BUTLER STREET" ON MAST ARM

1" AND POLE NO. 5. SEE SIGNING AND STRIPING PLAN FOR DETAIL

1" FT. TRAFFIC SIGNAL MAST ARM

1" FT. LUMINAIRE ARM

1" CIRCULAR LEFT TURN "YIELD ON GREEN" SIGN (ORND-12)

1" AND STRIPING PLAN FOR DETAIL

1" CONDUIT (SEE DETECTOR PLAN)

1" 21 CONDUIT (SEE INTERCONNECT PLAN)

1" 1/2" ELEC. CONDUIT

1" 1/2"

1" 1/2"

1" CABLE SHOWN

1" 1/2"

1" 1/2"

1" 1/2"

1" 1/2"

1" 1/2"

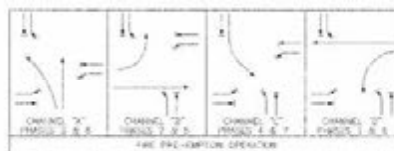
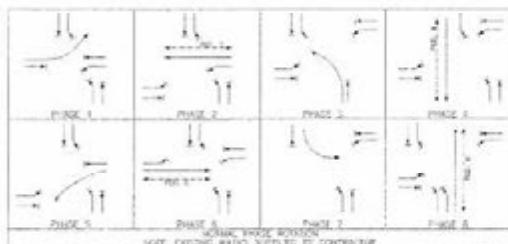
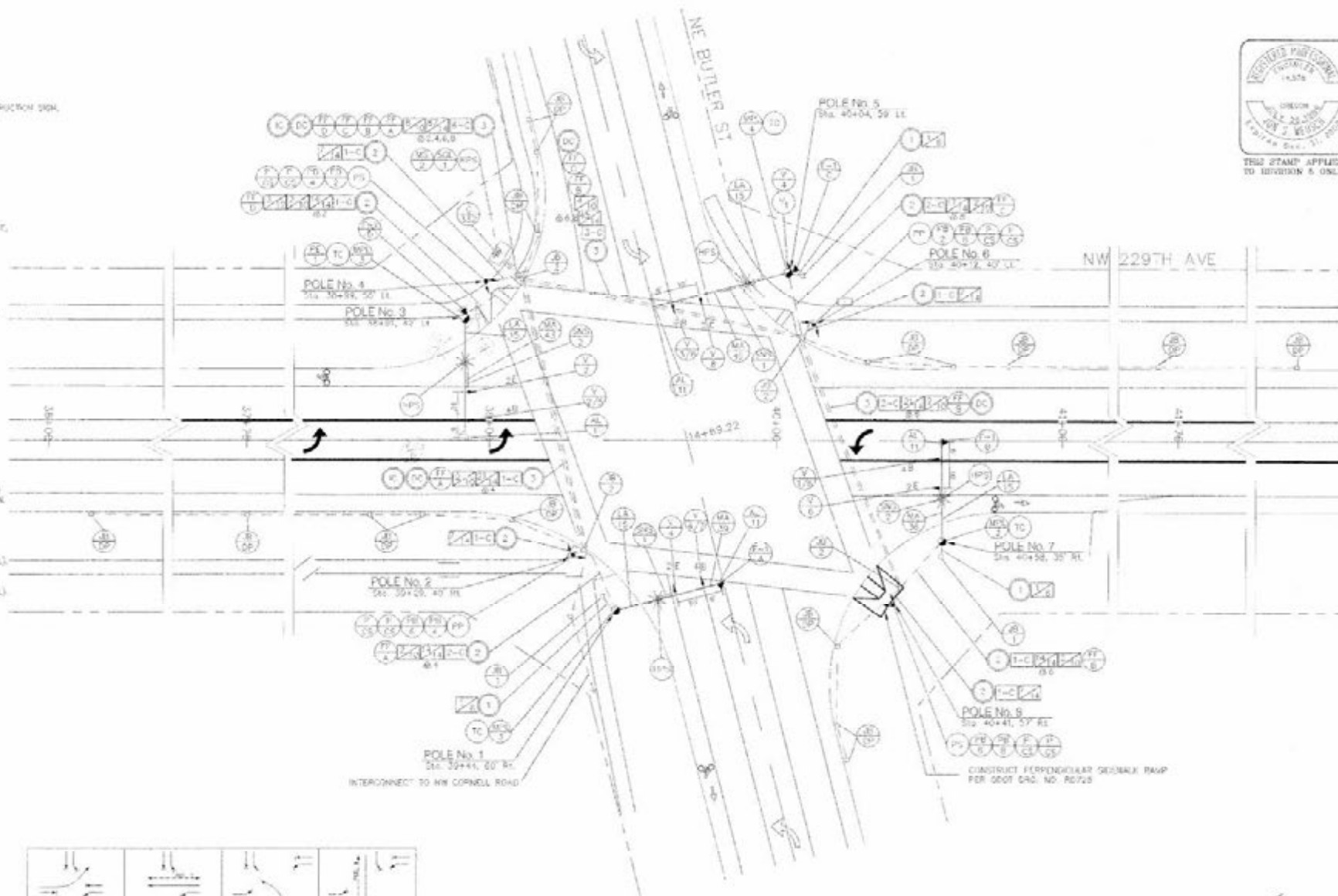
1" 1/2"

1" 1/2"

1" 1/2"

1" 1/2"

SIGNAL PLAN



GRAPHIC SCALE



PO126-4

C			
Wednesday, June 25, 2014 08:14			
Intersection Name	1 - 229th and Butler st		Local ID 1
Intersection Telephone Number			
System Name	121 - Hillsboro		System ID 121
Controller Type	Voyage - C1-C11		
Controller Serial Number			Installation Date
Programmed by			Programmed Date
Graphic Map Background		Phase Rotation Diagram	

Control Data (next/2/2)													
Controller Function and Timing (next/2/1, next/2/2)													
Security, Sequence, Initialization													
Security Code	****	0 = disabled, or 1000-9999											
Sequence	7	0 = sequential, 1 = quad left turn, 2-6 = special A-E, 7 = lead lag											
				Lead Lag (next/2/2/3)									
				Phases 1 - 2		Phases 3 - 4		Phases 5 - 6		Phases 7 - 8			
				2		2		2		2			
0 = no reversal, 1 = reversal, 2 = by coord plan or clock													
Initialization and Flash (next/2/2/5)													
	Initialization		Flash Entry		Flash Exit								
Ring 1 Phase	1		0		1		phase 1-8						
Ring 2 Phase	5		0		5		phase 1-8						
Interval	0		0		0		0 = red, 1 = yellow, 2 = green						
Power up Flash	0.0	0.0 - 25.5 seconds			First All Red	8.0	0.0 - 25.5 seconds						
Soft Flash (next/2/2/5)													
Phase	1	2	3	4	5	6	7	8	0 = dark, 1=flash yel WIG, 2 = flash yel WAG, 3 = flash red WIG, 4 = flash red WAG				
	3	4	3	4	3	4	3	4					
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	same as phase
	3	4	3	4	3	4	3	4	3	4	3	4	
Internal Logic Output	1	2	3	4	5	6	7	8	9	10	11	12	0 = normal, 1 = dark, 2 = flash WIG
	0	0	0	0	0	0	0	0	0	0	0	0	

Per Phase Functions (next/2/2/3, next/2/2/1)									
	1	2	3	4	5	6	7	8	
Phases Used	X	X	X	X	X	X	X	X	X = on
Restricted Phases									X = on (Sequence 2, 6, 7 only)
Exclusive Phases									X = on (Sequence 7 only)
Yellow Lock									X = on
Min Recall		X				X			
Max Recall									
Ped Recall									
Red Lock									
Max Out Recall Inhibit									
Soft Recall									
Free Walk Rest									
Conditional Ped									
Disable Inhibit Max Termination									
Call to Non Act 1									
Call to Non Act 2									
Dual Entry (next/2/2/9/3)									
Mode	1	0 = off, 1 = on, 2 = Not Used, 3 = by coord plan, 4 = by time clock circuit 61							
Dual Entry Phase -->	1	2	3	4	5	6	7	8	
Phase	0	6	0	8	0	2	0	4	0 = none, 1-8 = phase 1-8
Conditional Service, Five Section Head									
Conditional Service (next/2/2/9/3)			5 Section Head Logic (next/2/2/9/4)						
	Mode	CS Max Time	X Omits Y		Anti-Trap			Yellow Blanking LT	
Phase 1	0	0	X : Y		Trap Protected Phase		Next Phase	Phase	
Phase 3	0	0	6 : 1	0	1		< (5)	1	
Phase 5	0	0	8 : 3	0	3		< (7)	3	
Phase 7	0	0	2 : 5	0	5		< (1)	5	
			4 : 7	0	7		< (3)	7	
0 = off, 1 = C.S.On. 2 = C.S. on by TOD circuit 57, 3 = N/A, 4 = C.S. and C.R. On, 5 = C.R. on by TOD circuit 57.			0=off, 1=side call, 2=no side call		X = On				

Phase Times (next/2/2/2, next/2/2/9/5)								
	1	2	3	4	5	6	7	8
Movement								
Minimum Green	5	10	5	6	5	10	5	6 0 - 255 sec
Passage	0.5	2.5	1.0	2.0	0.5	2.5	1.0	2.0 0.0 - 25.5 sec
Yellow	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0 0.0 - 25.5 sec
Red Clearance	1.0	1.0	1.0	0.5	1.0	1.0	1.0	0.5 0.0 - 25.5 sec or 0 - 255 sec
Max 1	15	50	15	30	20	50	20	30 0 - 255 sec
Max 2	15	50	15	30	20	50	15	30 0 - 255 sec
Walk	0	10	0	10	0	10	0	10 0 - 255 sec
Ped Clear	0	19	0	23	0	24	0	15 0 - 255 sec
Seconds Per Actuation	0.0	1.3	0.0	0.0	0.0	1.3	0.0	0.0 0.0 - 25.5 sec
Time Before Reduction	0	0	0	0	0	0	0	0 0 - 255 sec
Time to Reduce	0	0	0	0	0	0	0	0 0 - 255 sec
Minimum Gap	0.5	2.5	1.0	2.0	0.5	2.5	1.0	2.0 0.0 - 25.5 sec
Max Variable Initial	6	20	6	12	6	20	6	12 0 - 255 sec
Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0 - 25.5 sec
Auto Max Limit	0	0	0	0	0	0	0	0 0 - 255 sec
Inhibit Min Yellow								X = On
Red Decimal Off								X = On
Advance Walk	0	0	0	0	0	0	0	0 0 - 255 sec
Other Controller Functions (next/2/2/9)								
Phase -->	1	2	3	4	5	6	7	8
Inhibit Simultaneous Gap Out	X		X	X	X		X	X X = On
Last Car Passage	2	0 = recall phase, 1 = last car passage, 2 = NOT recall - Not last car passage						
Red Revert (+2 seconds)	0.0	0 - 25.5 sec						
Auto Ped Clear	X	X = On						
Flashing Don't Walk Into Yellow		X = On						
Soft Recall / Red Rest Delay	0.0	0 - 25.5 sec						
Ped Pushbutton	0	0 - 5 sec, 0 = disable						
Advance Flash Rate	0	0 = disable, 1 = 120 FPM						
Change Sequence		X = On (After a download with a power on - off cycle)						
Phase -->	1	2	3	4	5	6	7	8
Red Clear Extension Detector	0	0	0	0	0	0	0	0 0 = none 1 - 32 = detector 1 - 32
Red Clear Extension Red Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0 - 25.5 sec.

Coordination Data (next/2/3)

Coordination Modes (next/2/3/1, next/2/3/4/1, next/2/3/4/3)

Flash Mode	<i>33</i>	0=off, 1=on, 33=time clock, 34=comm, 35=hardwire
Coordination Plan Mode	<i>34</i>	0=free, 1-32 = coord plan 1-32, 33=time clock, 34=comm, 35=hardwire
Offset Seeking Mode	<i>2</i>	0=add only, 1=dwell, 2=fastway
Late Ped	<i>0</i>	0 = off, 1 = on
Coord Walk Rest	<i>0</i>	0 = off, 1 = on, 2 = by TOD circuit 160, 3 = end of walk, 4 = coord ped during perms
Repeated Phase Service	<i>0</i>	0=off, 1=on (no coord ped), 2=on (beginning green coord ped), 3=on (coord ped always)
Zero Mode (TS2 only)	<i>0</i>	0=start of main street, 1=end of main street, 2=by TOD circuit 144

Phase -->	1	2	3	4	5	6	7	8	0 = service allowed 1 = service prevented
Omit Phase During Repeated Phase Service	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	
Auto Permissive Min Green	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	0 - 255 seconds

Coordination Plans (next/2/3/2)

Coord Plan	Coordination Phases		Cycle Length	Offset Time	Min Cycle Length Dwell Time	Permissive	Service Plan	Max Plan
	Ring 1	Ring 2						
<i>1 - PLAN 1</i>	<i>2</i>	<i>6</i>	<i>105</i>	<i>16</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>2 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>3 - PLAN 3</i>	<i>2</i>	<i>6</i>	<i>110</i>	<i>37</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>4 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>5 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>6 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>7 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>8 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>9 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>10 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>11 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>12 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>13 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>14 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>15 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>16 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>17 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>18 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>19 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>20 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>21 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>22 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>23 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>24 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>25 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>26 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>27 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>28 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>29 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>30 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>31 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>32 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
0 - 8			0 - 255 sec.				0 - 8	

Coordination Plans cont.

Coord Plan	* = Force Offs / Split Times (TS2)								* = Yield Points / Actuated Times (TS2)	
	1	2	3	4	5	6	7	8	Ring 1	Ring 2
1 - PLAN 1	15	40	12	38	12	43	12	38	0	0
2 -	0	0	0	0	0	0	0	0	0	0
3 - PLAN 3	12	48	12	38	20	40	12	38	0	0
4 -	0	0	0	0	0	0	0	0	0	0
5 -	0	0	0	0	0	0	0	0	0	0
6 -	0	0	0	0	0	0	0	0	0	0
7 -	0	0	0	0	0	0	0	0	0	0
8 -	0	0	0	0	0	0	0	0	0	0
9 -	0	0	0	0	0	0	0	0	0	0
10 -	0	0	0	0	0	0	0	0	0	0
11 -	0	0	0	0	0	0	0	0	0	0
12 -	0	0	0	0	0	0	0	0	0	0
13 -	0	0	0	0	0	0	0	0	0	0
14 -	0	0	0	0	0	0	0	0	0	0
15 -	0	0	0	0	0	0	0	0	0	0
16 -	0	0	0	0	0	0	0	0	0	0
17 -	0	0	0	0	0	0	0	0	0	0
18 -	0	0	0	0	0	0	0	0	0	0
19 -	0	0	0	0	0	0	0	0	0	0
20 -	0	0	0	0	0	0	0	0	0	0
21 -	0	0	0	0	0	0	0	0	0	0
22 -	0	0	0	0	0	0	0	0	0	0
23 -	0	0	0	0	0	0	0	0	0	0
24 -	0	0	0	0	0	0	0	0	0	0
25 -	0	0	0	0	0	0	0	0	0	0
26 -	0	0	0	0	0	0	0	0	0	0
27 -	0	0	0	0	0	0	0	0	0	0
28 -	0	0	0	0	0	0	0	0	0	0
29 -	0	0	0	0	0	0	0	0	0	0
30 -	0	0	0	0	0	0	0	0	0	0
31 -	0	0	0	0	0	0	0	0	0	0
32 -	0	0	0	0	0	0	0	0	0	0
0 - 255 sec * = force offs and yield points										

Time of Day Data (next/2/4)

Day Program (next/2/4/1)

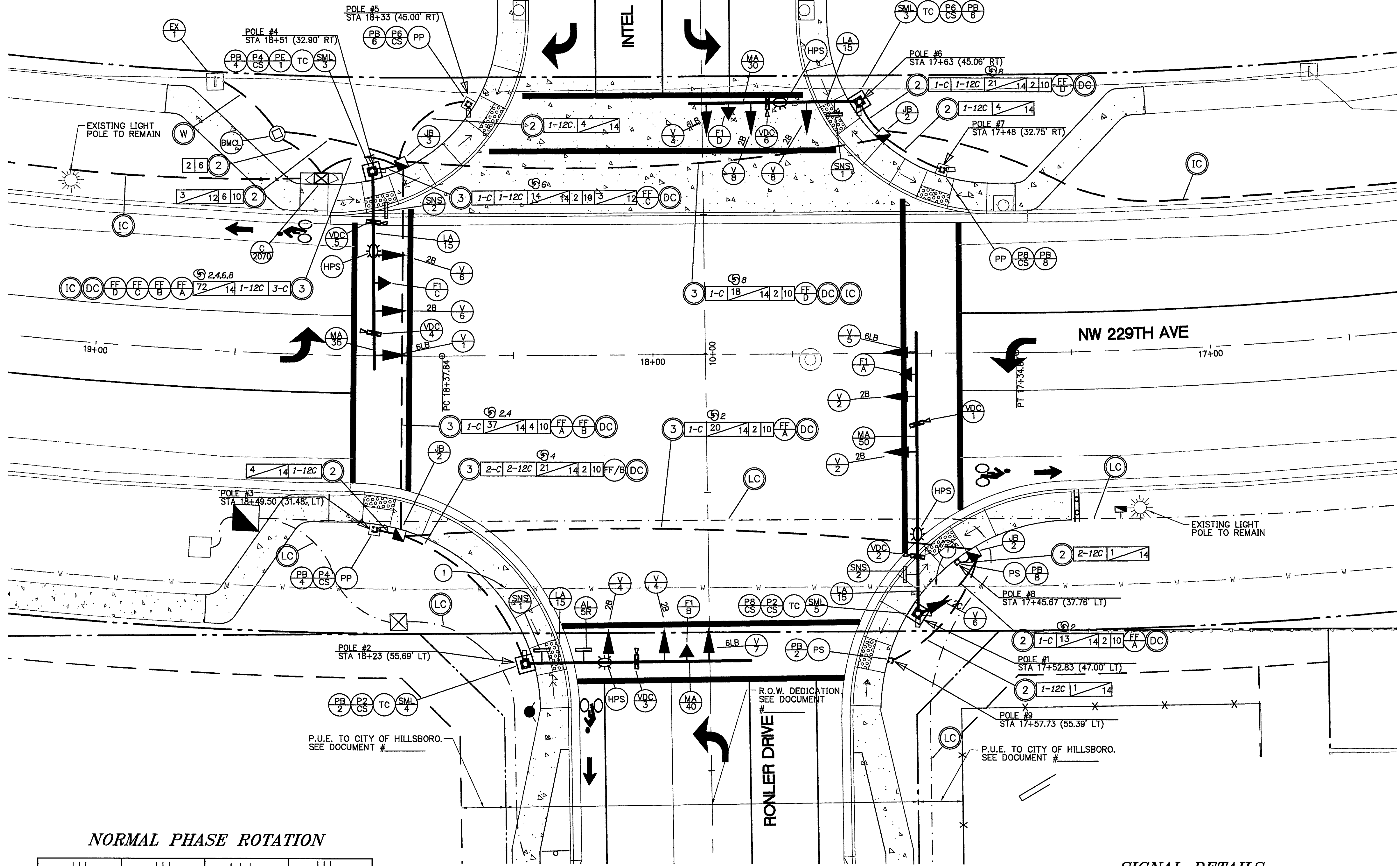
	Day Prog.	Time	Coord Plan	Coord Plan or Circuit	State On / Off		Day Prog.	Time	Coord Plan	Coord Plan or Circuit	State On/Off
1	1	06:45	X	1		51					
2	1	09:00	X	0		52					
3	1	15:30	X	3		53					
4	1	18:15	X	0		54					
5						55					
6						56					
7						57					
8						58					
9						59					
10						60					
11						61					
12						62					
13						63					
14						64					
15						65					
16						66					
17						67					
18						68					
19						69					
20						70					
21						71					
22						72					
23						73					
24						74					
25						75					
26						76					
27						77					
28						78					
29						79					
30						80					
31						81					
32						82					
33						83					
34						84					
35						85					
36						86					
37						87					
38						88					
39						89					
40						90					
41						91					
42						92					
43						93					
44						94					
45						95					
46						96					
47						97					
48						98					
49						99					
50						100					
	1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196	X = on		1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196	X = on

GENERAL NOTES

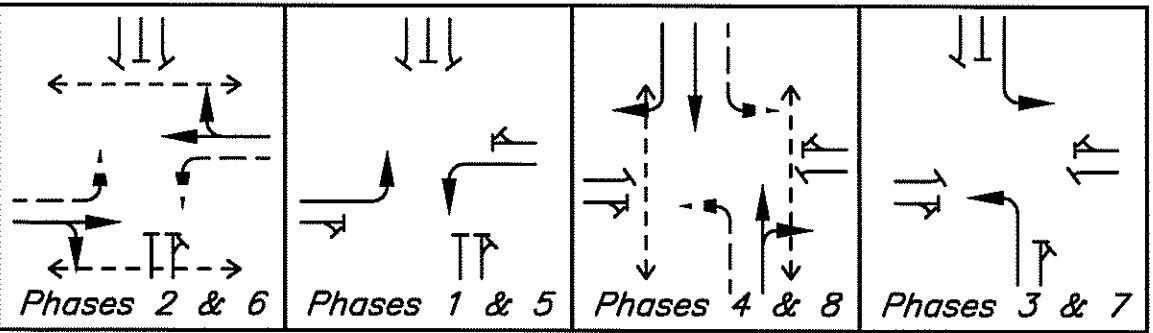
- SEE SHEET R-01 FOR GENERAL NOTES
- SEE SHEET S-01 FOR SIGNAL NOTES AND LEGEND

KEYNOTES

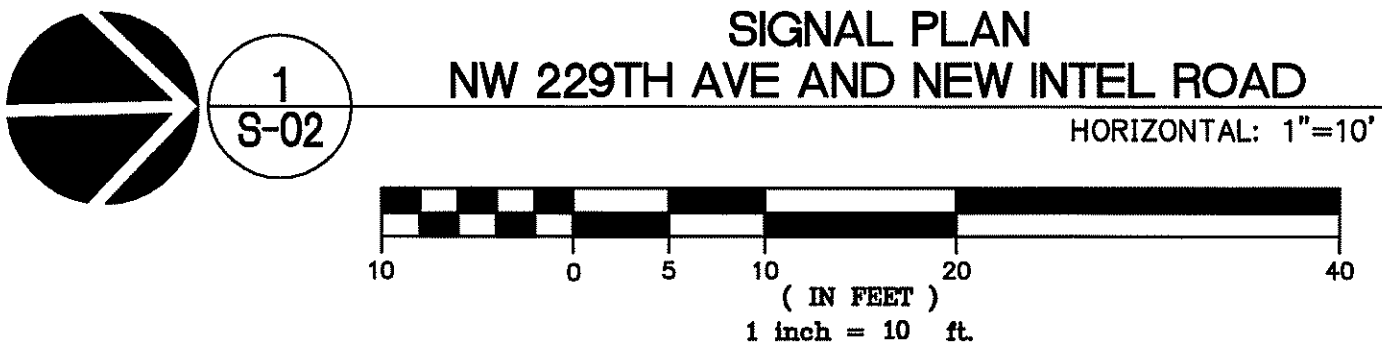
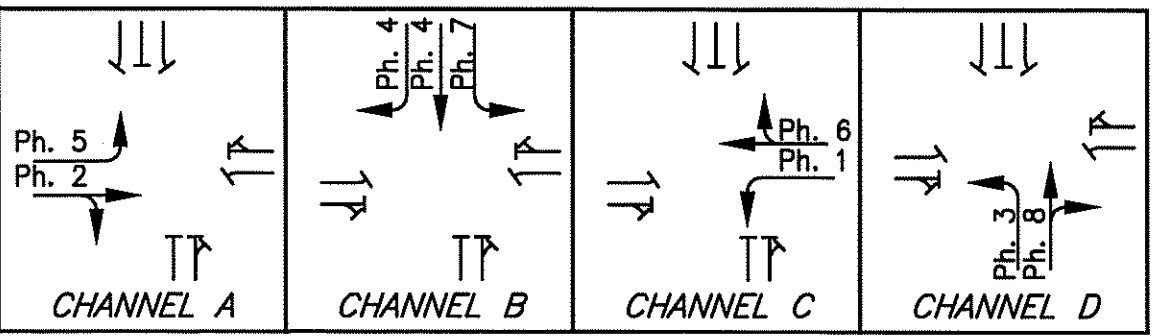
- CONTRACTOR TO POT-HOLE AND VERIFY LOCATION OF EXISTING WATERLINE RELATIVE TO PROPOSED SIGNAL POLE FOUNDATION PRIOR TO START OF CONSTRUCTION. NOTIFY ENGINEER IF THERE ARE ANY CLEARANCE ISSUES.



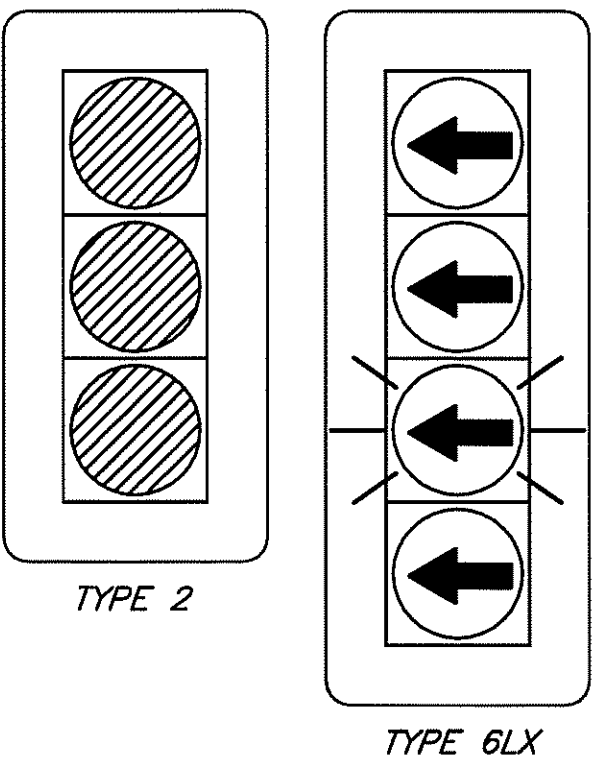
NORMAL PHASE ROTATION



EMERGENCY PREEMPTION



SIGNAL DETAILS



P1308-31
31 OF 33

RECORD DRAWING
THE RECORD DRAWING INFORMATION SHOWN ON THIS SHEET IS BASED ON THE DESIGN DRAWINGS AND INFORMATION SUPPLIED BY THE CONTRACTOR

SCOPE OF WORK
SCOPE OF WORK ON THIS DRAWING IS PACKAGE E02 UNLESS OTHERWISE IDENTIFIED.

REV. NO.	REVISION DESCRIPTION	APPROVED	DATE	AS BUILT DATE
1	ISSUE FOR CONSTRUCTION	KLH	03/16/12	
2	ISSUE FOR CONSTRUCTION	KLH	01/26/12	
3	ISSUE FOR CONSTRUCTION	TMW	08/11/11	



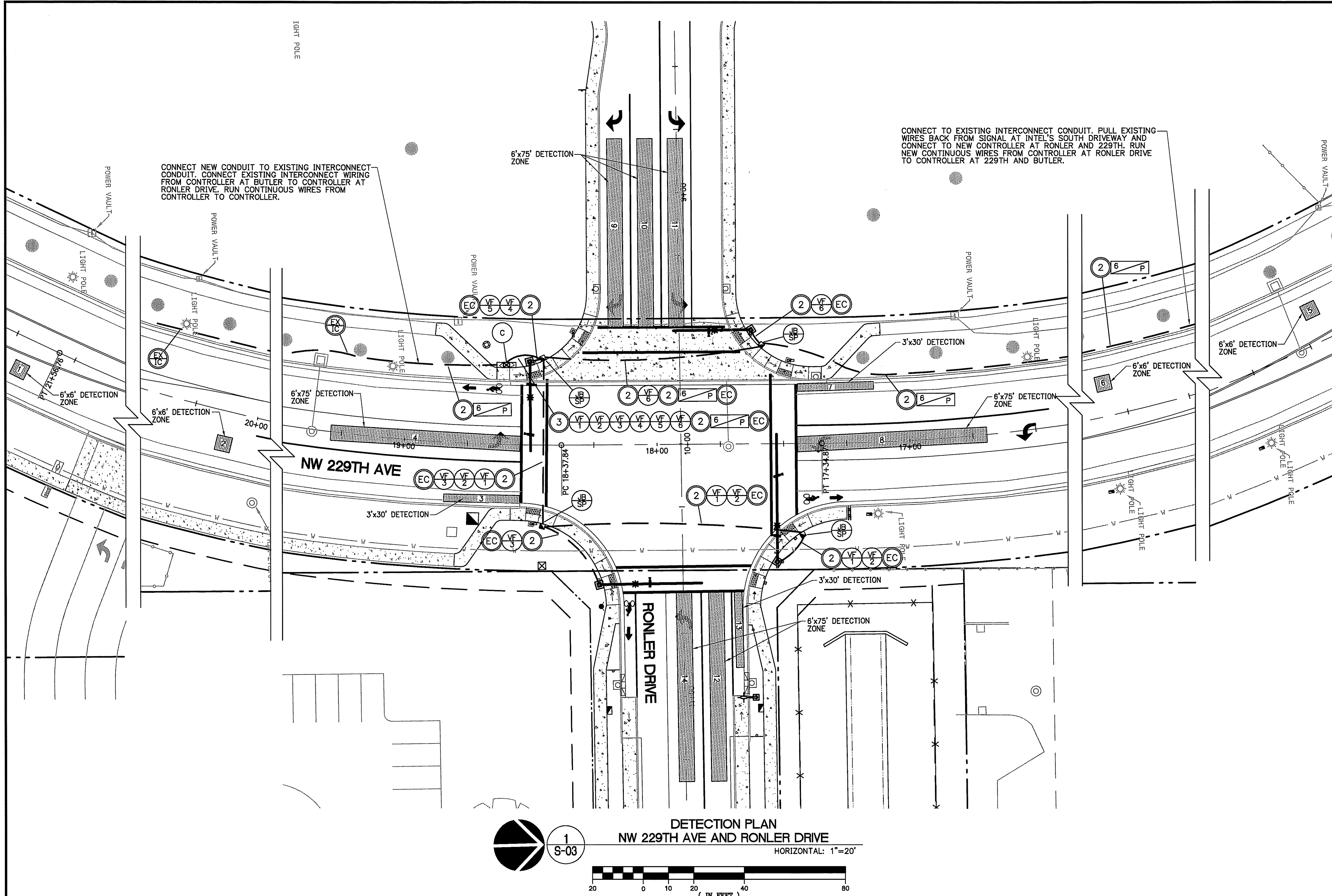
CH2MHILL
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INTEL CORPORATION
5200 NE Elan Young Pkwy
Hillsboro, Oregon 97124

APPROVALS	DATE
DRAWN: MAG	6/27/11
CHECKED: RJH	7/11/11
DESIGNED: MWB/BTA	7/18/11
PLANNED:	
ENGINEER:	
APPROVED:	
EXT CODE:	

CITY OF HILLSBORO
229TH AVENUE
SIGNAL PLAN

WORK IS IN: FILE NAME: DRAWING NO: **S-02**
SHEET: PLOT SCALE: 1"=10' SHEET OF



CAMERA NUMBER	DETECTION ZONE (N)	DISTANCE * (FEET)	PHASE	SLOT
4	1	320	2	12U
4	2	160	2	12L
2	3	30	2	13U
2	4	75	5	11U
1	5	320	6	12U
1	6	160	6	12L
5	7	30	6	13U
5	8	75	1	11U
3	9	75	4	16U
3	10	75	4	16L
3	11	75	7	15U
6	12	75	8	16U
6	13	30	8	16L
6	14	75	3	15U

* DISTANCE TO DETECTION ZONES ARE MEASURED FROM STOP BAR TO END OF ZONE.

DETECTION PLAN
NW 229TH AVE AND RONLER DRIVE
HORIZONTAL: 1"=20'
1 S-03
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

DESIGN SPEED
NW 229TH AVE - 40 MPH
RONLER DRIVE - 35 MPH

GENERAL NOTES

- SEE SHEET R-01 FOR GENERAL NOTES
- SEE SHEET S-01 FOR SIGNAL NOTES AND LEGEND
- VIDEO DETECTION EQUIPMENT SHALL BE TRAFICON OR APPROVED EQUAL.
- PROTECT AND MAINTAIN EXISTING INTERCONNECT CABLE.

SCOPE OF WORK
SCOPE OF WORK ON THIS DRAWING IS PACKAGE E02 UNLESS OTHERWISE IDENTIFIED.

REV. NO.	REVISION DESCRIPTION	APPROVED	DATE	AS BUILT DATE
1	ISSUE FOR CONSTRUCTION	KLH	03/16/12	
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3200 NE Elan Young Pkwy
Hillsboro, Oregon 97124

APPROVALS	DATE
DRAWN: MAG	6/27/11
CHECKED: RJH	7/11/11
DESIGNED: MWB/BTA	7/18/11
PLANNED:	
ENGINEERED:	
APPROVED:	
OUT CODE:	

RECORD DRAWING
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WORK NO. & NO.	FILE NAME	DRAWING NO.
		S-03

P1306-32
32 OF 33

C			
Wednesday, June 25, 2014 08:21			
Intersection Name	8 - 229th and ronler		Local ID 8
Intersection Telephone Number			
System Name	121 - Hillsboro		System ID 121
Controller Type	Voyage - C1-C11		
Controller Serial Number			Installation Date
Programmed by			Programmed Date
Graphic Map Background		Phase Rotation Diagram	

Control Data (next/2/2)													
Controller Function and Timing (next/2/1, next/2/2)													
Security, Sequence, Initialization													
Security Code	****	0 = disabled, or 1000-9999											
Sequence	7	0 = sequential, 1 = quad left turn, 2-6 = special A-E, 7 = lead lag											
				Lead Lag (next/2/2/3)									
				Phases 1 - 2		Phases 3 - 4		Phases 5 - 6		Phases 7 - 8			
				2		2		2		2			
0 = no reversal, 1 = reversal, 2 = by coord plan or clock													
Initialization and Flash (next/2/2/5)													
	Initialization		Flash Entry		Flash Exit								
Ring 1 Phase	1		0		1		phase 1-8						
Ring 2 Phase	5		0		5		phase 1-8						
Interval	0		0		0		0 = red, 1 = yellow, 2 = green						
Power up Flash	0.0	0.0 - 25.5 seconds			First All Red	8.0	0.0 - 25.5 seconds						
Soft Flash (next/2/2/5)													
Phase	1	2	3	4	5	6	7	8	0 = dark, 1=flash yel WIG, 2 = flash yel WAG, 3 = flash red WIG, 4 = flash red WAG				
	3	4	3	4	3	4	3	4					
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	same as phase
	3	4	3	4	3	4	3	4	3	4	3	4	
Internal Logic Output	1	2	3	4	5	6	7	8	9	10	11	12	0 = normal, 1 = dark, 2 = flash WIG
	0	0	0	0	0	0	0	0	0	0	0	0	

Per Phase Functions (next/2/2/3, next/2/2/1)									
	1	2	3	4	5	6	7	8	
Phases Used	X	X	X	X	X	X	X	X	X = on
Restricted Phases									X = on (Sequence 2, 6, 7 only)
Exclusive Phases									X = on (Sequence 7 only)
Yellow Lock									X = on
Min Recall		X				X			
Max Recall									
Ped Recall									
Red Lock									
Max Out Recall Inhibit									
Soft Recall									
Free Walk Rest									
Conditional Ped									
Disable Inhibit Max Termination									
Call to Non Act 1									
Call to Non Act 2									
Dual Entry (next/2/2/9/3)									
Mode	1	0 = off, 1 = on, 2 = Not Used, 3 = by coord plan, 4 = by time clock circuit 61							
Dual Entry Phase -->	1	2	3	4	5	6	7	8	
Phase	0	0	0	8	0	0	0	4	0 = none, 1-8 = phase 1-8
Conditional Service, Five Section Head									
Conditional Service (next/2/2/9/3)			5 Section Head Logic (next/2/2/9/4)						
	Mode	CS Max Time	X Omits Y		Anti-Trap			Yellow Blanking LT	
Phase 1	0	0	X : Y		Trap Protected Phase		Next Phase	Phase	
Phase 3	0	0	6 : 1	0	1		< (5)	1	
Phase 5	0	0	8 : 3	0	3		< (7)	3	
Phase 7	0	0	2 : 5	0	5		< (1)	5	
			4 : 7	0	7		< (3)	7	
0 = off, 1 = C.S.On. 2 = C.S. on by TOD circuit 57, 3 = N/A, 4 = C.S. and C.R. On, 5 = C.R. on by TOD circuit 57.			0=off, 1=side call, 2=no side call		X = On				

Phase Times (next/2/2/2, next/2/2/9/5)									
	1	2	3	4	5	6	7	8	
Movement	<i>SBLT</i>	<i>NB</i>	<i>WBLT</i>	<i>EB</i>	<i>NBLT</i>	<i>SB</i>	<i>EBLT</i>	<i>WB</i>	
Minimum Green	5	10	5	6	5	10	5	6	0 - 255 sec
Passage	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0 - 25.5 sec
Yellow	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	0.0 - 25.5 sec
Red Clearance	1.0	1.0	1.0	0.5	1.0	1.0	1.0	0.5	0.0 - 25.5 sec or 0 - 255 sec
Max 1	20	50	20	30	20	50	20	30	0 - 255 sec
Max 2	30	60	30	40	30	60	30	30	0 - 255 sec
Walk	0	7	0	7	0	7	0	7	0 - 255 sec
Ped Clear	0	19	0	14	0	12	0	13	0 - 255 sec
Seconds Per Actuation	0.0	1.3	0.0	0.0	0.0	1.3	0.0	0.0	0.0 - 25.5 sec
Time Before Reduction	0	0	0	0	0	0	0	0	0 - 255 sec
Time to Reduce	0	0	0	0	0	0	0	0	0 - 255 sec
Minimum Gap	0.5	2.5	0.5	0.5	0.5	2.5	0.5	0.5	0.0 - 25.5 sec
Max Variable Initial	0	18	0	15	0	18	0	15	0 - 255 sec
Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Inhibit Min Yellow									X = On
Red Decimal Off									X = On
Advance Walk	0	0	0	0	0	0	0	0	0 - 255 sec
Other Controller Functions (next/2/2/9)									
Phase -->	1	2	3	4	5	6	7	8	
Inhibit Simultaneous Gap Out	X		X	X	X		X	X	X = On
Last Car Passage	2	0 = recall phase, 1 = last car passage, 2 = NOT recall - Not last car passage							
Red Revert (+2 seconds)	0.0	0 - 25.5 sec							
Auto Ped Clear		X = On							
Flashing Don't Walk Into Yellow		X = On							
Soft Recall / Red Rest Delay	0.0	0 - 25.5 sec							
Ped Pushbutton	0	0 - 5 sec, 0 = disable							
Advance Flash Rate	0	0 = disable, 1 = 120 FPM							
Change Sequence		X = On (After a download with a power on - off cycle)							
Phase -->	1	2	3	4	5	6	7	8	
Red Clear Extension Detector	0	0	0	0	0	0	0	0	0 = none 1 - 32 = detector 1 - 32
Red Clear Extension Red Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec.

Coordination Data (next/2/3)

Coordination Modes (next/2/3/1, next/2/3/4/1, next/2/3/4/3)

Flash Mode	<i>33</i>	0=off, 1=on, 33=time clock, 34=comm, 35=hardwire
Coordination Plan Mode	<i>34</i>	0=free, 1-32 = coord plan 1-32, 33=time clock, 34=comm, 35=hardwire
Offset Seeking Mode	<i>2</i>	0=add only, 1=dwell, 2=fastway
Late Ped	<i>0</i>	0 = off, 1 = on
Coord Walk Rest	<i>0</i>	0 = off, 1 = on, 2 = by TOD circuit 160, 3 = end of walk, 4 = coord ped during perms
Repeated Phase Service	<i>0</i>	0=off, 1=on (no coord ped), 2=on (beginning green coord ped), 3=on (coord ped always)
Zero Mode (TS2 only)	<i>0</i>	0=start of main street, 1=end of main street, 2=by TOD circuit 144

Phase -->	1	2	3	4	5	6	7	8	0 = service allowed 1 = service prevented
Omit Phase During Repeated Phase Service	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	
Auto Permissive Min Green	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	0 - 255 seconds

Coordination Plans (next/2/3/2)

Coord Plan	Coordination Phases		Cycle Length	Offset Time	Min Cycle Length Dwell Time	Permissive	Service Plan	Max Plan
	Ring 1	Ring 2						
<i>1 - Plan 1</i>	<i>2</i>	<i>6</i>	<i>105</i>	<i>103</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>2 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>3 - Plan 3</i>	<i>2</i>	<i>6</i>	<i>110</i>	<i>2</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>4 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>5 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>6 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>7 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>8 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>9 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>10 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>11 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>12 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>13 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>14 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>15 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>16 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>17 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>18 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>19 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>20 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>21 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>22 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>23 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>24 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>25 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>26 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>27 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>28 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>29 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>30 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>31 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>32 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
0 - 8			0 - 255 sec.				0 - 8	

Coordination Plans cont.										
Coord Plan	* = Force Offs / Split Times (TS2)								* = Yield Points / Actuated Times (TS2)	
	1	2	3	4	5	6	7	8	Ring 1	Ring 2
1 - Plan 1	13	53	13	26	13	53	13	26	0	0
2 -	0	0	0	0	0	0	0	0	0	0
3 - Plan 3	13	54	13	30	13	54	13	30	0	0
4 -	0	0	0	0	0	0	0	0	0	0
5 -	0	0	0	0	0	0	0	0	0	0
6 -	0	0	0	0	0	0	0	0	0	0
7 -	0	0	0	0	0	0	0	0	0	0
8 -	0	0	0	0	0	0	0	0	0	0
9 -	0	0	0	0	0	0	0	0	0	0
10 -	0	0	0	0	0	0	0	0	0	0
11 -	0	0	0	0	0	0	0	0	0	0
12 -	0	0	0	0	0	0	0	0	0	0
13 -	0	0	0	0	0	0	0	0	0	0
14 -	0	0	0	0	0	0	0	0	0	0
15 -	0	0	0	0	0	0	0	0	0	0
16 -	0	0	0	0	0	0	0	0	0	0
17 -	0	0	0	0	0	0	0	0	0	0
18 -	0	0	0	0	0	0	0	0	0	0
19 -	0	0	0	0	0	0	0	0	0	0
20 -	0	0	0	0	0	0	0	0	0	0
21 -	0	0	0	0	0	0	0	0	0	0
22 -	0	0	0	0	0	0	0	0	0	0
23 -	0	0	0	0	0	0	0	0	0	0
24 -	0	0	0	0	0	0	0	0	0	0
25 -	0	0	0	0	0	0	0	0	0	0
26 -	0	0	0	0	0	0	0	0	0	0
27 -	0	0	0	0	0	0	0	0	0	0
28 -	0	0	0	0	0	0	0	0	0	0
29 -	0	0	0	0	0	0	0	0	0	0
30 -	0	0	0	0	0	0	0	0	0	0
31 -	0	0	0	0	0	0	0	0	0	0
32 -	0	0	0	0	0	0	0	0	0	0
0 - 255 sec * = force offs and yield points										

Time of Day Data (next/2/4)

Day Program (next/2/4/1)

	Day Prog.	Time	Coord Plan	Coord Plan or Circuit	State On / Off		Day Prog.	Time	Coord Plan	Coord Plan or Circuit	State On/Off
1	1	06:45	X	1		51					
2	1	09:00	X	0		52					
3	1	15:30	X	3		53					
4	1	18:15	X	0		54					
5						55					
6						56					
7						57					
8						58					
9						59					
10						60					
11						61					
12						62					
13						63					
14						64					
15						65					
16						66					
17						67					
18						68					
19						69					
20						70					
21						71					
22						72					
23						73					
24						74					
25						75					
26						76					
27						77					
28						78					
29						79					
30						80					
31						81					
32						82					
33						83					
34						84					
35						85					
36						86					
37						87					
38						88					
39						89					
40						90					
41						91					
42						92					
43						93					
44						94					
45						95					
46						96					
47						97					
48						98					
49						99					
50						100					
	1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196	X = on		1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196	X = on

C									
Thursday, April 14, 2016 08:43									
Intersection Name			3 - 229th and intel so				Local ID		3
Intersection Telephone Number									
System Name			121 - Hillsboro				System ID		121
Controller Type			Voyage - C1-C11						
Controller Serial Number							Installation Date		
Programmed by							Programmed Date		
Graphic Map Background					Phase Rotation Diagram				

Control Data (next/2/2)														
Controller Function and Timing (next/2/1, next/2/2)														
Security, Sequence, Initialization														
Security Code		****		0 = disabled, or 1000-9999										
Sequence		2		0 = sequential, 1 = quad left turn, 2-6 = special A-E, 7 = lead lag										
				Lead Lag (next/2/2/3)										
				Phases 1 - 2		Phases 3 - 4		Phases 5 - 6		Phases 7 - 8				
				2		0		2		0				
				0 = no reversal, 1 = reversal, 2 = by coord plan or clock										
Initialization and Flash (next/2/2/5)														
	Initialization			Flash Entry			Flash Exit							
Ring 1 Phase	1			0			1			phase 1-8				
Ring 2 Phase	5			0			5			phase 1-8				
Interval	0			0			0			0 = red, 1 = yellow, 2 = green				
Power up Flash	0.0		0.0 - 25.5 seconds				First All Red		8.0		0.0 - 25.5 seconds			
Soft Flash (next/2/2/5)														
Phase	1	2	3	4	5	6	7	8	0 = dark, 1=flash yel WIG, 2 = flash yel WAG, 3 = flash red WIG, 4 = flash red WAG					
	3	4	3	4	3	4	3	4						
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	same as phase	
	3	4	3	4	3	4	3	4	3	4	3	4		
Internal Logic Output	1	2	3	4	5	6	7	8	9	10	11	12	0 = normal, 1 = dark, 2 = flash WIG	
	0	0	0	0	0	0	0	0	0	0	0	0		

Per Phase Functions (next/2/2/3, next/2/2/1)									
	1	2	3	4	5	6	7	8	
Phases Used	X	X		X	X	X		X	X = on
Restricted Phases									X = on (Sequence 2, 6, 7 only)
Exclusive Phases									X = on (Sequence 7 only)
Yellow Lock									X = on
Min Recall		X				X			
Max Recall									
Ped Recall									
Red Lock									
Max Out Recall Inhibit									
Soft Recall									
Free Walk Rest									
Conditional Ped									
Disable Inhibit Max Termination									
Call to Non Act 1									
Call to Non Act 2									
Dual Entry (next/2/2/9/3)									
Mode	1	0 = off, 1 = on, 2 = Not Used, 3 = by coord plan, 4 = by time clock circuit 61							
Dual Entry Phase -->	1	2	3	4	5	6	7	8	
Phase	0	6	0	0	0	2	0	0	0 = none, 1-8 = phase 1-8
Conditional Service, Five Section Head									
Conditional Service (next/2/2/9/3)			5 Section Head Logic (next/2/2/9/4)						
			Anti-Trap				Yellow Blanking LT		
	Mode	CS Max Time	X Omits Y		Trap Protected Phase		Next Phase	Phase	
Phase 1	0	0	X : Y		1		< (5)	1	
Phase 3	0	0	6 : 1	0	3		< (7)	3	
Phase 5	0	0	8 : 3	0	5		< (1)	5	
Phase 7	0	0	2 : 5	0	7		< (3)	7	
0 = off, 1 = C.S.On. 2 = C.S. on by TOD circuit 57, 3 = N/A, 4 = C.S. and C.R. On, 5 = C.R. on by TOD circuit 57.			0=off, 1=side call, 2=no side call		X = On				

Phase Times (next/2/2/2, next/2/2/9/5)									
	1	2	3	4	5	6	7	8	
Movement									
Minimum Green	5	10	0	6	5	10	0	6	0 - 255 sec
Passage	2.5	4.0	0.0	3.0	2.5	4.0	0.0	3.0	0.0 - 25.5 sec
Yellow	3.0	4.0	0.0	3.0	3.0	4.0	0.0	3.0	0.0 - 25.5 sec
Red Clearance	1.0	1.0	0.0	0.5	1.0	1.0	0.0	0.5	0.0 - 25.5 sec or 0 - 255 sec
Max 1	25	50	0	35	25	50	0	35	0 - 255 sec
Max 2	25	50	0	35	25	50	0	35	0 - 255 sec
Walk	0	10	0	9	0	9	0	8	0 - 255 sec
Ped Clear	0	17	0	14	0	11	0	11	0 - 255 sec
Seconds Per Actuation	0.0	1.3	0.0	0.0	0.0	1.3	0.0	0.0	0.0 - 25.5 sec
Time Before Reduction	0	0	0	0	0	0	0	0	0 - 255 sec
Time to Reduce	0	0	0	0	0	0	0	0	0 - 255 sec
Minimum Gap	1.0	2.4	0.0	2.0	2.0	2.4	0.0	2.0	0.0 - 25.5 sec
Max Variable Initial	6	20	0	0	0	20	0	12	0 - 255 sec
Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Inhibit Min Yellow									X = On
Red Decimal Off									X = On
Advance Walk	0	0	0	0	0	0	0	0	0 - 255 sec
Other Controller Functions (next/2/2/9)									
Phase -->	1	2	3	4	5	6	7	8	
Inhibit Simultaneous Gap Out	X			X	X			X	X = On
Last Car Passage	2	0 = recall phase, 1 = last car passage, 2 = NOT recall - Not last car passage							
Red Revert (+2 seconds)	0.0	0 - 25.5 sec							
Auto Ped Clear	X	X = On							
Flashing Don't Walk Into Yellow		X = On							
Soft Recall / Red Rest Delay	0.0	0 - 25.5 sec							
Ped Pushbutton	0	0 - 5 sec, 0 = disable							
Advance Flash Rate	0	0 = disable, 1 = 120 FPM							
Change Sequence		X = On (After a download with a power on - off cycle)							
Phase -->	1	2	3	4	5	6	7	8	
Red Clear Extension Detector	0	0	0	0	0	0	0	0	0 = none 1 - 32 = detector 1 - 32
Red Clear Extension Red Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec.

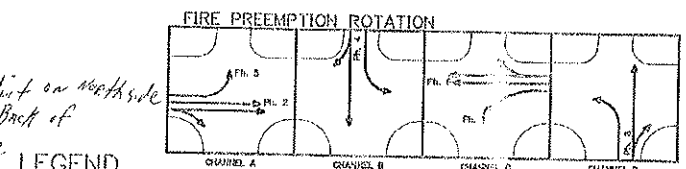
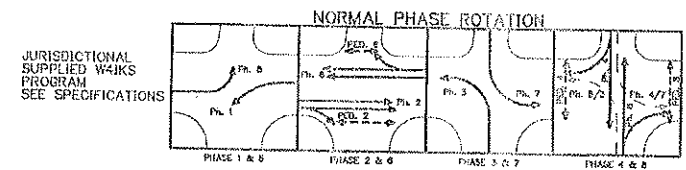
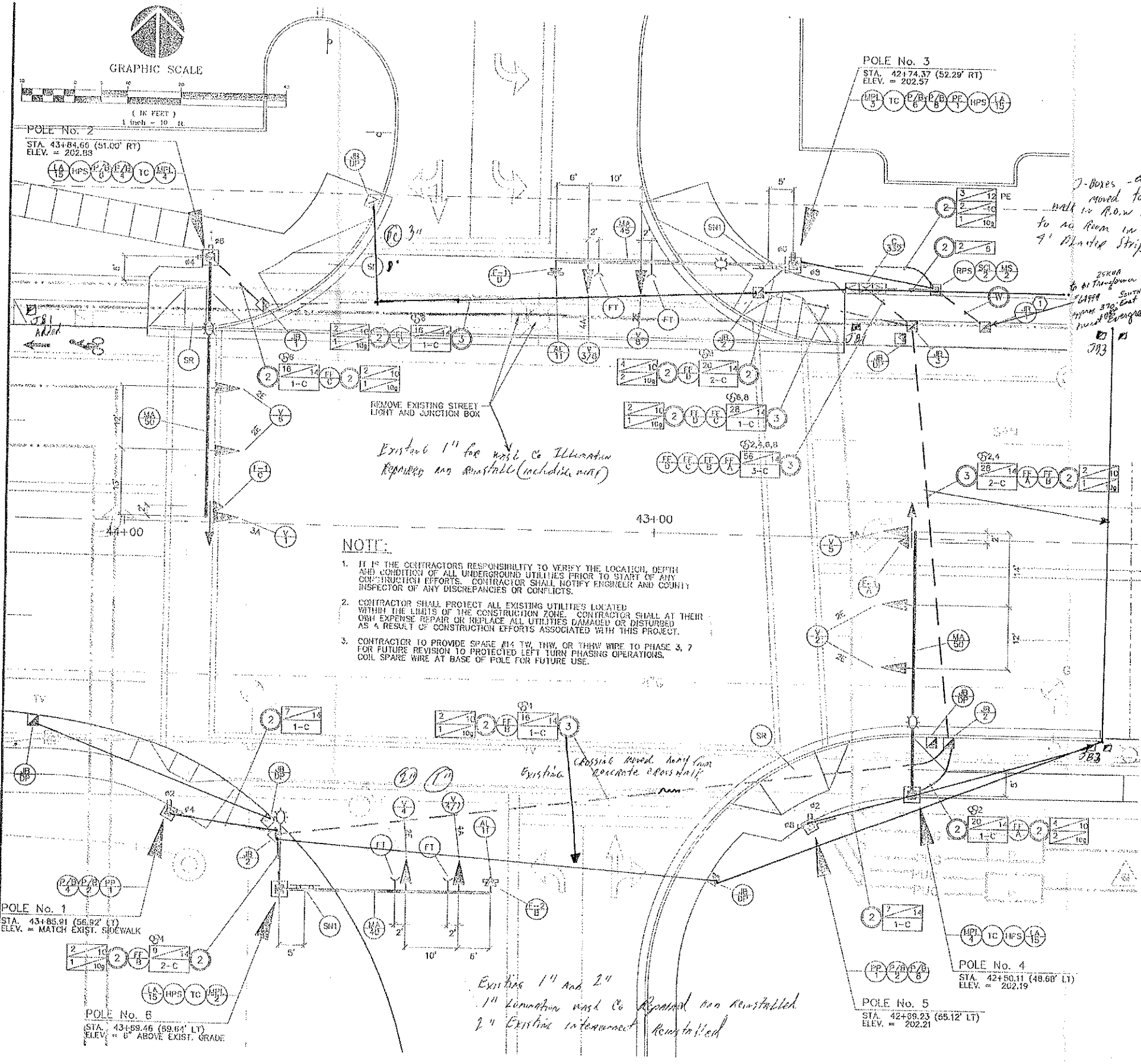
Coordination Data (next/2/3)									
Coordination Modes (next/2/3/1, next/2/3/4/1, next/2/3/4/3)									
Flash Mode	33	0=off, 1=on, 33=time clock, 34=comm, 35=hardwire, 36=NWS Set only, 37=AB3							
Coordination Plan Mode	34	0=free, 1-32 = coord plan 1-32, 33=time clock, 34=comm, 35=hardwire, 36=NW							
Offset Seeking Mode	1	0=add only, 1=dwell, 2=fastway							
Late Ped	0	0 = off, 1 = on							
Coord Walk Rest	0	0 = off, 1 = on, 2 = by TOD circuit 160, 3 = end of walk, 4 = coord ped during pe							
Repeated Phase Service	1	0=off, 1=on (no coord ped), 2=on (beginning green coord ped), 3=on (coord ped							
Zero Mode (TS2 only)	0	0=start of main street, 1=end of main street, 2=by TOD circuit 144							
Phase -->		1	2	3	4	5	6	7	8
Omit Phase During Repeated Phase Service		0	0	0	0	0	0	0	0
Auto Permissive Min Green		0	0	0	0	0	0	0	0
Coordination Plans (next/2/3/2)									
Coord Plan	Coordination Phases		Cycle Length	Offset Time	Min Cycle Length Dwell Time	Permissive	Service Plan	Max Plan	
	Ring 1	Ring 2							
1 - PLAN 1	2	6	105	26	35	0	0	0	
2 -	0	0	0	0	0	0	0	0	
3 - PLAN 3	2	6	110	4	35	0	0	3	
4 -	0	0	0	0	0	0	0	0	
5 -	0	0	0	0	0	0	0	0	
6 -	0	0	0	0	0	0	0	0	
7 -	0	0	0	0	0	0	0	0	
8 -	0	0	0	0	0	0	0	0	
9 -	0	0	0	0	0	0	0	0	
10 -	0	0	0	0	0	0	0	0	
11 -	0	0	0	0	0	0	0	0	
12 -	0	0	0	0	0	0	0	0	
13 -	0	0	0	0	0	0	0	0	
14 -	0	0	0	0	0	0	0	0	
15 -	0	0	0	0	0	0	0	0	
16 -	0	0	0	0	0	0	0	0	
17 -	0	0	0	0	0	0	0	0	
18 -	0	0	0	0	0	0	0	0	
19 -	0	0	0	0	0	0	0	0	
20 -	0	0	0	0	0	0	0	0	
21 -	0	0	0	0	0	0	0	0	
22 -	0	0	0	0	0	0	0	0	
23 -	0	0	0	0	0	0	0	0	
24 -	0	0	0	0	0	0	0	0	
25 -	0	0	0	0	0	0	0	0	
26 -	0	0	0	0	0	0	0	0	
27 -	0	0	0	0	0	0	0	0	
28 -	0	0	0	0	0	0	0	0	
29 -	0	0	0	0	0	0	0	0	
30 -	0	0	0	0	0	0	0	0	
31 -	0	0	0	0	0	0	0	0	
32 -	0	0	0	0	0	0	0	0	
0 - 8			0 - 255 sec.				0 - 8		

Coordination Plans cont.										
Coord Plan	* = Force Offs / Split Times (TS2)								* = Yield Points / Actuated Times (TS2)	
	1	2	3	4	5	6	7	8	Ring 1	Ring 2
1 - PLAN 1	21	34	0	27	12	43	0	23	0	0
2 -	0	0	0	0	0	0	0	0	0	0
3 - PLAN 3	12	39	0	27	12	39	0	32	0	0
4 -	0	0	0	0	0	0	0	0	0	0
5 -	0	0	0	0	0	0	0	0	0	0
6 -	0	0	0	0	0	0	0	0	0	0
7 -	0	0	0	0	0	0	0	0	0	0
8 -	0	0	0	0	0	0	0	0	0	0
9 -	0	0	0	0	0	0	0	0	0	0
10 -	0	0	0	0	0	0	0	0	0	0
11 -	0	0	0	0	0	0	0	0	0	0
12 -	0	0	0	0	0	0	0	0	0	0
13 -	0	0	0	0	0	0	0	0	0	0
14 -	0	0	0	0	0	0	0	0	0	0
15 -	0	0	0	0	0	0	0	0	0	0
16 -	0	0	0	0	0	0	0	0	0	0
17 -	0	0	0	0	0	0	0	0	0	0
18 -	0	0	0	0	0	0	0	0	0	0
19 -	0	0	0	0	0	0	0	0	0	0
20 -	0	0	0	0	0	0	0	0	0	0
21 -	0	0	0	0	0	0	0	0	0	0
22 -	0	0	0	0	0	0	0	0	0	0
23 -	0	0	0	0	0	0	0	0	0	0
24 -	0	0	0	0	0	0	0	0	0	0
25 -	0	0	0	0	0	0	0	0	0	0
26 -	0	0	0	0	0	0	0	0	0	0
27 -	0	0	0	0	0	0	0	0	0	0
28 -	0	0	0	0	0	0	0	0	0	0
29 -	0	0	0	0	0	0	0	0	0	0
30 -	0	0	0	0	0	0	0	0	0	0
31 -	0	0	0	0	0	0	0	0	0	0
32 -	0	0	0	0	0	0	0	0	0	0
0 - 255 sec * = force offs and yield points										

Time of Day Data (next/2/4)

Day Program (next/2/4/1)

	Day Prog	Time	Coord Plan	Coord Plan or Circuit	State On / Off		Day Prog	Time	Coord Plan	Coord Plan or Circuit	State On/Off
1	1	06:45	X	1			51				
2	1	09:00	X	0			52				
3	1	15:30	X	3			53				
4	1	18:15	X	0			54				
5							55				
6							56				
7							57				
8							58				
9							59				
10							60				
11							61				
12							62				
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30							80				
31							81				
32							82				
33							83				
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46							96				
47							97				
48							98				
49							99				



- LEGEND**
- Install model 170 controller in model 332 cabinet with riser 6'-0", orient front (lowered) door as shown
 - Install type (T) standard traffic signal mast arm pole with luminaire pole extension (40 ft. mounting height)
 - Install (L) ft. traffic signal mast arm
 - Install (L) ft. luminaire arm
 - Install pedestrian signal pedestal with frangible base
 - Install remote power service post
 - Install signal tenon with cap for future use
 - Install phase (Ph) vehicle signal with LED's
 - Install phase (Ph) pedestrian signal with LED's pushbutton and instruction decal
 - Install aluminum "LEFT TURN YIELD ON GREEN" sign (30"x36" "W7") (Diamond grade sheeting)
 - Install 6" x 8" x 18" terminal cabinet with sectional terminal blocks as connectors
 - Install service cabinet, 120/240 volt, for both signal and illumination circuits
 - Install 120/240 volt meter base
 - Junction box (See Detector Plan)
 - Install 17-1/4" x 10-1/2" x 12" precast concrete junction box
 - Install 22-1/4" x 10-1/4" x 13" precast concrete junction box
 - Install 30" x 17" x 12" precast concrete junction box
 - Install (N) No. type THWN (Signal system common)
 - Install (N) No. (G) type TW, THW, or THHN wires
 - Install (N) No. (G) type bare copper grounding wires

- Includes 3 spare wires for phase (Ph) as per table
- Install (S) inch electrical conduit
- Contractor to coordinate with power company for nearest point of connection and install conduit and wire as required by power company
- Install channel (Ch), (N)-way fire pre-emption detector unit
- Install channel (Ch) fire pre-emption detector feeder cable
- Install 200 watt high-pressure luminaire, type M.S., III 120, 200, 240, 277, multi-volt mag-regulator ballast
- Install photoelectric cell on pole (20'-35' above pole base)
- Construct sidewalk ramp
- Install 18" high street name sign per county standards with B" type c letters "NW EVERGREEN ROAD" with V.I.P. sheeting mounted with astro bracket or equal.
- A = Standard plumbizer
- E = Elevator plumbizer
- 2 = 12" R, 12" Y, 12" G
- 3 = 12" RLTA, 12" YLTA, 12" GLTA
- 4 = 12" R, 12" Y, 12" YLTA, 12" GLTA, 12" G
- H = Height shown Ph = Phase shown
- Y = Type shown X = Number of cables shown
- L = Length shown N = Number shown
- G = AWS size shown
- S = Size shown
- Ch = Channel shown

CONTRACTOR TO COORDINATE CONNECTION OF SIGNAL POWER SOURCE WITH PGE. PGE HAS SUGGESTED POWER SOURCE TO BE TAPPED INTO STREET LIGHT MAIN FEEDER. CONTRACTOR TO VERIFY LOCATION AND PGE REQUIREMENTS FOR CONNECTION. CONTACT DAN PETERSON AT (503) 844-5347.

- NOTE:**
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION, DEPTH AND CONDITION OF ALL UNDERGROUND UTILITIES PRIOR TO START OF ANY CONSTRUCTION EFFORTS. CONTRACTOR SHALL NOTIFY ENGINEER AND COUNTY INSPECTOR OF ANY DISCREPANCIES OR CONFLICTS.
 - CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES LOCATED WITHIN THE LIMITS OF THE CONSTRUCTION ZONE. CONTRACTOR SHALL AT THEIR OWN EXPENSE REPAIR OR REPLACE ALL UTILITIES DAMAGED OR DISTURBED AS A RESULT OF CONSTRUCTION EFFORTS ASSOCIATED WITH THIS PROJECT.
 - CONTRACTOR TO PROVIDE SPARE #14 TW, THW, OR THHN WIRE TO PHASE 3, 7 FOR FUTURE REVISION TO PROTECTED LEFT TURN PHASING OPERATIONS. COIL SPARE WIRE AT BASE OF POLE FOR FUTURE USE.

GROUP MACKENZIE

Architecture
Interior Design
Civil Engineering
Structural Engineering
Transportation Planning
Land Use Planning

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Project
RA2/D1C OFFSITE
IMPROVEMENTS
INTEL-RONLER ACRES
NORTH ACCESS
IMPROVEMENTS

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INTEL CORPORATION
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Sheet Title
TRAFFIC
SIGNALIZATION
PLAN

REGISTERED PROFESSIONAL ENGINEER
DAVID G. LARSON
EXPIRES: 12/31/00

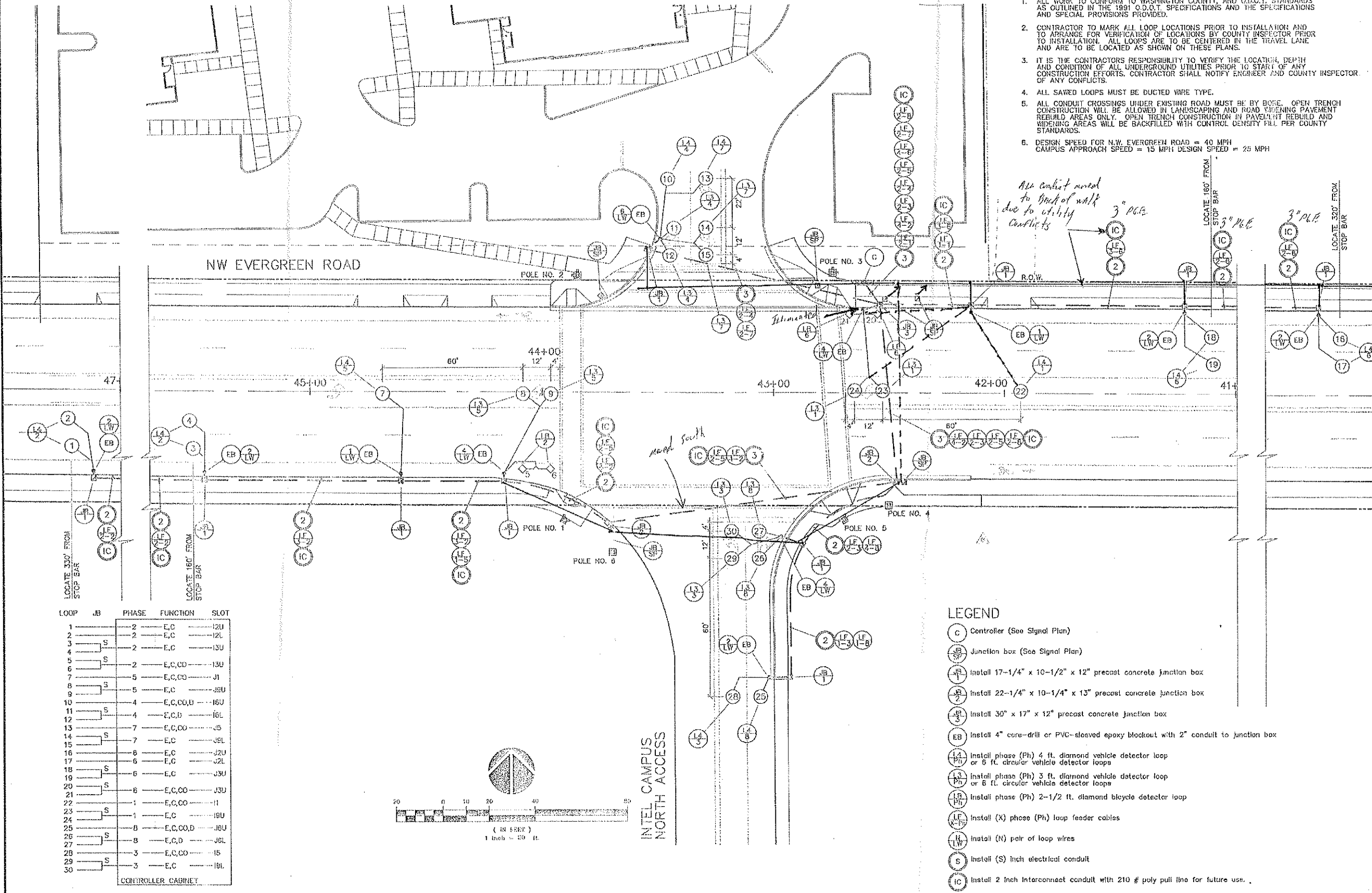
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Revisions:

REVISION NUMBER	REVISION DESCRIPTION	REVISION DATE

DATE: 3-5-98
DRAWN BY: *CHB*
CHECKED BY: *CHB*
SHEET

TS-1



- NOTES:**
1. ALL WORK TO CONFORM TO WASHINGTON COUNTY, AND O.D.O.T. STANDARDS AS OUTLINED IN THE 1991 O.D.O.T. SPECIFICATIONS AND THE SPECIFICATIONS AND SPECIAL PROVISIONS PROVIDED.
 2. CONTRACTOR TO MARK ALL LOOP LOCATIONS PRIOR TO INSTALLATION AND TO ARRANGE FOR VERIFICATION OF LOCATIONS BY COUNTY INSPECTOR PRIOR TO INSTALLATION. ALL LOOPS ARE TO BE CENTERED IN THE TRAVEL LANE AND ARE TO BE LOCATED AS SHOWN ON THESE PLANS.
 3. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY THE LOCATION, DEPTH AND CONDITION OF ALL UNDERGROUND UTILITIES PRIOR TO START OF ANY CONSTRUCTION EFFORTS. CONTRACTOR SHALL NOTIFY ENGINEER AND COUNTY INSPECTOR OF ANY CONFLICTS.
 4. ALL SAWS LOOPS MUST BE DUCTED WIRE TYPE.
 5. ALL CONDUIT CROSSINGS UNDER EXISTING ROAD MUST BE BY BORE. OPEN TRENCH CONSTRUCTION WILL BE ALLOWED IN LANDSCAPING AND ROAD VEENING PAVEMENT REBUILD AREAS ONLY. OPEN TRENCH CONSTRUCTION IN PAVEMENT REBUILD AND WIDENING AREAS WILL BE BACKFILLED WITH CONTROL DENSITY FILL PER COUNTY STANDARDS.
 6. DESIGN SPEED FOR N.W. EVERGREEN ROAD = 40 MPH
CAMPUS APPROACH SPEED = 15 MPH DESIGN SPEED = 25 MPH

All conduit moved to back of walk due to utility conflicts

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 Land Use Planning
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 Structural Engineering
 Transportation Planning

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Sheet Title
VEHICLE DETECTION PLAN



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Revisions:
 REVISION EDITION CLOSING DATE

DATE: 3-5-98
 DRAWN BY: *AB*
 CHECKED BY: *AB*

TS-2
 3 OF 8
 JOB NO. 197063

LOOP	JB	PHASE	FUNCTION	SLOT
1		2	E,C	I2U
2		2	E,C	I2L
3		2	E,C	I3U
4		2	E,C	I3L
5		2	E,C,CO	I3U
6		5	E,C,CO	J1
7		5	E,C	J8U
8		4	E,C,CO,U	I6U
9		4	E,C,D	I6L
10		7	E,C,CO	J5
11		7	E,C	J6L
12		6	E,C	J2U
13		6	E,C	J2L
14		6	E,C	J3U
15		6	E,C,CO	J3U
16		1	E,C,CO	I1
17		1	E,C	I9U
18		8	E,C,D	J6L
19		3	E,C,CO	I5
20		3	E,C	I9L

S = SERIES, E = EXTENSION, C = CALL, CO = CARRYOVER, D = DELAY
 SEE T.E.S. DRWG. NO. 15-128 FOR LOOP DETECTOR DETAILS
 CENTER ALL LOOPS IN TRAVEL LANES OR AS SHOWN ON PLANS

LOOP DETECTOR WIRING DIAGRAM

LEGEND

- (C) Controller (See Signal Plan)
- (JB) Junction box (See Signal Plan)
- (J1) Install 17-1/4" x 10-1/2" x 12" precast concrete junction box
- (J2) Install 22-1/4" x 10-1/4" x 13" precast concrete junction box
- (J3) Install 30" x 17" x 12" precast concrete junction box
- (EB) Install 4" core-drill or PVC-sheathed epoxy breakout with 2" conduit to junction box
- (L4) Install phase (Ph) 4 ft. diamond vehicle detector loop or 6 ft. circular vehicle detector loops
- (L3) Install phase (Ph) 3 ft. diamond vehicle detector loop or 6 ft. circular vehicle detector loops
- (L2) Install phase (Ph) 2-1/2 ft. diamond bicycle detector loop
- (LX) Install (X) phase (Ph) loop feeder cables
- (N) Install (N) pair of loop wires
- (S) Install (S) inch electrical conduit
- (IC) Install 2 inch interconnect conduit with 210 # poly pull line for future use.

PH = PHASE SHOWN
 X = NUMBER OF CABLES SHOWN
 N = NUMBER SHOWN
 S = SIZE SHOWN

NORTH															
Tuesday, September 23, 2014 12:13															
Intersection Name				11 - Evergreen Intel				Local ID		11					
Intersection Telephone Number															
System Name				106 - W of 185th				System ID		106					
Controller Type				Voyage - C1-C11											
Controller Serial Number								Installation Date							
Programmed by								Programmed Date							
Graphic Map Background							Phase Rotation Diagram								
Control Data (next/2/2)															
Controller Function and Timing (next/2/1, next/2/2)															
Security, Sequence, Initialization															
Security Code		****		0 = disabled, or 1000-9999											
Sequence		7		0 = sequential, 1 = quad left turn, 2-6 = special A-E, 7 = lead lag											
							Lead Lag (next/2/2/3)								
							Phases 1 - 2		Phases 3 - 4		Phases 5 - 6		Phases 7 - 8		
							2		2		2		2		
							0 = no reversal, 1 = reversal, 2 = by coord plan or clock								
Initialization and Flash (next/2/2/5)															
	Initialization			Flash Entry			Flash Exit								
Ring 1 Phase	1			0			1			phase 1-8					
Ring 2 Phase	5			0			5			phase 1-8					
Interval	0			0			0			0 = red, 1 = yellow, 2 = green					
Power up Flash	0.0		0.0 - 25.5 seconds				First All Red		6.0		0.0 - 25.5 seconds				
Soft Flash (next/2/2/5)															
Phase	1	2	3	4	5	6	7	8	0 = dark, 1=flash yel WIG, 2 = flash yel WAG, 3 = flash red WIG, 4 = flash red WAG						
	3	4	3	4	3	4	3	4							
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	same as phase		
	3	4	3	4	3	4	3	4	3	4	3	4			
Internal Logic Output	1	2	3	4	5	6	7	8	9	10	11	12	0 = normal, 1 = dark, 2 = flash WIG		
	0	0	0	0	0	0	0	0	0	0	0	0			

Per Phase Functions (next/2/2/3, next/2/2/1)									
	1	2	3	4	5	6	7	8	
Phases Used	X	X	X	X	X	X	X	X	X = on
Restricted Phases									X = on (Sequence 2, 6, 7 only)
Exclusive Phases									X = on (Sequence 7 only)
Yellow Lock									X = on
Min Recall		X				X			
Max Recall									
Ped Recall									
Red Lock									
Max Out Recall Inhibit	X	X	X	X	X	X	X	X	
Soft Recall									
Free Walk Rest									
Conditional Ped									
Disable Inhibit Max Termination									
Call to Non Act 1									
Call to Non Act 2									
Dual Entry (next/2/2/9/3)									
Mode	1	0 = off, 1 = on, 2 = Not Used, 3 = by coord plan, 4 = by time clock circuit 61							
Dual Entry Phase -->	1	2	3	4	5	6	7	8	
Phase	0	6	0	8	0	2	0	4	0 = none, 1-8 = phase 1-8
Conditional Service, Five Section Head									
Conditional Service (next/2/2/9/3)			5 Section Head Logic (next/2/2/9/4)						
	Mode	CS Max Time	X Omits Y		Anti-Trap			Yellow Blanking LT	
Phase 1	0	0	X : Y		Trap Protected Phase		Next Phase	Phase	
Phase 3	0	0	6 : 1	0	1		< (5)	1	
Phase 5	0	0	8 : 3	0	3		< (7)	3	
Phase 7	0	0	2 : 5	0	5		< (1)	5	
0 = off, 1 = C.S.On. 2 = C.S. on by TOD circuit 57, 3 = N/A, 4 = C.S. and C.R. On, 5 = C.R. on by TOD circuit 57.			4 : 7	0	7		< (3)	7	
			0=off, 1=side call, 2=no side call		X = On				

Phase Times (next/2/2/2, next/2/2/9/5)									
	1	2	3	4	5	6	7	8	
Movement	WBL	EB	NBL	SB	EBL	WB	SBL	NB	
Minimum Green	5	10	5	6	5	10	5	6	0 - 255 sec
Passage	1.5	3.1	1.5	0.7	1.5	3.1	1.5	1.0	0.0 - 25.5 sec
Yellow	3.0	4.5	3.0	3.5	3.0	4.5	3.0	3.5	0.0 - 25.5 sec
Red Clearance	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	0.0 - 25.5 sec or 0 - 255 sec
Max 1	20	45	10	20	10	45	10	20	0 - 255 sec
Max 2	20	45	10	20	10	45	10	20	0 - 255 sec
Walk	0	10	0	8	0	9	0	8	0 - 255 sec
Ped Clear	0	26	0	20	0	15	0	19	0 - 255 sec
Seconds Per Actuation	0.0	1.3	0.0	0.0	0.0	1.3	0.0	0.0	0.0 - 25.5 sec
Time Before Reduction	0	0	0	0	0	0	0	0	0 - 255 sec
Time to Reduce	0	0	0	0	0	0	0	0	0 - 255 sec
Minimum Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
Max Variable Initial	0	25	0	0	0	25	0	0	0 - 255 sec
Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Inhibit Min Yellow									X = On
Red Decimal Off									X = On
Advance Walk	0	0	0	0	0	0	0	0	0 - 255 sec
Other Controller Functions (next/2/2/9)									
Phase -->	1	2	3	4	5	6	7	8	
Inhibit Simultaneous Gap Out	X		X		X		X		X = On
Last Car Passage	2	0 = recall phase, 1 = last car passage, 2 = NOT recall - Not last car passage							
Red Revert (+2 seconds)	3.0	0 - 25.5 sec							
Auto Ped Clear	X	X = On							
Flashing Don't Walk Into Yellow		X = On							
Soft Recall / Red Rest Delay	0.0	0 - 25.5 sec							
Ped Pushbutton	0	0 - 5 sec, 0 = disable							
Advance Flash Rate	0	0 = disable, 1 = 120 FPM							
Change Sequence		X = On (After a download with a power on - off cycle)							
Phase -->	1	2	3	4	5	6	7	8	
Red Clear Extension Detector	0	0	0	0	0	0	0	0	0 = none 1 - 32 = detector 1 - 32
Red Clear Extension Red Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec.

Coordination Data (next/2/3)

Coordination Modes (next/2/3/1, next/2/3/4/1, next/2/3/4/3)

Flash Mode	<i>33</i>	0=off, 1=on, 33=time clock, 34=comm, 35=hardwire, 36=NWS Set only, 37=AB3418 / NTCIP Set
Coordination Plan Mode	<i>33</i>	0=free, 1-32 = coord plan 1-32, 33=time clock, 34=comm, 35=hardwire, 36=NWS Set only, 37=AB3418 / NTCIP Set
Offset Seeking Mode	<i>2</i>	0=add only, 1=dwell, 2=fastway
Late Ped	<i>0</i>	0 = off, 1 = on
Coord Walk Rest	<i>0</i>	0 = off, 1 = on, 2 = by TOD circuit 160, 3 = end of walk, 4 = coord ped during perms
Repeated Phase Service	<i>0</i>	0=off, 1=on (no coord ped), 2=on (beginning green coord ped), 3=on (coord ped always)
Zero Mode (TS2 only)	<i>1</i>	0=start of main street, 1=end of main street, 2=by TOD circuit 144

Phase -->	1	2	3	4	5	6	7	8	0 = service allowed 1 = service prevented
Omit Phase During Repeated Phase Service	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	
Auto Permissive Min Green	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	0 - 255 seconds

Coordination Plans (next/2/3/2)

Coord Plan	Coordination Phases		Cycle Length	Offset Time	Min Cycle Length Dwell Time	Permissive	Service Plan	Max Plan
	Ring 1	Ring 2						
<i>1 - AM</i>	<i>2</i>	<i>6</i>	<i>100</i>	<i>3</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>2 - MID</i>	<i>2</i>	<i>6</i>	<i>100</i>	<i>2</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>3 - PM</i>	<i>2</i>	<i>6</i>	<i>110</i>	<i>13</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>4 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>5 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>6 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>7 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>8 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>9 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>10 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>11 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>12 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>13 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>14 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>15 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>16 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>17 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>18 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>19 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>20 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>21 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>22 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>23 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>24 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>25 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>26 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>27 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>28 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>29 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>30 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>31 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>32 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
	0 - 8		0 - 255 sec.				0 - 8	

Coordination Plans cont.

Coord Plan	* = Force Offs / Split Times (TS2)								* = Yield Points / Actuated Times (TS2)	
	1	2	3	4	5	6	7	8	Ring 1	Ring 2
1 - AM	17	42	14	27	15	44	14	27	7	7
2 - MID	13	43	14	30	13	43	14	30	7	7
3 - PM	13	53	14	30	13	53	14	30	7	7
4 -	0	0	0	0	0	0	0	0	0	0
5 -	0	0	0	0	0	0	0	0	0	0
6 -	0	0	0	0	0	0	0	0	0	0
7 -	0	0	0	0	0	0	0	0	0	0
8 -	0	0	0	0	0	0	0	0	0	0
9 -	0	0	0	0	0	0	0	0	0	0
10 -	0	0	0	0	0	0	0	0	0	0
11 -	0	0	0	0	0	0	0	0	0	0
12 -	0	0	0	0	0	0	0	0	0	0
13 -	0	0	0	0	0	0	0	0	0	0
14 -	0	0	0	0	0	0	0	0	0	0
15 -	0	0	0	0	0	0	0	0	0	0
16 -	0	0	0	0	0	0	0	0	0	0
17 -	0	0	0	0	0	0	0	0	0	0
18 -	0	0	0	0	0	0	0	0	0	0
19 -	0	0	0	0	0	0	0	0	0	0
20 -	0	0	0	0	0	0	0	0	0	0
21 -	0	0	0	0	0	0	0	0	0	0
22 -	0	0	0	0	0	0	0	0	0	0
23 -	0	0	0	0	0	0	0	0	0	0
24 -	0	0	0	0	0	0	0	0	0	0
25 -	0	0	0	0	0	0	0	0	0	0
26 -	0	0	0	0	0	0	0	0	0	0
27 -	0	0	0	0	0	0	0	0	0	0
28 -	0	0	0	0	0	0	0	0	0	0
29 -	0	0	0	0	0	0	0	0	0	0
30 -	0	0	0	0	0	0	0	0	0	0
31 -	0	0	0	0	0	0	0	0	0	0
32 -	0	0	0	0	0	0	0	0	0	0
0 - 255 sec * = force offs and yield points										

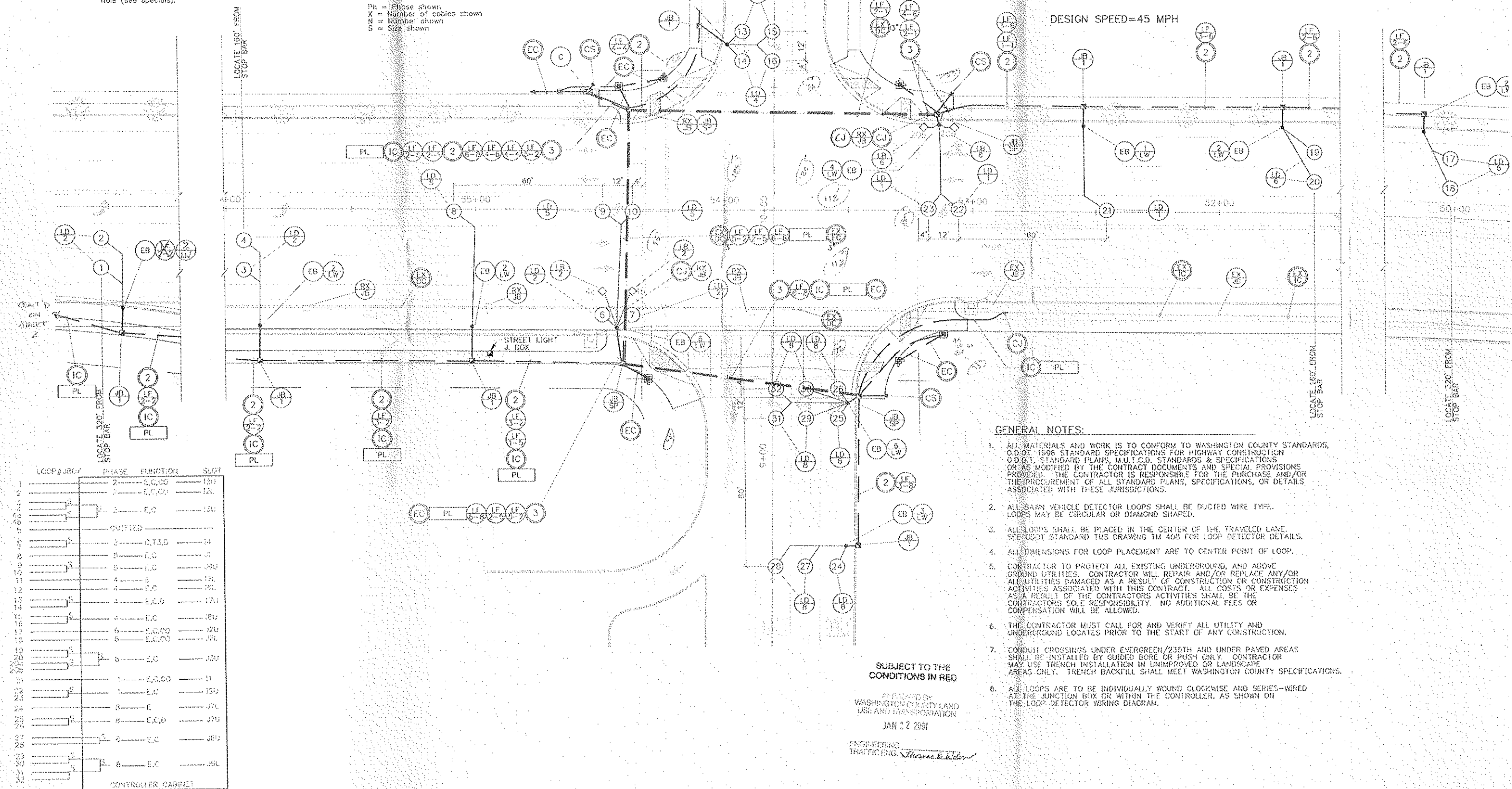
Time of Day Data (next/2/4)

Day Program (next/2/4/1)													
	Day Prog.	Time	Coord Plan	Coord Plan or Circuit		State On / Off		Day Prog.	Time	Coord Plan	Coord Plan or Circuit		State On/Off
1	1	06:30	X	1			51						
2	1	09:00	X	0			52						
3	1	11:30	X	2			53						
4	1	15:00	X	3			54						
5	1	18:30	X	0			55						
6							56						
7							57						
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44							94						
45							95						
46							96						
47							97						
48							98						
49							99						
50							100						
	1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196		X = on		1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196		X = on

	Retain and protect existing junction box
	Retain and protect existing electrical conduit (see signal plan)
	Retain and protect existing detector conduit
	Retain and protect existing interconnect conduit
	Remove existing junction box
	Abandon existing electrical conduit
	Controller (See Signal Plan)
	Junction box (See Signal Plan)
	Install 17-1/4" x 10-1/2" x 12" precast concrete junction box
	Install 4" PVC sleeve in core hole with conduit to junction box back fill with sand and epoxy seal hole (see specials).

- 1P Install phase (Ph) 4 ft. diamond vehicle detector loop or 6 ft. circular vehicle detector loops
- 1/2 Ph Install phase (Ph) 2-1/2 ft. diamond bicycle detector loops
- 1X-Ph Install (X) phase (Ph) loop feeder cables
- N-LW Install (N) pair of loop wires
- S Install (S) inch electrical conduit
- CS Install 2" conduit (For future use-loop ends)
- EC Electrical conduit (See Signal Plan)
- IC Install 2" interconnect conduit
- CJ Slice new electrical conduit to existing electrical conduit
- PL Install polybutyl line (225 lbf min-strength)

Ph = Phase shown
X = Number of cities shown
N = Number shown
S = Size shown



SUBJECT TO THE
CONDITIONS IN RED

APPROVED BY
WASHINGTON COUNTY LAND
USE AND TRANSPORTATION

ENGINEERING
TRAFFIC ENG. *Thomas E. Wilson*

GROUP **MACKENZIE**

Civil Engineering
Structural Engineering
Transportation Planning
Architectural
Interior Design
Land Use Planning

OSPC SWANSON & PO BOX 9909
Portland, OR 97201-0009
Tel: 503.424.9860
Fax: 503.2511286

Project

**OFFSITE
IMPROVEMENTS
INTEL-RONLER ACRES
CONTRACTOR PARKING
AND STAGING AREA
IMPROVEMENTS
WACO #00-936**

Client

**INTEL CORPORATION
RTI-03
2501 NW 229TH AVE
HILLSBORO, OR 97124
PHONE: 613-7732**

Sheet Title
VEHICLE
DETECTION
PLAN WITH
INTERCONNECT



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REVISION	EDITION
CLOSING DATE	

DATE: 9-20-00
DRAWN BY: SAW
CHECKED BY: DGL/RWB

TS-2

8 OF 10
JOB NO.
000239

RESUBMITTED FOR PERMIT 1-15-01

NORTH															
Tuesday, September 23, 2014 12:14															
Intersection Name				10 - Evergreen 235th				Local ID		10					
Intersection Telephone Number															
System Name				106 - W of 185th				System ID		106					
Controller Type				Voyage - C1-C11											
Controller Serial Number								Installation Date							
Programmed by								Programmed Date							
Graphic Map Background							Phase Rotation Diagram								
Control Data (next/2/2)															
Controller Function and Timing (next/2/1, next/2/2)															
Security, Sequence, Initialization															
Security Code		****		0 = disabled, or 1000-9999											
Sequence		2		0 = sequential, 1 = quad left turn, 2-6 = special A-E, 7 = lead lag											
							Lead Lag (next/2/2/3)								
							Phases 1 - 2		Phases 3 - 4		Phases 5 - 6		Phases 7 - 8		
							2		0		2		0		
							0 = no reversal, 1 = reversal, 2 = by coord plan or clock								
Initialization and Flash (next/2/2/5)															
	Initialization			Flash Entry			Flash Exit								
Ring 1 Phase	1			0			1			phase 1-8					
Ring 2 Phase	5			0			5			phase 1-8					
Interval	0			0			0			0 = red, 1 = yellow, 2 = green					
Power up Flash	0.0		0.0 - 25.5 seconds				First All Red		6.0		0.0 - 25.5 seconds				
Soft Flash (next/2/2/5)															
Phase	1	2	3	4	5	6	7	8	0 = dark, 1=flash yel WIG, 2 = flash yel WAG, 3 = flash red WIG, 4 = flash red WAG						
	3	4	3	4	3	4	3	4							
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	same as phase		
	3	4	3	4	3	4	3	4	3	4	3	4			
Internal Logic Output	1	2	3	4	5	6	7	8	9	10	11	12	0 = normal, 1 = dark, 2 = flash WIG		
	0	0	0	0	0	0	0	0	0	0	0	0			

Per Phase Functions (next/2/2/3, next/2/2/1)									
	1	2	3	4	5	6	7	8	
Phases Used	X	X		X	X	X		X	X = on
Restricted Phases									X = on (Sequence 2, 6, 7 only)
Exclusive Phases									X = on (Sequence 7 only)
Yellow Lock									X = on
Min Recall		X				X			
Max Recall									
Ped Recall									
Red Lock									
Max Out Recall Inhibit	X	X	X	X	X	X	X	X	
Soft Recall									
Free Walk Rest									
Conditional Ped									
Disable Inhibit Max Termination									
Call to Non Act 1									
Call to Non Act 2									
Dual Entry (next/2/2/9/3)									
Mode	1	0 = off, 1 = on, 2 = Not Used, 3 = by coord plan, 4 = by time clock circuit 61							
Dual Entry Phase -->	1	2	3	4	5	6	7	8	
Phase	0	6	0	0	0	2	0	0	0 = none, 1-8 = phase 1-8
Conditional Service, Five Section Head									
Conditional Service (next/2/2/9/3)			5 Section Head Logic (next/2/2/9/4)						
	Mode	CS Max Time	X Omits Y		Anti-Trap			Yellow Blanking LT	
Phase 1	0	0	X : Y		Trap Protected Phase		Next Phase	Phase	
Phase 3	0	0	6 : 1	0	1		< (5)	1	
Phase 5	0	0	8 : 3	0	3		< (7)	3	
Phase 7	0	0	2 : 5	0	5		< (1)	5	
0 = off, 1 = C.S.On. 2 = C.S. on by TOD circuit 57, 3 = N/A, 4 = C.S. and C.R. On, 5 = C.R. on by TOD circuit 57.			4 : 7	0	7		< (3)	7	
			0=off, 1=side call, 2=no side call		X = On				

Phase Times (next/2/2/2, next/2/2/9/5)									
	1	2	3	4	5	6	7	8	
Movement	<i>WBL</i>	<i>EB</i>		<i>SB</i>	<i>EBL</i>	<i>WB</i>		<i>NB</i>	
Minimum Green	5	10	0	6	5	10	0	6	0 - 255 sec
Passage	1.5	3.1	0.0	2.0	1.5	3.1	0.0	2.0	0.0 - 25.5 sec
Yellow	3.0	4.5	0.0	4.0	3.0	4.5	0.0	3.5	0.0 - 25.5 sec
Red Clearance	1.0	1.0	0.0	0.5	1.0	1.0	0.0	0.5	0.0 - 25.5 sec or 0 - 255 sec
Max 1	15	45	0	20	15	45	0	20	0 - 255 sec
Max 2	15	35	0	20	15	35	0	20	0 - 255 sec
Walk	0	8	0	9	0	8	0	8	0 - 255 sec
Ped Clear	0	17	0	24	0	12	0	20	0 - 255 sec
Seconds Per Actuation	0.0	1.3	0.0	0.0	0.0	1.3	0.0	0.0	0.0 - 25.5 sec
Time Before Reduction	0	0	0	0	0	0	0	0	0 - 255 sec
Time to Reduce	0	0	0	0	0	0	0	0	0 - 255 sec
Minimum Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
Max Variable Initial	0	25	0	0	0	25	0	0	0 - 255 sec
Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Inhibit Min Yellow									X = On
Red Decimal Off									X = On
Advance Walk	0	0	0	0	0	0	0	0	0 - 255 sec
Other Controller Functions (next/2/2/9)									
Phase -->	1	2	3	4	5	6	7	8	
Inhibit Simultaneous Gap Out	X		X	X	X		X	X	X = On
Last Car Passage	2	0 = recall phase, 1 = last car passage, 2 = NOT recall - Not last car passage							
Red Revert (+2 seconds)	3.0	0 - 25.5 sec							
Auto Ped Clear	X	X = On							
Flashing Don't Walk Into Yellow		X = On							
Soft Recall / Red Rest Delay	0.0	0 - 25.5 sec							
Ped Pushbutton	0	0 - 5 sec, 0 = disable							
Advance Flash Rate	0	0 = disable, 1 = 120 FPM							
Change Sequence		X = On (After a download with a power on - off cycle)							
Phase -->	1	2	3	4	5	6	7	8	
Red Clear Extension Detector	0	0	0	0	0	0	0	0	0 = none 1 - 32 = detector 1 - 32
Red Clear Extension Red Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec.

Coordination Data (next/2/3)

Coordination Modes (next/2/3/1, next/2/3/4/1, next/2/3/4/3)

Flash Mode	<i>33</i>	0=off, 1=on, 33=time clock, 34=comm, 35=hardwire, 36=NWS Set only, 37=AB3418 / NTCIP Set
Coordination Plan Mode	<i>33</i>	0=free, 1-32 = coord plan 1-32, 33=time clock, 34=comm, 35=hardwire, 36=NWS Set only, 37=AB3418 / NTCIP Set
Offset Seeking Mode	<i>2</i>	0=add only, 1=dwell, 2=fastway
Late Ped	<i>0</i>	0 = off, 1 = on
Coord Walk Rest	<i>0</i>	0 = off, 1 = on, 2 = by TOD circuit 160, 3 = end of walk, 4 = coord ped during perms
Repeated Phase Service	<i>2</i>	0=off, 1=on (no coord ped), 2=on (beginning green coord ped), 3=on (coord ped always)
Zero Mode (TS2 only)	<i>1</i>	0=start of main street, 1=end of main street, 2=by TOD circuit 144

Phase -->	1	2	3	4	5	6	7	8	0 = service allowed 1 = service prevented
Omit Phase During Repeated Phase Service	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	
Auto Permissive Min Green	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	0 - 255 seconds

Coordination Plans (next/2/3/2)

Coord Plan	Coordination Phases		Cycle Length	Offset Time	Min Cycle Length Dwell Time	Permissive	Service Plan	Max Plan
	Ring 1	Ring 2						
<i>1 - AM</i>	<i>2</i>	<i>6</i>	<i>100</i>	<i>10</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>2 - MID</i>	<i>2</i>	<i>6</i>	<i>100</i>	<i>6</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>3 - PM</i>	<i>2</i>	<i>6</i>	<i>110</i>	<i>25</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>4 -</i>	<i>2</i>	<i>6</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>5 -</i>	<i>2</i>	<i>6</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>6 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>7 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>8 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>9 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>10 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>11 -</i>	<i>2</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>12 -</i>	<i>2</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>13 -</i>	<i>2</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>14 -</i>	<i>2</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>15 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>16 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>17 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>18 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>19 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>20 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>21 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>22 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>23 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>24 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>25 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>26 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>27 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>28 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>29 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>30 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>31 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>32 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
	0 - 8		0 - 255 sec.				0 - 8	

Coordination Plans cont.

Coord Plan	* = Force Offs / Split Times (TS2)								* = Yield Points / Actuated Times (TS2)	
	1	2	3	4	5	6	7	8	Ring 1	Ring 2
1 - AM	13	31	0	28	13	31	0	28	7	7
2 - MID	13	31	0	28	13	31	0	28	7	7
3 - PM	13	33	0	32	13	33	0	32	7	7
4 -	0	0	0	0	0	0	0	0	0	0
5 -	0	0	0	0	0	0	0	0	0	0
6 -	0	0	0	0	0	0	0	0	0	0
7 -	0	0	0	0	0	0	0	0	0	0
8 -	0	0	0	0	0	0	0	0	0	0
9 -	0	0	0	0	0	0	0	0	0	0
10 -	0	0	0	0	0	0	0	0	0	0
11 -	0	0	0	0	0	0	0	0	0	0
12 -	0	0	0	0	0	0	0	0	0	0
13 -	0	0	0	0	0	0	0	0	0	0
14 -	0	0	0	0	0	0	0	0	0	0
15 -	0	0	0	0	0	0	0	0	0	0
16 -	0	0	0	0	0	0	0	0	0	0
17 -	0	0	0	0	0	0	0	0	0	0
18 -	0	0	0	0	0	0	0	0	0	0
19 -	0	0	0	0	0	0	0	0	0	0
20 -	0	0	0	0	0	0	0	0	0	0
21 -	0	0	0	0	0	0	0	0	0	0
22 -	0	0	0	0	0	0	0	0	0	0
23 -	0	0	0	0	0	0	0	0	0	0
24 -	0	0	0	0	0	0	0	0	0	0
25 -	0	0	0	0	0	0	0	0	0	0
26 -	0	0	0	0	0	0	0	0	0	0
27 -	0	0	0	0	0	0	0	0	0	0
28 -	0	0	0	0	0	0	0	0	0	0
29 -	0	0	0	0	0	0	0	0	0	0
30 -	0	0	0	0	0	0	0	0	0	0
31 -	0	0	0	0	0	0	0	0	0	0
32 -	0	0	0	0	0	0	0	0	0	0
0 - 255 sec * = force offs and yield points										

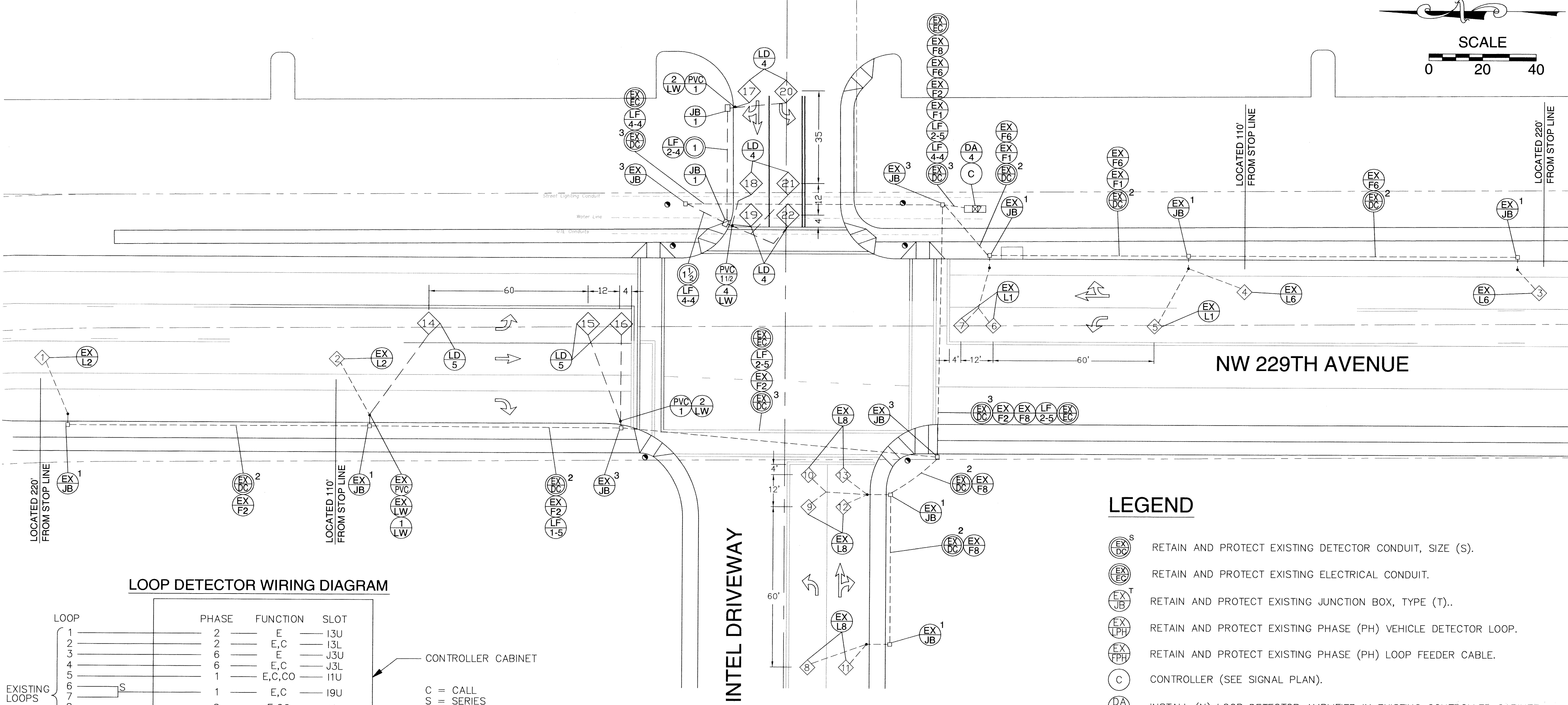
Time of Day Data (next/2/4)

Day Program (next/2/4/1)

	Day Prog.	Time	Coord Plan	Coord Plan or Circuit		State On / Off		Day Prog.	Time	Coord Plan	Coord Plan or Circuit		State On/Off
1	1	00:00	X	0			51						
2	1	06:30	X	1			52						
3	1	09:00	X	0			53						
4	1	11:30	X	2			54						
5	1	15:00	X	3			55						
6	1	18:30	X	0			56						
7							57						
8							58						
9							59						
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47							97						
48							98						
49							99						
50							100						
	1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196		X = on		1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196		X = on

CORNELIUS PASS CORPORATE CENTER DRIVEWAY

LOOP DETECTOR PLAN



LOOP DETECTOR WIRING DIAGRAM

LOOP	PHASE	FUNCTION	SLOT
1	2	E	I3U
2	2	E,C	I3L
3	6	E	J3U
4	6	E,C	J3L
5	1	E,C,CO	I1U
6	1	E,C	I9U
7	8	E,CO	J6L
8	8	E,C	J6U
9	8	E,C,CO	J7L
10	8	E,C	J7U
11	5	E,C,CO	J1U
12	5	E,C	J9U
13	4	E,CO	I7L
14	4	E,C	I7U
15	4	E,C,CO	I6L
16	4	E,C	I6U

CONTROLLER CABINET

C = CALL
S = SERIES
E = EXTENSION
CO = CARRY OVER
* = INSTALL NEW AMPLIFIERS

GENERAL NOTES

- ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE 1996 OREGON DEPARTMENT OF TRANSPORTATION (ODOT) STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND THE CURRENT ODOT STANDARD DRAWINGS.
 - ALL LOOPS ARE TO BE INDIVIDUALLY WOUND CLOCKWISE AND SERIES WIRED AT JUNCTION BOXES OR CONTROLLER AS SHOWN ON THE LOOP DETECTOR WIRING DIAGRAM.
 - LOOPS MAY BE CIRCULAR OR DIAMOND SHAPED AND MAY BE PREFORMED. IF SAWCUT IN THE FIELD, LOOPS TO BE INSTALLED USING DUCT MEETING IMSA SPEC. NO. 51-5.
- SEE DRAWING TM-408 FOR LOOP DETECTOR DETAILS. ALL DETECTOR LOOPS TO BE CENTERED IN TRAVEL LANES OR AS SHOWN.

LEGEND

- RETAIN AND PROTECT EXISTING DETECTOR CONDUIT, SIZE (S).
- RETAIN AND PROTECT EXISTING ELECTRICAL CONDUIT.
- RETAIN AND PROTECT EXISTING JUNCTION BOX, TYPE (T)..
- RETAIN AND PROTECT EXISTING PHASE (PH) VEHICLE DETECTOR LOOP.
- RETAIN AND PROTECT EXISTING PHASE (PH) LOOP FEEDER CABLE.
- CONTROLLER (SEE SIGNAL PLAN).
- INSTALL (N) LOOP DETECTOR AMPLIFIER IN EXISTING CONTROLLER CABINET.
- INSTALL 17" X 10" X 12" (MIN. DIMENSION) PRECAST CONCRETE JUNCTION BOX.
- INSTALL 6" DIAMETER X 14" PVC CONDUIT SLEEVE STREET ENTRANCE WITH (S) INCH CONDUIT TO JUNCTION BOX.
- INSTALL PHASE (PH) 3-FOOT DIAMOND VEHICLE DETECTOR LOOP.
- INSTALL (X) PHASE (PH) LOOP FEEDER CABLES.
- INSTALL (N) PAIR OF LOOP WIRES.
- INSTALL (S) INCH ELECTRICAL CONDUIT.

ABBREVIATIONS

- PH= PHASE SHOWN
S = SIZE SHOWN
X = NUMBER OF CABLES SHOWN
N = NUMBER SHOWN
T = TYPE SHOWN

AS BUILT

H:\PROJECTS\4144\DWGS\PHASE1\4144DET1XREF:4144BASE.DWG 05/15/01 AS-BUILT

NO.	DATE	REVISIONS	BY	PWW
				DESIGN
				JCH
				DRAWN
				CHECKED
				05/15/01
				DATE



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WRG DESIGN, INC.
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PORTLAND, OREGON 97223

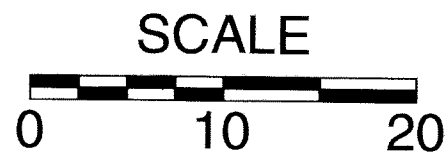
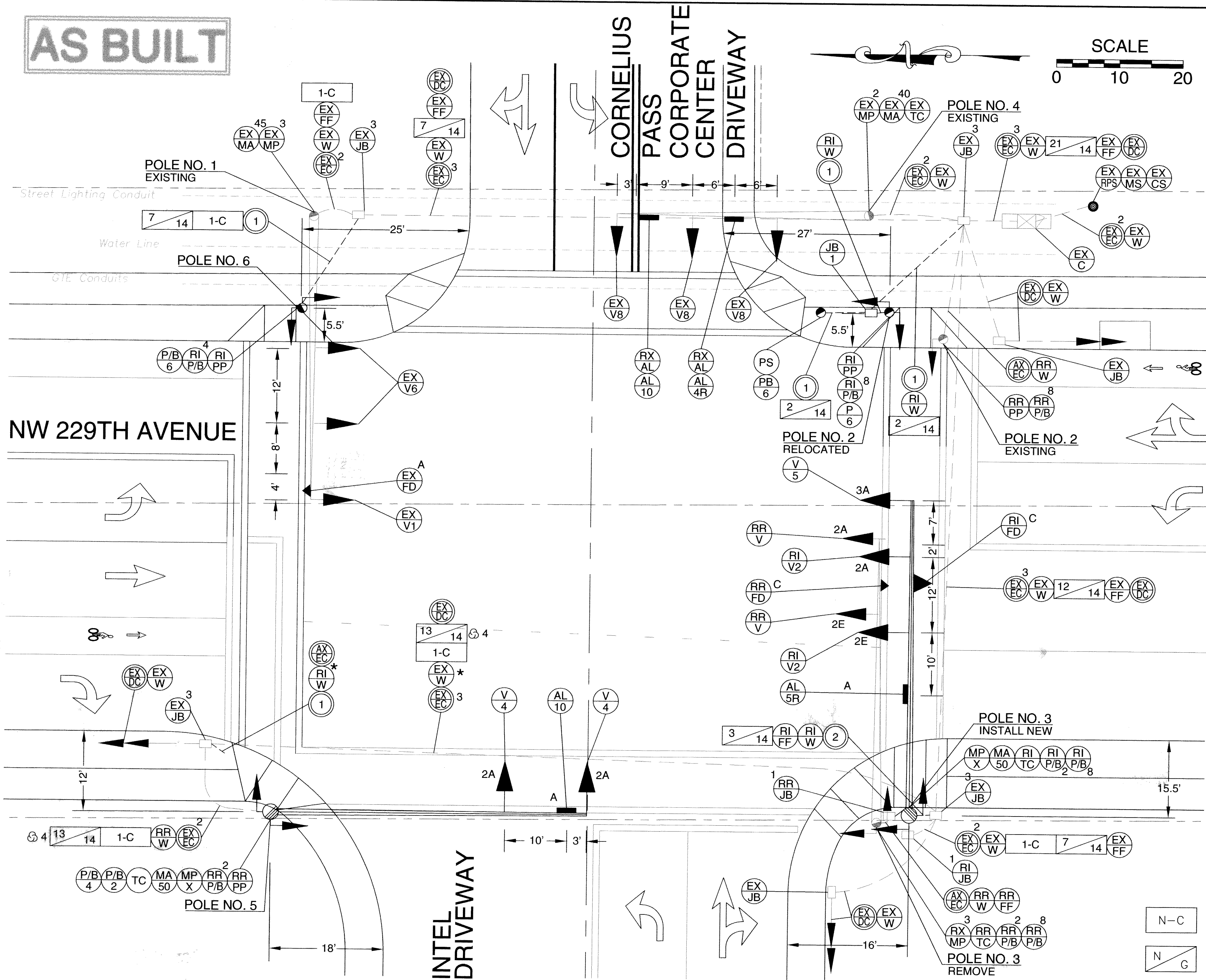
CITY OF HILLSBORO, OREGON

NW 229TH AVE AT
CORNELIUS PASS CORPORATE CENTER
TRAFFIC SIGNAL MODIFICATION

SHEET NO.
2 OF 3

PROJECT NO.
4144

AS BUILT



GENERAL NOTES

- ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE 1996 OREGON DEPARTMENT OF TRANSPORTATION (ODOT) STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND THE CURRENT ODOT STANDARD DRAWINGS.
 - THE CONTRACTOR SHALL SUPPLY ALL EQUIPMENT, MATERIALS, AND LABOR REQUIRED FOR THE SIGNAL OPERATIONS SHOWN ON THIS PLAN. ALL SIGNAL CONTROL EQUIPMENT SHALL BE TESTED AT ODOT SIGNAL LAB IN SALEM AT THE CONTRACTOR'S EXPENSE.
 - THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF EXISTING UTILITIES AND COORDINATE HIS WORK WITH THE UTILITY COMPANIES/AGENCIES TO ELIMINATE ANY CONFLICTS.
 - THE ENGINEER SHALL FIELD VERIFY THE LOCATION OF ALL SIGNAL EQUIPMENT BEFORE INSTALLATION.
 - CITY OF HILLSBORO WILL PROVIDE SIGNAL FIELD TESTING SERVICES AT CONTRACTOR EXPENSE.
 - KITTELSON WILL PROVIDE SIGNAL TIMING.
 - EQUIPMENT SUBMITTALS AND POLE DRAWINGS SHALL BE PROVIDED BY THE CONTRACTOR. APPROVAL OF THESE SUBMITTALS MUST BE OBTAINED PRIOR TO CONSTRUCTION, FROM THE CITY OF HILLSBORO.
- * MAINTAIN PEDESTRIAN SIGNAL DURING CONSTRUCTION. REMOVE PEDESTRIAN SIGNAL, POST, AND WIRE AFTER POLE #5 IS IN OPERATION.

ABBREVIATIONS

T = TYPE SHOWN
PH = PHASE SHOWN
G = AWG SIZE SHOWN
E = ELEVATOR PLUMBIZER
N = NUMBER SHOWN
L = LENGTH SHOWN
S = SIZE SHOWN
A = STANDARD PLUMBIZER
CH = CHANNEL SHOWN
2 = 12" R, 12" Y, 12" G
3 = 12" RLTA
12" YLTA
12" GLTA
(Ph) INCLUDES 3 SPARE WIRES FOR PHASE (PH) AS PER ODOT DWG NO. TM406 COLOR CODE CHART.

N-C INSTALL (N) NO. 8 TYPE THWN (SIGNAL SYSTEM COMMON).
N G INSTALL (N) NO. (G) TYPE THWN WIRES.

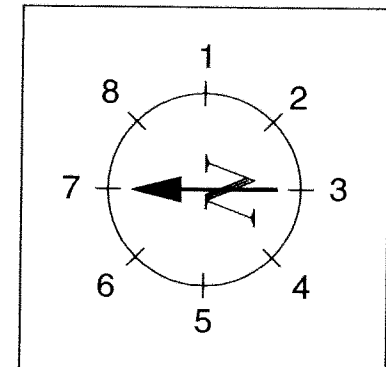
LEGEND

- RETAIN AND PROTECT EXISTING MODEL 170 CONTROLLER, AND MODEL 332 CABINET.
- RETAIN AND PROTECT EXISTING TYPE (T) TRAFFIC SIGNAL MAST ARM POLE.
- RETAIN AND PROTECT EXISTING (L) FOOT TRAFFIC SIGNAL MAST ARM.
- RETAIN AND PROTECT EXISTING PHASE (PH) VEHICLE SIGNAL.
- RETAIN AND PROTECT EXISTING PEDESTRIAN SIGNAL, PUSHBUTTON AND INSTRUCTIONS.
- RETAIN AND PROTECT EXISTING TERMINAL CABINET.
- RETAIN AND PROTECT EXISTING SERVICE CABINET.
- RETAIN AND PROTECT EXISTING METER BASE.
- RETAIN AND PROTECT EXISTING TYPE (T) JUNCTION BOX.
- RETAIN AND PROTECT EXISTING WIRING.
- RETAIN AND PROTECT EXISTING REMOTE SERVICE POST.
- RETAIN AND PROTECT EXISTING ELECTRICAL CONDUIT, SIZE (S)
- RETAIN AND PROTECT EXISTING FIRE PRE-EMPTION DETECTOR CHANNEL (CH).
- RETAIN AND PROTECT EXISTING FIRE PRE-EMPTION FEEDER CABLE.
- RETAIN AND PROTECT EXISTING DETECTOR CONDUIT.
- REMOVE EXISTING TRAFFIC SIGNAL MAST ARM POLE.
- REMOVE AND RELOCATE EXISTING PEDESTRIAN SIGNAL PEDESTAL.
- REMOVE AND RELOCATE EXISTING VEHICLE SIGNAL.
- REMOVE AND RELOCATE EXISTING PEDESTRIAN SIGNAL, PUSHBUTTON AND INSTRUCTIONS.
- REMOVE AND RELOCATE EXISTING WIRING.
- REMOVE AND RELOCATE EXISTING FIRE PRE-EMPTION DETECTOR UNIT.
- REMOVE AND RELOCATE EXISTING FIRE PRE-EMPTION FEEDER CABLE.
- REMOVE AND RELOCATE EXISTING JUNCTION BOX.
- REMOVE AND RELOCATE EXISTING TERMINAL CABINET.
- REINSTALL EXISTING PEDESTRIAN SIGNAL PEDESTAL.
- REINSTALL EXISTING PHASE (PH) VEHICLE SIGNAL.
- REMOVE AND RELOCATE EXISTING PEDESTRIAN SIGNAL, PUSHBUTTON AND INSTRUCTIONS.
- REINSTALL EXISTING WIRING.
- REINSTALL EXISTING FIRE PRE-EMPTION DETECTOR UNIT.
- REINSTALL EXISTING FIRE PRE-EMPTION FEEDER CABLE.
- REINSTALL EXISTING JUNCTION BOX.
- REINSTALL EXISTING TERMINAL CABINET.
- ABANDON EXISTING ELECTRICAL CONDUIT.
- INSTALL SPECIAL (NON-STANDARD) TRAFFIC SIGNAL MAST ARM POLE. (SEE SPECIAL PROVISIONS).
- INSTALL (L) FEET TRAFFIC SIGNAL MAST ARM.
- INSTALL (L) FOOT CLASS 4 TREATED WOOD POLE.
- INSTALL PHASE (PH) VEHICLE SIGNAL WITH LED'S.
- INSTALL PHASE (PH) PEDESTRIAN SIGNAL WITH LED'S, ALTERNATIVE PUSHBUTTON AND INSTRUCTION DECAL.
- INSTALL ALUMINUM (30" X 36", TYPE "W7") THROUGH AND RIGHT ARROW SIGN (DIAMOND GRADE SHEETING).
- INSTALL ALUMINUM (30" X 36", TYPE "W7") "LEFT TURN YIELD TO ONCOMING TRAFFIC" SIGN (OR17-1) (DIAMOND GRADE SHEETING).
- INSTALL ALUMINUM (30" X 36", TYPE "W7") RIGHT ARROW "ONLY" SIGN (DIAMOND GRADE SHEETING).
- INSTALL PUSHBUTTON POST.
- INSTALL PHASE (PH) PEDESTRIAN SIGNAL.
- INSTALL PHASE (PH) PUSHBUTTON WITH INSTRUCTION DECAL.
- INSTALL (S) INCH ELECTRICAL CONDUIT.

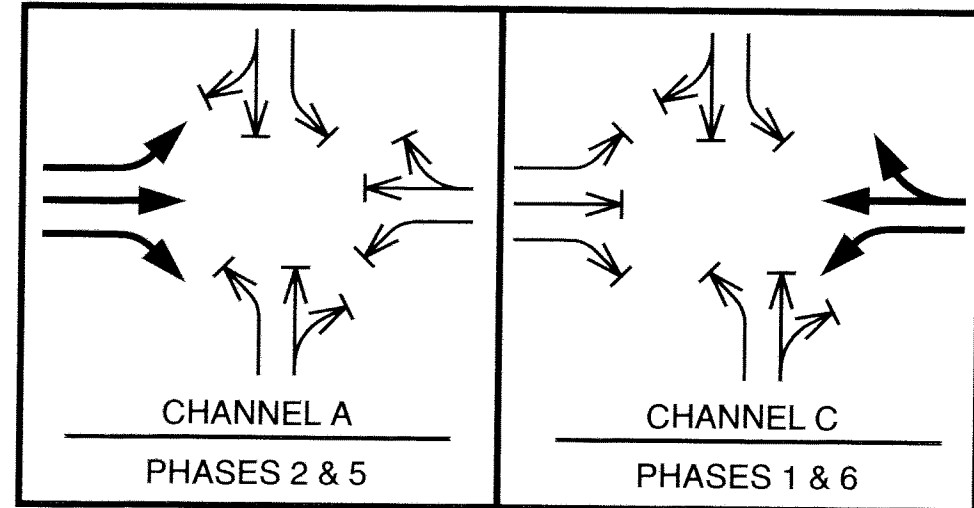
POLE ENTRANCE CHART

POLE NO.	1	2	3	4	5	6
MAST ARM	EX	-	1	EX	3	-
PED. SIGNAL CLAM SHELL	-	1,3	3,5	-	5,7	1,7
PEDESTRIAN PB/ SIGN	-	-	5,7	1,7	-	1,3
TERMINAL CAB.	-	-	5	EX	7	-

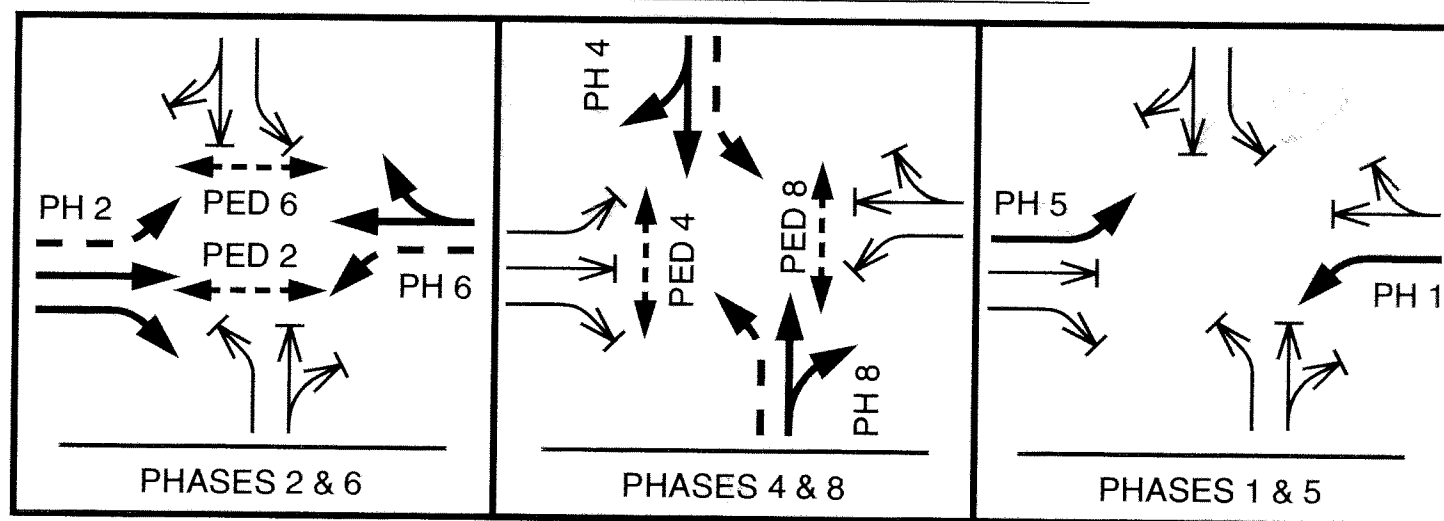
ORIENTATION LOOKING DOWN ON POLE



FIRE PREEMPTION OPERATION



NORMAL PHASE ROTATION



H:\PROJECTS\4144\DWGS\PHASE1\4144SIG1.XREF:4144BASE.DWG 05/15/01 AS-BUILT

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TRANSPORTATION PLANNING/TRAFFIC ENGINEERING

WRG DESIGN, INC.
10450 SW NIMBUS AVE. SUITE RA
PORTLAND, OREGON 97223

ACCOMP. BY DWG. NOS. ODOT:
TM400-TM403, TM405-TM409, BR963, BR966

CITY OF HILLSBORO, OREGON

NW 229TH AVE AT
CORNELIUS PASS CORPORATE CENTER
TRAFFIC SIGNAL MODIFICATION

SHEET NO.
1 OF 3

PROJECT NO.
4144

C													
Friday, September 18, 2015 13:50													
Intersection Name		2 - 229th and intel no						Local ID		2			
Intersection Telephone Number													
System Name		121 - Hillsboro						System ID		121			
Controller Type		Voyage - C1-C11											
Controller Serial Number										Installation Date			
Programmed by										Programmed Date			
Graphic Map Background							Phase Rotation Diagram						
Control Data (next/2/2)													
Controller Function and Timing (next/2/1, next/2/2)													
Security, Sequence, Initialization													
Security Code		****		0 = disabled, or 1000-9999									
Sequence		7		0 = sequential, 1 = quad left turn, 2-6 = special A-E, 7 = lead lag									
				Lead Lag (next/2/2/3)									
				Phases 1 - 2		Phases 3 - 4		Phases 5 - 6		Phases 7 - 8			
				2		2		2		2			
				0 = no reversal, 1 = reversal, 2 = by coord plan or clock									
Initialization and Flash (next/2/2/5)													
	Initialization			Flash Entry			Flash Exit						
Ring 1 Phase	1			0			1			phase 1-8			
Ring 2 Phase	5			0			5			phase 1-8			
Interval	0			0			0			0 = red, 1 = yellow, 2 = green			
Power up Flash	0.0		0.0 - 25.5 seconds				First All Red		8.0		0.0 - 25.5 seconds		
Soft Flash (next/2/2/5)													
Phase	1	2	3	4	5	6	7	8	0 = dark, 1=flash yel WIG, 2 = flash yel WAG, 3 = flash red WIG, 4 = flash red WAG				
	3	4	3	4	3	4	3	4					
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	same as phase
	3	4	3	4	3	4	3	4	3	4	3	4	
Internal Logic Output	1	2	3	4	5	6	7	8	9	10	11	12	0 = normal, 1 = dark, 2 = flash WIG
	0	0	0	0	0	0	0	0	0	0	0	0	

Per Phase Functions (next/2/2/3, next/2/2/1)									
	1	2	3	4	5	6	7	8	
Phases Used	X	X		X	X	X		X	X = on
Restricted Phases									X = on (Sequence 2, 6, 7 only)
Exclusive Phases									X = on (Sequence 7 only)
Yellow Lock									X = on
Min Recall		X				X			
Max Recall									
Ped Recall									
Red Lock									
Max Out Recall Inhibit									
Soft Recall									
Free Walk Rest									
Conditional Ped									
Disable Inhibit Max Termination									
Call to Non Act 1									
Call to Non Act 2									
Dual Entry (next/2/2/9/3)									
Mode	1	0 = off, 1 = on, 2 = Not Used, 3 = by coord plan, 4 = by time clock circuit 61							
Dual Entry Phase -->	1	2	3	4	5	6	7	8	
Phase	0	6	0	8	0	2	0	4	0 = none, 1-8 = phase 1-8
Conditional Service, Five Section Head									
Conditional Service (next/2/2/9/3)			5 Section Head Logic (next/2/2/9/4)						
			Anti-Trap				Yellow Blanking LT		
	Mode	CS Max Time	X Omits Y		Trap Protected Phase		Next Phase	Phase	
Phase 1	0	0	X : Y						
Phase 3	0	0	6 : 1	0	1		< (5)	1	
Phase 5	0	0	8 : 3	0	3		< (7)	3	
Phase 7	0	0	2 : 5	0	5		< (1)	5	
0 = off, 1 = C.S.On. 2 = C.S. on by TOD circuit 57, 3 = N/A, 4 = C.S. and C.R. On, 5 = C.R. on by TOD circuit 57.			4 : 7	0	7		< (3)	7	
			0=off, 1=side call, 2=no side call		X = On				

Phase Times (next/2/2/2, next/2/2/9/5)									
	1	2	3	4	5	6	7	8	
Movement									
Minimum Green	5	10	0	6	5	10	0	6	0 - 255 sec
Passage	2.5	4.0	0.0	3.0	2.5	4.0	0.0	3.0	0.0 - 25.5 sec
Yellow	3.0	4.0	0.0	3.0	3.0	4.0	0.0	3.0	0.0 - 25.5 sec
Red Clearance	1.0	1.0	0.0	0.5	1.0	1.0	0.0	0.5	0.0 - 25.5 sec or 0 - 255 sec
Max 1	20	45	0	32	20	45	0	32	0 - 255 sec
Max 2	20	45	0	32	20	45	0	32	0 - 255 sec
Walk	0	8	0	8	0	10	0	8	0 - 255 sec
Ped Clear	0	21	0	16	0	10	0	16	0 - 255 sec
Seconds Per Actuation	0.0	1.3	0.0	0.0	0.0	1.3	0.0	0.0	0.0 - 25.5 sec
Time Before Reduction	6	12	0	6	6	12	0	6	0 - 255 sec
Time to Reduce	12	20	0	12	0	20	0	12	0 - 255 sec
Minimum Gap	1.0	2.4	0.0	2.0	1.0	2.4	0.0	2.0	0.0 - 25.5 sec
Max Variable Initial	6	12	0	6	6	12	0	6	0 - 255 sec
Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Inhibit Min Yellow									X = On
Red Decimal Off									X = On
Advance Walk	0	0	0	4	0	0	0	4	0 - 255 sec
Other Controller Functions (next/2/2/9)									
Phase -->	1	2	3	4	5	6	7	8	
Inhibit Simultaneous Gap Out	X			X	X			X	X = On
Last Car Passage	2	0 = recall phase, 1 = last car passage, 2 = NOT recall - Not last car passage							
Red Revert (+2 seconds)	0.0	0 - 25.5 sec							
Auto Ped Clear	X	X = On							
Flashing Don't Walk Into Yellow		X = On							
Soft Recall / Red Rest Delay	0.0	0 - 25.5 sec							
Ped Pushbutton	0	0 - 5 sec, 0 = disable							
Advance Flash Rate	0	0 = disable, 1 = 120 FPM							
Change Sequence		X = On (After a download with a power on - off cycle)							
Phase -->	1	2	3	4	5	6	7	8	
Red Clear Extension Detector	0	0	0	0	0	0	0	0	0 = none 1 - 32 = detector 1 - 32
Red Clear Extension Red Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec.

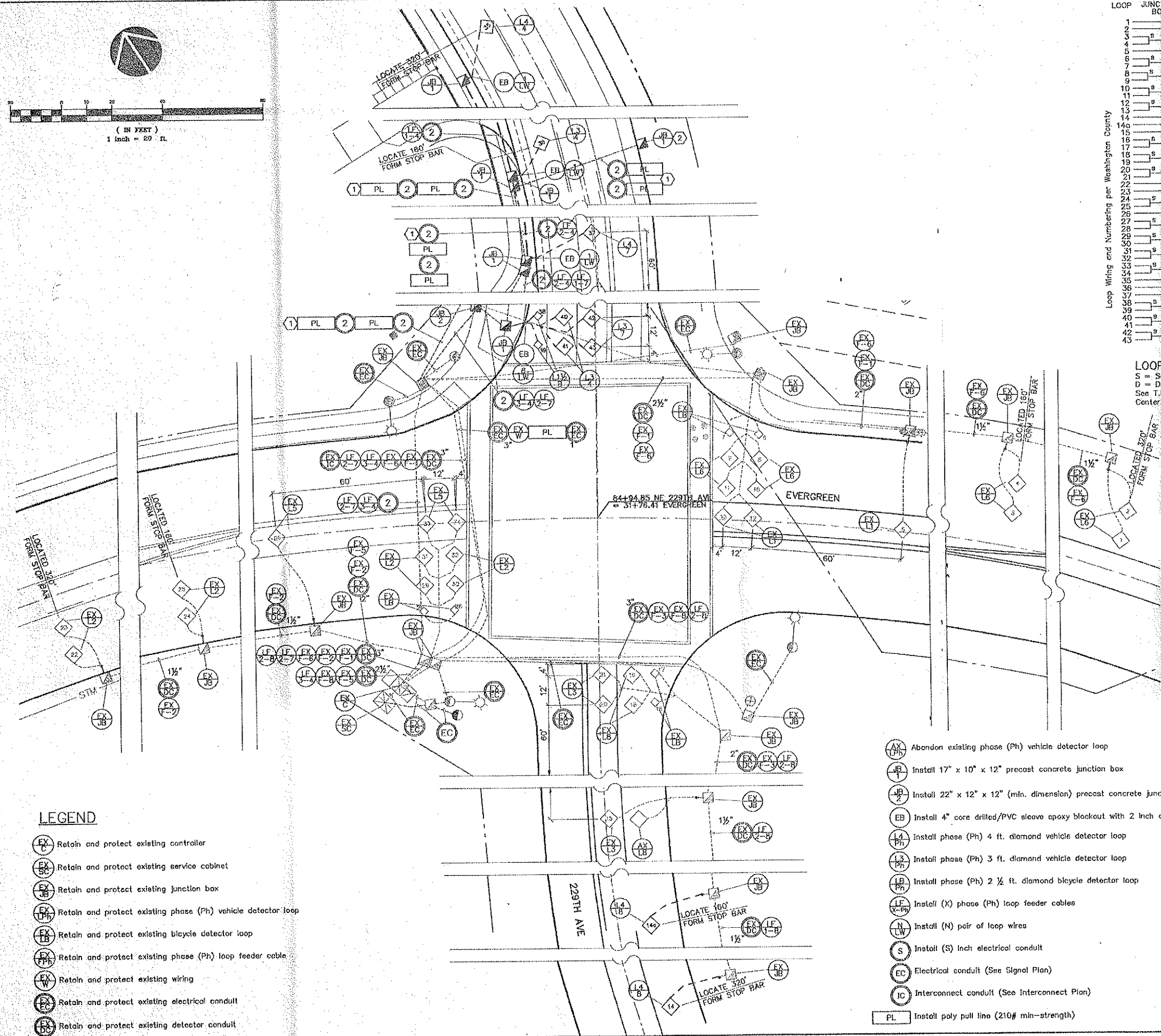
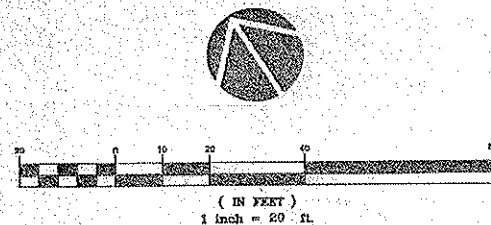
Coordination Data (next/2/3)									
Coordination Modes (next/2/3/1, next/2/3/4/1, next/2/3/4/3)									
Flash Mode	33	0=off, 1=on, 33=time clock, 34=comm, 35=hardwire							
Coordination Plan Mode	33	0=free, 1-32 = coord plan 1-32, 33=time clock, 34=comm, 35=hardwire							
Offset Seeking Mode	2	0=add only, 1=dwell, 2=fastway							
Late Ped	0	0 = off, 1 = on							
Coord Walk Rest	0	0 = off, 1 = on, 2 = by TOD circuit 160, 3 = end of walk, 4 = coord ped during pe							
Repeated Phase Service	0	0=off, 1=on (no coord ped), 2=on (beginning green coord ped), 3=on (coord ped							
Zero Mode (TS2 only)	0	0=start of main street, 1=end of main street, 2=by TOD circuit 144							
Phase -->		1	2	3	4	5	6	7	8
Omit Phase During Repeated Phase Service		0	0	0	0	0	0	0	0
Auto Permissive Min Green		0	0	0	0	0	0	0	0
Coordination Plans (next/2/3/2)									
Coord Plan	Coordination Phases		Cycle Length	Offset Time	Min Cycle Length Dwell Time	Permissive	Service Plan	Max Plan	
	Ring 1	Ring 2							
1 - PLAN 1	2	6	105	74	0	0	0	0	
2 -	0	0	0	0	0	0	0	0	
3 - PLAN 3	2	6	110	93	0	0	0	0	
4 -	0	0	0	0	0	0	0	0	
5 -	0	0	0	0	0	0	0	0	
6 -	0	0	0	0	0	0	0	0	
7 -	0	0	0	0	0	0	0	0	
8 -	0	0	0	0	0	0	0	0	
9 -	0	0	0	0	0	0	0	0	
10 -	0	0	0	0	0	0	0	0	
11 -	0	0	0	0	0	0	0	0	
12 -	0	0	0	0	0	0	0	0	
13 -	0	0	0	0	0	0	0	0	
14 -	0	0	0	0	0	0	0	0	
15 -	0	0	0	0	0	0	0	0	
16 -	0	0	0	0	0	0	0	0	
17 -	0	0	0	0	0	0	0	0	
18 -	0	0	0	0	0	0	0	0	
19 -	0	0	0	0	0	0	0	0	
20 -	0	0	0	0	0	0	0	0	
21 -	0	0	0	0	0	0	0	0	
22 -	0	0	0	0	0	0	0	0	
23 -	0	0	0	0	0	0	0	0	
24 -	0	0	0	0	0	0	0	0	
25 -	0	0	0	0	0	0	0	0	
26 -	0	0	0	0	0	0	0	0	
27 -	0	0	0	0	0	0	0	0	
28 -	0	0	0	0	0	0	0	0	
29 -	0	0	0	0	0	0	0	0	
30 -	0	0	0	0	0	0	0	0	
31 -	0	0	0	0	0	0	0	0	
32 -	0	0	0	0	0	0	0	0	
0 - 8			0 - 255 sec.				0 - 8		

Coordination Plans cont.										
Coord Plan	* = Force Offs / Split Times (TS2)								* = Yield Points / Actuated Times (TS2)	
	1	2	3	4	5	6	7	8	Ring 1	Ring 2
1 - PLAN 1	22	55	0	28	12	65	0	28	0	0
2 -	0	0	0	0	0	0	0	0	0	0
3 - PLAN 3	15	65	0	30	15	65	0	30	0	0
4 -	0	0	0	0	0	0	0	0	0	0
5 -	0	0	0	0	0	0	0	0	0	0
6 -	0	0	0	0	0	0	0	0	0	0
7 -	0	0	0	0	0	0	0	0	0	0
8 -	0	0	0	0	0	0	0	0	0	0
9 -	0	0	0	0	0	0	0	0	0	0
10 -	0	0	0	0	0	0	0	0	0	0
11 -	0	0	0	0	0	0	0	0	0	0
12 -	0	0	0	0	0	0	0	0	0	0
13 -	0	0	0	0	0	0	0	0	0	0
14 -	0	0	0	0	0	0	0	0	0	0
15 -	0	0	0	0	0	0	0	0	0	0
16 -	0	0	0	0	0	0	0	0	0	0
17 -	0	0	0	0	0	0	0	0	0	0
18 -	0	0	0	0	0	0	0	0	0	0
19 -	0	0	0	0	0	0	0	0	0	0
20 -	0	0	0	0	0	0	0	0	0	0
21 -	0	0	0	0	0	0	0	0	0	0
22 -	0	0	0	0	0	0	0	0	0	0
23 -	0	0	0	0	0	0	0	0	0	0
24 -	0	0	0	0	0	0	0	0	0	0
25 -	0	0	0	0	0	0	0	0	0	0
26 -	0	0	0	0	0	0	0	0	0	0
27 -	0	0	0	0	0	0	0	0	0	0
28 -	0	0	0	0	0	0	0	0	0	0
29 -	0	0	0	0	0	0	0	0	0	0
30 -	0	0	0	0	0	0	0	0	0	0
31 -	0	0	0	0	0	0	0	0	0	0
32 -	0	0	0	0	0	0	0	0	0	0
0 - 255 sec * = force offs and yield points										

Time of Day Data (next/2/4)

Day Program (next/2/4/1)

	Day Prog	Time	Coord Plan	Coord Plan or Circuit	State On / Off		Day Prog	Time	Coord Plan	Coord Plan or Circuit	State On/Off
1	1	06:45	X	1			51				
2	1	09:00	X	0			52				
3	1	15:30	X	3			53				
4	1	18:15	X	0			54				
5							55				
6							56				
7							57				
8							58				
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44							94				
45							95				
46							96				
47							97				
48							98				
49							99				



LEGEND

- EX Retain and protect existing controller
- EB Retain and protect existing service cabinet
- EX Retain and protect existing junction box
- EX Retain and protect existing phase (Ph) vehicle detector loop
- EX Retain and protect existing bicycle detector loop
- EX Retain and protect existing phase (Ph) loop feeder cable
- EX Retain and protect existing wiring
- EX Retain and protect existing electrical conduit
- EX Retain and protect existing detector conduit

- AX Abandon existing phase (Ph) vehicle detector loop
- JP Install 17" x 10" x 12" precast concrete junction box
- JP Install 22" x 12" x 12" (min. dimension) precast concrete junction box
- EB Install 4" core drilled/PVC sleeve epoxy blockout with 2 inch conduit to junction box
- L4 Install phase (Ph) 4 ft. diamond vehicle detector loop
- L3 Install phase (Ph) 3 ft. diamond vehicle detector loop
- L2 Install phase (Ph) 2 1/2 ft. diamond bicycle detector loop
- LX Install (X) phase (Ph) loop feeder cables
- NLW Install (N) pair of loop wires
- S Install (S) inch electrical conduit
- EC Electrical conduit (See Signal Plan)
- IC Interconnect conduit (See Interconnect Plan)
- PL Install poly pull line (210# min-strength)

LOOP	JUNCTION BOX	PHASE	FUNCTION	SLOT
1		6	E,C,CO	J2U
2		6	E,C,CO	J2L
3		6	E,C,CO	J3U
4		6	E,C,CO	J1U
5		6	E,C,CO	J3L
6		6	E,C,CO	J4U
7		6	E,C,CO	J4L
8		6	E,C,CO	J5U
9		6	E,C,CO	J5L
10		6	E,C,CO	J6U
11		6	E,C,CO	J6L
12		6	E,C,CO	J7U
13		6	E,C,CO	J7L
14		6	E,C,CO	J8U
15		6	E,C,CO	J8L
16		6	E,C,CO	J9U
17		6	E,C,CO	J9L
18		6	E,C,CO	J10U
19		6	E,C,CO	J10L
20		6	E,C,CO	J11U
21		6	E,C,CO	J11L
22		6	E,C,CO	J12U
23		6	E,C,CO	J12L
24		6	E,C,CO	J13U
25		6	E,C,CO	J13L
26		6	E,C,CO	J14U
27		6	E,C,CO	J14L
28		6	E,C,CO	J15U
29		6	E,C,CO	J15L
30		6	E,C,CO	J16U
31		6	E,C,CO	J16L
32		6	E,C,CO	J17U
33		6	E,C,CO	J17L
34		6	E,C,CO	J18U
35		6	E,C,CO	J18L
36		6	E,C,CO	J19U
37		6	E,C,CO	J19L
38		6	E,C,CO	J20U
39		6	E,C,CO	J20L
40		6	E,C,CO	J21U
41		6	E,C,CO	J21L
42		6	E,C,CO	J22U
43		6	E,C,CO	J22L

CABINET
LOOP DETECTOR WIRING DIAGRAM
S = Series, E = Extension, C = Call, CO = Carry-over
D = Delay, TS = Type III Detection
See T.E.S. Drawg. No. TS-129 for loop detector details
Center all loops in travel lanes or as shown on plans

KEYNOTES

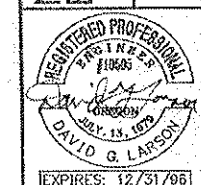
- 1 Provide 2" conduit and pull line for future use for fire station push-button pre-emption activation and fire signal.
- 2 Install junction box for future fire station use at approximately STA B74+40

RECORD DRAWING

THIS DRAWING IS BASED ON THE ORIGINAL DESIGN AND INFORMATION PROVIDED BY THE CONTRACTOR

RECORD DRAWING 9/17/97

NW 229TH AVENUE EXTENSION
EVERGREEN RD TO 235TH AVE
HILLSBORO, OREGON
DETECTION PLAN

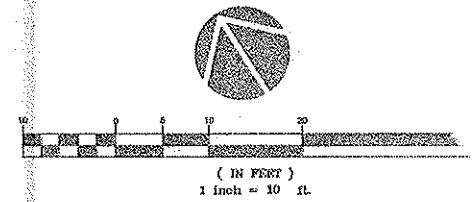
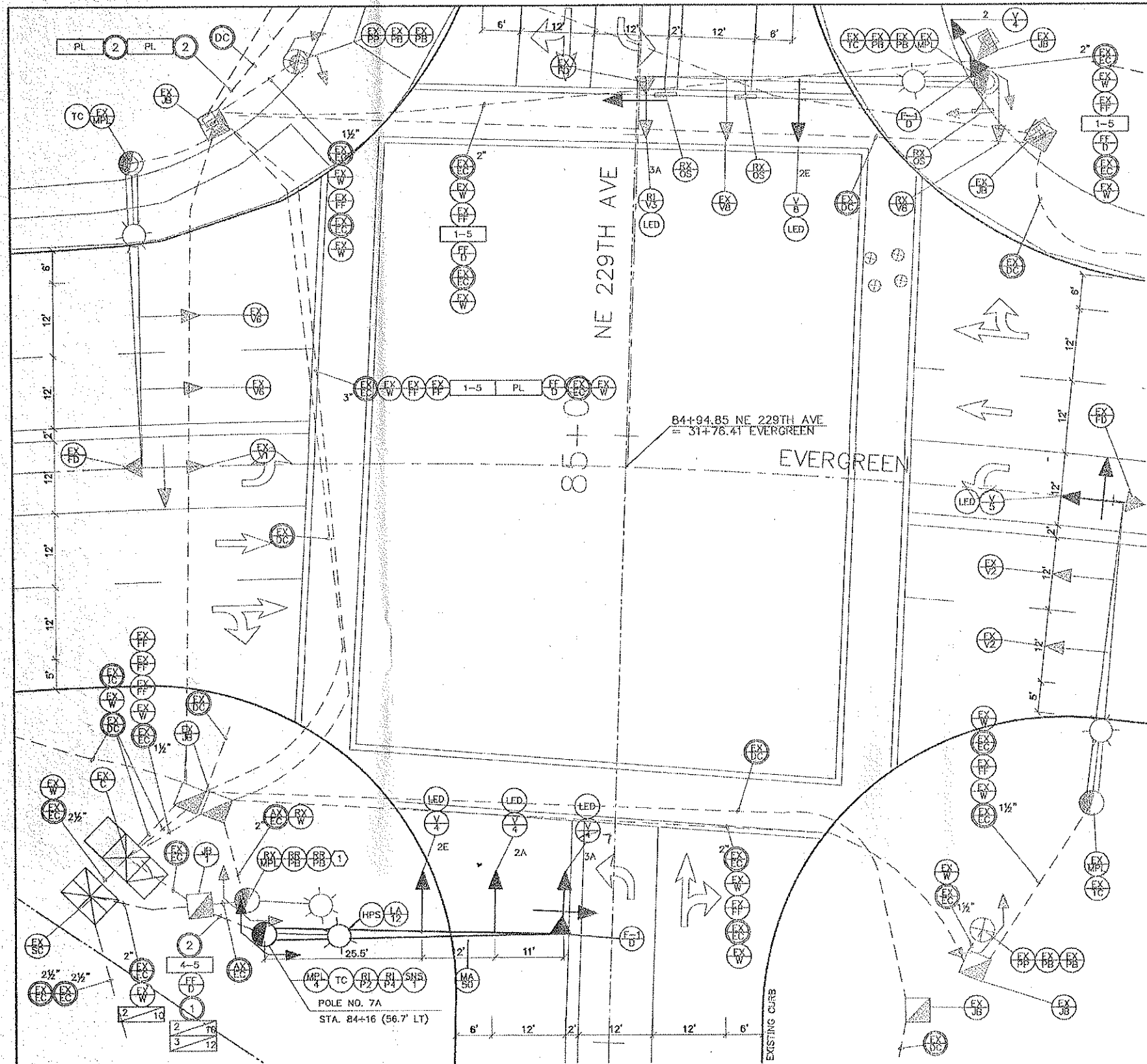


DATE: 7/15/96
DRAWN BY: DMB
CHECKED BY: DGL

REVISION	DATE	BY
1	8/8/96	
2	8/16/96	
3		
4		
5		
6		
7		
8		
9		
10		

SHEET
TS1.2
OF 31
JOB NO. 196235

196235\PLANS\235TS1-2.DWG R.J.H. 08/12/97 09:10 1:2000

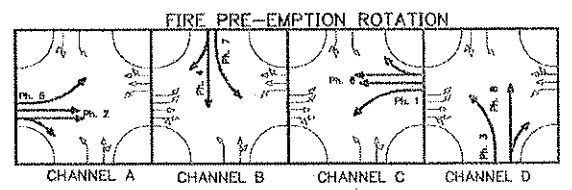
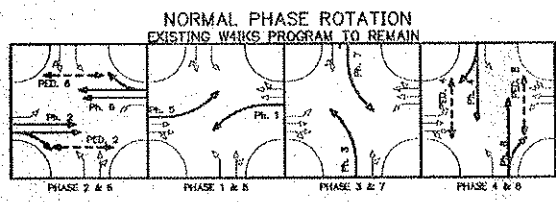


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JED USE & TRANSPORTATION
TRAFFIC ENGINEERING

- LEGEND**
- EX 1C Retain and protect existing controller
 - EX 1A Retain and protect existing mast arm pole
 - EX 1B Retain and protect existing pedestrian signal pedestal
 - EX 1D Retain and protect existing phase (Ph) vehicle signal
 - EX 1E Retain and protect existing pedestrian pushbutton and instruction sign
 - EX 1F Retain and protect existing terminal cabinet
 - EX 1G Retain and protect existing service cabinet
 - EX 1H Retain and protect existing junction box
 - EX 1I Retain and protect existing fire pre-emption device
 - EX 1J Retain and protect existing wiring
 - EX 1K Retain and protect existing electrical conduit
 - EX 1L Retain and protect existing detector conduit
 - EX 1M Retain and protect existing interconnect conduit
 - EX 1N Retain and protect existing fire pre-emption detector unit
 - EX 1O Remove existing wiring
 - EX 1P Remove existing mast arm pole
 - EX 1Q Abandon existing electrical conduit
 - EX 1R Remove and relocate existing pedestrian pushbutton and instruction sign
 - EX 1S Reinstall existing pedestrian pushbutton and instruction sign
 - EX 1T Install type (T) standard traffic signal mast arm pole with luminaire (40 ft. mounting ht.)
 - EX 1U Install phase (Ph) vehicle signal
 - EX 1V Install LED retrofit kit (See Special Provisions 02920.51)
 - EX 1W Install 200 watt high pressure sodium luminaire type M-S-111 120,208,240,277 multi-volt mag-regulator ballast
 - EX 1X Install street name sign "EVERGREEN PKWY" per detail sheet TS1.3
 - PL Install poly pull line (210g minimum strength)
 - N-C Install (N) No. 8 type THWN wire (Signal system common)
 - N-G Install (N) - 1/conductor No. (G) type AWG cable
 - N-G Install (N) No. (G) type THWN wires
 - Ph Include 3 spare wires for phase (Ph) as per table
 - S Install (S) inch electrical conduit
 - DC Detector conduit (See Detector Plan)
 - IC Interconnect conduit (See Interconnect Plan)
 - FP Install fire pre-emption device in controller
 - E-N Install channel (Ch), (N)-way fire pre-emption detector unit
 - E-Ch Install channel (Ch) fire pre-emption detector feeder cable
 - PC Install photo cell relocated from ex. MPL
- LEGEND NOTES:**
- H = Height shown
 - T = Type shown
 - L = Length shown
 - Ph = Phase shown
 - X = Number of cables shown
 - N = Number shown
 - G = AWG size shown
 - S = Size shown
 - Ch = Channel shown
 - A = Standard plumber
 - E = Elevator plumber
 - 2 = 12" RLT, 12" YLT, 12" GLTA
 - 3 = 12" RLT, 12" YLT, 12" GLTA, 12" GRTA, 12" G
 - 4 = 12" RLT, 12" YLT, 12" GLTA, 12" G
- NOTES:**
- Contractor shall use existing wiring at poles to reassign signal heads as shown.
 - Contractor shall verify that existing wiring will be sufficient for proposed signal modifications.
 - See Sheet TS1.2 for additional wiring information regarding fire station signal provision

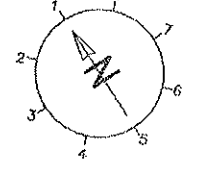
RECORD DRAWING

THIS DRAWING IS BASED ON THE ORIGINAL DESIGN AND INFORMATION PROVIDED BY THE CONTRACTOR



POLE ORIENTATION CHART

POLE NO.	MAST ARM	TERMINAL CABINET	LUMINAIRE ARM	PEDESTRIAN SIGNAL	PEDESTRIAN BUTTONS
7A	6.2	2.2	6.2	2.2, 4.2	6.2, 8.2



KEYNOTES:

- 1 Remove existing MPL/3 and provide to City of Hillsboro for possible future use at fire station.

GROUP
MACKENZIE
Architecture
Interior Design
Land Use Planning
Transportation Planning
4450 SW Boston St / Portland, OR 97207-0038
Tel: 503.224.7600 Fax: 503.224.7600

**NW 229TH AVENUE EXTENSION
EVERGREEN RD TO 235TH AVE
HILLSBORO, OREGON**

SIGNALIZATION PLAN

REGISTERED PROFESSIONAL ENGINEER
11006
DAVID G. LARSON
EXPIRES: 12/31/98

DATE:	7/15/96
DRAWN BY:	DMB
CHECKED BY:	DGL
REVISION	DATE:
1	8/8/96
2	8/16/96
3	X

TS1.1

OF 31

JOB NO. 196235

RECORD DRAWING 9/17/97

<i>NORTH</i>			
Thursday, June 22, 2017 11:22			
Intersection Name	12 - Evergreen_229th		Local ID 12
Intersection Telephone Number			
System Name	106 - W of 185th		System ID 106
Controller Type	Voyage - C1-C11		
Controller Serial Number			Installation Date
Programmed by			Programmed Date
Graphic Map Background		Phase Rotation Diagram	

Control Data (next/2/2)													
Controller Function and Timing (next/2/1, next/2/2)													
Security, Sequence, Initialization													
Security Code	****	0 = disabled, or 1000-9999											
Sequence	7	0 = sequential, 1 = quad left turn, 2-6 = special A-E, 7 = lead lag											
				Lead Lag (next/2/2/3)									
				Phases 1 - 2		Phases 3 - 4		Phases 5 - 6		Phases 7 - 8			
				2		2		2		2			
0 = no reversal, 1 = reversal, 2 = by coord plan or clock													
Initialization and Flash (next/2/2/5)													
	Initialization		Flash Entry		Flash Exit								
Ring 1 Phase	1		0		1		phase 1-8						
Ring 2 Phase	5		0		5		phase 1-8						
Interval	0		0		0		0 = red, 1 = yellow, 2 = green						
Power up Flash	0.0	0.0 - 25.5 seconds			First All Red	6.0	0.0 - 25.5 seconds						
Soft Flash (next/2/2/5)													
Phase	1	2	3	4	5	6	7	8	0 = dark, 1=flash yel WIG, 2 = flash yel WAG, 3 = flash red WIG, 4 = flash red WAG				
	3	4	3	4	3	4	3	4					
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	same as phase
	3	4	3	4	3	4	3	4	3	4	3	4	
Internal Logic Output	1	2	3	4	5	6	7	8	9	10	11	12	0 = normal, 1 = dark, 2 = flash WIG
	0	0	0	0	0	0	0	0	0	0	0	0	

Per Phase Functions (next/2/2/3, next/2/2/1)									
	1	2	3	4	5	6	7	8	
Phases Used	X	X	X	X	X	X	X	X	X = on
Restricted Phases									X = on (Sequence 2, 6, 7 only)
Exclusive Phases									X = on (Sequence 7 only)
Yellow Lock									X = on
Min Recall		X				X			
Max Recall									
Ped Recall									
Red Lock									
Max Out Recall Inhibit	X	X	X	X	X	X	X	X	
Soft Recall									
Free Walk Rest									
Conditional Ped									
Disable Inhibit Max Termination									
Call to Non Act 1									
Call to Non Act 2									
Dual Entry (next/2/2/9/3)									
Mode	1	0 = off, 1 = on, 2 = Not Used, 3 = by coord plan, 4 = by time clock circuit 61							
Dual Entry Phase -->	1	2	3	4	5	6	7	8	
Phase	0	6	0	8	0	2	0	4	0 = none, 1-8 = phase 1-8
Conditional Service, Five Section Head									
Conditional Service (next/2/2/9/3)			5 Section Head Logic (next/2/2/9/4)						
	Mode	CS Max Time	X Omits Y		Anti-Trap			Yellow Blanking LT	
Phase 1	0	0	X : Y		Trap Protected Phase		Next Phase	Phase	
Phase 3	0	0	6 : 1	0	1		< (5)	1	
Phase 5	0	0	8 : 3	0	3		< (7)	3	
Phase 7	0	0	2 : 5	0	5		< (1)	5	
0 = off, 1 = C.S.On. 2 = C.S. on by TOD circuit 57, 3 = N/A, 4 = C.S. and C.R. On, 5 = C.R. on by TOD circuit 57.			4 : 7	0	7		< (3)	7	
			0=off, 1=side call, 2=no side call		X = On				

Phase Times (next/2/2/2, next/2/2/9/5)									
	1	2	3	4	5	6	7	8	
Movement	<i>WBL</i>	<i>EB</i>	<i>NBL</i>	<i>SB</i>	<i>EBL</i>	<i>WB</i>	<i>SBL</i>	<i>NB</i>	
Minimum Green	5	10	5	6	5	10	5	6	0 - 255 sec
Passage	2.0	3.1	2.0	2.5	2.0	3.1	2.0	2.5	0.0 - 25.5 sec
Yellow	3.0	4.5	3.0	4.0	3.0	4.5	3.0	4.0	0.0 - 25.5 sec
Red Clearance	1.0	1.0	1.0	0.5	1.0	1.0	1.0	0.5	0.0 - 25.5 sec or 0 - 255 sec
Max 1	25	30	15	25	15	30	25	20	0 - 255 sec
Max 2	35	35	10	20	15	35	90	27	0 - 255 sec
Walk	0	11	0	5	0	9	0	5	0 - 255 sec
Ped Clear	0	19	0	29	0	19	0	29	0 - 255 sec
Seconds Per Actuation	0.0	1.3	0.0	0.0	0.0	1.3	0.0	0.0	0.0 - 25.5 sec
Time Before Reduction	0	0	0	0	0	0	0	0	0 - 255 sec
Time to Reduce	0	0	0	0	0	0	0	0	0 - 255 sec
Minimum Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
Max Variable Initial	0	25	0	0	0	25	0	0	0 - 255 sec
Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Inhibit Min Yellow									X = On
Red Decimal Off									X = On
Advance Walk	0	0	0	0	0	0	0	0	0 - 255 sec
Other Controller Functions (next/2/2/9)									
Phase -->	1	2	3	4	5	6	7	8	
Inhibit Simultaneous Gap Out	X		X	X	X		X	X	X = On
Last Car Passage	2	0 = recall phase, 1 = last car passage, 2 = NOT recall - Not last car passage							
Red Revert (+2 seconds)	3.0	0 - 25.5 sec							
Auto Ped Clear	X	X = On							
Flashing Don't Walk Into Yellow		X = On							
Soft Recall / Red Rest Delay	0.0	0 - 25.5 sec							
Ped Pushbutton	2	0 - 5 sec, 0 = disable							
Advance Flash Rate	0	0 = disable, 1 = 120 FPM							
Change Sequence		X = On (After a download with a power on - off cycle)							
Phase -->	1	2	3	4	5	6	7	8	
Red Clear Extension Detector	0	0	0	0	0	0	0	0	0 = none 1 - 32 = detector 1 - 32
Red Clear Extension Red Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec.

Coordination Data (next/2/3)

Coordination Modes (next/2/3/1, next/2/3/4/1, next/2/3/4/3)

Flash Mode	<i>33</i>	0=off, 1=on, 33=time clock, 34=comm, 35=hardwire, 36=NWS Set only, 37=AB3418 / NTCIP 5
Coordination Plan Mode	<i>33</i>	0=free, 1-32 = coord plan 1-32, 33=time clock, 34=comm, 35=hardwire, 36=NWS Set only, 37-
Offset Seeking Mode	<i>2</i>	0=add only, 1= dwell, 2=fastway
Late Ped	<i>0</i>	0 = off, 1 = on
Coord Walk Rest	<i>0</i>	0 = off, 1 = on, 2 = by TOD circuit 160, 3 = end of walk, 4 = coord ped during perms
Repeated Phase Service	<i>0</i>	0=off, 1=on (no coord ped), 2=on (beginning green coord ped), 3=on (coord ped always)
Zero Mode (TS2 only)	<i>1</i>	0=start of main street, 1=end of main street, 2=by TOD circuit 144

Phase -->	1	2	3	4	5	6	7	8	0 = service allowed 1 = service prevented
Omit Phase During Repeated Phase Service	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	
Auto Permissive Min Green	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	0 - 255 seconds

Coordination Plans (next/2/3/2)

Coord Plan	Coordination Phases		Cycle Length	Offset Time	Min Cycle Length Dwell Time	Permissive	Service Plan	Max Plan
	Ring 1	Ring 2						
<i>1 - AM Plan</i>	<i>2</i>	<i>6</i>	<i>100</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>2 - Mid Plan</i>	<i>2</i>	<i>6</i>	<i>100</i>	<i>94</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>3 - PM Plan</i>	<i>2</i>	<i>6</i>	<i>110</i>	<i>5</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>4 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>5 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>6 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>7 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>8 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>9 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>10 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>11 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>12 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>13 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>14 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>15 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>16 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>17 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>18 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>19 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>20 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>21 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>22 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>23 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>24 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>25 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>26 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>27 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>28 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>29 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>30 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>31 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>32 -</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
0 - 8			0 - 255 sec.				0 - 8	

Coordination Plans cont.										
Coord Plan	* = Force Offs / Split Times (TS2)								* = Yield Points / Actuated Times (TS2)	
	1	2	3	4	5	6	7	8	Ring 1	Ring 2
1 - AM Plan	22	36	13	29	15	43	13	29	0	0
2 - Mid Plan	18	38	14	30	13	43	14	30	0	0
3 - PM Plan	18	36	14	42	13	41	20	36	0	0
4 -	0	0	0	0	0	0	0	0	0	0
5 -	0	0	0	0	0	0	0	0	0	0
6 -	0	0	0	0	0	0	0	0	0	0
7 -	0	0	0	0	0	0	0	0	0	0
8 -	0	0	0	0	0	0	0	0	0	0
9 -	0	0	0	0	0	0	0	0	0	0
10 -	0	0	0	0	0	0	0	0	0	0
11 -	0	0	0	0	0	0	0	0	0	0
12 -	0	0	0	0	0	0	0	0	0	0
13 -	0	0	0	0	0	0	0	0	0	0
14 -	0	0	0	0	0	0	0	0	0	0
15 -	0	0	0	0	0	0	0	0	0	0
16 -	0	0	0	0	0	0	0	0	0	0
17 -	0	0	0	0	0	0	0	0	0	0
18 -	0	0	0	0	0	0	0	0	0	0
19 -	0	0	0	0	0	0	0	0	0	0
20 -	0	0	0	0	0	0	0	0	0	0
21 -	0	0	0	0	0	0	0	0	0	0
22 -	0	0	0	0	0	0	0	0	0	0
23 -	0	0	0	0	0	0	0	0	0	0
24 -	0	0	0	0	0	0	0	0	0	0
25 -	0	0	0	0	0	0	0	0	0	0
26 -	0	0	0	0	0	0	0	0	0	0
27 -	0	0	0	0	0	0	0	0	0	0
28 -	0	0	0	0	0	0	0	0	0	0
29 -	0	0	0	0	0	0	0	0	0	0
30 -	0	0	0	0	0	0	0	0	0	0
31 -	0	0	0	0	0	0	0	0	0	0
32 -	0	0	0	0	0	0	0	0	0	0
0 - 255 sec * = force offs and yield points										

Time of Day Data (next/2/4)

Day Program (next/2/4/1)												
	Day Prog.	Time	Coord Plan	Coord Plan or Circuit	State On / Off		Day Prog.	Time	Coord Plan	Coord Plan or Circuit	State On/Off	
1	1	00:00	X	0			51					
2	1	06:30	X	1			52					
3	1	07:00		13	MX2 X		53					
4	1	09:00	X	0			54					
5	1	09:00		13	MX2		55					
6	1	11:30	X	2			56					
7	1	15:00	X	3			57					
8	1	16:00		13	MX2 X		58					
9	1	18:30	X	0			59					
10	1	18:30		13	MX2		60					
11	1	20:30		13	MX2 X		61					
12	1	23:00		13	MX2		62					
13	2	20:30		13	MX2 X		63					
14	2	23:00		13	MX2		64					
15	3	15:00		13	MX2 X		65					
16	3	20:30		13	MX2		66					
17							67					
18							68					
19							69					
20							70					
21							71					
22							72					
23							73					
24							74					
25							75					
26							76					
27							77					
28							78					
29							79					
30							80					
31							81					
32							82					
33							83					
34							84					
35							85					
36							86					
37							87					
38							88					
39							89					
40							90					
41							91					
42							92					
43							93					
44							94					
45							95					
46							96					
47							97					
48							98					
49							99					
50							100					
	1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196	X = on		1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196	X = on	

APPENDIX J.
**OPERATIONS
CALCULATIONS**

	Intersection Operations – All Intersections																			
	Intersection	Lane Group	Analysis Results																	
			2018 Existing						2022 Approved						2022 Proposed					
			AM			PM			AM			PM			AM			PM		
V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay
1	NE Evergreen Parkway/ NE Brookwood Parkway (Signalized)	Overall	0.47	C	24.1	0.75	D	36.1	0.59	C	24.5	0.88	D	46.1	0.60	C	24.4	0.90	D	47.4
		EB L	0.66	D	53.3	0.83	D	48.1	0.70	D	53.7	0.93	E	63.3	0.70	D	53.7	0.93	E	63.1
		EB T	0.56	D	43.9	0.39	C	28.3	0.59	D	42.9	0.44	C	32.8	0.59	D	43.5	0.44	C	32.9
		EB R	0.08	A	0.1	0.07	A	0.1	0.09	A	0.1	0.08	A	0.1	0.10	A	0.1	0.08	A	0.1
		WB L	0.50	D	53.4	0.57	D	50.7	0.52	D	53.3	0.64	E	59.6	0.56	D	53.5	0.64	E	59.5
		WB T	0.50	D	46.5	0.64	D	43.7	0.54	D	46.1	0.76	D	54.3	0.54	D	46.2	0.75	D	54.0
		WB R	0.03	A	0.0	0.10	A	0.1	0.08	A	0.1	0.12	A	0.2	0.08	A	0.1	0.12	A	0.2
		NB L	0.40	D	49.2	0.31	D	43.5	0.41	D	42.1	0.35	D	49.6	0.42	D	40.9	0.37	D	49.8
		NB TR	0.30	B	10.3	0.75	C	34.7	0.42	A	9.8	0.92	D	48.4	0.42	A	8.8	0.95	D	53.2
		SB L	0.44	E	55.3	0.30	D	54.1	0.44	D	53.8	0.51	E	60.0	0.44	D	53.8	0.51	E	60.0
		SB T	0.43	B	17.8	0.66	D	41.2	0.57	C	22.0	0.81	D	49.0	0.59	C	22.3	0.81	D	49.0
		SB R	0.19	A	8.1	0.12	B	15.5	0.22	A	9.0	0.16	B	16.3	0.22	A	9.0	0.16	B	16.1
2	NE Shute Road/ NE Brookwood Parkway (Signalized)	Overall	0.46	B	18.2	0.63	B	16.8	0.56	B	17.9	0.72	C	20.4	0.59	B	19.0	0.74	C	22.0
		EB LTR	0.05	E	58.9	0.15	D	39.3	0.05	E	58.9	0.17	D	50.8	0.05	E	58.9	0.17	D	53.5
		WB LT	0.17	E	59.7	0.39	D	36.9	0.17	E	59.7	0.49	D	48.8	0.17	E	59.7	0.40	D	49.5
		WB R	0.09	C	30.8	0.58	B	17.5	0.10	C	26.3	0.70	C	25.7	0.11	C	24.5	0.73	C	26.5
		NB L	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0
		NB TR	0.35	B	16.7	0.69	C	26.0	0.51	C	23.0	0.74	C	29.5	0.54	C	25.3	0.76	C	32.8
		SB L	0.64	D	35.3	0.17	B	15.3	0.62	C	30.6	0.19	C	20.4	0.64	C	31.3	0.19	C	20.8
		SB TR	0.29	A	1.7	0.48	A	8.9	0.39	A	1.9	0.54	A	8.4	0.39	A	2.5	0.55	A	9.3
3	NE Shute Road/ RS4&RS5 Access (Unsignalized)	EB LTR	0.27	C	24.8	0.07	C	19.5	0.33	D	31.2	0.09	C	22.6	0.40	E	39.6	0.11	D	27.2
		WB L	0.09	D	27.9	0.42	E	39.9	0.11	D	32.7	0.53	F	56.5	0.15	E	39.5	0.65	F	74.2
		WB TR	0.02	A	9.3	0.39	C	15.5	0.02	A	9.5	0.42	C	17.2	0.04	A	9.6	0.52	C	19.9
		NB L	0.01	A	8.5	0.01	A	7.7	0.01	A	8.9	0.01	A	7.8	0.01	A	9.0	0.01	A	7.8
		SB L	0.15	A	8.3	0.01	B	8.3	0.15	A	8.4	0.02	B	11.4	0.17	A	8.5	0.02	B	11.6
4	NE Shute Road/NE Dawson Creek Drive/RS6 Access (Unsignalized)+B165	EB L	0.02	A	47.9	0.17	D	27.7	0.03	F	69.3	0.23	E	35.1	0.05	F	95.0	0.29	E	45.1
		EB TR	0.06	B	10.3	0.18	B	10.0	0.07	B	10.9	0.20	B	10.3	0.14	C	16.2	0.21	B	10.5
		WB L	0.07	D	26.4	0.77	F	79.4	0.87	D	33.6	1.03	F	163.4	0.34	F	62.8	1.80	F	453.1
		WB TR	0.02	B	11.2	0.30	B	14.1	0.02	B	12.1	0.34	C	15.8	0.05	B	13.0	0.49	C	16.0
		NB L	0.12	A	8.9	0.05	A	8.0	0.16	A	9.5	0.06	A	8.1	0.16	A	9.4	0.06	A	8.1
		SB L	0.06	A	8.1	0.00	A	9.1	0.06	A	8.1	0.00	A	9.6	0.12	A	8.6	0.01	A	9.5
5	NE Shute Road/ D1X Access (Unsignalized)	WB L	0.01	C	15.1	0.06	C	18.6	0.01	C	17.9	0.10	C	22.1	0.01	C	19.3	0.09	C	22.7
		WB R	0.03	B	10.8	0.25	B	11.9	0.04	B	11.1	0.31	B	13.1	0.05	B	11.6	0.29	B	12.7
		SB L	0.03	A	9.3	0.01	A	9.1	0.06	A	9.6	0.01	A	9.5	0.06	B	10.0	0.01	A	9.4
6	NE Shute Road/ NE Tandem Way (Unsignalized)	EB LTR	0.14	C	15.3	0.04	B	13.7	0.17	C	18.3	0.05	C	15.0	0.18	C	19.3	0.05	C	16.4
		WB LT	0.03	C	21.0	0.07	C	21.4	0.04	D	26.1	0.11	D	25.0	0.04	D	28.8	0.11	D	26.8
		WB R	0.02	A	9.9	0.20	B	10.8	0.04	B	10.2	0.25	B	11.5	0.03	B	10.5	0.24	B	11.3
		NB L	0.01	A	8.0	0.04	A	8.8	0.01	A	8.2	0.04	A	8.9	0.01	A	8.2	0.04	A	9.3
		SB L	0.09	A	8.4	0.01	A	8.2	0.12	A	8.7	0.01	A	8.5	0.12	A	9.0	0.08	A	8.4

Intersection Operations – All Intersections																				
	Intersection	Lane Group	Analysis Results																	
			2018 Existing						2022 Approved						2022 Proposed					
			AM			PM			AM			PM			AM			PM		
			V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay
7	NE Shute Road/NE Airport Road/NE Butler Street (Signalized)	Overall	0.33	B	13.7	0.55	C	20.6	0.36	B	16.6	0.65	C	21.8	0.37	B	16.8	0.65	C	22.7
		EB L	0.18	B	16.5	0.11	B	19.8	0.18	B	17.2	0.15	C	21.8	0.20	B	16.7	0.15	C	23.0
		EB TR	0.47	C	20.6	0.23	C	23.2	0.42	C	21.5	0.29	C	25.6	0.43	C	22.0	0.29	C	26.9
		WB L	0.21	B	15.7	0.25	B	10.8	0.19	B	14.1	0.34	B	11.7	0.18	B	15.7	0.32	B	12.6
		WB TR	0.28	B	19.1	0.54	B	17.9	0.28	B	19.0	0.67	C	21.3	0.38	C	21.3	0.65	C	22.2
		NB L	0.01	B	10.8	0.05	C	24.3	0.01	B	15.4	0.06	C	24.9	0.01	B	14.8	0.06	C	26.2
		NB TR	0.29	B	12.6	0.33	C	26.8	0.42	B	18.2	0.36	C	27.6	0.45	B	17.8	0.38	C	29.0
		SB L	0.19	A	6.8	0.35	B	17.1	0.29	A	9.5	0.37	B	17.1	0.28	A	8.9	0.45	B	17.3
		SB T	0.29	B	10.2	0.06	C	24.3	0.33	B	13.0	0.62	C	24.9	0.33	B	12.4	0.65	C	25.1
8	NE Butler Street/ NE 60th Place (Unsignalized)	SB R	0.02	B	11.4	0.06	C	25.2	0.02	B	16.1	0.06	C	25.7	0.02	B	15.4	0.09	C	27.2
		EB L	0.11	A	7.9	0.01	A	8.0	0.15	A	8.2	0.02	A	8.3	0.14	A	8.3	0.02	A	8.2
		WB L	0.00	A	7.7	0.00	A	7.8	0.00	A	7.9	0.00	A	7.9	0.00	A	7.9	0.00	A	8.0
		NB LTR	0.03	C	15.6	0.09	C	20.5	0.02	C	22.6	0.14	D	29.3	0.04	C	16.9	0.13	D	28.1
		SB L	0.01	C	17.2	0.22	C	18.1	0.04	C	20.0	0.30	C	22.7	0.02	C	22.3	0.30	C	23.4
9	NE Butler Street/ NE 65th Avenue (Unsignalized)	SB TR	0.05	A	9.6	0.26	B	12.2	0.07	A	9.9	0.38	B	14.6	0.06	B	10.1	0.34	B	13.7
		EB LT	0.19	A	5.6	0.22	A	7.9	0.28	A	6.8	0.28	A	9.9	0.25	A	6.3	0.31	A	9.9
		EB TR	0.09	A	4.6	0.22	A	8.0	0.11	A	4.8	0.31	A	10.0	0.12	A	4.9	0.33	A	10.0
		WB LTR	0.39	A	8.6	0.16	A	5.0	0.52	B	11.5	0.18	A	5.2	0.50	B	11.0	0.18	A	5.2
		WB R	0.43	A	9.1	0.05	A	3.9	0.58	B	12.8	0.07	A	4.0	0.56	B	12.0	0.06	A	4.0
		NB LTR	0.15	A	5.7	0.02	A	6.3	0.17	A	6.5	0.03	A	7.4	0.17	A	6.3	0.03	A	7.3
		SB L	0.11	A	4.5	0.47	A	9.1	0.15	A	4.8	0.63	B	12.8	0.14	A	4.9	0.58	B	11.4
10	Internal Circulation/ NE 65th Avenue (Unsignalized)	SB LTR	0.10	A	4.3	0.41	A	8.2	0.13	A	4.7	0.55	B	10.8	0.12	A	4.7	0.51	A	9.8
		EB LT	0.62	C	18.5	0.30	B	12.8	0.22	B	14.4	0.48	C	18.5	0.20	B	13.7	0.42	C	16.6
		EB R	0.49	B	14.2	0.56	C	17.1	0.11	B	11.9	0.84	E	35.1	0.09	B	11.4	0.74	D	28.4
		WB L	0.36	B	10.7	0.25	B	13.5	0.20	B	13.8	0.44	C	19.3	0.18	B	13.1	0.37	C	17.1
		WB LTR	0.15	B	12.1	0.24	B	13.4	0.46	C	17.4	0.44	C	19.2	0.44	C	16.4	0.37	C	17.2
		NB LT	0.07	B	10.3	0.05	B	10.9	0.86	E	38.8	0.09	B	13.1	0.78	D	29.2	0.08	B	12.4
		NB T	0.14	B	11.9	0.06	B	10.8	0.67	C	21.7	0.09	B	12.8	0.61	C	18.7	0.08	B	12.2
		NB R	0.34	B	13.4	0.08	B	10.2	0.54	C	15.2	0.13	B	12.4	0.48	B	13.4	0.11	B	11.7
11	Internal Circulation/ RA3&RA4 Access/Parking Lot (Unsignalized)	SB LTR	0.18	B	12.1	0.73	D	27.5	0.28	C	14.9	1.16	F	130.1	0.25	B	14.0	1.02	F	77.3
		EB L	0.17	B	11.2	0.09	A	9.4	0.29	B	15.0	0.15	B	10.9	0.26	B	14.0	0.13	B	9.9
		EB TR	0.17	B	10.5	0.57	C	15.6	0.26	B	13.6	0.91	E	44.2	0.23	B	12.8	0.80	D	21.0
		WB L	0.01	A	9.3	0.00	A	9.2	0.01	B	10.6	0.00	B	10.8	0.01	B	10.3	0.00	B	10.0
		WB TR	0.78	D	25.7	0.20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		WB T	N/A	N/A	N/A	N/A	N/A	N/A	0.79	D	32.0	0.14	B	11.5	0.69	C	24.30	0.13	B	10.40
		WB R	N/A	N/A	N/A	N/A	N/A	N/A	0.48	C	15.3	0.15	B	10.8	0.42	B	13.60	0.14	B	9.90
		NB L	0.24	B	12.4	0.01	A	9.9	0.36	C	16.4	0.02	B	11.5	0.32	C	15.1	0.02	B	10.6
		NB TR	0.10	B	10.4	0.02	A	9.0	0.15	B	12.5	0.03	B	10.6	0.13	B	11.9	0.02	B	9.5
		SB L	0.25	B	12.7	0.34	B	12.7	0.36	C	16.4	0.54	C	18.8	0.32	C	15.2	0.47	C	14.3
		SB TR	0.12	A	9.7	0.15	A	9.4	0.20	B	12.1	0.14	B	11.1	0.17	B	11.4	0.19	B	9.4

Intersection Operations – All Intersections																				
	Intersection	Lane Group	Analysis Results																	
			2018 Existing						2022 Approved						2022 Proposed					
			AM			PM			AM			PM			AM			PM		
			V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay
12	NE Century Boulevard/ NE Butler Street (Signalized)	Overall	0.60	C	25.9	0.59	C	26.7	0.72	C	27.9	0.70	C	28.2	0.71	C	27.7	0.68	C	28.1
		EB L	0.35	C	23.4	0.34	C	31.3	0.45	C	22.8	0.42	C	28.2	0.43	C	22.4	0.43	C	27.9
		EB TR	0.11	C	23.3	0.80	D	45.1	0.13	B	19.9	0.84	D	43.3	0.13	B	19.6	0.83	D	43.2
		WB L	0.01	C	24.7	0.07	D	37.9	0.01	C	21.1	0.07	D	35.1	0.01	C	20.8	0.07	C	34.8
		WB T	0.79	D	33.1	0.36	D	40.3	0.83	D	38.9	0.34	D	37.3	0.83	D	37.9	0.33	D	36.9
		WB R	0.17	C	23.3	0.04	C	31.3	0.19	C	20.1	0.04	C	27.8	0.18	B	19.7	0.04	C	27.5
		NB L	0.29	B	14.3	0.08	B	11.8	0.46	B	18.0	0.13	B	15.5	0.44	B	18.2	0.13	B	15.4
		NB TR	0.52	C	21.3	0.19	B	13.8	0.65	C	31.0	0.24	B	17.8	0.64	C	31.0	0.20	B	17.7
		SB L	0.11	B	16.6	0.31	A	5.9	0.15	B	16.6	0.36	A	7.4	0.14	B	16.7	0.36	A	7.5
		SB TR	0.26	B	20.2	0.51	B	13.5	0.41	C	24.5	0.63	B	17.9	0.39	C	24.7	0.61	B	17.6
13	Internal Circulation/ NE Ronler Drive (Unsignalized)	WB L	0.46	C	15.7	0.05	B	10.2	0.70	C	24.5	0.07	B	11.0	0.33	C	20.3	0.06	B	10.7
		WB R	0.05	A	8.9	0.00	A	9.0	0.05	A	9.0	0.00	A	9.4	0.05	A	9.0	0.00	A	9.3
		SB L	0.00	A	7.9	0.01	A	8.7	0.00	A	8.0	0.02	A	9.5	0.00	A	8.0	0.02	A	9.2
14	NE Century Boulevard/ NE Ronler Drive (Signalized)	Overall	0.68	C	26.4	0.56	C	22.6	0.76	C	31.8	0.63	C	25.3	0.74	C	30.5	0.61	C	24.3
		EB L	0.08	D	48.0	0.12	C	33.7	0.12	D	48.1	0.13	C	30.7	0.11	D	48.1	0.13	C	31.7
		EB TR	0.23	D	45.7	0.78	D	50.3	0.13	D	35.5	0.83	D	49.8	0.12	D	36.0	0.82	D	50.0
		WB L	0.17	C	22.6	0.27	D	49.4	0.18	B	18.0	0.30	D	49.5	0.18	B	18.9	0.30	D	49.5
		WB TR	0.73	D	35.3	0.10	D	46.3	0.72	C	29.6	0.14	D	45.8	0.70	C	30.0	0.13	D	46.1
		NB L	0.22	B	12.5	0.04	B	16.0	0.34	C	20.1	0.06	C	24.8	0.30	B	18.5	0.05	C	24.5
		NB TR	0.66	C	20.5	0.37	B	14.4	0.82	C	34.8	0.48	C	20.6	0.79	C	31.8	0.45	B	19.3
		SBL	0.27	C	22.5	0.23	A	5.0	0.37	D	33.0	0.29	A	6.6	0.37	C	30.1	0.28	A	6.0
		SB TR	0.39	C	28.9	0.52	A	8.3	0.64	D	40.6	0.57	A	8.0	0.59	D	38.4	0.56	A	7.6
15	NE Century Boulevard/ RAP1 Access (Signalized)	Overall	0.32	B	18.2	0.49	C	22.0	0.35	B	18.7	0.54	C	22.9	0.34	B	18.5	0.53	C	22.4
		EB LT	0.41	D	45.5	0.72	D	49.2	0.43	D	45.5	0.75	D	49.6	0.42	D	45.6	0.74	D	48.9
		EB R	0.07	D	42.8	0.18	D	38.0	0.07	D	42.4	0.18	D	36.3	0.07	D	42.6	0.18	D	36.8
		WB L	0.00	A	0.0	0.01	D	50.6	0.00	A	0.0	0.01	D	50.6	0.00	A	0.0	0.01	D	50.6
		WB TR	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0
		NB L	0.23	A	2.2	0.04	A	2.9	0.25	A	2.7	0.04	A	8.0	0.24	A	2.9	0.04	A	6.0
		NB TR	0.31	A	2.5	0.22	A	3.5	0.34	A	2.9	0.29	A	7.5	0.33	A	3.1	0.27	A	5.9
		SB L	0.00	A	0.0	0.00	A	8.2	0.00	A	0.0	0.00	B	10.1	0.00	A	0.0	0.00	A	9.2
		SB T	0.16	B	12.4	0.47	B	11.4	0.22	B	12.4	0.53	B	13.1	0.20	B	12.3	0.52	B	13.0
		SB R	0.23	D	35.2	0.02	A	8.4	0.26	D	36.9	0.02	D	9.2	0.25	D	35.9	0.02	A	9.0

Intersection Operations – All Intersections																				
	Intersection	Lane Group	Analysis Results																	
			2018 Existing						2022 Approved						2022 Proposed					
			AM			PM			AM			PM			AM			PM		
			V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay
16	NE Century Boulevard/ RA1&2 Access (Signalized)	Overall	0.34	A	8.8	0.44	B	18.8	0.41	A	9.0	0.54	B	19.0	0.39	A	8.9	0.51	B	19.1
		EB L	0.45	D	46.4	0.75	D	53.8	0.49	D	46.7	0.79	D	54.7	0.48	D	46.6	0.77	D	54.3
		EB TR	0.06	D	42.6	0.12	D	37.9	0.06	D	42.3	0.12	D	35.7	0.06	D	42.4	0.12	D	36.4
		WB L	0.14	D	43.3	0.13	D	38.0	0.14	D	43.0	0.11	D	35.7	0.14	D	43.1	0.12	D	36.5
		WB TR	0.06	D	42.5	0.01	D	36.9	0.05	D	42.3	0.01	C	34.8	0.06	D	42.3	0.01	D	35.5
		NB L	0.23	A	1.9	0.04	A	5.7	0.26	A	2.2	0.04	A	7.8	0.25	A	2.1	0.04	A	8.0
		NB TR	0.20	A	3.4	0.37	A	7.5	0.22	A	3.6	0.47	B	10.5	0.22	A	3.6	0.45	B	10.4
		SB L	0.01	A	3.8	0.02	A	7.5	0.01	A	3.9	0.03	A	5.9	0.01	A	3.8	0.03	A	6.6
		SB T	0.34	A	5.7	0.30	A	8.5	0.41	A	6.4	0.34	A	7.1	0.39	A	6.2	0.33	A	7.4
		SBR	0.19	A	4.7	0.03	B	11.2	0.22	A	5.1	0.03	A	3.9	0.21	A	4.9	0.03	A	6.3
17	NE Evergreen Parkway/ NE Century Boulevard (Signalized)	Overall	0.64	B	16.4	0.65	C	30.7	0.69	B	17.3	0.80	D	35.9	0.68	B	16.5	0.79	D	34.3
		EB L	0.04	C	22.4	0.03	C	27.5	0.08	C	27.4	0.04	C	33.6	0.08	C	26.6	0.04	C	32.6
		EB T	0.32	B	19.7	0.52	C	24.0	0.52	C	26.2	0.76	C	33.6	0.49	C	23.9	0.75	C	32.2
		EB R	0.07	B	17.5	0.09	B	18.9	0.10	C	21.4	0.09	C	22.6	0.09	B	19.872	0.09	C	21.8
		WB L	0.68	A	8.6	0.33	B	10.2	0.73	B	13.9	0.38	B	15.1	0.72	B	12.4	0.38	B	14.3
		WB TR	0.35	A	7.2	0.27	B	10.5	0.44	A	7.8	0.33	B	11.3	0.45	A	7.9	0.33	B	11.3
		NB L	0.32	D	35.0	0.41	D	44.8	0.39	D	37.2	0.55	D	43.5	0.38	D	37.2	0.53	D	46.9
		NB T	0.26	D	41.5	0.16	D	54.1	0.31	D	42.4	0.24	D	50.7	0.30	D	42.4	0.21	D	54.9
		NB R	0.16	B	19.2	0.90	D	51.3	0.17	B	13.6	0.97	E	62.0	0.17	B	19.4	0.95	E	57.3
		SB L	0.24	D	41.4	0.51	C	33.5	0.24	D	40.2	0.54	C	33.7	0.24	D	40.2	0.54	C	33.8
		SB TR	0.15	D	44.6	0.35	D	42.0	0.23	D	44.0	0.38	D	42.2	0.20	D	43.8	0.38	D	42.2
18	NE Evergreen Parkway/ RA1&2 North Access (Signalized)	Overall	0.26	A	6.6	0.39	B	11.6	0.31	A	6.5	0.46	B	10.9	0.31	A	6.5	0.46	B	11.0
		EB L	0.01	A	7.4	0.01	A	8.4	0.01	A	9.0	0.01	A	6.9	0.01	A	9.0	0.01	A	6.4
		EB TR	0.28	A	6.6	0.38	A	7.9	0.33	A	7.7	0.46	A	7.9	0.33	A	7.7	0.47	A	8.1
		WB L	0.22	A	2.1	0.03	A	3.8	0.24	A	2.1	0.04	A	3.7	0.24	A	2.0	0.04	A	3.8
		WB TR	0.22	A	2.5	0.26	A	3.8	0.30	A	2.4	0.32	A	3.6	0.31	A	2.4	0.32	A	3.6
		NB L	0.58	E	60.2	0.63	D	52.9	0.58	E	60.2	0.70	E	58.7	0.58	E	60.2	0.70	E	58.7
		NB TR	0.03	D	41.7	0.07	D	39.6	0.03	D	41.7	0.07	D	40.4	0.03	D	41.7	0.07	D	40.4
		SB L	0.28	D	52.2	0.50	E	61.9	0.28	D	52.2	0.50	E	61.9	0.28	D	52.2	0.50	E	61.9
		SB TR	0.01	D	43.8	0.00	D	48.4	0.01	D	43.8	0.00	D	48.4	0.01	D	43.8	0.00	D	48.4
19	NE Evergreen Parkway/ NE 59th Avenue (Signalized)	Overall	0.23	A	9.8	0.34	B	17.5	0.32	B	11.8	0.45	B	19.6	0.33	B	11.9	0.45	B	19.5
		EB L	0.11	A	6.3	0.03	B	10.4	0.14	A	8.6	0.05	B	15.0	0.15	A	8.8	0.05	B	14.9
		EB T	0.26	A	7.7	0.31	A	9.9	0.31	A	8.9	0.40	B	12.8	0.31	A	8.9	0.40	B	12.9
		EB R	0.01	A	6.2	0.00	A	7.7	0.01	A	6.9	0.00	A	9.4	0.01	A	7.0	0.00	A	9.4
		WB L	0.04	A	4.1	0.01	A	6.2	0.05	A	5.9	0.01	A	9.4	0.05	A	6.1	0.01	A	9.6
		WB TR	0.25	A	7.1	0.34	A	7.4	0.36	A	9.5	0.45	B	11.0	0.37	A	9.6	0.45	B	10.9
		NB L	0.05	D	43.3	0.43	D	45.9	0.05	D	43.3	0.43	D	45.9	0.05	D	43.3	0.43	D	45.9
		NB LT	0.04	D	43.2	0.43	D	45.8	0.04	D	43.2	0.43	D	45.8	0.04	D	43.2	0.43	D	45.8
		NB R	0.01	D	43.1	0.11	D	43.7	0.01	D	43.1	0.11	D	43.7	0.01	D	43.1	0.11	D	43.7
		SB L	0.18	D	41.5	0.30	D	46.0	0.40	D	42.1	0.53	D	44.7	0.40	D	42.7	0.53	D	44.7
		SB TR	0.05	D	40.9	0.04	D	44.4	0.05	D	40.1	0.05	D	40.7	0.05	D	40.1	0.05	D	40.7

HCM Signalized Intersection Capacity Analysis

1: NE Brookwood Parkway & NE Evergreen Parkway

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	264	393	123	130	282	40	75	602	160	84	1145	524
Future Volume (vph)	264	393	123	130	282	40	75	602	160	84	1145	524
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	2.5	4.0	4.0	2.5	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91		0.97	0.91	0.88
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3303	3438	1564	3213	3438	1410	3467	4707		3335	5085	2733
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3303	3438	1564	3213	3438	1410	3467	4707		3335	5085	2733
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	264	393	123	130	282	40	75	602	160	84	1145	524
RTOR Reduction (vph)	0	0	0	0	0	0	0	27	0	0	0	179
Lane Group Flow (vph)	264	393	123	130	282	40	75	735	0	84	1145	345
Confl. Peds. (#/hr)	3		1	1		3	2		1	1		2
Confl. Bikes (#/hr)						3			1			1
Heavy Vehicles (%)	6%	5%	2%	9%	5%	13%	1%	6%	8%	5%	2%	4%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA		Prot	NA	pt+ov
Protected Phases	3	8		7	4		1	6		5	2	2 3
Permitted Phases			Free			Free						
Actuated Green, G (s)	14.1	23.0	120.0	9.2	18.1	120.0	6.0	61.4		6.4	61.8	80.4
Effective Green, g (s)	14.6	24.5	120.0	9.7	19.6	120.0	6.5	62.9		6.9	63.3	78.9
Actuated g/C Ratio	0.12	0.20	1.00	0.08	0.16	1.00	0.05	0.52		0.06	0.53	0.66
Clearance Time (s)	4.5	5.5		4.5	5.5		4.5	5.5		4.5	5.5	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	401	701	1564	259	561	1410	187	2467		191	2682	1796
v/s Ratio Prot	c0.08	0.11		0.04	c0.08		0.02	c0.16		0.03	c0.23	0.13
v/s Ratio Perm			0.08			0.03						
v/c Ratio	0.66	0.56	0.08	0.50	0.50	0.03	0.40	0.30		0.44	0.43	0.19
Uniform Delay, d1	50.3	42.9	0.0	52.8	45.8	0.0	54.9	16.1		54.7	17.3	8.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.62		1.00	1.00	1.00
Incremental Delay, d2	3.0	1.0	0.1	0.6	0.7	0.0	0.5	0.3		0.6	0.5	0.0
Delay (s)	53.3	43.9	0.1	53.4	46.5	0.0	49.2	10.3		55.3	17.8	8.1
Level of Service	D	D	A	D	D	A	D	B		E	B	A
Approach Delay (s)		40.2			44.4			13.8			16.7	
Approach LOS		D			D			B			B	
Intersection Summary												
HCM 2000 Control Delay			24.1				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.47									
Actuated Cycle Length (s)			120.0				Sum of lost time (s)			16.0		
Intersection Capacity Utilization			58.5%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: NE Brookwood Parkway & T5 Data Center/NE Shute Road

03/11/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔		↔	↔	
Traffic Volume (vph)	1	0	0	4	0	230	0	612	21	650	798	0
Future Volume (vph)	1	0	0	4	0	230	0	612	21	650	798	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	3.5		4.0		3.0	4.0	
Lane Util. Factor		1.00			1.00	0.88		0.95		0.97	0.95	
Frpb, ped/bikes		1.00			1.00	1.00		1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00		1.00		1.00	1.00	
Frt		1.00			1.00	0.85		1.00		1.00	1.00	
Flt Protected		0.95			0.95	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1805			1805	2608		3388		3433	3505	
Flt Permitted		0.95			0.95	1.00		1.00		0.95	1.00	
Satd. Flow (perm)		1805			1805	2608		3388		3433	3505	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	0	0	4	0	230	0	612	21	650	798	0
RTOR Reduction (vph)	0	0	0	0	0	163	0	1	0	0	0	0
Lane Group Flow (vph)	0	1	0	0	4	67	0	632	0	650	798	0
Confl. Bikes (#/hr)									1			2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	9%	0%	6%	5%	2%	3%	0%
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	8	8		4	4	7 5	1	6		5 7	2	
Permitted Phases						4						
Actuated Green, G (s)		1.0			1.1	33.7		62.3		32.6	92.0	
Effective Green, g (s)		1.5			1.6	35.2		63.8		35.6	93.5	
Actuated g/C Ratio		0.01			0.01	0.29		0.53		0.30	0.78	
Clearance Time (s)		4.5			4.5			5.5			5.5	
Vehicle Extension (s)		2.0			2.0			3.0			3.0	
Lane Grp Cap (vph)		22			24	765		1801		1018	2730	
v/s Ratio Prot		c0.00			c0.00	0.02		c0.19		c0.19	0.23	
v/s Ratio Perm						0.00						
v/c Ratio		0.05			0.17	0.09		0.35		0.64	0.29	
Uniform Delay, d1		58.5			58.5	30.8		16.2		36.6	3.8	
Progression Factor		1.00			1.00	1.00		1.00		0.96	0.37	
Incremental Delay, d2		0.3			1.2	0.0		0.5		0.9	0.3	
Delay (s)		58.9			59.7	30.8		16.7		36.0	1.7	
Level of Service		E			E	C		B		D	A	
Approach Delay (s)		58.9			31.3			16.7			17.1	
Approach LOS		E			C			B			B	
Intersection Summary												
HCM 2000 Control Delay		18.4										
HCM 2000 Volume to Capacity ratio		0.46										
Actuated Cycle Length (s)		120.0								20.5		
Intersection Capacity Utilization		50.3%										
Analysis Period (min)		15										
c Critical Lane Group												

HCM 2010 TWSC
3: NE Shute Road & PERRIN Driveway/RS5 Access

03/11/2019

Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕		↕	↕		↕	↕	
Traffic Vol, veh/h	35	3	30	16	0	19	12	204	61	187	512	28
Future Vol, veh/h	35	3	30	16	0	19	12	204	61	187	512	28
Conflicting Peds, #/hr	1	0	1	1	0	1	1	0	7	7	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	125	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	19	0	11	0	5	18	0	2	4
Mvmt Flow	35	3	30	16	0	19	12	204	61	187	512	28

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1028	1197	272	899	1181	141	541	0	0	272	0	0
Stage 1	901	901	-	266	266	-	-	-	-	-	-	-
Stage 2	127	296	-	633	915	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.88	6.5	7.12	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.88	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.88	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.69	4	3.41	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	191	187	732	209	192	853	1038	-	-	1303	-	-
Stage 1	303	360	-	670	692	-	-	-	-	-	-	-
Stage 2	869	672	-	396	354	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	164	157	731	173	161	847	1037	-	-	1294	-	-
Mov Cap-2 Maneuver	164	157	-	173	161	-	-	-	-	-	-	-
Stage 1	299	307	-	658	679	-	-	-	-	-	-	-
Stage 2	839	659	-	321	302	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	24.8		17.8		0.4		2.1	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1037	-	-	249 173 847 1294	-	-	-
HCM Lane V/C Ratio	0.012	-	-	0.273 0.092 0.022 0.145	-	-	-
HCM Control Delay (s)	8.5	-	-	24.8 27.9 9.3 8.3	-	-	-
HCM Lane LOS	A	-	-	C D A A	-	-	-
HCM 95th %tile Q(veh)	0	-	-	1.1 0.3 0.1 0.5	-	-	-

Intersection

Int Delay, s/veh 2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	43	12	1	9	130	263	62	69	427	74
Future Vol, veh/h	2	0	43	12	1	9	130	263	62	69	427	74
Conflicting Peds, #/hr	0	0	3	3	0	0	3	0	0	0	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	105	-	-	165	-	-	215	-	-	210	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	100	0	7	8	0	0	2	7	0	0	3	3
Mvmt Flow	2	0	43	12	1	9	130	263	62	69	427	74

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	997	1190	257	909	1196	163	504	0	0	325	0	0
Stage 1	605	605	-	554	554	-	-	-	-	-	-	-
Stage 2	392	585	-	355	642	-	-	-	-	-	-	-
Critical Hdwy	9.5	6.5	7.04	7.66	6.5	6.9	4.14	-	-	4.1	-	-
Critical Hdwy Stg 1	8.5	5.5	-	6.66	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	8.5	5.5	-	6.66	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	4.5	4	3.37	3.58	4	3.3	2.22	-	-	2.2	-	-
Pot Cap-1 Maneuver	101	189	727	221	188	859	1057	-	-	1246	-	-
Stage 1	273	491	-	469	517	-	-	-	-	-	-	-
Stage 2	401	501	-	619	472	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	86	156	723	180	155	859	1054	-	-	1246	-	-
Mov Cap-2 Maneuver	86	156	-	180	155	-	-	-	-	-	-	-
Stage 1	239	463	-	411	453	-	-	-	-	-	-	-
Stage 2	347	439	-	548	445	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12	19.5	2.5	1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1054	-	-	86	723	180	591	1246	-	-
HCM Lane V/C Ratio	0.123	-	-	0.023	0.059	0.067	0.017	0.055	-	-
HCM Control Delay (s)	8.9	-	-	47.9	10.3	26.4	11.2	8.1	-	-
HCM Lane LOS	A	-	-	E	B	D	B	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	0.1	0.2	0.2	0.1	0.2	-	-

HCM 2010 TWSC
5: NE Shute Road & D1X Access

03/11/2019

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	22	433	12	27	450
Future Vol, veh/h	2	22	433	12	27	450
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	130	0	-	225	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	55	3	25	41	2
Mvmt Flow	2	22	433	12	27	450
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	715	220	0	0	448	0
Stage 1	436	-	-	-	-	-
Stage 2	279	-	-	-	-	-
Critical Hdwy	6.8	8	-	-	4.92	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.85	-	-	2.61	-
Pot Cap-1 Maneuver	370	644	-	-	876	-
Stage 1	625	-	-	-	-	-
Stage 2	749	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	357	642	-	-	873	-
Mov Cap-2 Maneuver	357	-	-	-	-	-
Stage 1	623	-	-	-	-	-
Stage 2	726	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	11.2	0	0.5			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 357 642	873	-		
HCM Lane V/C Ratio	-	- 0.006 0.034	0.031	-		
HCM Control Delay (s)	-	- 15.1 10.8	9.3	-		
HCM Lane LOS	-	- C B	A	-		
HCM 95th %tile Q(veh)	-	- 0 0.1	0.1	-		

Intersection

Int Delay, s/veh 2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕	↕↕	↕↕	↕↕		↕↕	↕↕	
Traffic Vol, veh/h	15	9	32	3	3	18	9	409	3	100	345	7
Future Vol, veh/h	15	9	32	3	3	18	9	409	3	100	345	7
Conflicting Peds, #/hr	0	0	2	2	0	0	2	0	3	3	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	170	-	0	160	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	7	0	0	0	0	17	0	2	0	0	1	0
Mvmt Flow	15	9	32	3	3	18	9	409	3	100	345	7

Major/Minor	Minor2		Minor1		Major1		Major2		Major2		Major2	
Conflicting Flow All	775	984	180	811	986	209	354	0	0	415	0	0
Stage 1	551	551	-	432	432	-	-	-	-	-	-	-
Stage 2	224	433	-	379	554	-	-	-	-	-	-	-
Critical Hdwy	7.64	6.5	6.9	7.5	6.5	7.24	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.64	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.64	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.57	4	3.3	3.5	4	3.47	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	279	250	838	274	250	752	1216	-	-	1155	-	-
Stage 1	474	519	-	577	586	-	-	-	-	-	-	-
Stage 2	744	585	-	620	517	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	250	226	835	236	226	750	1214	-	-	1152	-	-
Mov Cap-2 Maneuver	250	226	-	236	226	-	-	-	-	-	-	-
Stage 1	470	473	-	571	580	-	-	-	-	-	-	-
Stage 2	717	579	-	533	471	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	15.3		12.7		0.2		1.9	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1214	-	-	405 231 750	1152	-	-
HCM Lane V/C Ratio	0.007	-	-	0.138 0.026 0.024	0.087	-	-
HCM Control Delay (s)	8	-	-	15.3 21 9.9	8.4	-	-
HCM Lane LOS	A	-	-	C C A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5 0.1 0.1	0.3	-	-

HCM Signalized Intersection Capacity Analysis

7: NE Shute Road & NE Airport Road/NE Butler Street

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	115	5	63	33	108	4	216	195	90	212	32
Future Volume (vph)	51	115	5	63	33	108	4	216	195	90	212	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	5.5		4.0	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.99		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.89		1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1804	1886		1805	1650		1805	3285		1786	1827	1482
Flt Permitted	0.67	1.00		0.62	1.00		0.63	1.00		0.41	1.00	1.00
Satd. Flow (perm)	1266	1886		1183	1650		1188	3285		769	1827	1482
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	51	115	5	63	33	108	4	216	195	90	212	32
RTOR Reduction (vph)	0	1	0	0	73	0	0	102	0	0	0	22
Lane Group Flow (vph)	51	119	0	63	68	0	4	309	0	90	212	10
Confl. Peds. (#/hr)	3					3			2	2		
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	1%	1%	1%	4%	9%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	custom
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		6
Actuated Green, G (s)	9.5	6.5		10.7	7.1		16.3	15.6		24.1	19.5	15.6
Effective Green, g (s)	9.5	6.5		10.7	7.1		16.3	15.6		24.1	19.5	15.6
Actuated g/C Ratio	0.19	0.13		0.22	0.15		0.33	0.32		0.49	0.40	0.32
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	5.5		4.0	5.5	5.5
Vehicle Extension (s)	2.5	2.5		2.5	2.5		1.0	3.0		1.0	3.0	3.0
Lane Grp Cap (vph)	279	251		305	240		405	1050		475	730	473
v/s Ratio Prot	0.01	c0.06		c0.02	0.04		0.00	0.09		c0.02	c0.12	
v/s Ratio Perm	0.02			0.03			0.00			0.08		0.01
v/c Ratio	0.18	0.47		0.21	0.28		0.01	0.29		0.19	0.29	0.02
Uniform Delay, d1	16.3	19.6		15.4	18.6		10.8	12.5		6.8	10.0	11.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	1.0		0.2	0.5		0.0	0.2		0.1	0.2	0.0
Delay (s)	16.5	20.6		15.7	19.1		10.8	12.6		6.8	10.2	11.4
Level of Service	B	C		B	B		B	B		A	B	B
Approach Delay (s)		19.4			18.0			12.6			9.4	
Approach LOS		B			B			B			A	
Intersection Summary												
HCM 2000 Control Delay			13.7			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.33									
Actuated Cycle Length (s)			48.8			Sum of lost time (s)			18.5			
Intersection Capacity Utilization			47.4%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Int Delay, s/veh 2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	154	234	15	1	192	10	5	2	3	3	0	40
Future Vol, veh/h	154	234	15	1	192	10	5	2	3	3	0	40
Conflicting Peds, #/hr	2	0	2	2	0	2	2	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	1	7	0	1	20	0	0	0	0	0	5
Mvmt Flow	154	234	15	1	192	10	5	2	3	3	0	40

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	204	0	0	251	0	0	773	758	244	753	760	201
Stage 1	-	-	-	-	-	-	552	552	-	201	201	-
Stage 2	-	-	-	-	-	-	221	206	-	552	559	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.345
Pot Cap-1 Maneuver	1380	-	-	1326	-	-	319	339	800	329	338	832
Stage 1	-	-	-	-	-	-	522	518	-	805	739	-
Stage 2	-	-	-	-	-	-	786	735	-	522	514	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1377	-	-	1323	-	-	276	300	798	297	299	829
Mov Cap-2 Maneuver	-	-	-	-	-	-	276	300	-	297	299	-
Stage 1	-	-	-	-	-	-	462	459	-	713	737	-
Stage 2	-	-	-	-	-	-	746	733	-	460	455	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3	0	15.6	10.1
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	350	1377	-	-	1323	-	-	297	829
HCM Lane V/C Ratio	0.029	0.112	-	-	0.001	-	-	0.01	0.048
HCM Control Delay (s)	15.6	7.9	-	-	7.7	-	-	17.2	9.6
HCM Lane LOS	C	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.1	0.4	-	-	0	-	-	0	0.2

HCM 2010 Roundabout
9: NE 65th Avenue/Intel Driveway & NE Butler Street

03/11/2019

Intersection							
Intersection Delay, s/veh	7.1						
Intersection LOS	A						
Approach	EB		WB		NB		SB
Entry Lanes	2		2		1		2
Conflicting Circle Lanes	2		2		2		2
Adj Approach Flow, veh/h	277		722		128		220
Demand Flow Rate, veh/h	278		723		128		220
Vehicles Circulating, veh/h	151		306		407		112
Vehicles Exiting, veh/h	181		229		22		917
Follow-Up Headway, s	3.186		3.186		3.186		3.186
Ped Vol Crossing Leg, #/h	45		22		0		0
Ped Cap Adj	0.955		0.981		1.000		1.000
Approach Delay, s/veh	5.3		8.9		5.7		4.4
Approach LOS	A		A		A		A
Lane	Left	Right	Left	Right	Left	Left	Right
Designated Moves	LT	TR	LTR	R	LTR	L	LTR
Assumed Moves	L	TR	LTR	R	LTR	L	LTR
RT Channelized							
Lane Util	0.673	0.327	0.470	0.530	1.000	0.532	0.468
Critical Headway, s	4.293	4.113	4.293	4.113	4.113	4.293	4.113
Entry Flow, veh/h	187	91	340	383	128	117	103
Cap Entry Lane, veh/h	1009	1017	898	912	850	1039	1045
Entry HV Adj Factor	1.000	0.991	0.998	0.999	1.000	0.997	1.004
Flow Entry, veh/h	187	90	339	383	128	117	103
Cap Entry, veh/h	963	961	880	894	850	1035	1049
V/C Ratio	0.194	0.094	0.386	0.428	0.151	0.113	0.099
Control Delay, s/veh	5.6	4.6	8.6	9.1	5.7	4.5	4.3
LOS	A	A	A	A	A	A	A
95th %tile Queue, veh	1	0	2	2	1	0	0

HCS7 Roundabouts Report

General Information

Analyst	PGP/JTJ
Agency or Co.	Mackenzie
Date Performed	3/8/2019
Analysis Year	2018
Time Analyzed	Existing - AM
Project Description	Project Lark

Site Information

Intersection	NE Butler Street/NE 65th Avenue
E/W Street Name	NE Butler Street
N/S Street Name	NE 65th Avenue
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.86
Jurisdiction	City of Hillsboro

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	2	0	0	0	1	1	0	0	1	0	0	1	1	0
Lane Assignment	LT		TR		LTR		R				LTR		L		LTR	
Volume (V), veh/h	0	187	85	5	0	0	105	617	0	6	113	9	0	134	17	69
Percent Heavy Vehicles, %	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Flow Rate (v_{pce}), pc/h	0	217	100	6	0	0	123	717	0	7	131	10	0	156	20	80
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	2				1				2				1			
Pedestrians Crossing, p/h	45				22				0				0			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)	4.6453	4.9763		4.5436	4.5436			4.3276		4.5436	4.5436	
Follow-Up Headway (s)	2.6667	2.5352		2.5352	2.5352			2.5352		2.5352	2.5352	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h	217	106		378	462			148		205	51	
Entry Volume veh/h	216	106		377	461			148		205	51	
Circulating Flow (v_c), pc/h	176			355			473			130		
Exiting Flow (v_{ex}), pc/h	266			210			1065			26		
Capacity (C_{pce}), pc/h	1148	1185		1028	1028			950		1262	1262	
Capacity (c), veh/h	1093	1128		1008	1008			950		1262	1262	
v/c Ratio (x)	0.20	0.09		0.37	0.46			0.16		0.16	0.04	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh	5.1	4.0		7.6	8.8			5.3		4.2	3.2	
Lane LOS	A	A		A	A			A		A	A	
95% Queue, veh	0.7	0.3		1.8	2.4			0.6		0.6	0.1	
Approach Delay, s/veh	4.7			8.3			5.3			4.0		
Approach LOS	A			A			A			A		
Intersection Delay, s/veh LOS	6.6						A					

HCM 2010 AWSC
10: Intel Driveway & Internal Circulation

03/11/2019

Intersection

Intersection Delay, s/veh 14.2

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	42	34	70	77	91	213	455	249	5	78	3
Future Vol, veh/h	27	42	34	70	77	91	213	455	249	5	78	3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	2	0	0	1	0	0	0	0	0	0	0
Mvmt Flow	27	42	34	70	77	91	213	455	249	5	78	3
Number of Lanes	0	1	1	1	1	0	0	2	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	1	2	2
HCM Control Delay	11.5	13	15	12.1
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	58%	0%	0%	39%	0%	100%	4%	6%
Vol Thru, %	42%	100%	0%	61%	0%	0%	44%	91%
Vol Right, %	0%	0%	100%	0%	100%	0%	52%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	365	303	249	69	34	63	175	86
LT Vol	213	0	0	27	0	63	7	5
Through Vol	152	303	0	42	0	0	77	78
RT Vol	0	0	249	0	34	0	91	3
Lane Flow Rate	365	303	249	69	34	63	175	86
Geometry Grp	7	7	7	8	8	8	8	8
Degree of Util (X)	0.622	0.492	0.355	0.152	0.067	0.137	0.34	0.181
Departure Headway (Hd)	6.136	5.841	5.135	7.926	7.047	7.833	6.994	7.593
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	587	616	697	451	505	456	513	470
Service Time	3.885	3.59	2.884	5.713	4.834	5.608	4.768	5.387
HCM Lane V/C Ratio	0.622	0.492	0.357	0.153	0.067	0.138	0.341	0.183
HCM Control Delay	18.5	14.2	10.7	12.1	10.3	11.9	13.4	12.1
HCM Lane LOS	C	B	B	B	B	B	B	B
HCM 95th-tile Q	4.3	2.7	1.6	0.5	0.2	0.5	1.5	0.7

Intersection

Intersection Delay, s/veh 18.2

Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	98	85	8	3	295	194	118	51	0	119	2	69
Future Vol, veh/h	98	85	8	3	295	194	118	51	0	119	2	69
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	0	0	0	0	6	0	0	0	7	0	3
Mvmt Flow	98	85	8	3	295	194	118	51	0	119	2	69
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	10.9	25.8	11.9	11.6
HCM LOS	B	D	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	100%	0%	91%	0%	60%	0%	3%
Vol Right, %	0%	0%	0%	9%	0%	40%	0%	97%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	118	51	98	93	3	489	119	71
LT Vol	118	0	98	0	3	0	119	0
Through Vol	0	51	0	85	0	295	0	2
RT Vol	0	0	0	8	0	194	0	69
Lane Flow Rate	118	51	98	93	3	489	119	71
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.242	0.097	0.189	0.165	0.005	0.779	0.247	0.121
Departure Headway (Hd)	7.39	6.88	6.954	6.383	6.525	5.737	7.48	6.155
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	484	518	514	559	547	631	478	579
Service Time	5.174	4.663	4.732	4.161	4.282	3.494	5.261	3.935
HCM Lane V/C Ratio	0.244	0.098	0.191	0.166	0.005	0.775	0.249	0.123
HCM Control Delay	12.5	10.4	11.4	10.4	9.3	25.9	12.7	9.8
HCM Lane LOS	B	B	B	B	A	D	B	A
HCM 95th-tile Q	0.9	0.3	0.7	0.6	0	7.4	1	0.4

HCM Signalized Intersection Capacity Analysis

12: NE Century Boulevard & NE Butler Street

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	123	37	4	463	270	170	415	4	40	133	61
Future Volume (vph)	64	123	37	4	463	270	170	415	4	40	133	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3429		1797	1900	1577	1803	1829		1752	1678	
Flt Permitted	0.15	1.00		0.65	1.00	1.00	0.55	1.00		0.38	1.00	
Satd. Flow (perm)	286	3429		1231	1900	1577	1040	1829		707	1678	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	64	123	37	4	463	270	170	415	4	40	133	61
RTOR Reduction (vph)	0	24	0	0	0	174	0	1	0	0	14	0
Lane Group Flow (vph)	64	136	0	4	463	96	170	418	0	40	180	0
Confl. Peds. (#/hr)	2		4	4		2	2		3	3		2
Confl. Bikes (#/hr)						3			3			
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	2%	50%	3%	6%	0%
Bus Blockages (#/hr)	0	1	0	0	0	0	0	3	33	0	7	0
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4	5	1	6		5	2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)	41.0	36.0		33.0	32.0	37.2	53.3	45.3		47.7	42.5	
Effective Green, g (s)	41.0	36.5		33.0	32.5	37.2	53.3	46.3		47.7	43.5	
Actuated g/C Ratio	0.39	0.35		0.31	0.31	0.35	0.51	0.44		0.45	0.41	
Clearance Time (s)	4.0	4.5		4.0	4.5	4.0	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.0	2.0		1.0	2.0	0.5	0.5	2.5		0.5	2.5	
Lane Grp Cap (vph)	184	1191		392	588	558	586	806		372	695	
v/s Ratio Prot	c0.02	0.04		0.00	c0.24	0.01	c0.02	c0.23		0.01	0.11	
v/s Ratio Perm	0.12			0.00		0.05	0.13			0.04		
v/c Ratio	0.35	0.11		0.01	0.79	0.17	0.29	0.52		0.11	0.26	
Uniform Delay, d1	23.4	23.3		24.7	33.1	23.3	14.3	21.3		16.6	20.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		0.75	0.84	
Incremental Delay, d2	0.4	0.0		0.0	6.4	0.1	0.1	2.4		0.0	0.9	
Delay (s)	23.9	23.3		24.7	39.5	23.4	14.4	23.7		12.5	17.8	
Level of Service	C	C		C	D	C	B	C		B	B	
Approach Delay (s)		23.4			33.5			21.0			16.9	
Approach LOS		C			C			C			B	
Intersection Summary												
HCM 2000 Control Delay			25.9									
HCM 2000 Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			105.0									
Intersection Capacity Utilization			75.5%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 2010 TWSC
13: Internal Circulation & NE Ronler Drive

03/11/2019

Intersection						
Int Delay, s/veh	6.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	317	49	83	115	4	255
Future Vol, veh/h	317	49	83	115	4	255
Conflicting Peds, #/hr	0	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	-	85	25	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	2	6	3	25	4
Mvmt Flow	317	49	83	115	4	255

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	347	85	0
Stage 1	84	-	-
Stage 2	263	-	-
Critical Hdwy	6.4	6.22	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.318	-
Pot Cap-1 Maneuver	654	974	-
Stage 1	944	-	-
Stage 2	786	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	651	972	-
Mov Cap-2 Maneuver	651	-	-
Stage 1	943	-	-
Stage 2	784	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.8	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	-	651	972
HCM Lane V/C Ratio	-	-	0.487	0.05
HCM Control Delay (s)	-	-	15.7	8.9
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	2.7	0.2

HCM Signalized Intersection Capacity Analysis

14: NE Century Boulevard & NE Ronler Drive

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	59	18	100	386	52	148	552	44	42	201	37
Future Volume (vph)	6	59	18	100	386	52	148	552	44	42	201	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.98		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1543	3465		1784	1853		1785	1836		1805	1718	
Flt Permitted	0.53	1.00		0.70	1.00		0.51	1.00		0.16	1.00	
Satd. Flow (perm)	855	3465		1323	1853		965	1836		303	1718	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	6	59	18	100	386	52	148	552	44	42	201	37
RTOR Reduction (vph)	0	17	0	0	4	0	0	3	0	0	8	0
Lane Group Flow (vph)	6	60	0	100	434	0	148	593	0	42	230	0
Confl. Peds. (#/hr)			1	1			2		3	3		2
Confl. Bikes (#/hr)									4			
Heavy Vehicles (%)	17%	0%	0%	1%	0%	6%	1%	2%	5%	0%	9%	0%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	8.6	7.6		38.8	33.3		58.2	50.2		38.5	35.5	
Effective Green, g (s)	8.6	8.1		38.8	33.8		58.2	51.2		38.5	36.5	
Actuated g/C Ratio	0.08	0.08		0.37	0.32		0.55	0.49		0.37	0.35	
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	76	267		606	596		673	895		154	597	
v/s Ratio Prot	0.00	0.02		c0.04	c0.23		c0.04	c0.32		0.01	0.13	
v/s Ratio Perm	0.01			0.02			0.08			0.09		
v/c Ratio	0.08	0.23		0.17	0.73		0.22	0.66		0.27	0.39	
Uniform Delay, d1	47.8	45.5		22.6	31.5		15.5	20.4		39.8	25.8	
Progression Factor	1.00	1.00		1.00	1.00		0.80	0.83		0.56	1.05	
Incremental Delay, d2	0.2	0.2		0.0	3.8		0.1	3.6		0.3	1.9	
Delay (s)	48.0	45.7		22.6	35.3		12.5	20.5		22.5	28.9	
Level of Service	D	D		C	D		B	C		C	C	
Approach Delay (s)		45.8			32.9			18.9			28.0	
Approach LOS		D			C			B			C	
Intersection Summary												
HCM 2000 Control Delay			26.4			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			105.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			69.4%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

15: NE Century Boulevard & RAP1 Access/Parking

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↩	↩	↩	↩		↩	↩		↩	↩	↩
Traffic Volume (vph)	75	0	114	0	0	0	206	428	1	0	177	364
Future Volume (vph)	75	0	114	0	0	0	206	428	1	0	177	364
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	3.5				4.0	4.0			4.0	4.0
Lane Util. Factor		1.00	1.00				1.00	1.00			1.00	1.00
Frpb, ped/bikes		1.00	0.97				1.00	1.00			1.00	0.97
Flpb, ped/bikes		1.00	1.00				1.00	1.00			1.00	1.00
Frt		1.00	0.85				1.00	1.00			1.00	0.85
Flt Protected		0.95	1.00				0.95	1.00			1.00	1.00
Satd. Flow (prot)		1805	1570				1801	1826			1792	1556
Flt Permitted		0.95	1.00				0.61	1.00			1.00	1.00
Satd. Flow (perm)		1805	1570				1148	1826			1792	1556
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	75	0	114	0	0	0	206	428	1	0	177	364
RTOR Reduction (vph)	0	0	102	0	0	0	0	0	0	0	0	136
Lane Group Flow (vph)	0	75	12	0	0	0	206	429	0	0	177	228
Confl. Peds. (#/hr)			3	3			3					3
Confl. Bikes (#/hr)									4			2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	6%	1%
Turn Type	Split	NA	Perm	Split			pm+pt	NA		pm+pt	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases			8				6			2		2
Actuated Green, G (s)		10.8	10.8				77.6	77.6			64.8	64.8
Effective Green, g (s)		10.8	10.8				77.6	78.6			65.8	65.8
Actuated g/C Ratio		0.10	0.10				0.74	0.75			0.63	0.63
Clearance Time (s)		3.5	3.5				4.0	5.0			5.0	5.0
Vehicle Extension (s)		3.0	3.0				2.5	4.0			4.0	4.0
Lane Grp Cap (vph)		185	161				903	1366			1122	975
v/s Ratio Prot		c0.04					0.02	c0.23			0.10	
v/s Ratio Perm			0.01				0.15					0.15
v/c Ratio		0.41	0.07				0.23	0.31			0.16	0.23
Uniform Delay, d1		44.1	42.6				4.1	4.3			8.1	8.6
Progression Factor		1.00	1.00				0.51	0.45			1.50	4.04
Incremental Delay, d2		1.5	0.2				0.1	0.5			0.3	0.5
Delay (s)		45.5	42.8				2.2	2.5			12.4	35.2
Level of Service		D	D				A	A			B	D
Approach Delay (s)		43.9			0.0			2.4			27.8	
Approach LOS		D			A			A			C	
Intersection Summary												
HCM 2000 Control Delay			18.2				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.32									
Actuated Cycle Length (s)			105.0				Sum of lost time (s)			15.0		
Intersection Capacity Utilization			49.9%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

16: NE Century Boulevard & RA1/2 Access/Office Driveway

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	4	46	20	11	0	166	260	22	7	458	281
Future Volume (vph)	66	4	46	20	11	0	166	260	22	7	458	281
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5		3.5	3.5		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97		1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	0.99	1.00		0.99	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.86		1.00	1.00		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1793	1401		1790	1900		1769	1824		1803	1863	1580
Flt Permitted	0.75	1.00		0.72	1.00		0.44	1.00		0.59	1.00	1.00
Satd. Flow (perm)	1417	1401		1365	1900		817	1824		1113	1863	1580
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	66	4	46	20	11	0	166	260	22	7	458	281
RTOR Reduction (vph)	0	41	0	0	0	0	0	2	0	0	0	66
Lane Group Flow (vph)	66	9	0	20	11	0	166	280	0	7	458	215
Confl. Peds. (#/hr)	3		4	4		3	1		1	1		1
Confl. Bikes (#/hr)						2			2			
Heavy Vehicles (%)	0%	0%	15%	0%	0%	0%	2%	3%	0%	0%	2%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		2
Actuated Green, G (s)	10.9	10.9		10.9	10.9		85.6	80.5		76.9	75.8	75.8
Effective Green, g (s)	10.9	10.9		10.9	10.9		85.6	81.5		76.9	76.8	76.8
Actuated g/C Ratio	0.10	0.10		0.10	0.10		0.82	0.78		0.73	0.73	0.73
Clearance Time (s)	3.5	3.5		3.5	3.5		4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.5	4.0		2.5	4.0	4.0
Lane Grp Cap (vph)	147	145		141	197		718	1415		822	1362	1155
v/s Ratio Prot		0.01			0.01		c0.01	0.15		0.00	c0.25	
v/s Ratio Perm	c0.05			0.01			0.18			0.01		0.14
v/c Ratio	0.45	0.06		0.14	0.06		0.23	0.20		0.01	0.34	0.19
Uniform Delay, d1	44.2	42.4		42.8	42.4		2.5	3.1		3.8	5.0	4.4
Progression Factor	1.00	1.00		1.00	1.00		0.74	0.98		1.00	1.00	1.00
Incremental Delay, d2	2.2	0.2		0.5	0.1		0.1	0.3		0.0	0.7	0.4
Delay (s)	46.4	42.6		43.3	42.5		1.9	3.4		3.8	5.7	4.7
Level of Service	D	D		D	D		A	A		A	A	A
Approach Delay (s)		44.8			43.0			2.8			5.3	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			8.8				HCM 2000 Level of Service			A		
HCM 2000 Volume to Capacity ratio			0.34									
Actuated Cycle Length (s)			105.0				Sum of lost time (s)			11.5		
Intersection Capacity Utilization			54.9%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

17: NE Century Boulevard & NE Evergreen Parkway

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	422	113	572	545	252	74	52	244	32	15	3
Future Volume (vph)	9	422	113	572	545	252	74	52	244	32	15	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	0.99		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1356	3374	1548	1787	3275		1719	1827	1576	1473	1512	
Flt Permitted	0.35	1.00	1.00	0.40	1.00		0.45	1.00	1.00	0.72	1.00	
Satd. Flow (perm)	500	3374	1548	755	3275		815	1827	1576	1122	1512	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	9	422	113	572	545	252	74	52	244	32	15	3
RTOR Reduction (vph)	0	0	69	0	29	0	0	0	146	0	3	0
Lane Group Flow (vph)	9	422	44	572	768	0	74	52	98	32	15	0
Confl. Peds. (#/hr)	4		1	1		4			7	7		
Confl. Bikes (#/hr)			1			3			1			
Heavy Vehicles (%)	33%	7%	2%	1%	5%	2%	5%	4%	2%	22%	27%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)	38.7	37.6	37.6	71.4	66.3		18.6	10.3	40.1	10.4	6.1	
Effective Green, g (s)	38.7	39.1	39.1	71.4	67.8		18.6	10.8	40.1	10.4	6.6	
Actuated g/C Ratio	0.39	0.39	0.39	0.71	0.68		0.19	0.11	0.40	0.10	0.07	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.0	4.5	4.0	4.0	4.5	
Vehicle Extension (s)	2.0	3.1	3.1	2.0	3.1		2.0	2.5	2.0	2.0	2.5	
Lane Grp Cap (vph)	202	1319	605	846	2220		228	197	631	131	99	
v/s Ratio Prot	0.00	0.13		c0.20	0.23		c0.03	0.03	0.05	0.01	0.01	
v/s Ratio Perm	0.02		0.03	c0.28			c0.03		0.02	0.01		
v/c Ratio	0.04	0.32	0.07	0.68	0.35		0.32	0.26	0.16	0.24	0.15	
Uniform Delay, d1	19.1	21.2	19.1	6.9	6.8		34.7	41.0	19.1	41.0	44.1	
Progression Factor	1.17	0.90	3.44	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	0.6	0.2	1.7	0.4		0.3	0.5	0.0	0.4	0.5	
Delay (s)	22.4	19.7	66.0	8.6	7.2		35.0	41.5	19.2	41.4	44.6	
Level of Service	C	B	E	A	A		D	D	B	D	D	
Approach Delay (s)		29.3			7.8			25.5			42.5	
Approach LOS		C			A			C			D	
Intersection Summary												
HCM 2000 Control Delay			16.4			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			81.1%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

EBR - Correct Progression Factor to Match EBT
PF = 0.90, Delay = 17.5, LOS = B

HCM Signalized Intersection Capacity Analysis

18: RA1&2 North Access/Ronler Corporate Center & NE Evergreen Parkway

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	534	93	129	516	37	25	1	33	5	1	2
Future Volume (vph)	3	534	93	129	516	37	25	1	33	5	1	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		3.5	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.85		1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1804	3337		1719	3440		1504	1382		1805	1710	
Flt Permitted	0.45	1.00		0.37	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	845	3337		671	3440		1504	1382		1805	1710	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	3	534	93	129	516	37	25	1	33	5	1	2
RTOR Reduction (vph)	0	7	0	0	2	0	0	30	0	0	2	0
Lane Group Flow (vph)	3	620	0	129	551	0	25	4	0	5	1	0
Confl. Peds. (#/hr)	1		1	1		1						
Confl. Bikes (#/hr)			1			2						
Heavy Vehicles (%)	0%	5%	8%	5%	4%	0%	20%	0%	18%	0%	0%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6								
Actuated Green, G (s)	66.9	65.9		77.2	72.2		2.9	8.3		1.0	6.4	
Effective Green, g (s)	66.9	67.4		77.2	73.7		2.9	8.8		1.0	6.4	
Actuated g/C Ratio	0.67	0.67		0.77	0.74		0.03	0.09		0.01	0.06	
Clearance Time (s)	4.0	5.5		4.0	5.5		4.0	4.5		3.5	4.0	
Vehicle Extension (s)	1.5	3.1		1.5	3.1		1.5	1.0		1.5	0.7	
Lane Grp Cap (vph)	574	2249		594	2535		43	121		18	109	
v/s Ratio Prot	0.00	c0.19		c0.02	0.16		c0.02	c0.00		0.00	0.00	
v/s Ratio Perm	0.00			0.15								
v/c Ratio	0.01	0.28		0.22	0.22		0.58	0.03		0.28	0.01	
Uniform Delay, d1	5.5	6.5		3.1	4.1		48.0	41.7		49.1	43.8	
Progression Factor	1.34	0.97		0.64	0.55		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.3		0.1	0.2		12.2	0.0		3.0	0.0	
Delay (s)	7.4	6.6		2.1	2.5		60.2	41.7		52.2	43.8	
Level of Service	A	A		A	A		E	D		D	D	
Approach Delay (s)		6.6			2.4			49.6			49.1	
Approach LOS		A			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			6.6			HCM 2000 Level of Service			A			
HCM 2000 Volume to Capacity ratio			0.26									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			55.2%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

19: North Access/NE 59th Avenue & NE Evergreen Parkway

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	590	17	17	480	51	8	2	11	28	4	42
Future Volume (vph)	67	590	17	17	480	51	8	2	11	28	4	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3471	1483	1454	3408		1517	1626	1188	1583	1541	
Flt Permitted	0.43	1.00	1.00	0.41	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	821	3471	1483	621	3408		1517	1626	1188	1583	1541	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	67	590	17	17	480	51	8	2	11	28	4	42
RTOR Reduction (vph)	0	0	6	0	4	0	0	0	10	0	38	0
Lane Group Flow (vph)	67	590	11	17	527	0	5	5	1	28	8	0
Confl. Peds. (#/hr)			3	3								
Confl. Bikes (#/hr)			1			2						
Heavy Vehicles (%)	0%	4%	6%	24%	4%	6%	13%	0%	36%	14%	0%	7%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Split	NA	Prot	Split	NA	
Protected Phases	5	2		1	6		8	8	8	4	4	
Permitted Phases	2		2	6								
Actuated Green, G (s)	69.1	63.4	63.4	61.7	59.7		7.2	7.2	7.2	9.4	9.4	
Effective Green, g (s)	69.1	64.9	64.9	61.7	61.2		7.2	7.2	7.2	9.9	9.9	
Actuated g/C Ratio	0.69	0.65	0.65	0.62	0.61		0.07	0.07	0.07	0.10	0.10	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.0	4.0	4.0	4.5	4.5	
Vehicle Extension (s)	1.5	3.1	3.1	1.5	3.1		2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	623	2252	962	399	2085		109	117	85	156	152	
v/s Ratio Prot	c0.01	c0.17		0.00	0.15		c0.00	0.00	0.00	c0.02	0.01	
v/s Ratio Perm	0.07		0.01	0.03								
v/c Ratio	0.11	0.26	0.01	0.04	0.25		0.05	0.04	0.01	0.18	0.05	
Uniform Delay, d1	6.3	7.4	6.2	8.9	8.9		43.2	43.2	43.1	41.3	40.8	
Progression Factor	1.00	1.00	1.00	0.46	0.76		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	0.3	0.0	0.0	0.3		0.1	0.1	0.0	0.2	0.1	
Delay (s)	6.3	7.7	6.2	4.1	7.1		43.3	43.2	43.1	41.5	40.9	
Level of Service	A	A	A	A	A		D	D	D	D	D	
Approach Delay (s)		7.5			7.0			43.2			41.1	
Approach LOS		A			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			9.8			HCM 2000 Level of Service			A			
HCM 2000 Volume to Capacity ratio			0.23									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			43.2%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

1: NE Brookwood Parkway & NE Evergreen Parkway

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	723	492	115	210	490	165	173	1194	151	48	816	286
Future Volume (vph)	723	492	115	210	490	165	173	1194	151	48	816	286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	2.5	4.0	4.0	2.5	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91		0.97	0.91	0.88
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3467	3574	1564	3467	3610	1583	3467	5044		3433	5085	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3467	3574	1564	3467	3610	1583	3467	5044		3433	5085	2787
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	723	492	115	210	490	165	173	1194	151	48	816	286
RTOR Reduction (vph)	0	0	0	0	0	0	0	12	0	0	0	121
Lane Group Flow (vph)	723	492	115	210	490	165	173	1333	0	48	816	165
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	1%	2%	1%	0%	2%	1%	1%	2%	2%	2%	2%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA		Prot	NA	pt+ov
Protected Phases	3	8		7	4		1	6		5	2	2 3
Permitted Phases			Free			Free						
Actuated Green, G (s)	28.6	39.9	116.5	11.9	23.2	116.5	18.0	39.8		4.9	26.7	59.8
Effective Green, g (s)	29.1	41.4	116.5	12.4	24.7	116.5	18.5	41.3		5.4	28.2	58.3
Actuated g/C Ratio	0.25	0.36	1.00	0.11	0.21	1.00	0.16	0.35		0.05	0.24	0.50
Clearance Time (s)	4.5	5.5		4.5	5.5		4.5	5.5		4.5	5.5	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	866	1270	1564	369	765	1583	550	1788		159	1230	1394
v/s Ratio Prot	c0.21	0.14		0.06	c0.14		0.05	c0.26		0.01	c0.16	0.06
v/s Ratio Perm			0.07			0.10						
v/c Ratio	0.83	0.39	0.07	0.57	0.64	0.10	0.31	0.75		0.30	0.66	0.12
Uniform Delay, d1	41.4	28.1	0.0	49.5	41.9	0.0	43.4	33.0		53.7	39.9	15.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.7	0.2	0.1	1.2	1.8	0.1	0.1	1.7		0.4	1.4	0.0
Delay (s)	48.1	28.3	0.1	50.7	43.7	0.1	43.5	34.7		54.1	41.2	15.5
Level of Service	D	C	A	D	D	A	D	C		D	D	B
Approach Delay (s)		36.6			37.1			35.7			35.4	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			36.1				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			116.5				Sum of lost time (s)			16.0		
Intersection Capacity Utilization			78.1%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: NE Brookwood Parkway & T5 Data Center/NE Shute Road

03/11/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔		↔	↔	
Traffic Volume (vph)	2	2	1	39	0	936	0	714	16	222	1005	1
Future Volume (vph)	2	2	1	39	0	936	0	714	16	222	1005	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	3.5		4.0		3.0	4.0	
Lane Util. Factor		1.00			1.00	0.88		0.95		0.97	0.95	
Frpb, ped/bikes		0.99			1.00	1.00		1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00		1.00		1.00	1.00	
Frt		0.97			1.00	0.85		1.00		1.00	1.00	
Flt Protected		0.98			0.95	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1801			1805	2814		3429		3273	3471	
Flt Permitted		0.98			0.95	1.00		1.00		0.95	1.00	
Satd. Flow (perm)		1801			1805	2814		3429		3273	3471	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	2	1	39	0	936	0	714	16	222	1005	1
RTOR Reduction (vph)	0	1	0	0	0	239	0	1	0	0	0	0
Lane Group Flow (vph)	0	4	0	0	39	697	0	729	0	222	1006	0
Confl. Peds. (#/hr)			1	1			1		2	2		1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	5%	0%	7%	4%	0%
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	8	8		4	4	7 5	1	6		5 7	2	
Permitted Phases						4						
Actuated Green, G (s)		0.7			3.9	32.4		22.8		28.5	46.1	
Effective Green, g (s)		1.2			4.4	33.9		24.3		31.5	47.6	
Actuated g/C Ratio		0.02			0.06	0.43		0.31		0.40	0.60	
Clearance Time (s)		4.5			4.5			5.5			5.5	
Vehicle Extension (s)		2.0			2.0			3.0			3.0	
Lane Grp Cap (vph)		27			100	1209		1056		1306	2094	
v/s Ratio Prot		c0.00			0.02	c0.22		c0.21		0.07	0.29	
v/s Ratio Perm						0.03						
v/c Ratio		0.15			0.39	0.58		0.69		0.17	0.48	
Uniform Delay, d1		38.3			36.0	17.1		24.0		15.3	8.7	
Progression Factor		1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.9			0.9	0.4		2.0		0.0	0.2	
Delay (s)		39.3			36.9	17.5		26.0		15.3	8.9	
Level of Service		D			D	B		C		B	A	
Approach Delay (s)		39.3			18.3			26.0			10.1	
Approach LOS		D			B			C			B	
Intersection Summary												
HCM 2000 Control Delay			16.8				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			78.9				Sum of lost time (s)			20.5		
Intersection Capacity Utilization			67.2%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 2010 TWSC
3: NE Shute Road & PERRIN Driveway/RS5 Access

03/11/2019

Intersection												
Int Delay, s/veh	4.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↗	↖		↗	↖		↗	↖	
Traffic Vol, veh/h	12	0	8	73	1	215	17	882	8	9	220	12
Future Vol, veh/h	12	0	8	73	1	215	17	882	8	9	220	12
Conflicting Peds, #/hr	0	0	2	2	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	125	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	8	0	0	3	0	1	0	1	38	22	4	8
Mvmt Flow	12	0	8	73	1	215	17	882	8	9	220	12

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	720	1168	118	1050	1170	445	232	0	0	890	0	0
Stage 1	244	244	-	920	920	-	-	-	-	-	-	-
Stage 2	476	924	-	130	250	-	-	-	-	-	-	-
Critical Hdwy	7.66	6.5	6.9	7.56	6.5	6.92	4.1	-	-	4.54	-	-
Critical Hdwy Stg 1	6.66	5.5	-	6.56	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.66	5.5	-	6.56	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.58	4	3.3	3.53	4	3.31	2.2	-	-	2.42	-	-
Pot Cap-1 Maneuver	304	195	918	180	195	563	1348	-	-	643	-	-
Stage 1	721	708	-	290	352	-	-	-	-	-	-	-
Stage 2	523	351	-	857	704	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	183	190	916	174	190	563	1348	-	-	643	-	-
Mov Cap-2 Maneuver	183	190	-	174	190	-	-	-	-	-	-	-
Stage 1	712	698	-	286	347	-	-	-	-	-	-	-
Stage 2	318	346	-	836	694	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	19.5		21.7		0.1		0.4	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1348	-	-	269 174 558	643	-	-
HCM Lane V/C Ratio	0.013	-	-	0.074 0.42 0.387	0.014	-	-
HCM Control Delay (s)	7.7	-	-	19.5 39.9 15.5	10.7	-	-
HCM Lane LOS	A	-	-	C E C	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2 1.9 1.8	0	-	-

Intersection												
Int Delay, s/veh	9.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	33	0	152	121	9	159	66	711	19	3	289	10
Future Vol, veh/h	33	0	152	121	9	159	66	711	19	3	289	10
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	105	-	-	165	-	-	215	-	-	210	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	0	1	0	0	1	2	1	0	0	3	10
Mvmt Flow	33	0	152	121	9	159	66	711	19	3	289	10

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	793	1164	151	1005	1160	366	300	0	0	731	0	0
Stage 1	301	301	-	854	854	-	-	-	-	-	-	-
Stage 2	492	863	-	151	306	-	-	-	-	-	-	-
Critical Hdwy	7.56	6.5	6.92	7.5	6.5	6.92	4.14	-	-	4.1	-	-
Critical Hdwy Stg 1	6.56	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4	3.31	3.5	4	3.31	2.22	-	-	2.2	-	-
Pot Cap-1 Maneuver	277	196	871	199	197	634	1258	-	-	883	-	-
Stage 1	681	669	-	324	378	-	-	-	-	-	-	-
Stage 2	524	374	-	842	665	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	191	185	870	157	186	633	1257	-	-	882	-	-
Mov Cap-2 Maneuver	191	185	-	157	186	-	-	-	-	-	-	-
Stage 1	645	666	-	307	358	-	-	-	-	-	-	-
Stage 2	362	354	-	693	662	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.2		41.4		0.7		0.1	
HCM LOS	B		E					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1257	-	-	191	870	157	561	882	-	-
HCM Lane V/C Ratio	0.053	-	-	0.173	0.175	0.771	0.299	0.003	-	-
HCM Control Delay (s)	8	-	-	27.7	10	79.4	14.1	9.1	-	-
HCM Lane LOS	A	-	-	D	B	F	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.6	0.6	4.9	1.3	0	-	-

HCM 2010 TWSC
5: NE Shute Road & D1X Access

03/11/2019

Intersection						
Int Delay, s/veh	1.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	16	176	609	1	8	545
Future Vol, veh/h	16	176	609	1	8	545
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	130	0	-	225	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	1	0	13	2
Mvmt Flow	16	176	609	1	8	545
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	898	305	0	0	610	0
Stage 1	609	-	-	-	-	-
Stage 2	289	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.36	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.33	-
Pot Cap-1 Maneuver	283	697	-	-	893	-
Stage 1	511	-	-	-	-	-
Stage 2	741	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	280	697	-	-	893	-
Mov Cap-2 Maneuver	280	-	-	-	-	-
Stage 1	511	-	-	-	-	-
Stage 2	734	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12.5	0	0.1			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 280 697	893	-		
HCM Lane V/C Ratio	-	- 0.057 0.253	0.009	-		
HCM Control Delay (s)	-	- 18.6 11.9	9.1	-		
HCM Lane LOS	-	- C B	A	-		
HCM 95th %tile Q(veh)	-	- 0.2 1	0	-		

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	14	12	5	155	37	449	1	6	558	18
Future Vol, veh/h	4	0	14	12	5	155	37	449	1	6	558	18
Conflicting Peds, #/hr	0	0	0	0	0	0	6	0	2	2	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	170	-	0	160	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	1	0	1	0	0	1	0
Mvmt Flow	4	0	14	12	5	155	37	449	1	6	558	18
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	886	1111	294	817	1120	227	582	0	0	452	0	0
Stage 1	585	585	-	526	526	-	-	-	-	-	-	-
Stage 2	301	526	-	291	594	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.92	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.31	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	242	211	708	272	208	779	1002	-	-	1119	-	-
Stage 1	469	501	-	508	532	-	-	-	-	-	-	-
Stage 2	689	532	-	698	496	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	183	201	704	258	198	778	996	-	-	1117	-	-
Mov Cap-2 Maneuver	183	201	-	258	198	-	-	-	-	-	-	-
Stage 1	449	495	-	488	511	-	-	-	-	-	-	-
Stage 2	526	511	-	680	491	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	13.7		11.8		0.7		0.1					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR					
Capacity (veh/h)	996	-	-	431 237 778	1117	-	-					
HCM Lane V/C Ratio	0.037	-	-	0.042 0.072 0.199	0.005	-	-					
HCM Control Delay (s)	8.8	-	-	13.7 21.4 10.8	8.2	-	-					
HCM Lane LOS	A	-	-	B C B	A	-	-					
HCM 95th %tile Q(veh)	0.1	-	-	0.1 0.2 0.7	0	-	-					

HCM Signalized Intersection Capacity Analysis

7: NE Shute Road & NE Airport Road/NE Butler Street

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	94	12	172	185	205	11	192	34	150	330	86
Future Volume (vph)	36	94	12	172	185	205	11	192	34	150	330	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	5.5		4.0	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.92		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1804	1845		1798	1726		1802	3427		1783	1881	1544
Flt Permitted	0.53	1.00		0.57	1.00		0.56	1.00		0.48	1.00	1.00
Satd. Flow (perm)	1009	1845		1070	1726		1065	3427		896	1881	1544
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	36	94	12	172	185	205	11	192	34	150	330	86
RTOR Reduction (vph)	0	2	0	0	17	0	0	11	0	0	0	70
Lane Group Flow (vph)	36	104	0	172	373	0	11	215	0	150	330	16
Confl. Peds. (#/hr)	3		6	6		3	3		4	4		3
Confl. Bikes (#/hr)						3						
Heavy Vehicles (%)	0%	1%	0%	0%	0%	1%	0%	3%	0%	1%	1%	2%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	custom
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		6
Actuated Green, G (s)	21.6	18.3		37.7	30.4		15.2	14.3		27.4	22.5	14.3
Effective Green, g (s)	21.6	18.3		37.7	30.4		15.2	14.3		27.4	22.5	14.3
Actuated g/C Ratio	0.29	0.24		0.50	0.40		0.20	0.19		0.36	0.30	0.19
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	5.5		4.0	5.5	5.5
Vehicle Extension (s)	2.5	2.5		2.5	2.5		1.0	3.0		1.0	3.0	3.0
Lane Grp Cap (vph)	322	446		681	694		222	648		431	559	292
v/s Ratio Prot	0.00	0.06		c0.05	c0.22		0.00	0.06		c0.04	c0.18	
v/s Ratio Perm	0.03			0.07			0.01			0.08		0.01
v/c Ratio	0.11	0.23		0.25	0.54		0.05	0.33		0.35	0.59	0.06
Uniform Delay, d1	19.7	23.0		10.6	17.2		24.3	26.5		16.9	22.6	25.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.1	0.2		0.1	0.6		0.0	0.3		0.2	1.7	0.1
Delay (s)	19.8	23.2		10.8	17.9		24.3	26.8		17.1	24.3	25.2
Level of Service	B	C		B	B		C	C		B	C	C
Approach Delay (s)		22.3			15.7			26.7			22.5	
Approach LOS		C			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			20.6			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.55									
Actuated Cycle Length (s)			75.6			Sum of lost time (s)			18.5			
Intersection Capacity Utilization			63.6%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Int Delay, s/veh 4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	262	30	5	364	2	19	1	3	79	0	177
Future Vol, veh/h	17	262	30	5	364	2	19	1	3	79	0	177
Conflicting Peds, #/hr	3	0	3	3	0	3	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	1	3	0	1	0	0	0	33	0	0	0
Mvmt Flow	17	262	30	5	364	2	19	1	3	79	0	177

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	369	0	0	295	0	0	779	693	280	691	707	369
Stage 1	-	-	-	-	-	-	314	314	-	378	378	-
Stage 2	-	-	-	-	-	-	465	379	-	313	329	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.53	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.597	3.5	4	3.3
Pot Cap-1 Maneuver	1201	-	-	1278	-	-	316	369	690	362	363	681
Stage 1	-	-	-	-	-	-	701	660	-	648	619	-
Stage 2	-	-	-	-	-	-	581	618	-	702	650	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1198	-	-	1274	-	-	229	360	688	354	354	678
Mov Cap-2 Maneuver	-	-	-	-	-	-	229	360	-	354	354	-
Stage 1	-	-	-	-	-	-	689	649	-	637	615	-
Stage 2	-	-	-	-	-	-	427	614	-	688	639	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.1			20.5			14		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	255	1198	-	-	1274	-	-	354	678
HCM Lane V/C Ratio	0.09	0.014	-	-	0.004	-	-	0.223	0.261
HCM Control Delay (s)	20.5	8	-	-	7.8	-	-	18.1	12.2
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.8	1

HCM 2010 Roundabout
9: NE 65th Avenue/Intel Driveway & NE Butler Street

03/11/2019

Intersection							
Intersection Delay, s/veh	7.9						
Intersection LOS	A						
Approach	EB		WB		NB		SB
Entry Lanes	2		2		1		2
Conflicting Circle Lanes	2		2		2		2
Adj Approach Flow, veh/h	323		215		13		876
Demand Flow Rate, veh/h	326		218		13		876
Vehicles Circulating, veh/h	647		38		908		174
Vehicles Exiting, veh/h	403		883		65		82
Follow-Up Headway, s	3.186		3.186		3.186		3.186
Ped Vol Crossing Leg, #/h	29		46		2		0
Ped Cap Adj	0.987		0.949		1.000		1.000
Approach Delay, s/veh	8.0		4.7		6.3		8.7
Approach LOS	A		A		A		A
Lane	Left	Right	Left	Right	Left	Left	Right
Designated Moves	LT	TR	LTR	R	LTR	L	LTR
Assumed Moves	LT	TR	LT	R	LTR	L	LTR
RT Channelized							
Lane Util	0.469	0.531	0.766	0.234	1.000	0.530	0.470
Critical Headway, s	4.293	4.113	4.293	4.113	4.113	4.293	4.113
Entry Flow, veh/h	153	173	167	51	13	464	412
Cap Entry Lane, veh/h	696	718	1098	1100	598	992	1000
Entry HV Adj Factor	0.993	0.990	0.981	1.000	1.000	1.001	0.999
Flow Entry, veh/h	152	171	164	51	13	464	412
Cap Entry, veh/h	682	702	1022	1044	598	992	1000
V/C Ratio	0.223	0.244	0.160	0.049	0.022	0.468	0.412
Control Delay, s/veh	7.9	8.0	5.0	3.9	6.3	9.1	8.2
LOS	A	A	A	A	A	A	A
95th %tile Queue, veh	1	1	1	0	0	3	2

HCS7 Roundabouts Report

General Information

Analyst	PGP
Agency or Co.	Mackenzie
Date Performed	3/8/2019
Analysis Year	2018
Time Analyzed	Existing - PM
Project Description	Project Lark

Site Information

Intersection	NE Butler Street/NE 65th Avenue
E/W Street Name	NE Butler Street
N/S Street Name	NE 65th Avenue
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.83
Jurisdiction	City of Hillsboro

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	2	0	0	0	1	1	0	0	1	0	0	1	1	0
Lane Assignment	LT		TR		LTR		R				LTR		L		LTR	
Volume (V), veh/h	0	27	280	16	0	4	160	51	0	7	4	2	0	598	45	233
Percent Heavy Vehicles, %	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0
Flow Rate (v_{pce}), pc/h	0	33	341	19	0	5	197	61	0	8	5	2	0	720	54	281
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	2				1				2				1			
Pedestrians Crossing, p/h	29				46				2				0			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)	4.6453	4.9763		4.5436	4.5436			4.3276		4.5436	4.5436	
Follow-Up Headway (s)	2.6667	2.5352		2.5352	2.5352			2.5352		2.5352	2.5352	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h	177	216		202	61			15		739	317	
Entry Volume veh/h	175	214		199	60			15		739	317	
Circulating Flow (v_c), pc/h	779			46			1094			210		
Exiting Flow (v_{ex}), pc/h	1063			486			99			78		
Capacity (C_{pce}), pc/h	659	636		1362	1362			560		1173	1173	
Capacity (c), veh/h	648	625		1274	1274			560		1173	1173	
v/c Ratio (x)	0.27	0.34		0.16	0.05			0.03		0.63	0.27	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh	9.0	10.4		4.1	3.2			6.7		11.3	5.5	
Lane LOS	A	B		A	A			A		B	A	
95% Queue, veh	1.1	1.5		0.6	0.1			0.1		4.7	1.1	
Approach Delay, s/veh	9.8			3.9			6.7			9.6		
Approach LOS	A			A			A			A		
Intersection Delay, s/veh LOS	8.7						A					

HCM 2010 AWSC
10: Intel Driveway & Internal Circulation

03/11/2019

Intersection

Intersection Delay, s/veh 18.6

Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↕			↕	↗		↕	
Traffic Vol, veh/h	5	145	319	185	18	14	10	44	44	42	312	13
Future Vol, veh/h	5	145	319	185	18	14	10	44	44	42	312	13
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	0	0	0	11	0	0	0	0	0	0	0
Mvmt Flow	5	145	319	185	18	14	10	44	44	42	312	13
Number of Lanes	0	1	1	1	1	0	0	2	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	1	2	2
HCM Control Delay	15.7	13.5	10.6	27.5
HCM LOS	C	B	B	D

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	41%	0%	0%	3%	0%	100%	70%	11%
Vol Thru, %	59%	100%	0%	97%	0%	0%	17%	85%
Vol Right, %	0%	0%	100%	0%	100%	0%	13%	4%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	25	29	44	150	319	109	108	367
LT Vol	10	0	0	5	0	109	76	42
Through Vol	15	29	0	145	0	0	18	312
RT Vol	0	0	44	0	319	0	14	13
Lane Flow Rate	25	29	44	150	319	109	108	367
Geometry Grp	7	7	7	8	8	8	8	8
Degree of Util (X)	0.053	0.061	0.083	0.296	0.564	0.246	0.241	0.735
Departure Headway (Hd)	7.732	7.523	6.804	7.096	6.366	8.099	8.046	7.207
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	462	475	525	507	568	443	446	503
Service Time	5.489	5.281	4.561	4.842	4.112	5.854	5.801	4.954
HCM Lane V/C Ratio	0.054	0.061	0.084	0.296	0.562	0.246	0.242	0.73
HCM Control Delay	10.9	10.8	10.2	12.8	17.1	13.5	13.4	27.5
HCM Lane LOS	B	B	B	B	C	B	B	D
HCM 95th-tile Q	0.2	0.2	0.3	1.2	3.5	1	0.9	6.1

Intersection

Intersection Delay, s/veh 12.9

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	55	365	4	1	61	69	7	4	5	186	5	89
Future Vol, veh/h	55	365	4	1	61	69	7	4	5	186	5	89
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	0	0	0	0	6	0	0	0	2	20	0
Mvmt Flow	55	365	4	1	61	69	7	4	5	186	5	89
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	14.8	9.7	9.4	11.6
HCM LOS	B	A	A	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	44%	0%	99%	0%	47%	0%	5%
Vol Right, %	0%	56%	0%	1%	0%	53%	0%	95%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	7	9	55	369	1	130	186	94
LT Vol	7	0	55	0	1	0	186	0
Through Vol	0	4	0	365	0	61	0	5
RT Vol	0	5	0	4	0	69	0	89
Lane Flow Rate	7	9	55	369	1	130	186	94
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.014	0.015	0.093	0.574	0.002	0.202	0.34	0.149
Departure Headway (Hd)	7.027	6.123	6.111	5.599	6.475	5.593	6.575	5.709
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	509	584	590	649	553	642	547	629
Service Time	4.77	3.866	3.811	3.299	4.206	3.323	4.306	3.439
HCM Lane V/C Ratio	0.014	0.015	0.093	0.569	0.002	0.202	0.34	0.149
HCM Control Delay	9.9	9	9.4	15.6	9.2	9.7	12.7	9.4
HCM Lane LOS	A	A	A	C	A	A	B	A
HCM 95th-tile Q	0	0	0.3	3.7	0	0.8	1.5	0.5

HCM Signalized Intersection Capacity Analysis

12: NE Century Boulevard & NE Butler Street

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	485	185	6	117	65	35	167	11	235	471	68
Future Volume (vph)	107	485	185	6	117	65	35	167	11	235	471	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3386		1802	1881	1583	1750	1791		1786	1786	
Flt Permitted	0.49	1.00		0.22	1.00	1.00	0.39	1.00		0.59	1.00	
Satd. Flow (perm)	933	3386		408	1881	1583	710	1791		1101	1786	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	107	485	185	6	117	65	35	167	11	235	471	68
RTOR Reduction (vph)	0	40	0	0	0	49	0	1	0	0	3	0
Lane Group Flow (vph)	107	630	0	6	117	16	35	177	0	235	536	0
Confl. Peds. (#/hr)			14	14			7		2	2		7
Confl. Bikes (#/hr)			7									4
Heavy Vehicles (%)	0%	0%	1%	0%	1%	2%	3%	4%	0%	1%	1%	1%
Bus Blockages (#/hr)	0	1	0	0	0	0	0	3	33	0	7	0
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4	5	1	6		5	2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)	30.1	25.1		19.6	18.6	27.4	60.6	57.6		70.4	63.4	
Effective Green, g (s)	30.1	25.6		19.6	19.1	27.4	60.6	58.6		70.4	64.4	
Actuated g/C Ratio	0.27	0.23		0.18	0.17	0.25	0.55	0.53		0.64	0.59	
Clearance Time (s)	4.0	4.5		4.0	4.5	4.0	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.0	2.0		1.0	2.0	0.5	0.5	2.5		0.5	2.5	
Lane Grp Cap (vph)	314	788		85	326	394	419	954		759	1045	
v/s Ratio Prot	c0.02	c0.19		0.00	0.06	0.00	0.00	0.10		c0.02	c0.30	
v/s Ratio Perm	0.07			0.01		0.01	0.04			0.17		
v/c Ratio	0.34	0.80		0.07	0.36	0.04	0.08	0.19		0.31	0.51	
Uniform Delay, d1	31.0	39.8		37.7	40.1	31.3	11.8	13.3		8.4	13.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		0.70	0.88	
Incremental Delay, d2	0.2	5.3		0.1	0.2	0.0	0.0	0.4		0.1	1.6	
Delay (s)	31.3	45.1		37.9	40.3	31.3	11.8	13.8		5.9	13.5	
Level of Service	C	D		D	D	C	B	B		A	B	
Approach Delay (s)		43.2			37.1			13.4			11.2	
Approach LOS		D			D			B			B	
Intersection Summary												
HCM 2000 Control Delay			26.7									
HCM 2000 Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			110.0									
Intersection Capacity Utilization			71.5%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 2010 TWSC
13: Internal Circulation & NE Ronler Drive

03/11/2019

Intersection						
Int Delay, s/veh	0.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	35	1	153	447	13	82
Future Vol, veh/h	35	1	153	447	13	82
Conflicting Peds, #/hr	0	1	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	-	85	25	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	1	1	0	5
Mvmt Flow	35	1	153	447	13	82
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	261	154	0	0	600	0
Stage 1	153	-	-	-	-	-
Stage 2	108	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	732	897	-	-	987	-
Stage 1	880	-	-	-	-	-
Stage 2	921	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	722	896	-	-	987	-
Mov Cap-2 Maneuver	722	-	-	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	909	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	10.2	0	1.2			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 722 896	987	-		
HCM Lane V/C Ratio	-	- 0.048 0.001	0.013	-		
HCM Control Delay (s)	-	- 10.2 9	8.7	-		
HCM Lane LOS	-	- B A	A	-		
HCM 95th %tile Q(veh)	-	- 0.2 0	0	-		

HCM Signalized Intersection Capacity Analysis

14: NE Century Boulevard & NE Ronler Drive

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	406	63	32	16	6	13	247	129	160	620	5
Future Volume (vph)	44	406	63	32	16	6	13	247	129	160	620	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.96		1.00	0.95		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3502		1804	1822		1670	1758		1804	1879	
Flt Permitted	0.74	1.00		0.43	1.00		0.31	1.00		0.47	1.00	
Satd. Flow (perm)	1384	3502		826	1822		542	1758		885	1879	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	44	406	63	32	16	6	13	247	129	160	620	5
RTOR Reduction (vph)	0	13	0	0	5	0	0	14	0	0	0	0
Lane Group Flow (vph)	44	456	0	32	17	0	13	362	0	160	625	0
Confl. Peds. (#/hr)			1	1			3		2	2		3
Confl. Bikes (#/hr)			1						1			5
Heavy Vehicles (%)	2%	0%	5%	0%	0%	0%	8%	3%	0%	0%	1%	0%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	25.4	17.8		12.3	9.2		62.6	60.6		76.6	69.6	
Effective Green, g (s)	25.4	18.3		12.3	9.7		62.6	61.6		76.6	70.6	
Actuated g/C Ratio	0.23	0.17		0.11	0.09		0.57	0.56		0.70	0.64	
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	360	582		119	160		328	984		708	1205	
v/s Ratio Prot	0.01	c0.13		c0.01	0.01		0.00	0.21		c0.02	c0.33	
v/s Ratio Perm	0.02			0.02			0.02			0.13		
v/c Ratio	0.12	0.78		0.27	0.10		0.04	0.37		0.23	0.52	
Uniform Delay, d1	33.6	44.0		49.0	46.1		19.2	13.4		9.6	10.6	
Progression Factor	1.00	1.00		1.00	1.00		0.83	0.99		0.52	0.65	
Incremental Delay, d2	0.1	6.3		0.4	0.1		0.0	1.1		0.1	1.5	
Delay (s)	33.7	50.3		49.4	46.3		16.0	14.4		5.0	8.3	
Level of Service	C	D		D	D		B	B		A	A	
Approach Delay (s)		48.9			48.1			14.4			7.6	
Approach LOS		D			D			B			A	
Intersection Summary												
HCM 2000 Control Delay			22.6			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.56									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			68.0%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

15: NE Century Boulevard & RAP1 Access/Parking

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	241	1	295	1	0	0	17	255	0	1	547	32
Future Volume (vph)	241	1	295	1	0	0	17	255	0	1	547	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	3.5	3.5			4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00			1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85	1.00			1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00	0.95			0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1810	1615	1805			1805	1863		1801	1881	1445
Flt Permitted		0.95	1.00	0.95			0.35	1.00		0.59	1.00	1.00
Satd. Flow (perm)		1810	1615	1805			668	1863		1116	1881	1445
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	241	1	295	1	0	0	17	255	0	1	547	32
RTOR Reduction (vph)	0	0	240	0	0	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	242	55	1	0	0	17	255	0	1	547	20
Confl. Peds. (#/hr)							1		2	2		1
Confl. Bikes (#/hr)									2			5
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	1%	9%
Turn Type	Split	NA	Perm	Split			pm+pt	NA		pm+pt	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases			8				6			2		2
Actuated Green, G (s)		20.5	20.5	4.6			70.3	67.9		67.5	66.5	66.5
Effective Green, g (s)		20.5	20.5	4.6			70.3	68.9		67.5	67.5	67.5
Actuated g/C Ratio		0.19	0.19	0.04			0.64	0.63		0.61	0.61	0.61
Clearance Time (s)		3.5	3.5	3.5			4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0			2.5	4.0		2.5	4.0	4.0
Lane Grp Cap (vph)		337	300	75			451	1166		691	1154	886
v/s Ratio Prot		c0.13		c0.00			c0.00	0.14		0.00	c0.29	
v/s Ratio Perm			0.03				0.02			0.00		0.01
v/c Ratio		0.72	0.18	0.01			0.04	0.22		0.00	0.47	0.02
Uniform Delay, d1		42.0	37.7	50.5			8.4	8.9		8.2	11.6	8.3
Progression Factor		1.00	1.00	1.00			0.34	0.35		0.99	0.87	1.00
Incremental Delay, d2		7.1	0.3	0.1			0.0	0.4		0.0	1.4	0.0
Delay (s)		49.2	38.0	50.6			2.9	3.5		8.2	11.4	8.4
Level of Service		D	D	D			A	A		A	B	A
Approach Delay (s)		43.0			50.6			3.5			11.2	
Approach LOS		D			D			A			B	
Intersection Summary												
HCM 2000 Control Delay			22.0				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.49									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)			15.0		
Intersection Capacity Utilization			62.1%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

16: NE Century Boulevard & RA1/2 Access/Office Driveway

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	11	127	24	0	21	26	469	18	14	384	37
Future Volume (vph)	191	11	127	24	0	21	26	469	18	14	384	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5		3.5	3.5		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.96		1.00	0.98		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.85		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1801	1513		1780	1579		1733	1870		1805	1881	1453
Flt Permitted	0.74	1.00		0.54	1.00		0.49	1.00		0.44	1.00	1.00
Satd. Flow (perm)	1410	1513		1004	1579		895	1870		828	1881	1453
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	191	11	127	24	0	21	26	469	18	14	384	37
RTOR Reduction (vph)	0	104	0	0	17	0	0	1	0	0	0	12
Lane Group Flow (vph)	191	34	0	24	4	0	26	486	0	14	384	25
Confl. Peds. (#/hr)	1		8	8		1	3					3
Confl. Bikes (#/hr)			4						2			5
Heavy Vehicles (%)	0%	0%	4%	0%	0%	0%	4%	1%	0%	0%	1%	8%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		2
Actuated Green, G (s)	20.0	20.0		20.0	20.0		78.3	75.3		76.7	74.5	74.5
Effective Green, g (s)	20.0	20.0		20.0	20.0		78.3	76.3		76.7	75.5	75.5
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.71	0.69		0.70	0.69	0.69
Clearance Time (s)	3.5	3.5		3.5	3.5		4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.5	4.0		2.5	4.0	4.0
Lane Grp Cap (vph)	256	275		182	287		659	1297		596	1291	997
v/s Ratio Prot		0.02			0.00		c0.00	c0.26		0.00	0.20	
v/s Ratio Perm	c0.14			0.02			0.03			0.02		0.02
v/c Ratio	0.75	0.12		0.13	0.01		0.04	0.37		0.02	0.30	0.03
Uniform Delay, d1	42.6	37.7		37.7	36.9		4.8	7.0		5.4	6.8	5.5
Progression Factor	1.00	1.00		1.00	1.00		1.18	0.97		1.39	1.17	2.03
Incremental Delay, d2	11.2	0.2		0.3	0.0		0.0	0.8		0.0	0.6	0.0
Delay (s)	53.8	37.9		38.1	36.9		5.7	7.5		7.5	8.5	11.2
Level of Service	D	D		D	D		A	A		A	A	B
Approach Delay (s)		47.1			37.5			7.4			8.7	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			18.8			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.44									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)				11.5		
Intersection Capacity Utilization			52.4%			ICU Level of Service				A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

17: NE Century Boulevard & NE Evergreen Parkway

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	750	135	182	511	63	103	25	531	198	90	15
Future Volume (vph)	8	750	135	182	511	63	103	25	531	198	90	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1597	3574	1566	1770	3511		1802	1900	1599	1787	1806	
Flt Permitted	0.44	1.00	1.00	0.22	1.00		0.69	1.00	1.00	0.51	1.00	
Satd. Flow (perm)	733	3574	1566	419	3511		1307	1900	1599	955	1806	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	8	750	135	182	511	63	103	25	531	198	90	15
RTOR Reduction (vph)	0	0	80	0	5	0	0	0	116	0	7	0
Lane Group Flow (vph)	8	750	55	182	569	0	103	25	415	198	98	0
Confl. Peds. (#/hr)	1					1	3					3
Confl. Bikes (#/hr)			1			1						1
Heavy Vehicles (%)	13%	1%	1%	2%	1%	0%	0%	0%	1%	1%	1%	13%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)	44.4	43.3	43.3	70.3	65.2		17.8	8.7	31.7	29.7	16.6	
Effective Green, g (s)	44.4	44.8	44.8	70.3	66.7		17.8	9.2	31.7	29.7	17.1	
Actuated g/C Ratio	0.40	0.41	0.41	0.64	0.61		0.16	0.08	0.29	0.27	0.16	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.0	4.5	4.0	4.0	4.5	
Vehicle Extension (s)	2.0	3.1	3.1	2.0	3.1		2.0	2.5	2.0	2.0	2.5	
Lane Grp Cap (vph)	304	1455	637	550	2128		252	158	460	386	280	
v/s Ratio Prot	0.00	c0.21		0.07	0.16		0.03	0.01	c0.19	c0.08	0.05	
v/s Ratio Perm	0.01		0.04	0.14			0.03		0.07	0.06		
v/c Ratio	0.03	0.52	0.09	0.33	0.27		0.41	0.16	0.90	0.51	0.35	
Uniform Delay, d1	19.7	24.5	20.0	10.1	10.2		41.0	46.8	37.7	33.0	41.5	
Progression Factor	1.40	0.93	3.58	1.00	1.00		1.08	1.15	0.85	1.00	1.00	
Incremental Delay, d2	0.0	1.3	0.3	0.1	0.3		0.4	0.3	19.2	0.5	0.6	
Delay (s)	27.5	24.0	71.9	10.2	10.5		44.8	54.1	51.3	33.5	42.0	
Level of Service	C	C	E	B	B		D	D	D	C	D	
Approach Delay (s)		31.3			10.4			50.4			36.5	
Approach LOS		C			B			D			D	
Intersection Summary												
HCM 2000 Control Delay			30.7			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			74.6%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

EBR - Correct Progression Factor to Match EBT
PF = 0.93, Delay = 18.9, LOS = B

HCM Signalized Intersection Capacity Analysis

18: RA1&2 North Access/Ronler Corporate Center & NE Evergreen Parkway

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	910	15	11	627	3	111	0	113	9	0	6
Future Volume (vph)	2	910	15	11	627	3	111	0	113	9	0	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		3.5	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1203	3557		1804	3537		1736	1578		1805	1380	
Flt Permitted	0.39	1.00		0.27	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	495	3557		515	3537		1736	1578		1805	1380	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	910	15	11	627	3	111	0	113	9	0	6
RTOR Reduction (vph)	0	1	0	0	0	0	0	95	0	0	6	0
Lane Group Flow (vph)	2	924	0	11	630	0	111	18	0	9	0	0
Confl. Peds. (#/hr)			5	5								
Confl. Bikes (#/hr)			8						1			
Heavy Vehicles (%)	50%	1%	13%	0%	2%	0%	4%	0%	1%	0%	0%	17%
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6								
Actuated Green, G (s)	74.6	73.6		74.6	73.6		11.1	16.8		1.1	6.8	
Effective Green, g (s)	74.6	75.1		74.6	75.1		11.1	17.3		1.1	6.8	
Actuated g/C Ratio	0.68	0.68		0.68	0.68		0.10	0.16		0.01	0.06	
Clearance Time (s)	4.0	5.5		4.0	5.5		4.0	4.5		3.5	4.0	
Vehicle Extension (s)	1.5	3.1		1.5	3.1		1.5	1.0		1.5	0.7	
Lane Grp Cap (vph)	342	2428		360	2414		175	248		18	85	
v/s Ratio Prot	0.00	c0.26		c0.00	0.18		c0.06	c0.01		0.00	0.00	
v/s Ratio Perm	0.00			0.02								
v/c Ratio	0.01	0.38		0.03	0.26		0.63	0.07		0.50	0.00	
Uniform Delay, d1	5.8	7.5		6.1	6.7		47.5	39.5		54.2	48.4	
Progression Factor	1.45	1.00		0.62	0.52		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.4		0.0	0.3		5.4	0.0		7.7	0.0	
Delay (s)	8.4	7.9		3.8	3.8		52.9	39.6		61.9	48.4	
Level of Service	A	A		A	A		D	D		E	D	
Approach Delay (s)		7.9			3.8			46.2			56.5	
Approach LOS		A			A			D			E	
Intersection Summary												
HCM 2000 Control Delay			11.6			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.39									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			49.5%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

19: North Access/NE 59th Avenue & NE Evergreen Parkway

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	687	4	3	705	23	163	9	174	52	0	66
Future Volume (vph)	13	687	4	3	705	23	163	9	174	52	0	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1671	3574	1556	1803	3498		1715	1728	1615	1671	1583	
Flt Permitted	0.33	1.00	1.00	0.35	1.00		0.95	0.96	1.00	0.95	1.00	
Satd. Flow (perm)	585	3574	1556	669	3498		1715	1728	1615	1671	1583	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	13	687	4	3	705	23	163	9	174	52	0	66
RTOR Reduction (vph)	0	0	1	0	1	0	0	0	154	0	59	0
Lane Group Flow (vph)	13	687	3	3	727	0	86	86	20	52	7	0
Confl. Peds. (#/hr)	1		5	5		1			1	1		
Confl. Bikes (#/hr)			10			2						
Heavy Vehicles (%)	8%	1%	0%	0%	2%	22%	0%	0%	0%	8%	0%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Split	NA	Prot	Split	NA	
Protected Phases	5	2		1	6		8	8	8	4	4	
Permitted Phases	2		2	6								
Actuated Green, G (s)	70.2	67.4	67.4	66.6	65.6		12.7	12.7	12.7	10.9	10.9	
Effective Green, g (s)	70.2	68.9	68.9	66.6	67.1		12.7	12.7	12.7	11.4	11.4	
Actuated g/C Ratio	0.64	0.63	0.63	0.61	0.61		0.12	0.12	0.12	0.10	0.10	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.0	4.0	4.0	4.5	4.5	
Vehicle Extension (s)	1.5	3.1	3.1	1.5	3.1		2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	400	2238	974	415	2133		198	199	186	173	164	
v/s Ratio Prot	c0.00	0.19		0.00	c0.21		c0.05	0.05	0.01	c0.03	0.00	
v/s Ratio Perm	0.02		0.00	0.00								
v/c Ratio	0.03	0.31	0.00	0.01	0.34		0.43	0.43	0.11	0.30	0.04	
Uniform Delay, d1	10.4	9.5	7.7	11.3	10.6		45.3	45.3	43.6	45.6	44.4	
Progression Factor	1.00	1.00	1.00	0.55	0.66		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	0.4	0.0	0.0	0.4		0.6	0.5	0.1	0.4	0.0	
Delay (s)	10.4	9.9	7.7	6.2	7.4		45.9	45.8	43.7	46.0	44.4	
Level of Service	B	A	A	A	A		D	D	D	D	D	
Approach Delay (s)		9.9			7.4			44.8			45.1	
Approach LOS		A			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			17.5			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.34									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			47.1%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

1: NE Brookwood Parkway & NE Evergreen Parkway

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	311	454	142	144	326	113	83	807	171	104	1454	578
Future Volume (vph)	311	454	142	144	326	113	83	807	171	104	1454	578
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	2.5	4.0	4.0	2.5	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91		0.97	0.91	0.88
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3303	3438	1564	3213	3438	1410	3467	4738		3335	5085	2733
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3303	3438	1564	3213	3438	1410	3467	4738		3335	5085	2733
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	311	454	142	144	326	113	83	807	171	104	1454	578
RTOR Reduction (vph)	0	0	0	0	0	0	0	20	0	0	0	189
Lane Group Flow (vph)	311	454	142	144	326	113	83	958	0	104	1454	389
Confl. Peds. (#/hr)	3		1	1		3	2		1	1		2
Confl. Bikes (#/hr)						3			1			1
Heavy Vehicles (%)	6%	5%	2%	9%	5%	13%	1%	6%	8%	5%	2%	4%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA		Prot	NA	pt+ov
Protected Phases	3	8		7	4		1	6		5	2	2 3
Permitted Phases			Free			Free						
Actuated Green, G (s)	15.6	25.3	120.0	9.8	19.5	120.0	6.5	56.8		8.1	58.4	78.5
Effective Green, g (s)	16.1	26.8	120.0	10.3	21.0	120.0	7.0	58.3		8.6	59.9	77.0
Actuated g/C Ratio	0.13	0.22	1.00	0.09	0.18	1.00	0.06	0.49		0.07	0.50	0.64
Clearance Time (s)	4.5	5.5		4.5	5.5		4.5	5.5		4.5	5.5	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	443	767	1564	275	601	1410	202	2301		239	2538	1753
v/s Ratio Prot	c0.09	0.13		0.04	c0.09		0.02	c0.20		0.03	c0.29	0.14
v/s Ratio Perm			0.09			0.08						
v/c Ratio	0.70	0.59	0.09	0.52	0.54	0.08	0.41	0.42		0.44	0.57	0.22
Uniform Delay, d1	49.7	41.7	0.0	52.5	45.1	0.0	54.5	19.9		53.4	21.1	9.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.76	0.47		1.00	1.00	1.00
Incremental Delay, d2	4.1	1.2	0.1	0.8	1.0	0.1	0.5	0.5		0.5	0.9	0.0
Delay (s)	53.7	42.9	0.1	53.3	46.1	0.1	42.1	9.8		53.8	22.0	9.0
Level of Service	D	D	A	D	D	A	D	A		D	C	A
Approach Delay (s)		39.9			39.0			12.3			20.1	
Approach LOS		D			D			B			C	
Intersection Summary												
HCM 2000 Control Delay			24.5			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)				16.0		
Intersection Capacity Utilization			65.2%			ICU Level of Service				C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: NE Brookwood Parkway & T5 Data Center/NE Shute Road

03/11/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔		↔	↔	
Traffic Volume (vph)	1	0	0	4	0	261	0	805	23	757	1037	0
Future Volume (vph)	1	0	0	4	0	261	0	805	23	757	1037	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	3.5		4.0		3.0	4.0	
Lane Util. Factor		1.00			1.00	0.88		0.95		0.97	0.95	
Frpb, ped/bikes		1.00			1.00	1.00		1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00		1.00		1.00	1.00	
Frt		1.00			1.00	0.85		1.00		1.00	1.00	
Flt Protected		0.95			0.95	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1805			1805	2608		3391		3433	3505	
Flt Permitted		0.95			0.95	1.00		1.00		0.95	1.00	
Satd. Flow (perm)		1805			1805	2608		3391		3433	3505	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	0	0	4	0	261	0	805	23	757	1037	0
RTOR Reduction (vph)	0	0	0	0	0	170	0	1	0	0	0	0
Lane Group Flow (vph)	0	1	0	0	4	91	0	827	0	757	1037	0
Confl. Bikes (#/hr)									1			2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	9%	0%	6%	5%	2%	3%	0%
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	8	8		4	4	7 5	1	6		5 7	2	
Permitted Phases						4						
Actuated Green, G (s)		1.0			1.1	40.5		55.5		39.4	90.7	
Effective Green, g (s)		1.5			1.6	42.0		57.0		42.4	92.2	
Actuated g/C Ratio		0.01			0.01	0.35		0.48		0.35	0.77	
Clearance Time (s)		4.5			4.5			5.5			5.5	
Vehicle Extension (s)		2.0			2.0			3.0			3.0	
Lane Grp Cap (vph)		22			24	912		1610		1212	2693	
v/s Ratio Prot		c0.00			c0.00	0.03		c0.24		c0.22	0.30	
v/s Ratio Perm						0.00						
v/c Ratio		0.05			0.17	0.10		0.51		0.62	0.39	
Uniform Delay, d1		58.5			58.5	26.3		21.9		32.2	4.6	
Progression Factor		1.00			1.00	1.00		1.00		0.93	0.39	
Incremental Delay, d2		0.3			1.2	0.0		1.2		0.6	0.4	
Delay (s)		58.9			59.7	26.3		23.0		30.6	2.2	
Level of Service		E			E	C		C		C	A	
Approach Delay (s)		58.9			26.8			23.0			14.2	
Approach LOS		E			C			C			B	

Intersection Summary

HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 TWSC
3: NE Shute Road & PERRIN Driveway/RS5 Access

03/11/2019

Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕		↕	↕		↕	↕	
Traffic Vol, veh/h	35	3	30	16	0	19	12	235	61	187	623	28
Future Vol, veh/h	35	3	30	16	0	19	12	235	61	187	623	28
Conflicting Peds, #/hr	1	0	1	1	0	1	1	0	7	7	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	125	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	19	0	11	0	5	18	0	2	4
Mvmt Flow	35	3	30	16	0	19	12	235	61	187	623	28

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1155	1339	328	985	1323	156	652	0	0	303	0	0
Stage 1	1012	1012	-	297	297	-	-	-	-	-	-	-
Stage 2	143	327	-	688	1026	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.88	6.5	7.12	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.88	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.88	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.69	4	3.41	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	154	154	674	179	158	834	944	-	-	1269	-	-
Stage 1	260	319	-	642	671	-	-	-	-	-	-	-
Stage 2	851	651	-	365	315	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	132	128	673	146	132	828	943	-	-	1261	-	-
Mov Cap-2 Maneuver	132	128	-	146	132	-	-	-	-	-	-	-
Stage 1	256	271	-	630	658	-	-	-	-	-	-	-
Stage 2	820	638	-	293	268	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	31.2		20.1		0.3		1.9	
HCM LOS	D		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	943	-	-	204	146	828	1261
HCM Lane V/C Ratio	0.013	-	-	0.333	0.11	0.023	0.148
HCM Control Delay (s)	8.9	-	-	31.2	32.7	9.5	8.4
HCM Lane LOS	A	-	-	D	D	A	A
HCM 95th %tile Q(veh)	0	-	-	1.4	0.4	0.1	0.5

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	48	12	1	9	152	294	62	69	536	80
Future Vol, veh/h	2	0	48	12	1	9	152	294	62	69	536	80
Conflicting Peds, #/hr	0	0	3	3	0	0	3	0	0	0	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	105	-	-	165	-	-	215	-	-	210	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	100	0	7	8	0	0	2	7	0	0	3	3
Mvmt Flow	2	0	48	12	1	9	152	294	62	69	536	80

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1169	1377	314	1038	1386	178	619	0	0	356	0	0
Stage 1	717	717	-	629	629	-	-	-	-	-	-	-
Stage 2	452	660	-	409	757	-	-	-	-	-	-	-
Critical Hdwy	9.5	6.5	7.04	7.66	6.5	6.9	4.14	-	-	4.1	-	-
Critical Hdwy Stg 1	8.5	5.5	-	6.66	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	8.5	5.5	-	6.66	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	4.5	4	3.37	3.58	4	3.3	2.22	-	-	2.2	-	-
Pot Cap-1 Maneuver	70	146	667	177	144	841	957	-	-	1214	-	-
Stage 1	223	437	-	422	478	-	-	-	-	-	-	-
Stage 2	360	463	-	574	419	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	58	115	663	138	114	841	954	-	-	1214	-	-
Mov Cap-2 Maneuver	58	115	-	138	114	-	-	-	-	-	-	-
Stage 1	187	411	-	355	402	-	-	-	-	-	-	-
Stage 2	299	389	-	501	394	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.2		23.8		2.8		0.8	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	954	-	-	58	663	138	514	1214	-	-
HCM Lane V/C Ratio	0.159	-	-	0.034	0.072	0.087	0.019	0.057	-	-
HCM Control Delay (s)	9.5	-	-	69.3	10.9	33.6	12.1	8.1	-	-
HCM Lane LOS	A	-	-	F	B	D	B	A	-	-
HCM 95th %tile Q(veh)	0.6	-	-	0.1	0.2	0.3	0.1	0.2	-	-

HCM 2010 TWSC
5: NE Shute Road & D1X Access

03/11/2019

Intersection						
Int Delay, s/veh	0.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	27	482	18	50	541
Future Vol, veh/h	3	27	482	18	50	541
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	130	0	-	225	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	55	3	25	41	2
Mvmt Flow	3	27	482	18	50	541
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	856	244	0	0	503	0
Stage 1	485	-	-	-	-	-
Stage 2	371	-	-	-	-	-
Critical Hdwy	6.8	8	-	-	4.92	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.85	-	-	2.61	-
Pot Cap-1 Maneuver	301	618	-	-	828	-
Stage 1	591	-	-	-	-	-
Stage 2	674	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	282	616	-	-	826	-
Mov Cap-2 Maneuver	282	-	-	-	-	-
Stage 1	589	-	-	-	-	-
Stage 2	633	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	11.8	0	0.8			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 282 616	826	-		
HCM Lane V/C Ratio	-	- 0.011 0.044	0.061	-		
HCM Control Delay (s)	-	- 17.9 11.1	9.6	-		
HCM Lane LOS	-	- C B	A	-		
HCM 95th %tile Q(veh)	-	- 0 0.1	0.2	-		

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	9	32	4	3	25	9	455	9	129	407	7
Future Vol, veh/h	15	9	32	4	3	25	9	455	9	129	407	7
Conflicting Peds, #/hr	0	0	2	2	0	0	2	0	3	3	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	170	-	0	160	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	7	0	0	0	0	17	0	2	0	0	1	0
Mvmt Flow	15	9	32	4	3	25	9	455	9	129	407	7
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	918	1156	211	949	1155	235	416	0	0	467	0	0
Stage 1	671	671	-	481	481	-	-	-	-	-	-	-
Stage 2	247	485	-	468	674	-	-	-	-	-	-	-
Critical Hdwy	7.64	6.5	6.9	7.5	6.5	7.24	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.64	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.64	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.57	4	3.3	3.5	4	3.47	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	219	198	801	218	199	723	1154	-	-	1105	-	-
Stage 1	401	458	-	540	557	-	-	-	-	-	-	-
Stage 2	721	555	-	550	457	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	189	173	798	181	174	721	1152	-	-	1102	-	-
Mov Cap-2 Maneuver	189	173	-	181	174	-	-	-	-	-	-	-
Stage 1	397	403	-	534	551	-	-	-	-	-	-	-
Stage 2	687	549	-	455	403	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	18.3		13.7		0.2		2.1					
HCM LOS	C		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR					
Capacity (veh/h)	1152	-	-	327 178 721	1102	-	-					
HCM Lane V/C Ratio	0.008	-	-	0.171 0.039 0.035	0.117	-	-					
HCM Control Delay (s)	8.2	-	-	18.3 26.1 10.2	8.7	-	-					
HCM Lane LOS	A	-	-	C D B	A	-	-					
HCM 95th %tile Q(veh)	0	-	-	0.6 0.1 0.1	0.4	-	-					

HCM Signalized Intersection Capacity Analysis

7: NE Shute Road & NE Airport Road/NE Butler Street

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	145	5	77	41	127	4	236	249	132	230	34
Future Volume (vph)	61	145	5	77	41	127	4	236	249	132	230	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	5.5		4.0	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.99		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.89		1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1803	1889		1805	1653		1805	3261		1786	1827	1482
Flt Permitted	0.65	1.00		0.55	1.00		0.62	1.00		0.34	1.00	1.00
Satd. Flow (perm)	1236	1889		1048	1653		1169	3261		633	1827	1482
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	61	145	5	77	41	127	4	236	249	132	230	34
RTOR Reduction (vph)	0	1	0	0	63	0	0	130	0	0	0	25
Lane Group Flow (vph)	61	149	0	77	105	0	4	355	0	132	230	9
Confl. Peds. (#/hr)	3					3			2	2		
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	1%	1%	1%	4%	9%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	custom
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		6
Actuated Green, G (s)	14.6	11.0		19.0	13.2		16.1	15.3		27.2	22.4	15.3
Effective Green, g (s)	14.6	11.0		19.0	13.2		16.1	15.3		27.2	22.4	15.3
Actuated g/C Ratio	0.25	0.19		0.32	0.23		0.28	0.26		0.46	0.38	0.26
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	5.5		4.0	5.5	5.5
Vehicle Extension (s)	2.5	2.5		2.5	2.5		1.0	3.0		1.0	3.0	3.0
Lane Grp Cap (vph)	343	355		415	372		330	852		450	699	387
v/s Ratio Prot	0.01	c0.08		c0.02	0.06		0.00	c0.11		c0.04	0.13	
v/s Ratio Perm	0.03			0.04			0.00			0.10		0.01
v/c Ratio	0.18	0.42		0.19	0.28		0.01	0.42		0.29	0.33	0.02
Uniform Delay, d1	17.0	20.9		14.0	18.7		15.4	17.9		9.4	12.7	16.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.6		0.2	0.3		0.0	0.3		0.1	0.3	0.0
Delay (s)	17.2	21.5		14.1	19.0		15.4	18.2		9.5	13.0	16.1
Level of Service	B	C		B	B		B	B		A	B	B
Approach Delay (s)		20.3			17.5			18.2			12.1	
Approach LOS		C			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			16.6			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.36									
Actuated Cycle Length (s)			58.5			Sum of lost time (s)			18.5			
Intersection Capacity Utilization			53.3%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Int Delay, s/veh 2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	200	314	15	1	224	16	5	2	3	4	0	52
Future Vol, veh/h	200	314	15	1	224	16	5	2	3	4	0	52
Conflicting Peds, #/hr	2	0	2	2	0	2	2	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	1	7	0	1	20	0	0	0	0	0	5
Mvmt Flow	200	314	15	1	224	16	5	2	3	4	0	52

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	242	0	0	331	0	0	986	968	324	960	967	236
Stage 1	-	-	-	-	-	-	724	724	-	236	236	-
Stage 2	-	-	-	-	-	-	262	244	-	724	731	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.345
Pot Cap-1 Maneuver	1336	-	-	1240	-	-	229	256	722	238	256	796
Stage 1	-	-	-	-	-	-	420	433	-	772	713	-
Stage 2	-	-	-	-	-	-	747	708	-	420	430	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1333	-	-	1238	-	-	188	217	721	208	217	793
Mov Cap-2 Maneuver	-	-	-	-	-	-	188	217	-	208	217	-
Stage 1	-	-	-	-	-	-	356	367	-	655	711	-
Stage 2	-	-	-	-	-	-	696	706	-	354	365	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.1	0	20	10.8
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	250	1333	-	-	1238	-	-	208	793
HCM Lane V/C Ratio	0.04	0.15	-	-	0.001	-	-	0.019	0.066
HCM Control Delay (s)	20	8.2	-	-	7.9	-	-	22.6	9.9
HCM Lane LOS	C	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.1	0.5	-	-	0	-	-	0.1	0.2

HCM 2010 Roundabout
9: NE 65th Avenue/Intel Driveway & NE Butler Street

03/11/2019

Intersection								
Intersection Delay, s/veh	9.2							
Intersection LOS	A							
Approach	EB		WB		NB		SB	
Entry Lanes	2		2		1		2	
Conflicting Circle Lanes	2		2		2		2	
Adj Approach Flow, veh/h	361		919		134		282	
Demand Flow Rate, veh/h	362		920		134		282	
Vehicles Circulating, veh/h	195		387		534		130	
Vehicles Exiting, veh/h	217		281		23		1177	
Follow-Up Headway, s	3.186		3.186		3.186		3.186	
Ped Vol Crossing Leg, #/h	45		22		0		0	
Ped Cap Adj	0.956		0.983		1.000		1.000	
Approach Delay, s/veh	6.2		12.2		6.5		4.7	
Approach LOS	A		B		A		A	
Lane	Left	Right	Left	Right	Left	Left	Right	
Designated Moves	LT	TR	LTR	R	LTR	L	LTR	
Assumed Moves	L	TR	LTR	R	LTR	L	LTR	
RT Channelized								
Lane Util	0.724	0.276	0.470	0.530	1.000	0.528	0.472	
Critical Headway, s	4.293	4.113	4.293	4.113	4.113	4.293	4.113	
Entry Flow, veh/h	262	100	432	488	134	149	133	
Cap Entry Lane, veh/h	976	986	845	862	778	1025	1032	
Entry HV Adj Factor	1.000	0.991	1.000	0.998	1.000	1.003	0.997	
Flow Entry, veh/h	262	99	432	487	134	149	133	
Cap Entry, veh/h	934	934	831	845	778	1028	1028	
V/C Ratio	0.281	0.106	0.520	0.576	0.172	0.145	0.129	
Control Delay, s/veh	6.8	4.8	11.5	12.8	6.5	4.8	4.7	
LOS	A	A	B	B	A	A	A	
95th %tile Queue, veh	1	0	3	4	1	1	0	

HCS7 Roundabouts Report

General Information

Analyst	PGP
Agency or Co.	Mackenzie
Date Performed	3/8/2019
Analysis Year	2022
Time Analyzed	Approved - AM
Project Description	Project Lark

Site Information

Intersection	NE Butler Street/NE 65th Avenue
E/W Street Name	NE Butler Street
N/S Street Name	NE 65th Avenue
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.86
Jurisdiction	City of Hillsboro

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	2	0	0	0	1	1	0	0	1	0	0	1	1	0
Lane Assignment	LT		TR		LTR		R				LTR		L		LTR	
Volume (V), veh/h	0	262	94	5	0	0	123	796	0	6	119	9	0	177	18	87
Percent Heavy Vehicles, %	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Flow Rate (v_{pce}), pc/h	0	305	111	6	0	0	144	926	0	7	138	10	0	206	21	101
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	2				1				2				1			
Pedestrians Crossing, p/h	45				22				0				0			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)	4.6453	4.9763		4.5436	4.5436			4.3276		4.5436	4.5436	
Follow-Up Headway (s)	2.6667	2.5352		2.5352	2.5352			2.5352		2.5352	2.5352	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h	305	117		482	589			155		262	66	
Entry Volume veh/h	304	117		481	588			155		262	66	
Circulating Flow (v_c), pc/h	227			450			622			151		
Exiting Flow (v_{ex}), pc/h	327			252			1369			27		
Capacity (C_{pce}), pc/h	1096	1124		943	943			837		1238	1238	
Capacity (c), veh/h	1046	1073		927	927			837		1238	1238	
v/c Ratio (x)	0.29	0.11		0.52	0.63			0.19		0.21	0.05	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh	6.3	4.3		10.6	13.5			6.2		4.7	3.3	
Lane LOS	A	A		B	B			A		A	A	
95% Queue, veh	1.2	0.4		3.1	4.7			0.7		0.8	0.2	
Approach Delay, s/veh	5.7			12.2			6.2			4.5		
Approach LOS	A			B			A			A		
Intersection Delay, s/veh LOS	9.1						A					

HCM 2010 AWSC
10: Intel Driveway & Internal Circulation

03/11/2019

Intersection

Intersection Delay, s/veh 23

Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	54	48	92	100	99	271	565	341	7	104	4
Future Vol, veh/h	35	54	48	92	100	99	271	565	341	7	104	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	2	0	0	1	0	0	0	0	0	0	0
Mvmt Flow	35	54	48	92	100	99	271	565	341	7	104	4
Number of Lanes	0	1	1	1	1	0	0	2	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	1	2	2
HCM Control Delay	13.5	16.4	26.5	14.9
HCM LOS	B	C	D	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	59%	0%	0%	39%	0%	100%	4%	6%
Vol Thru, %	41%	100%	0%	61%	0%	0%	48%	90%
Vol Right, %	0%	0%	100%	0%	100%	0%	48%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	459	377	341	89	48	83	208	115
LT Vol	271	0	0	35	0	83	9	7
Through Vol	188	377	0	54	0	0	100	104
RT Vol	0	0	341	0	48	0	99	4
Lane Flow Rate	459	377	341	89	48	83	208	115
Geometry Grp	7	7	7	8	8	8	8	8
Degree of Util (X)	0.865	0.678	0.546	0.223	0.109	0.202	0.461	0.28
Departure Headway (Hd)	6.776	6.477	5.766	9.037	8.151	8.786	7.976	8.769
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	537	561	631	397	439	408	452	409
Service Time	4.476	4.177	3.466	6.807	5.92	6.545	5.734	6.542
HCM Lane V/C Ratio	0.855	0.672	0.54	0.224	0.109	0.203	0.46	0.281
HCM Control Delay	38.8	21.7	15.2	14.4	11.9	13.8	17.4	14.9
HCM Lane LOS	E	C	C	B	B	B	C	B
HCM 95th-tile Q	9.4	5.1	3.3	0.8	0.4	0.7	2.4	1.1

HCM 2010 AWSC

11: Parking Lot/RA3&4 Access & Internal Circulation

03/11/2019

Intersection

Intersection Delay, s/veh 19.9

Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	120	103	11	4	392	258	147	64	0	144	3	90
Future Vol, veh/h	120	103	11	4	392	258	147	64	0	144	3	90
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	0	0	0	0	6	0	0	0	7	0	3
Mvmt Flow	120	103	11	4	392	258	147	64	0	144	3	90
Number of Lanes	1	1	0	1	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	14.3	25.3	15.2	14.7
HCM LOS	B	D	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	90%	0%	100%	0%	0%	3%
Vol Right, %	0%	0%	0%	10%	0%	0%	100%	0%	97%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	147	64	120	114	4	392	258	144	93
LT Vol	147	0	120	0	4	0	0	144	0
Through Vol	0	64	0	103	0	392	0	0	3
RT Vol	0	0	0	11	0	0	258	0	90
Lane Flow Rate	147	64	120	114	4	392	258	144	93
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.359	0.147	0.289	0.256	0.009	0.788	0.475	0.354	0.194
Departure Headway (Hd)	8.782	8.271	8.661	8.077	7.747	7.237	6.627	8.846	7.522
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	409	432	414	443	461	498	542	406	475
Service Time	6.561	6.049	6.438	5.854	5.509	4.999	4.388	6.622	5.296
HCM Lane V/C Ratio	0.359	0.148	0.29	0.257	0.009	0.787	0.476	0.355	0.196
HCM Control Delay	16.4	12.5	15	13.6	10.6	32	15.3	16.4	12.1
HCM Lane LOS	C	B	B	B	B	D	C	C	B
HCM 95th-tile Q	1.6	0.5	1.2	1	0	7.2	2.5	1.6	0.7

HCM Signalized Intersection Capacity Analysis

12: NE Century Boulevard & NE Butler Street

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	151	48	4	573	275	212	458	4	40	157	104
Future Volume (vph)	77	151	48	4	573	275	212	458	4	40	157	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3423		1798	1900	1577	1804	1830		1752	1660	
Flt Permitted	0.11	1.00		0.63	1.00	1.00	0.42	1.00		0.30	1.00	
Satd. Flow (perm)	210	3423		1186	1900	1577	804	1830		552	1660	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	77	151	48	4	573	275	212	458	4	40	157	104
RTOR Reduction (vph)	0	26	0	0	0	153	0	0	0	0	23	0
Lane Group Flow (vph)	77	173	0	4	573	122	212	462	0	40	238	0
Confl. Peds. (#/hr)	2		4	4		2	2		3	3		2
Confl. Bikes (#/hr)						3			3			
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	2%	50%	3%	6%	0%
Bus Blockages (#/hr)	0	1	0	0	0	0	0	3	33	0	7	0
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4	5	1	6		5	2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)	46.6	41.6		38.5	37.5	42.7	48.9	39.7		40.9	35.7	
Effective Green, g (s)	46.6	42.1		38.5	38.0	42.7	48.9	40.7		40.9	36.7	
Actuated g/C Ratio	0.44	0.40		0.37	0.36	0.41	0.47	0.39		0.39	0.35	
Clearance Time (s)	4.0	4.5		4.0	4.5	4.0	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.0	2.0		1.0	2.0	0.5	0.5	2.5		0.5	2.5	
Lane Grp Cap (vph)	170	1372		440	687	641	462	709		274	580	
v/s Ratio Prot	c0.02	0.05		0.00	c0.30	0.01	c0.04	c0.25		0.01	0.14	
v/s Ratio Perm	0.18			0.00		0.07	0.17			0.05		
v/c Ratio	0.45	0.13		0.01	0.83	0.19	0.46	0.65		0.15	0.41	
Uniform Delay, d1	22.1	19.8		21.1	30.6	20.0	17.8	26.3		21.0	25.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		0.78	0.86	
Incremental Delay, d2	0.7	0.0		0.0	8.2	0.1	0.3	4.6		0.1	2.1	
Delay (s)	22.8	19.9		21.1	38.9	20.1	18.0	31.0		16.6	24.5	
Level of Service	C	B		C	D	C	B	C		B	C	
Approach Delay (s)		20.7			32.7			26.9			23.4	
Approach LOS		C			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			27.9									
HCM 2000 Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			105.0									
Intersection Capacity Utilization			83.7%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 2010 TWSC
13: Internal Circulation & NE Ronler Drive

03/11/2019

Intersection						
Int Delay, s/veh	10.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	409	49	99	142	4	325
Future Vol, veh/h	409	49	99	142	4	325
Conflicting Peds, #/hr	0	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	-	85	25	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	2	6	3	25	4
Mvmt Flow	409	49	99	142	4	325
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	433	101	0	0	242	0
Stage 1	100	-	-	-	-	-
Stage 2	333	-	-	-	-	-
Critical Hdwy	6.4	6.22	-	-	4.35	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.318	-	-	2.425	-
Pot Cap-1 Maneuver	584	954	-	-	1201	-
Stage 1	929	-	-	-	-	-
Stage 2	731	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	582	952	-	-	1200	-
Mov Cap-2 Maneuver	582	-	-	-	-	-
Stage 1	928	-	-	-	-	-
Stage 2	729	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	22.8	0	0.1			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 582 952 1200	-	-		
HCM Lane V/C Ratio	-	- 0.703 0.051 0.003	-	-		
HCM Control Delay (s)	-	- 24.5 9 8	-	-		
HCM Lane LOS	-	- C A A	-	-		
HCM 95th %tile Q(veh)	-	- 5.6 0.2 0	-	-		

HCM Signalized Intersection Capacity Analysis

14: NE Century Boulevard & NE Ronler Drive

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	79	26	120	473	56	183	572	51	45	247	49
Future Volume (vph)	9	79	26	120	473	56	183	572	51	45	247	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.98		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1543	3456		1784	1858		1786	1833		1805	1717	
Flt Permitted	0.21	1.00		0.69	1.00		0.37	1.00		0.15	1.00	
Satd. Flow (perm)	338	3456		1288	1858		698	1833		288	1717	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	9	79	26	120	473	56	183	572	51	45	247	49
RTOR Reduction (vph)	0	21	0	0	3	0	0	4	0	0	10	0
Lane Group Flow (vph)	9	84	0	120	526	0	183	619	0	45	286	0
Confl. Peds. (#/hr)			1	1			2		3	3		2
Confl. Bikes (#/hr)									4			
Heavy Vehicles (%)	17%	0%	0%	1%	0%	6%	1%	2%	5%	0%	9%	0%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	20.2	19.2		46.5	41.0		50.5	42.5		29.4	26.4	
Effective Green, g (s)	20.2	19.7		46.5	41.5		50.5	43.5		29.4	27.4	
Actuated g/C Ratio	0.19	0.19		0.44	0.40		0.48	0.41		0.28	0.26	
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	76	648		678	734		533	759		123	448	
v/s Ratio Prot	0.00	0.02		c0.04	c0.28		c0.06	c0.34		0.01	0.17	
v/s Ratio Perm	0.02			0.04			0.10			0.09		
v/c Ratio	0.12	0.13		0.18	0.72		0.34	0.82		0.37	0.64	
Uniform Delay, d1	47.9	35.5		18.0	26.8		24.8	27.2		46.8	34.4	
Progression Factor	1.00	1.00		1.00	1.00		0.81	0.97		0.69	0.98	
Incremental Delay, d2	0.3	0.0		0.0	2.8		0.1	8.5		0.7	6.7	
Delay (s)	48.1	35.5		18.0	29.6		20.1	34.8		33.0	40.6	
Level of Service	D	D		B	C		C	C		C	D	
Approach Delay (s)		36.5			27.4			31.4			39.6	
Approach LOS		D			C			C			D	
Intersection Summary												
HCM 2000 Control Delay			31.8			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			105.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			75.7%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

15: NE Century Boulevard & RAP1 Access/Parking

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	0	114	0	0	0	206	457	1	0	239	399
Future Volume (vph)	83	0	114	0	0	0	206	457	1	0	239	399
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	3.5				4.0	4.0			4.0	4.0
Lane Util. Factor		1.00	1.00				1.00	1.00			1.00	1.00
Frpb, ped/bikes		1.00	0.97				1.00	1.00			1.00	0.97
Flpb, ped/bikes		1.00	1.00				1.00	1.00			1.00	1.00
Frt		1.00	0.85				1.00	1.00			1.00	0.85
Flt Protected		0.95	1.00				0.95	1.00			1.00	1.00
Satd. Flow (prot)		1805	1570				1801	1826			1792	1556
Flt Permitted		0.95	1.00				0.56	1.00			1.00	1.00
Satd. Flow (perm)		1805	1570				1053	1826			1792	1556
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	83	0	114	0	0	0	206	457	1	0	239	399
RTOR Reduction (vph)	0	0	102	0	0	0	0	0	0	0	0	152
Lane Group Flow (vph)	0	83	12	0	0	0	206	458	0	0	239	247
Confl. Peds. (#/hr)			3	3			3					3
Confl. Bikes (#/hr)									4			2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	6%	1%
Turn Type	Split	NA	Perm	Split			pm+pt	NA		pm+pt	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases			8				6			2		2
Actuated Green, G (s)		11.2	11.2				77.2	77.2			64.1	64.1
Effective Green, g (s)		11.2	11.2				77.2	78.2			65.1	65.1
Actuated g/C Ratio		0.11	0.11				0.74	0.74			0.62	0.62
Clearance Time (s)		3.5	3.5				4.0	5.0			5.0	5.0
Vehicle Extension (s)		3.0	3.0				2.5	4.0			4.0	4.0
Lane Grp Cap (vph)		192	167				839	1359			1111	964
v/s Ratio Prot		c0.05					0.02	c0.25			0.13	
v/s Ratio Perm			0.01				0.16					0.16
v/c Ratio		0.43	0.07				0.25	0.34			0.22	0.26
Uniform Delay, d1		43.9	42.2				4.4	4.6			8.7	9.0
Progression Factor		1.00	1.00				0.60	0.54			1.37	4.03
Incremental Delay, d2		1.6	0.2				0.1	0.5			0.4	0.6
Delay (s)		45.5	42.4				2.7	2.9			12.4	36.9
Level of Service		D	D				A	A			B	D
Approach Delay (s)		43.7			0.0			2.9			27.7	
Approach LOS		D			A			A			C	
Intersection Summary												
HCM 2000 Control Delay			18.8				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.35									
Actuated Cycle Length (s)			105.0				Sum of lost time (s)			15.0		
Intersection Capacity Utilization			49.9%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

16: NE Century Boulevard & RA1/2 Access/Office Driveway

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	4	46	20	11	0	166	290	22	7	552	316
Future Volume (vph)	74	4	46	20	11	0	166	290	22	7	552	316
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5		3.5	3.5		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97		1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	0.99	1.00		0.99	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.86		1.00	1.00		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1793	1401		1790	1900		1769	1826		1803	1863	1580
Flt Permitted	0.75	1.00		0.72	1.00		0.38	1.00		0.57	1.00	1.00
Satd. Flow (perm)	1417	1401		1365	1900		716	1826		1083	1863	1580
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	74	4	46	20	11	0	166	290	22	7	552	316
RTOR Reduction (vph)	0	41	0	0	0	0	0	1	0	0	0	62
Lane Group Flow (vph)	74	9	0	20	11	0	166	311	0	7	552	254
Confl. Peds. (#/hr)	3		4	4		3	1		1	1		1
Confl. Bikes (#/hr)						2			2			
Heavy Vehicles (%)	0%	0%	15%	0%	0%	0%	2%	3%	0%	0%	2%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		2
Actuated Green, G (s)	11.2	11.2		11.2	11.2		85.3	80.2		76.5	75.4	75.4
Effective Green, g (s)	11.2	11.2		11.2	11.2		85.3	81.2		76.5	76.4	76.4
Actuated g/C Ratio	0.11	0.11		0.11	0.11		0.81	0.77		0.73	0.73	0.73
Clearance Time (s)	3.5	3.5		3.5	3.5		4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.5	4.0		2.5	4.0	4.0
Lane Grp Cap (vph)	151	149		145	202		640	1412		796	1355	1149
v/s Ratio Prot		0.01			0.01		c0.01	0.17		0.00	c0.30	
v/s Ratio Perm	c0.05			0.01			0.20			0.01		0.16
v/c Ratio	0.49	0.06		0.14	0.05		0.26	0.22		0.01	0.41	0.22
Uniform Delay, d1	44.2	42.2		42.5	42.1		3.0	3.3		3.9	5.5	4.6
Progression Factor	1.00	1.00		1.00	1.00		0.70	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.5	0.2		0.4	0.1		0.1	0.3		0.0	0.9	0.4
Delay (s)	46.7	42.3		43.0	42.3		2.2	3.6		3.9	6.4	5.1
Level of Service	D	D		D	D		A	A		A	A	A
Approach Delay (s)		44.9			42.7			3.1			5.9	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			9.0				HCM 2000 Level of Service			A		
HCM 2000 Volume to Capacity ratio			0.41									
Actuated Cycle Length (s)			105.0				Sum of lost time (s)			11.5		
Intersection Capacity Utilization			60.2%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

17: NE Century Boulevard & NE Evergreen Parkway

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	510	151	648	742	272	82	57	273	35	27	3
Future Volume (vph)	10	510	151	648	742	272	82	57	273	35	27	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	0.99		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1357	3374	1547	1787	3300		1719	1827	1578	1474	1506	
Flt Permitted	0.28	1.00	1.00	0.28	1.00		0.56	1.00	1.00	0.72	1.00	
Satd. Flow (perm)	404	3374	1547	527	3300		1015	1827	1578	1117	1506	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	10	510	151	648	742	272	82	57	273	35	27	3
RTOR Reduction (vph)	0	0	107	0	19	0	0	0	136	0	3	0
Lane Group Flow (vph)	10	510	44	648	995	0	82	57	137	35	27	0
Confl. Peds. (#/hr)	4		1	1		4			7	7		
Confl. Bikes (#/hr)			1			3			1			
Heavy Vehicles (%)	33%	7%	2%	1%	5%	2%	5%	4%	2%	22%	27%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)	28.5	27.4	27.4	72.0	66.9		16.3	9.6	50.2	11.7	7.3	
Effective Green, g (s)	28.5	28.9	28.9	72.0	68.4		16.3	10.1	50.2	11.7	7.8	
Actuated g/C Ratio	0.28	0.29	0.29	0.72	0.68		0.16	0.10	0.50	0.12	0.08	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.0	4.5	4.0	4.0	4.5	
Vehicle Extension (s)	2.0	3.1	3.1	2.0	3.1		2.0	2.5	2.0	2.0	2.5	
Lane Grp Cap (vph)	125	975	447	891	2257		212	184	792	146	117	
v/s Ratio Prot	0.00	0.15		c0.30	0.30		c0.03	0.03	0.07	0.01	0.02	
v/s Ratio Perm	0.02		0.03	c0.23			c0.04		0.02	0.02		
v/c Ratio	0.08	0.52	0.10	0.73	0.44		0.39	0.31	0.17	0.24	0.23	
Uniform Delay, d1	26.2	29.8	26.0	11.3	7.1		36.8	41.7	13.6	39.9	43.3	
Progression Factor	1.04	0.81	1.56	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	1.9	0.4	2.5	0.6		0.4	0.7	0.0	0.3	0.7	
Delay (s)	27.4	26.2	40.9	13.9	7.8		37.2	42.4	13.6	40.2	44.0	
Level of Service	C	C	D	B	A		D	D	B	D	D	
Approach Delay (s)		29.5			10.2			22.3			42.0	
Approach LOS		C			B			C			D	
Intersection Summary												
HCM 2000 Control Delay			17.3			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			85.7%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

EBR - Correct Progression Factor to Match EBT
PF = 0.81, Delay = 21.4, LOS = C

HCM Signalized Intersection Capacity Analysis

18: RA1&2 North Access/Ronler Corporate Center & NE Evergreen Parkway

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	663	93	129	724	37	25	1	33	5	1	2
Future Volume (vph)	3	663	93	129	724	37	25	1	33	5	1	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		3.5	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.85		1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3354		1719	3448		1504	1382		1805	1710	
Flt Permitted	0.36	1.00		0.32	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	690	3354		571	3448		1504	1382		1805	1710	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	3	663	93	129	724	37	25	1	33	5	1	2
RTOR Reduction (vph)	0	6	0	0	2	0	0	30	0	0	2	0
Lane Group Flow (vph)	3	750	0	129	759	0	25	4	0	5	1	0
Confl. Peds. (#/hr)	1		1	1		1						
Confl. Bikes (#/hr)			1			2						
Heavy Vehicles (%)	0%	5%	8%	5%	4%	0%	20%	0%	18%	0%	0%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6								
Actuated Green, G (s)	66.5	65.5		77.2	72.2		2.9	8.3		1.0	6.4	
Effective Green, g (s)	66.5	67.0		77.2	73.7		2.9	8.8		1.0	6.4	
Actuated g/C Ratio	0.66	0.67		0.77	0.74		0.03	0.09		0.01	0.06	
Clearance Time (s)	4.0	5.5		4.0	5.5		4.0	4.5		3.5	4.0	
Vehicle Extension (s)	1.5	3.1		1.5	3.1		1.5	1.0		1.5	0.7	
Lane Grp Cap (vph)	470	2247		529	2541		43	121		18	109	
v/s Ratio Prot	0.00	c0.22		c0.02	0.22		c0.02	c0.00		0.00	0.00	
v/s Ratio Perm	0.00			0.17								
v/c Ratio	0.01	0.33		0.24	0.30		0.58	0.03		0.28	0.01	
Uniform Delay, d1	5.6	7.0		3.4	4.4		48.0	41.7		49.1	43.8	
Progression Factor	1.59	1.04		0.59	0.47		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.4		0.1	0.3		12.2	0.0		3.0	0.0	
Delay (s)	9.0	7.7		2.1	2.4		60.2	41.7		52.2	43.8	
Level of Service	A	A		A	A		E	D		D	D	
Approach Delay (s)		7.7			2.3			49.6			49.1	
Approach LOS		A			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			6.5			HCM 2000 Level of Service			A			
HCM 2000 Volume to Capacity ratio			0.31									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			55.2%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

19: North Access/NE 59th Avenue & NE Evergreen Parkway

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	679	17	17	613	126	8	2	11	68	4	45
Future Volume (vph)	72	679	17	17	613	126	8	2	11	68	4	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3471	1483	1455	3359		1517	1626	1188	1583	1539	
Flt Permitted	0.33	1.00	1.00	0.36	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	623	3471	1483	549	3359		1517	1626	1188	1583	1539	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	72	679	17	17	613	126	8	2	11	68	4	45
RTOR Reduction (vph)	0	0	6	0	10	0	0	0	10	0	40	0
Lane Group Flow (vph)	72	679	11	17	729	0	5	5	1	68	9	0
Confl. Peds. (#/hr)			3	3								
Confl. Bikes (#/hr)			1			2						
Heavy Vehicles (%)	0%	4%	6%	24%	4%	6%	13%	0%	36%	14%	0%	7%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Split	NA	Prot	Split	NA	
Protected Phases	5	2		1	6		8	8	8	4	4	
Permitted Phases	2		2	6								
Actuated Green, G (s)	67.9	61.5	61.5	61.1	58.1		7.2	7.2	7.2	10.3	10.3	
Effective Green, g (s)	67.9	63.0	63.0	61.1	59.6		7.2	7.2	7.2	10.8	10.8	
Actuated g/C Ratio	0.68	0.63	0.63	0.61	0.60		0.07	0.07	0.07	0.11	0.11	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.0	4.0	4.0	4.5	4.5	
Vehicle Extension (s)	1.5	3.1	3.1	1.5	3.1		2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	498	2186	934	362	2001		109	117	85	170	166	
v/s Ratio Prot	c0.01	0.20		0.00	c0.22		c0.00	0.00	0.00	c0.04	0.01	
v/s Ratio Perm	0.09		0.01	0.03								
v/c Ratio	0.14	0.31	0.01	0.05	0.36		0.05	0.04	0.01	0.40	0.05	
Uniform Delay, d1	8.6	8.5	6.9	10.0	10.4		43.2	43.2	43.1	41.6	40.0	
Progression Factor	1.00	1.00	1.00	0.59	0.86		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	0.4	0.0	0.0	0.5		0.1	0.1	0.0	0.6	0.0	
Delay (s)	8.6	8.9	6.9	5.9	9.5		43.3	43.2	43.1	42.1	40.1	
Level of Service	A	A	A	A	A		D	D	D	D	D	
Approach Delay (s)		8.8			9.4			43.2			41.3	
Approach LOS		A			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			11.8			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.32									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			45.6%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

1: NE Brookwood Parkway & NE Evergreen Parkway

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↕↕	↗	↔↔	↕↕	↗	↔↔	↕↕↕		↔↔	↕↕↕	↗↗
Traffic Volume (vph)	813	549	125	226	556	185	192	1484	163	121	1087	326
Future Volume (vph)	813	549	125	226	556	185	192	1484	163	121	1087	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	2.5	4.0	4.0	2.5	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91		0.97	0.91	0.88
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3467	3574	1564	3467	3610	1583	3467	5054		3433	5085	2787
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3467	3574	1564	3467	3610	1583	3467	5054		3433	5085	2787
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	813	549	125	226	556	185	192	1484	163	121	1087	326
RTOR Reduction (vph)	0	0	0	0	0	0	0	10	0	0	0	94
Lane Group Flow (vph)	813	549	125	226	556	185	192	1637	0	121	1087	232
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	1%	2%	1%	0%	2%	1%	1%	2%	2%	2%	2%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA		Prot	NA	pt+ov
Protected Phases	3	8		7	4		1	6		5	2	2 3
Permitted Phases			Free			Free						
Actuated Green, G (s)	32.9	45.1	131.9	13.0	25.2	131.9	20.4	45.2		8.6	33.4	70.8
Effective Green, g (s)	33.4	46.6	131.9	13.5	26.7	131.9	20.9	46.7		9.1	34.9	69.3
Actuated g/C Ratio	0.25	0.35	1.00	0.10	0.20	1.00	0.16	0.35		0.07	0.26	0.53
Clearance Time (s)	4.5	5.5		4.5	5.5		4.5	5.5		4.5	5.5	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	877	1262	1564	354	730	1583	549	1789		236	1345	1464
v/s Ratio Prot	c0.23	0.15		0.07	c0.15		0.06	c0.32		0.04	c0.21	0.08
v/s Ratio Perm			0.08			0.12						
v/c Ratio	0.93	0.44	0.08	0.64	0.76	0.12	0.35	0.92		0.51	0.81	0.16
Uniform Delay, d1	48.1	32.6	0.0	56.9	49.6	0.0	49.4	40.7		59.3	45.4	16.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	15.2	0.2	0.1	2.8	4.7	0.2	0.1	7.7		0.8	3.7	0.1
Delay (s)	63.3	32.8	0.1	59.6	54.3	0.2	49.6	48.4		60.0	49.0	16.3
Level of Service	E	C	A	E	D	A	D	D		E	D	B
Approach Delay (s)		46.7			45.2			48.6			42.9	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			46.1				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			131.9				Sum of lost time (s)			16.0		
Intersection Capacity Utilization			88.4%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: NE Brookwood Parkway & T5 Data Center/NE Shute Road

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔		↔	↔	
Traffic Volume (vph)	2	2	1	42	0	1045	0	936	17	244	1287	1
Future Volume (vph)	2	2	1	42	0	1045	0	936	17	244	1287	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	3.5		4.0		3.0	4.0	
Lane Util. Factor		1.00			1.00	0.88		0.95		0.97	0.95	
Frpb, ped/bikes		0.99			1.00	1.00		1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00		1.00		1.00	1.00	
Frt		0.97			1.00	0.85		1.00		1.00	1.00	
Flt Protected		0.98			0.95	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1800			1805	2814		3431		3273	3471	
Flt Permitted		0.98			0.95	1.00		1.00		0.95	1.00	
Satd. Flow (perm)		1800			1805	2814		3431		3273	3471	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	2	1	42	0	1045	0	936	17	244	1287	1
RTOR Reduction (vph)	0	1	0	0	0	225	0	1	0	0	0	0
Lane Group Flow (vph)	0	4	0	0	42	820	0	952	0	244	1288	0
Confl. Peds. (#/hr)			1	1			1		2	2		1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	5%	0%	7%	4%	0%
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	8	8		4	4	7 5	1	6		5 7	2	
Permitted Phases						4						
Actuated Green, G (s)		0.8			4.3	40.9		36.7		36.6	67.7	
Effective Green, g (s)		1.3			4.8	42.4		38.2		39.6	69.2	
Actuated g/C Ratio		0.01			0.05	0.42		0.38		0.39	0.68	
Clearance Time (s)		4.5			4.5			5.5			5.5	
Vehicle Extension (s)		2.0			2.0			3.0			3.0	
Lane Grp Cap (vph)		23			85	1176		1292		1278	2368	
v/s Ratio Prot		c0.00			0.02	c0.26		c0.28		0.07	0.37	
v/s Ratio Perm						0.03						
v/c Ratio		0.17			0.49	0.70		0.74		0.19	0.54	
Uniform Delay, d1		49.5			47.1	24.2		27.3		20.3	8.1	
Progression Factor		1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		1.3			1.6	1.5		2.2		0.0	0.3	
Delay (s)		50.8			48.8	25.7		29.5		20.4	8.4	
Level of Service		D			D	C		C		C	A	
Approach Delay (s)		50.8			26.6			29.5			10.3	
Approach LOS		D			C			C			B	
Intersection Summary												
HCM 2000 Control Delay			20.4				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			101.4				Sum of lost time (s)		20.5			
Intersection Capacity Utilization			77.1%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 2010 TWSC
3: NE Shute Road & PERRIN Driveway/RS5 Access

03/11/2019

Intersection												
Int Delay, s/veh	5.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕		↕	↕		↕	↕	
Traffic Vol, veh/h	12	0	8	73	1	215	17	1004	8	9	242	12
Future Vol, veh/h	12	0	8	73	1	215	17	1004	8	9	242	12
Conflicting Peds, #/hr	0	0	2	2	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	125	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	8	0	0	3	0	1	0	1	38	22	4	8
Mvmt Flow	12	0	8	73	1	215	17	1004	8	9	242	12

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	803	1312	129	1183	1314	506	254	0	0	1012	0	0
Stage 1	266	266	-	1042	1042	-	-	-	-	-	-	-
Stage 2	537	1046	-	141	272	-	-	-	-	-	-	-
Critical Hdwy	7.66	6.5	6.9	7.56	6.5	6.92	4.1	-	-	4.54	-	-
Critical Hdwy Stg 1	6.66	5.5	-	6.56	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.66	5.5	-	6.56	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.58	4	3.3	3.53	4	3.31	2.2	-	-	2.42	-	-
Pot Cap-1 Maneuver	264	160	903	144	160	514	1323	-	-	572	-	-
Stage 1	700	692	-	244	309	-	-	-	-	-	-	-
Stage 2	481	308	-	845	688	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	149	155	901	139	155	514	1323	-	-	572	-	-
Mov Cap-2 Maneuver	149	155	-	139	155	-	-	-	-	-	-	-
Stage 1	691	681	-	241	305	-	-	-	-	-	-	-
Stage 2	275	304	-	823	677	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	22.6		27.1		0.1		0.4	
HCM LOS	C		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1323	-	-	224 139 509	572	-	-
HCM Lane V/C Ratio	0.013	-	-	0.089 0.525 0.424	0.016	-	-
HCM Control Delay (s)	7.8	-	-	22.6 56.5 17.2	11.4	-	-
HCM Lane LOS	A	-	-	C F C	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3 2.5 2.1	0	-	-

Intersection												
Int Delay, s/veh	14.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	0	175	121	9	159	73	832	19	3	311	11
Future Vol, veh/h	36	0	175	121	9	159	73	832	19	3	311	11
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	105	-	-	165	-	-	215	-	-	210	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	0	1	0	0	1	2	1	0	0	3	10
Mvmt Flow	36	0	175	121	9	159	73	832	19	3	311	11
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	891	1322	162	1151	1318	427	323	0	0	852	0	0
Stage 1	324	324	-	989	989	-	-	-	-	-	-	-
Stage 2	567	998	-	162	329	-	-	-	-	-	-	-
Critical Hdwy	7.56	6.5	6.92	7.5	6.5	6.92	4.14	-	-	4.1	-	-
Critical Hdwy Stg 1	6.56	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4	3.31	3.5	4	3.31	2.22	-	-	2.2	-	-
Pot Cap-1 Maneuver	235	158	857	155	159	579	1234	-	-	795	-	-
Stage 1	660	653	-	268	327	-	-	-	-	-	-	-
Stage 2	473	324	-	830	650	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	155	148	856	~ 117	149	578	1233	-	-	794	-	-
Mov Cap-2 Maneuver	155	148	-	~ 117	149	-	-	-	-	-	-	-
Stage 1	620	650	-	252	307	-	-	-	-	-	-	-
Stage 2	313	305	-	658	647	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	14.5		77.6		0.6		0.1					
HCM LOS	B		F									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	1233	-	-	155	856	117	501	794	-	-		
HCM Lane V/C Ratio	0.059	-	-	0.232	0.204	1.034	0.335	0.004	-	-		
HCM Control Delay (s)	8.1	-	-	35.1	10.3	163.4	15.8	9.6	-	-		
HCM Lane LOS	A	-	-	E	B	F	C	A	-	-		
HCM 95th %tile Q(veh)	0.2	-	-	0.9	0.8	7	1.5	0	-	-		
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined				*: All major volume in platoon				

HCM 2010 TWSC
5: NE Shute Road & D1X Access

03/11/2019

Intersection						
Int Delay, s/veh	2.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	202	710	2	10	588
Future Vol, veh/h	22	202	710	2	10	588
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	130	0	-	225	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	1	0	13	2
Mvmt Flow	22	202	710	2	10	588
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1024	355	0	0	712	0
Stage 1	710	-	-	-	-	-
Stage 2	314	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.36	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.33	-
Pot Cap-1 Maneuver	235	647	-	-	814	-
Stage 1	454	-	-	-	-	-
Stage 2	720	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	232	647	-	-	814	-
Mov Cap-2 Maneuver	232	-	-	-	-	-
Stage 1	454	-	-	-	-	-
Stage 2	711	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	14	0	0.2			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 232 647	814	-		
HCM Lane V/C Ratio	-	- 0.095 0.312	0.012	-		
HCM Control Delay (s)	-	- 22.1 13.1	9.5	-		
HCM Lane LOS	-	- C B	A	-		
HCM 95th %tile Q(veh)	-	- 0.3 1.3	0	-		

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕	↕	↕↕		↕	↕↕	
Traffic Vol, veh/h	4	0	14	18	5	187	37	519	2	9	604	18
Future Vol, veh/h	4	0	14	18	5	187	37	519	2	9	604	18
Conflicting Peds, #/hr	0	0	0	0	0	0	6	0	2	2	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	170	-	0	160	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	1	0	1	0	0	1	0
Mvmt Flow	4	0	14	18	5	187	37	519	2	9	604	18
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	973	1234	317	916	1242	263	628	0	0	523	0	0
Stage 1	637	637	-	596	596	-	-	-	-	-	-	-
Stage 2	336	597	-	320	646	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.92	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.31	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	210	178	685	230	176	739	964	-	-	1054	-	-
Stage 1	437	475	-	462	495	-	-	-	-	-	-	-
Stage 2	657	495	-	672	470	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	147	168	681	217	166	738	958	-	-	1052	-	-
Mov Cap-2 Maneuver	147	168	-	217	166	-	-	-	-	-	-	-
Stage 1	418	468	-	444	475	-	-	-	-	-	-	-
Stage 2	467	475	-	653	463	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	15		13		0.6		0.1					
HCM LOS	C		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR					
Capacity (veh/h)	958	-	-	377 203 738	1052	-	-					
HCM Lane V/C Ratio	0.039	-	-	0.048 0.113 0.253	0.009	-	-					
HCM Control Delay (s)	8.9	-	-	15 25 11.5	8.5	-	-					
HCM Lane LOS	A	-	-	C D B	A	-	-					
HCM 95th %tile Q(veh)	0.1	-	-	0.1 0.4 1	0	-	-					

HCM Signalized Intersection Capacity Analysis

7: NE Shute Road & NE Airport Road/NE Butler Street

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	103	13	233	221	255	12	205	41	166	361	91
Future Volume (vph)	42	103	13	233	221	255	12	205	41	166	361	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	5.5		4.0	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.92		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1804	1846		1799	1723		1802	3419		1784	1881	1544
Flt Permitted	0.49	1.00		0.55	1.00		0.55	1.00		0.47	1.00	1.00
Satd. Flow (perm)	932	1846		1039	1723		1035	3419		880	1881	1544
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	42	103	13	233	221	255	12	205	41	166	361	91
RTOR Reduction (vph)	0	2	0	0	18	0	0	12	0	0	0	74
Lane Group Flow (vph)	42	114	0	233	458	0	12	234	0	166	361	17
Confl. Peds. (#/hr)	3		6	6		3	3		4	4		3
Confl. Bikes (#/hr)						3						
Heavy Vehicles (%)	0%	1%	0%	0%	0%	1%	0%	3%	0%	1%	1%	2%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	custom
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		6
Actuated Green, G (s)	19.8	16.4		37.9	30.5		15.2	14.4		28.4	23.6	14.4
Effective Green, g (s)	19.8	16.4		37.9	30.5		15.2	14.4		28.4	23.6	14.4
Actuated g/C Ratio	0.26	0.21		0.49	0.40		0.20	0.19		0.37	0.31	0.19
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	5.5		4.0	5.5	5.5
Vehicle Extension (s)	2.5	2.5		2.5	2.5		1.0	3.0		1.0	3.0	3.0
Lane Grp Cap (vph)	278	394		685	684		212	641		443	578	289
v/s Ratio Prot	0.01	0.06		c0.08	c0.27		0.00	0.07		c0.05	c0.19	
v/s Ratio Perm	0.03			0.09			0.01			0.09		0.01
v/c Ratio	0.15	0.29		0.34	0.67		0.06	0.36		0.37	0.62	0.06
Uniform Delay, d1	21.7	25.3		11.4	19.0		24.9	27.2		16.9	22.8	25.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3		0.2	2.2		0.0	0.4		0.2	2.1	0.1
Delay (s)	21.8	25.6		11.7	21.3		24.9	27.6		17.1	24.9	25.7
Level of Service	C	C		B	C		C	C		B	C	C
Approach Delay (s)		24.6			18.1			27.4			22.9	
Approach LOS		C			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			21.8			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			76.8			Sum of lost time (s)			18.5			
Intersection Capacity Utilization			70.2%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

Intersection												
Int Delay, s/veh	5.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	291	30	5	458	3	19	1	3	85	0	228
Future Vol, veh/h	21	291	30	5	458	3	19	1	3	85	0	228
Conflicting Peds, #/hr	3	0	3	3	0	3	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	1	3	0	1	0	0	0	33	0	0	0
Mvmt Flow	21	291	30	5	458	3	19	1	3	85	0	228
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	464	0	0	324	0	0	936	825	309	823	839	464
Stage 1	-	-	-	-	-	-	351	351	-	473	473	-
Stage 2	-	-	-	-	-	-	585	474	-	350	366	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.53	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.597	3.5	4	3.3
Pot Cap-1 Maneuver	1108	-	-	1247	-	-	247	310	664	295	304	602
Stage 1	-	-	-	-	-	-	670	636	-	576	562	-
Stage 2	-	-	-	-	-	-	501	561	-	671	626	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1105	-	-	1243	-	-	150	301	662	287	295	600
Mov Cap-2 Maneuver	-	-	-	-	-	-	150	301	-	287	295	-
Stage 1	-	-	-	-	-	-	655	622	-	563	558	-
Stage 2	-	-	-	-	-	-	309	557	-	654	612	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			0.1			29.3			16.8		
HCM LOS							D			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	171	1105	-	-	1243	-	-	287	600			
HCM Lane V/C Ratio	0.135	0.019	-	-	0.004	-	-	0.296	0.38			
HCM Control Delay (s)	29.3	8.3	-	-	7.9	-	-	22.7	14.6			
HCM Lane LOS	D	A	-	-	A	-	-	C	B			
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0	-	-	1.2	1.8			

HCM 2010 Roundabout
9: NE 65th Avenue/Intel Driveway & NE Butler Street

03/11/2019

Intersection							
Intersection Delay, s/veh	10.5						
Intersection LOS	B						
Approach	EB		WB		NB		SB
Entry Lanes	2		2		1		2
Conflicting Circle Lanes	2		2		2		2
Adj Approach Flow, veh/h	355		247		14		1164
Demand Flow Rate, veh/h	358		250		14		1164
Vehicles Circulating, veh/h	852		46		1139		189
Vehicles Exiting, veh/h	501		1107		71		107
Follow-Up Headway, s	3.186		3.186		3.186		3.186
Ped Vol Crossing Leg, #/h	29		46		2		0
Ped Cap Adj	0.996		0.949		1.000		1.000
Approach Delay, s/veh	9.9		4.9		7.4		11.9
Approach LOS	A		A		A		B
Lane	Left	Right	Left	Right	Left	Left	Right
Designated Moves	LT	TR	LTR	R	LTR	L	LTR
Assumed Moves	LT	TR	LT	R	LTR	L	LTR
RT Channelized							
Lane Util	0.469	0.531	0.728	0.272	1.000	0.530	0.470
Critical Headway, s	4.293	4.113	4.293	4.113	4.113	4.293	4.113
Entry Flow, veh/h	168	190	182	68	14	617	547
Cap Entry Lane, veh/h	596	622	1092	1094	509	981	990
Entry HV Adj Factor	0.993	0.990	0.981	1.000	1.000	1.000	1.000
Flow Entry, veh/h	167	188	179	68	14	617	547
Cap Entry, veh/h	590	614	1016	1039	509	980	990
V/C Ratio	0.283	0.306	0.176	0.065	0.028	0.629	0.553
Control Delay, s/veh	9.9	10.0	5.2	4.0	7.4	12.8	10.8
LOS	A	A	A	A	A	B	B
95th %tile Queue, veh	1	1	1	0	0	5	3

HCS7 Roundabouts Report

General Information

Analyst	PGP
Agency or Co.	Mackenzie
Date Performed	3/8/2019
Analysis Year	2022
Time Analyzed	Approved - PM
Project Description	Project Lark

Site Information

Intersection	NE Butler Street/NE 65th Avenue
E/W Street Name	NE Butler Street
N/S Street Name	NE 65th Avenue
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.83
Jurisdiction	City of Hillsboro

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	2	0	0	0	1	1	0	0	1	0	0	1	1	0
Lane Assignment	LT		TR		LTR		R				LTR		L		LTR	
Volume (V), veh/h	0	34	305	16	0	4	175	68	0	7	5	2	0	797	51	316
Percent Heavy Vehicles, %	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0
Flow Rate (v_{pce}), pc/h	0	41	372	19	0	5	215	82	0	8	6	2	0	960	61	381
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	2				1				2				1			
Pedestrians Crossing, p/h	29				46				2				0			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)	4.6453	4.9763		4.5436	4.5436			4.3276		4.5436	4.5436	
Follow-Up Headway (s)	2.6667	2.5352		2.5352	2.5352			2.5352		2.5352	2.5352	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h	194	238		220	82			16		981	421	
Entry Volume veh/h	192	235		217	81			16		981	421	
Circulating Flow (v_c), pc/h	1026			55			1373			228		
Exiting Flow (v_{ex}), pc/h	1334			604			129			85		
Capacity (C_{pce}), pc/h	525	493		1351	1351			442		1154	1154	
Capacity (c), veh/h	520	488		1265	1265			442		1154	1154	
v/c Ratio (x)	0.37	0.48		0.17	0.06			0.04		0.85	0.36	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh	12.8	16.4		4.3	3.4			8.6		22.0	6.7	
Lane LOS	B	C		A	A			A		C	A	
95% Queue, veh	1.7	2.6		0.6	0.2			0.1		11.2	1.7	
Approach Delay, s/veh	14.8			4.0			8.6			17.4		
Approach LOS	B			A			A			C		
Intersection Delay, s/veh LOS	14.9						B					

HCM 2010 AWSC
10: Intel Driveway & Internal Circulation

03/11/2019

Intersection

Intersection Delay, s/veh 59.1

Intersection LOS F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	195	383	288	24	15	16	54	53	57	433	18
Future Vol, veh/h	6	195	383	288	24	15	16	54	53	57	433	18
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	0	0	0	11	0	0	0	0	0	0	0
Mvmt Flow	6	195	383	288	24	15	16	54	53	57	433	18
Number of Lanes	0	1	1	1	1	0	0	2	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	1	2	2
HCM Control Delay	29.4	19.3	12.7	130.1
HCM LOS	D	C	B	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	47%	0%	0%	3%	0%	100%	76%	11%
Vol Thru, %	53%	100%	0%	97%	0%	0%	15%	85%
Vol Right, %	0%	0%	100%	0%	100%	0%	9%	4%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	34	36	53	201	383	164	163	508
LT Vol	16	0	0	6	0	164	124	57
Through Vol	18	36	0	195	0	0	24	433
RT Vol	0	0	53	0	383	0	15	18
Lane Flow Rate	34	36	53	201	383	164	163	508
Geometry Grp	7	7	7	8	8	8	8	8
Degree of Util (X)	0.085	0.087	0.118	0.457	0.795	0.417	0.414	1.181
Departure Headway (Hd)	9.505	9.259	8.527	8.712	7.973	9.764	9.767	8.369
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	379	390	423	416	456	371	371	437
Service Time	7.205	6.959	6.227	6.412	5.673	7.464	7.467	6.109
HCM Lane V/C Ratio	0.09	0.092	0.125	0.483	0.84	0.442	0.439	1.162
HCM Control Delay	13.1	12.8	12.4	18.5	35.1	19.3	19.2	130.1
HCM Lane LOS	B	B	B	C	E	C	C	F
HCM 95th-tile Q	0.3	0.3	0.4	2.3	7.2	2	2	19.4

Intersection

Intersection Delay, s/veh 28

Intersection LOS D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	77	509	5	1	68	76	10	5	7	260	7	102
Future Vol, veh/h	77	509	5	1	68	76	10	5	7	260	7	102
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	0	0	0	0	6	0	0	0	2	20	0
Mvmt Flow	77	509	5	1	68	76	10	5	7	260	7	102
Number of Lanes	1	1	0	1	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	39.9	11.1	11	16.5
HCM LOS	E	B	B	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	42%	0%	99%	0%	100%	0%	0%	6%
Vol Right, %	0%	58%	0%	1%	0%	0%	100%	0%	94%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	10	12	77	514	1	68	76	260	109
LT Vol	10	0	77	0	1	0	0	260	0
Through Vol	0	5	0	509	0	68	0	0	7
RT Vol	0	7	0	5	0	0	76	0	102
Lane Flow Rate	10	12	77	514	1	68	76	260	109
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.024	0.026	0.147	0.91	0.002	0.143	0.147	0.54	0.2
Departure Headway (Hd)	8.612	7.684	6.884	6.371	8.067	7.556	6.944	7.477	6.621
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	418	468	517	565	446	477	519	478	537
Service Time	6.321	5.393	4.669	4.155	5.769	5.258	4.647	5.275	4.418
HCM Lane V/C Ratio	0.024	0.026	0.149	0.91	0.002	0.143	0.146	0.544	0.203
HCM Control Delay	11.5	10.6	10.9	44.2	10.8	11.5	10.8	18.8	11.1
HCM Lane LOS	B	B	B	E	B	B	B	C	B
HCM 95th-tile Q	0.1	0.1	0.5	11	0	0.5	0.5	3.2	0.7

HCM Signalized Intersection Capacity Analysis

12: NE Century Boulevard & NE Butler Street

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	157	605	231	6	135	69	41	193	12	242	524	77
Future Volume (vph)	157	605	231	6	135	69	41	193	12	242	524	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3388		1803	1881	1583	1751	1792		1786	1786	
Flt Permitted	0.49	1.00		0.18	1.00	1.00	0.31	1.00		0.54	1.00	
Satd. Flow (perm)	935	3388		337	1881	1583	569	1792		1024	1786	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	157	605	231	6	135	69	41	193	12	242	524	77
RTOR Reduction (vph)	0	37	0	0	0	49	0	2	0	0	4	0
Lane Group Flow (vph)	157	799	0	6	135	20	41	203	0	242	597	0
Confl. Peds. (#/hr)			14	14			7		2	2		7
Confl. Bikes (#/hr)			7									4
Heavy Vehicles (%)	0%	0%	1%	0%	1%	2%	3%	4%	0%	1%	1%	1%
Bus Blockages (#/hr)	0	1	0	0	0	0	0	3	33	0	7	0
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4	5	1	6		5	2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)	35.5	30.5		23.5	22.5	32.3	54.4	51.2		65.0	57.8	
Effective Green, g (s)	35.5	31.0		23.5	23.0	32.3	54.4	52.2		65.0	58.8	
Actuated g/C Ratio	0.32	0.28		0.21	0.21	0.29	0.49	0.47		0.59	0.53	
Clearance Time (s)	4.0	4.5		4.0	4.5	4.0	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.0	2.0		1.0	2.0	0.5	0.5	2.5		0.5	2.5	
Lane Grp Cap (vph)	372	954		85	393	464	315	850		672	954	
v/s Ratio Prot	c0.03	c0.24		0.00	0.07	0.00	0.00	0.11		c0.03	c0.33	
v/s Ratio Perm	0.10			0.01		0.01	0.06			0.18		
v/c Ratio	0.42	0.84		0.07	0.34	0.04	0.13	0.24		0.36	0.63	
Uniform Delay, d1	27.9	37.1		35.0	37.1	27.8	15.5	17.1		11.0	17.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		0.67	0.85	
Incremental Delay, d2	0.3	6.2		0.1	0.2	0.0	0.1	0.7		0.1	2.7	
Delay (s)	28.2	43.3		35.1	37.3	27.8	15.5	17.8		7.4	17.9	
Level of Service	C	D		D	D	C	B	B		A	B	
Approach Delay (s)		40.9			34.1			17.4			14.9	
Approach LOS		D			C			B			B	
Intersection Summary												
HCM 2000 Control Delay			28.2									
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			110.0									
Intersection Capacity Utilization			83.7%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 2010 TWSC
13: Internal Circulation & NE Ronler Drive

03/11/2019

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	43	1	229	591	13	88
Future Vol, veh/h	43	1	229	591	13	88
Conflicting Peds, #/hr	0	1	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	-	85	25	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	1	1	0	5
Mvmt Flow	43	1	229	591	13	88
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	343	230	0	0	820	0
Stage 1	229	-	-	-	-	-
Stage 2	114	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	657	814	-	-	818	-
Stage 1	814	-	-	-	-	-
Stage 2	916	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	646	813	-	-	818	-
Mov Cap-2 Maneuver	646	-	-	-	-	-
Stage 1	814	-	-	-	-	-
Stage 2	901	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	11	0	1.2			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 646 813	818	-		
HCM Lane V/C Ratio	-	- 0.067 0.001	0.016	-		
HCM Control Delay (s)	-	- 11 9.4	9.5	-		
HCM Lane LOS	-	- B A	A	-		
HCM 95th %tile Q(veh)	-	- 0.2 0	0	-		

HCM Signalized Intersection Capacity Analysis

14: NE Century Boulevard & NE Ronler Drive

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	502	101	36	24	6	16	304	152	173	642	6
Future Volume (vph)	57	502	101	36	24	6	16	304	152	173	642	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.97		1.00	0.95		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3476		1804	1843		1671	1760		1804	1878	
Flt Permitted	0.74	1.00		0.40	1.00		0.27	1.00		0.39	1.00	
Satd. Flow (perm)	1374	3476		767	1843		469	1760		736	1878	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	57	502	101	36	24	6	16	304	152	173	642	6
RTOR Reduction (vph)	0	16	0	0	5	0	0	14	0	0	0	0
Lane Group Flow (vph)	57	587	0	36	25	0	16	442	0	173	648	0
Confl. Peds. (#/hr)			1	1			3		2	2		3
Confl. Bikes (#/hr)			1						1			5
Heavy Vehicles (%)	2%	0%	5%	0%	0%	0%	8%	3%	0%	0%	1%	0%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	29.6	21.9		13.1	9.9		58.5	56.5		72.4	65.4	
Effective Green, g (s)	29.6	22.4		13.1	10.4		58.5	57.5		72.4	66.4	
Actuated g/C Ratio	0.27	0.20		0.12	0.09		0.53	0.52		0.66	0.60	
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	424	707		121	174		271	920		590	1133	
v/s Ratio Prot	0.02	c0.17		c0.01	0.01		0.00	0.25		c0.03	c0.34	
v/s Ratio Perm	0.02			0.03			0.03			0.16		
v/c Ratio	0.13	0.83		0.30	0.14		0.06	0.48		0.29	0.57	
Uniform Delay, d1	30.7	42.0		49.0	45.7		24.1	16.7		14.7	13.2	
Progression Factor	1.00	1.00		1.00	1.00		1.03	1.12		0.44	0.47	
Incremental Delay, d2	0.1	7.8		0.5	0.1		0.0	1.8		0.1	1.9	
Delay (s)	30.7	49.8		49.5	45.8		24.8	20.6		6.6	8.0	
Level of Service	C	D		D	D		C	C		A	A	
Approach Delay (s)		48.2			47.8			20.7			7.7	
Approach LOS		D			D			C			A	
Intersection Summary												
HCM 2000 Control Delay			25.3				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)			16.0		
Intersection Capacity Utilization			72.9%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

15: NE Century Boulevard & RAP1 Access/Parking

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	279	1	295	1	0	0	17	324	0	1	587	35
Future Volume (vph)	279	1	295	1	0	0	17	324	0	1	587	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	3.5	3.5			4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00			1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85	1.00			1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00	0.95			0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1810	1615	1805			1805	1863		1802	1881	1444
Flt Permitted		0.95	1.00	0.95			0.32	1.00		0.53	1.00	1.00
Satd. Flow (perm)		1810	1615	1805			599	1863		1003	1881	1444
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	279	1	295	1	0	0	17	324	0	1	587	35
RTOR Reduction (vph)	0	0	234	0	0	0	0	0	0	0	0	14
Lane Group Flow (vph)	0	280	61	1	0	0	17	324	0	1	587	21
Confl. Peds. (#/hr)							1		2	2		1
Confl. Bikes (#/hr)									2			5
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	1%	9%
Turn Type	Split	NA	Perm	Split			pm+pt	NA		pm+pt	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases			8				6			2		2
Actuated Green, G (s)		22.6	22.6	4.6			68.2	65.8		65.4	64.4	64.4
Effective Green, g (s)		22.6	22.6	4.6			68.2	66.8		65.4	65.4	65.4
Actuated g/C Ratio		0.21	0.21	0.04			0.62	0.61		0.59	0.59	0.59
Clearance Time (s)		3.5	3.5	3.5			4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0			2.5	4.0		2.5	4.0	4.0
Lane Grp Cap (vph)		371	331	75			397	1131		603	1118	858
v/s Ratio Prot		c0.15		c0.00			c0.00	0.17		0.00	c0.31	
v/s Ratio Perm			0.04				0.03			0.00		0.01
v/c Ratio		0.75	0.18	0.01			0.04	0.29		0.00	0.53	0.02
Uniform Delay, d1		41.1	36.1	50.5			9.7	10.3		9.1	13.1	9.2
Progression Factor		1.00	1.00	1.00			0.82	0.68		1.10	0.86	1.00
Incremental Delay, d2		8.5	0.3	0.1			0.0	0.6		0.0	1.7	0.1
Delay (s)		49.6	36.3	50.6			8.0	7.5		10.1	13.1	9.2
Level of Service		D	D	D			A	A		B	B	A
Approach Delay (s)		42.8			50.6			7.6			12.8	
Approach LOS		D			D			A			B	
Intersection Summary												
HCM 2000 Control Delay			22.9				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.54									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)			15.0		
Intersection Capacity Utilization			64.2%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

16: NE Century Boulevard & RA1/2 Access/Office Driveway

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	229	11	127	24	0	21	26	576	18	14	422	40
Future Volume (vph)	229	11	127	24	0	21	26	576	18	14	422	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5		3.5	3.5		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.96		1.00	0.98		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.85		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1801	1514		1780	1579		1734	1872		1805	1881	1453
Flt Permitted	0.74	1.00		0.56	1.00		0.46	1.00		0.36	1.00	1.00
Satd. Flow (perm)	1410	1514		1046	1579		835	1872		683	1881	1453
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	229	11	127	24	0	21	26	576	18	14	422	40
RTOR Reduction (vph)	0	101	0	0	17	0	0	1	0	0	0	14
Lane Group Flow (vph)	229	37	0	24	4	0	26	593	0	14	422	26
Confl. Peds. (#/hr)	1		8	8		1	3					3
Confl. Bikes (#/hr)			4						2			5
Heavy Vehicles (%)	0%	0%	4%	0%	0%	0%	4%	1%	0%	0%	1%	8%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		2
Actuated Green, G (s)	22.7	22.7		22.7	22.7		75.6	72.6		74.0	71.8	71.8
Effective Green, g (s)	22.7	22.7		22.7	22.7		75.6	73.6		74.0	72.8	72.8
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.69	0.67		0.67	0.66	0.66
Clearance Time (s)	3.5	3.5		3.5	3.5		4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.5	4.0		2.5	4.0	4.0
Lane Grp Cap (vph)	290	312		215	325		598	1252		481	1244	961
v/s Ratio Prot		0.02			0.00		c0.00	c0.32		0.00	0.22	
v/s Ratio Perm	c0.16			0.02			0.03			0.02		0.02
v/c Ratio	0.79	0.12		0.11	0.01		0.04	0.47		0.03	0.34	0.03
Uniform Delay, d1	41.4	35.5		35.5	34.7		5.8	8.8		6.7	8.1	6.4
Progression Factor	1.00	1.00		1.00	1.00		1.35	1.05		0.88	0.78	0.60
Incremental Delay, d2	13.3	0.2		0.2	0.0		0.0	1.2		0.0	0.7	0.1
Delay (s)	54.7	35.7		35.7	34.8		7.8	10.5		5.9	7.1	3.9
Level of Service	D	D		D	C		A	B		A	A	A
Approach Delay (s)		47.6			35.3			10.4			6.8	
Approach LOS		D			D			B			A	
Intersection Summary												
HCM 2000 Control Delay			19.0			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.54									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			11.5			
Intersection Capacity Utilization			58.0%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

17: NE Century Boulevard & NE Evergreen Parkway

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	942	148	201	628	68	143	38	623	214	97	16
Future Volume (vph)	9	942	148	201	628	68	143	38	623	214	97	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1597	3574	1565	1770	3518		1802	1900	1599	1787	1807	
Flt Permitted	0.39	1.00	1.00	0.10	1.00		0.68	1.00	1.00	0.50	1.00	
Satd. Flow (perm)	651	3574	1565	185	3518		1298	1900	1599	944	1807	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	9	942	148	201	628	68	143	38	623	214	97	16
RTOR Reduction (vph)	0	0	97	0	4	0	0	0	91	0	7	0
Lane Group Flow (vph)	9	942	51	201	692	0	143	38	532	214	106	0
Confl. Peds. (#/hr)	1					1	3					3
Confl. Bikes (#/hr)			1			1						1
Heavy Vehicles (%)	13%	1%	1%	2%	1%	0%	0%	0%	1%	1%	1%	13%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)	37.7	36.6	36.6	69.7	64.6		18.3	8.7	37.8	30.3	16.7	
Effective Green, g (s)	37.7	38.1	38.1	69.7	66.1		18.3	9.2	37.8	30.3	17.2	
Actuated g/C Ratio	0.34	0.35	0.35	0.63	0.60		0.17	0.08	0.34	0.28	0.16	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.0	4.5	4.0	4.0	4.5	
Vehicle Extension (s)	2.0	3.1	3.1	2.0	3.1		2.0	2.5	2.0	2.0	2.5	
Lane Grp Cap (vph)	232	1237	542	536	2113		259	158	549	394	282	
v/s Ratio Prot	0.00	c0.26		0.10	0.20		0.05	0.02	c0.26	c0.09	0.06	
v/s Ratio Perm	0.01		0.03	0.14			0.04		0.08	0.06		
v/c Ratio	0.04	0.76	0.09	0.38	0.33		0.55	0.24	0.97	0.54	0.38	
Uniform Delay, d1	23.9	31.9	24.3	14.9	10.9		41.5	47.1	35.5	32.9	41.6	
Progression Factor	1.41	0.92	2.92	1.00	1.00		1.02	1.07	0.96	1.00	1.00	
Incremental Delay, d2	0.0	4.2	0.3	0.2	0.4		1.3	0.5	27.8	0.8	0.6	
Delay (s)	33.6	33.6	71.2	15.1	11.3		43.5	50.7	62.0	33.7	42.2	
Level of Service	C	C	E	B	B		D	D	E	C	D	
Approach Delay (s)		38.7			12.2			58.2			36.6	
Approach LOS		D			B			E			D	
Intersection Summary												
HCM 2000 Control Delay			35.9			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.80									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			86.5%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

EBR - Correct Progression Factor to Match EBT
PF = 0.92, Delay = 22.6, LOS = C

HCM Signalized Intersection Capacity Analysis

18: RA1&2 North Access/Ronler Corporate Center & NE Evergreen Parkway

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	1126	15	11	786	3	111	0	113	9	0	6
Future Volume (vph)	2	1126	15	11	786	3	111	0	113	9	0	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		3.5	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1203	3560		1805	3537		1736	1577		1805	1380	
Flt Permitted	0.32	1.00		0.21	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	410	3560		391	3537		1736	1577		1805	1380	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	1126	15	11	786	3	111	0	113	9	0	6
RTOR Reduction (vph)	0	1	0	0	0	0	0	96	0	0	6	0
Lane Group Flow (vph)	2	1140	0	11	789	0	111	17	0	9	0	0
Confl. Peds. (#/hr)			5	5								
Confl. Bikes (#/hr)			8						1			
Heavy Vehicles (%)	50%	1%	13%	0%	2%	0%	4%	0%	1%	0%	0%	17%
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6								
Actuated Green, G (s)	75.6	74.6		75.6	74.6		10.1	15.8		1.1	6.8	
Effective Green, g (s)	75.6	76.1		75.6	76.1		10.1	16.3		1.1	6.8	
Actuated g/C Ratio	0.69	0.69		0.69	0.69		0.09	0.15		0.01	0.06	
Clearance Time (s)	4.0	5.5		4.0	5.5		4.0	4.5		3.5	4.0	
Vehicle Extension (s)	1.5	3.1		1.5	3.1		1.5	1.0		1.5	0.7	
Lane Grp Cap (vph)	288	2462		281	2446		159	233		18	85	
v/s Ratio Prot	0.00	c0.32		c0.00	0.22		c0.06	c0.01		0.00	0.00	
v/s Ratio Perm	0.00			0.03								
v/c Ratio	0.01	0.46		0.04	0.32		0.70	0.07		0.50	0.00	
Uniform Delay, d1	5.6	7.7		6.2	6.7		48.5	40.3		54.2	48.4	
Progression Factor	1.24	0.95		0.60	0.48		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.6		0.0	0.3		10.3	0.0		7.7	0.0	
Delay (s)	6.9	7.9		3.7	3.6		58.7	40.4		61.9	48.4	
Level of Service	A	A		A	A		E	D		E	D	
Approach Delay (s)		7.9			3.6			49.5			56.5	
Approach LOS		A			A			D			E	
Intersection Summary												
HCM 2000 Control Delay			10.9			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.46									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			51.1%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

19: North Access/NE 59th Avenue & NE Evergreen Parkway

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	829	4	3	807	79	163	9	174	125	0	71
Future Volume (vph)	14	829	4	3	807	79	163	9	174	125	0	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1671	3574	1555	1804	3425		1715	1728	1615	1671	1583	
Flt Permitted	0.26	1.00	1.00	0.28	1.00		0.95	0.96	1.00	0.95	1.00	
Satd. Flow (perm)	453	3574	1555	534	3425		1715	1728	1615	1671	1583	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	14	829	4	3	807	79	163	9	174	125	0	71
RTOR Reduction (vph)	0	0	2	0	4	0	0	0	154	0	61	0
Lane Group Flow (vph)	14	829	2	3	882	0	86	86	20	125	10	0
Confl. Peds. (#/hr)	1		5	5		1			1	1		
Confl. Bikes (#/hr)			10			2						
Heavy Vehicles (%)	8%	1%	0%	0%	2%	22%	0%	0%	0%	8%	0%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Split	NA	Prot	Split	NA	
Protected Phases	5	2		1	6		8	8	8	4	4	
Permitted Phases	2		2	6								
Actuated Green, G (s)	65.9	63.1	63.1	62.3	61.3		12.7	12.7	12.7	15.2	15.2	
Effective Green, g (s)	65.9	64.6	64.6	62.3	62.8		12.7	12.7	12.7	15.7	15.7	
Actuated g/C Ratio	0.60	0.59	0.59	0.57	0.57		0.12	0.12	0.12	0.14	0.14	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.0	4.0	4.0	4.5	4.5	
Vehicle Extension (s)	1.5	3.1	3.1	1.5	3.1		2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	302	2098	913	313	1955		198	199	186	238	225	
v/s Ratio Prot	c0.00	0.23		0.00	c0.26		c0.05	0.05	0.01	c0.07	0.01	
v/s Ratio Perm	0.03		0.00	0.01								
v/c Ratio	0.05	0.40	0.00	0.01	0.45		0.43	0.43	0.11	0.53	0.05	
Uniform Delay, d1	14.9	12.2	9.4	15.5	13.6		45.3	45.3	43.6	43.7	40.7	
Progression Factor	1.00	1.00	1.00	0.61	0.76		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	0.6	0.0	0.0	0.7		0.6	0.5	0.1	1.0	0.0	
Delay (s)	15.0	12.8	9.4	9.4	11.0		45.9	45.8	43.7	44.7	40.7	
Level of Service	B	B	A	A	B		D	D	D	D	D	
Approach Delay (s)		12.8			11.0			44.8			43.2	
Approach LOS		B			B			D			D	
Intersection Summary												
HCM 2000 Control Delay			19.6			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.45									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			51.1%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

1: NE Brookwood Parkway & NE Evergreen Parkway

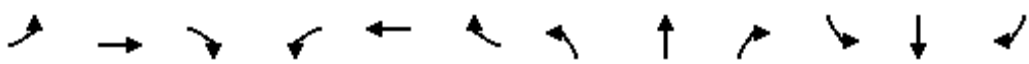
03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↕↕	↗	↔↔	↕↕	↗	↔↔	↕↕↕		↔↔	↕↕↕	↗
Traffic Volume (vph)	311	446	150	162	324	113	85	816	176	104	1496	578
Future Volume (vph)	311	446	150	162	324	113	85	816	176	104	1496	578
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	2.5	4.0	4.0	2.5	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91		0.97	0.91	0.88
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3303	3438	1564	3213	3438	1410	3467	4736		3335	5085	2733
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3303	3438	1564	3213	3438	1410	3467	4736		3335	5085	2733
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	311	446	150	162	324	113	85	816	176	104	1496	578
RTOR Reduction (vph)	0	0	0	0	0	0	0	21	0	0	0	188
Lane Group Flow (vph)	311	446	150	162	324	113	85	971	0	104	1496	390
Confl. Peds. (#/hr)	3		1	1		3	2		1	1		2
Confl. Bikes (#/hr)						3			1			1
Heavy Vehicles (%)	6%	5%	2%	9%	5%	13%	1%	6%	8%	5%	2%	4%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA		Prot	NA	pt+ov
Protected Phases	3	8		7	4		1	6		5	2	2 3
Permitted Phases			Free			Free						
Actuated Green, G (s)	15.6	24.6	120.0	10.4	19.4	120.0	6.5	56.9		8.1	58.5	78.6
Effective Green, g (s)	16.1	26.1	120.0	10.9	20.9	120.0	7.0	58.4		8.6	60.0	77.1
Actuated g/C Ratio	0.13	0.22	1.00	0.09	0.17	1.00	0.06	0.49		0.07	0.50	0.64
Clearance Time (s)	4.5	5.5		4.5	5.5		4.5	5.5		4.5	5.5	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	443	747	1564	291	598	1410	202	2304		239	2542	1755
v/s Ratio Prot	c0.09	0.13		0.05	c0.09		0.02	c0.21		0.03	c0.29	0.14
v/s Ratio Perm			0.10			0.08						
v/c Ratio	0.70	0.60	0.10	0.56	0.54	0.08	0.42	0.42		0.44	0.59	0.22
Uniform Delay, d1	49.7	42.2	0.0	52.2	45.2	0.0	54.5	19.9		53.4	21.3	8.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.74	0.42		1.00	1.00	1.00
Incremental Delay, d2	4.1	1.3	0.1	1.3	1.0	0.1	0.5	0.5		0.5	1.0	0.0
Delay (s)	53.7	43.5	0.1	53.5	46.2	0.1	40.9	8.8		53.8	22.3	9.0
Level of Service	D	D	A	D	D	A	D	A		D	C	A
Approach Delay (s)		39.8			39.5			11.3			20.2	
Approach LOS		D			D			B			C	
Intersection Summary												
HCM 2000 Control Delay			24.4									
HCM 2000 Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			120.0									
Intersection Capacity Utilization			66.0%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: NE Brookwood Parkway & T5 Data Center/NE Shute Road

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔		↔	↔	
Traffic Volume (vph)	1	0	0	4	0	277	0	805	23	825	1037	0
Future Volume (vph)	1	0	0	4	0	277	0	805	23	825	1037	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	3.5		4.0		3.0	4.0	
Lane Util. Factor		1.00			1.00	0.88		0.95		0.97	0.95	
Frpb, ped/bikes		1.00			1.00	1.00		1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00		1.00		1.00	1.00	
Frt		1.00			1.00	0.85		1.00		1.00	1.00	
Flt Protected		0.95			0.95	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1805			1805	2608		3391		3433	3505	
Flt Permitted		0.95			0.95	1.00		1.00		0.95	1.00	
Satd. Flow (perm)		1805			1805	2608		3391		3433	3505	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	0	0	4	0	277	0	805	23	825	1037	0
RTOR Reduction (vph)	0	0	0	0	0	173	0	1	0	0	0	0
Lane Group Flow (vph)	0	1	0	0	4	104	0	827	0	825	1037	0
Confl. Bikes (#/hr)									1			2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	9%	0%	6%	5%	2%	3%	0%
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	8	8		4	4	7 5	1	6		5 7	2	
Permitted Phases						4						
Actuated Green, G (s)		1.0			1.1	43.4		52.6		42.3	90.1	
Effective Green, g (s)		1.5			1.6	44.9		54.1		45.3	91.6	
Actuated g/C Ratio		0.01			0.01	0.37		0.45		0.38	0.76	
Clearance Time (s)		4.5			4.5			5.5			5.5	
Vehicle Extension (s)		2.0			2.0			3.0			3.0	
Lane Grp Cap (vph)		22			24	975		1528		1295	2675	
v/s Ratio Prot		c0.00			c0.00	0.04		c0.24		c0.24	0.30	
v/s Ratio Perm						0.00						
v/c Ratio		0.05			0.17	0.11		0.54		0.64	0.39	
Uniform Delay, d1		58.5			58.5	24.5		23.9		30.6	4.8	
Progression Factor		1.00			1.00	1.00		1.00		1.00	0.45	
Incremental Delay, d2		0.3			1.2	0.0		1.4		0.7	0.4	
Delay (s)		58.9			59.7	24.5		25.3		31.1	2.5	
Level of Service		E			E	C		C		C	A	
Approach Delay (s)		58.9			25.0			25.3			15.2	
Approach LOS		E			C			C			B	
Intersection Summary												
HCM 2000 Control Delay			19.0				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			120.0				Sum of lost time (s)			20.5		
Intersection Capacity Utilization			60.7%				ICU Level of Service			B		
Analysis Period (min)			15									

c Critical Lane Group

HCM 2010 TWSC
3: NE Shute Road & PERRIN Driveway/RS5 Access

03/11/2019

Intersection												
Int Delay, s/veh	4.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕		↕	↕		↕	↕	
Traffic Vol, veh/h	35	3	30	18	0	26	12	244	71	217	661	28
Future Vol, veh/h	35	3	30	18	0	26	12	244	71	217	661	28
Conflicting Peds, #/hr	1	0	1	1	0	1	1	0	7	7	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	125	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	19	0	11	0	5	18	0	2	4
Mvmt Flow	35	3	30	18	0	26	12	244	71	217	661	28

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1257	1456	347	1078	1435	166	690	0	0	322	0	0
Stage 1	1110	1110	-	311	311	-	-	-	-	-	-	-
Stage 2	147	346	-	767	1124	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.88	6.5	7.12	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.88	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.88	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.69	4	3.41	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	130	131	655	152	135	822	914	-	-	1249	-	-
Stage 1	227	287	-	629	662	-	-	-	-	-	-	-
Stage 2	847	639	-	325	283	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	108	106	654	121	109	816	913	-	-	1241	-	-
Mov Cap-2 Maneuver	108	106	-	121	109	-	-	-	-	-	-	-
Stage 1	224	236	-	616	649	-	-	-	-	-	-	-
Stage 2	808	626	-	252	233	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	39.3		22		0.3		2	
HCM LOS	E		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	913	-	-	171 121 816	1241	-	-
HCM Lane V/C Ratio	0.013	-	-	0.398 0.149 0.032	0.175	-	-
HCM Control Delay (s)	9	-	-	39.3 39.9 9.6	8.5	-	-
HCM Lane LOS	A	-	-	E E A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.7 0.5 0.1	0.6	-	-

Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↱		↰	↱	
Traffic Vol, veh/h	2	6	48	32	2	26	152	296	147	139	506	80
Future Vol, veh/h	2	6	48	32	2	26	152	296	147	139	506	80
Conflicting Peds, #/hr	0	0	3	3	0	0	3	0	0	0	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	105	-	-	0	-	-	215	-	-	210	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	100	0	7	8	0	0	2	7	0	0	3	3
Mvmt Flow	2	6	48	32	2	26	152	296	147	139	506	80
Major/Minor	Minor2		Minor1		Major1		Major2		Major2		Major2	
Conflicting Flow All	1280	1574	299	1211	1541	222	589	0	0	443	0	0
Stage 1	827	827	-	674	674	-	-	-	-	-	-	-
Stage 2	453	747	-	537	867	-	-	-	-	-	-	-
Critical Hdwy	9.5	6.5	7.04	7.66	6.5	6.9	4.14	-	-	4.1	-	-
Critical Hdwy Stg 1	8.5	5.5	-	6.66	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	8.5	5.5	-	6.66	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	4.5	4	3.37	3.58	4	3.3	2.22	-	-	2.2	-	-
Pot Cap-1 Maneuver	55	111	682	132	116	788	982	-	-	1128	-	-
Stage 1	182	389	-	397	457	-	-	-	-	-	-	-
Stage 2	360	423	-	481	373	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	42	82	678	93	86	788	979	-	-	1128	-	-
Mov Cap-2 Maneuver	42	82	-	93	86	-	-	-	-	-	-	-
Stage 1	153	340	-	335	386	-	-	-	-	-	-	-
Stage 2	293	357	-	384	326	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB		SB		SB	
HCM Control Delay, s	19		39.4		2.4		1.7					
HCM LOS	C		E									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	979	-	-	42	375	93	498	1128	-	-		
HCM Lane V/C Ratio	0.155	-	-	0.048	0.144	0.344	0.056	0.123	-	-		
HCM Control Delay (s)	9.4	-	-	95	16.2	62.8	12.7	8.6	-	-		
HCM Lane LOS	A	-	-	F	C	F	B	A	-	-		
HCM 95th %tile Q(veh)	0.5	-	-	0.1	0.5	1.3	0.2	0.4	-	-		

HCM 2010 TWSC
5: NE Shute Road & D1X Access

03/11/2019

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	26	570	16	42	539
Future Vol, veh/h	3	26	570	16	42	539
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	130	0	-	225	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	55	3	25	41	2
Mvmt Flow	3	26	570	16	42	539
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	927	288	0	0	589	0
Stage 1	573	-	-	-	-	-
Stage 2	354	-	-	-	-	-
Critical Hdwy	6.8	8	-	-	4.92	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.85	-	-	2.61	-
Pot Cap-1 Maneuver	271	573	-	-	758	-
Stage 1	533	-	-	-	-	-
Stage 2	687	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	255	571	-	-	756	-
Mov Cap-2 Maneuver	255	-	-	-	-	-
Stage 1	531	-	-	-	-	-
Stage 2	649	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12.4	0	0.7			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 255 571	756	-		
HCM Lane V/C Ratio	-	- 0.012 0.046	0.056	-		
HCM Control Delay (s)	-	- 19.3 11.6	10	-		
HCM Lane LOS	-	- C B	B	-		
HCM 95th %tile Q(veh)	-	- 0 0.1	0.2	-		

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	9	32	4	3	22	9	544	7	119	415	7
Future Vol, veh/h	15	9	32	4	3	22	9	544	7	119	415	7
Conflicting Peds, #/hr	0	0	2	2	0	0	2	0	3	3	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	170	-	0	160	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	7	0	0	0	0	17	0	2	0	0	1	0
Mvmt Flow	15	9	32	4	3	22	9	544	7	119	415	7
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	951	1231	215	1021	1231	279	424	0	0	554	0	0
Stage 1	659	659	-	569	569	-	-	-	-	-	-	-
Stage 2	292	572	-	452	662	-	-	-	-	-	-	-
Critical Hdwy	7.64	6.5	6.9	7.5	6.5	7.24	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.64	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.64	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.57	4	3.3	3.5	4	3.47	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	207	179	796	193	179	675	1146	-	-	1026	-	-
Stage 1	407	464	-	479	509	-	-	-	-	-	-	-
Stage 2	678	508	-	562	462	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	178	156	793	160	156	673	1144	-	-	1023	-	-
Mov Cap-2 Maneuver	178	156	-	160	156	-	-	-	-	-	-	-
Stage 1	403	409	-	474	503	-	-	-	-	-	-	-
Stage 2	647	502	-	465	407	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	19.3		14.9		0.1		2					
HCM LOS	C		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR					
Capacity (veh/h)	1144	-	-	307	158	673	1023	-	-			
HCM Lane V/C Ratio	0.008	-	-	0.182	0.044	0.033	0.116	-	-			
HCM Control Delay (s)	8.2	-	-	19.3	28.8	10.5	9	-	-			
HCM Lane LOS	A	-	-	C	D	B	A	-	-			
HCM 95th %tile Q(veh)	0	-	-	0.7	0.1	0.1	0.4	-	-			

HCM Signalized Intersection Capacity Analysis

7: NE Shute Road & NE Airport Road/NE Butler Street

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	135	5	73	38	170	4	272	231	129	239	36
Future Volume (vph)	69	135	5	73	38	170	4	272	231	129	239	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	5.5		4.0	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.99		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.88		1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1804	1888		1805	1633		1805	3294		1787	1827	1482
Flt Permitted	0.60	1.00		0.62	1.00		0.61	1.00		0.33	1.00	1.00
Satd. Flow (perm)	1136	1888		1186	1633		1159	3294		623	1827	1482
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	69	135	5	73	38	170	4	272	231	129	239	36
RTOR Reduction (vph)	0	1	0	0	95	0	0	103	0	0	0	26
Lane Group Flow (vph)	69	139	0	73	113	0	4	400	0	129	239	10
Confl. Peds. (#/hr)	3					3			2	2		
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	1%	1%	1%	4%	9%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	custom
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		6
Actuated Green, G (s)	15.0	10.0		16.4	10.7		16.6	15.8		27.7	22.9	15.8
Effective Green, g (s)	15.0	10.0		16.4	10.7		16.6	15.8		27.7	22.9	15.8
Actuated g/C Ratio	0.26	0.17		0.28	0.18		0.29	0.27		0.48	0.40	0.27
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	5.5		4.0	5.5	5.5
Vehicle Extension (s)	2.5	2.5		2.5	2.5		1.0	3.0		1.0	3.0	3.0
Lane Grp Cap (vph)	351	326		396	301		341	898		456	722	404
v/s Ratio Prot	0.02	c0.07		c0.02	0.07		0.00	c0.12		c0.04	0.13	
v/s Ratio Perm	0.03			0.03			0.00			0.10		0.01
v/c Ratio	0.20	0.43		0.18	0.38		0.01	0.45		0.28	0.33	0.02
Uniform Delay, d1	16.5	21.4		15.5	20.7		14.8	17.4		8.8	12.2	15.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.7		0.2	0.6		0.0	0.4		0.1	0.3	0.0
Delay (s)	16.7	22.0		15.7	21.3		14.8	17.8		8.9	12.4	15.4
Level of Service	B	C		B	C		B	B		A	B	B
Approach Delay (s)		20.3			19.8			17.8			11.6	
Approach LOS		C			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			16.8			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.37									
Actuated Cycle Length (s)			57.9			Sum of lost time (s)			18.5			
Intersection Capacity Utilization			55.8%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Int Delay, s/veh 2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	184	299	15	1	265	14	5	2	3	4	0	47
Future Vol, veh/h	184	299	15	1	265	14	5	2	3	4	0	47
Conflicting Peds, #/hr	2	0	2	2	0	2	2	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	1	7	0	1	20	0	0	0	0	0	5
Mvmt Flow	184	299	15	1	265	14	5	2	3	4	0	47

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	281	0	0	316	0	0	977	960	309	953	960	276
Stage 1	-	-	-	-	-	-	677	677	-	276	276	-
Stage 2	-	-	-	-	-	-	300	283	-	677	684	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.345
Pot Cap-1 Maneuver	1293	-	-	1256	-	-	232	259	736	241	259	756
Stage 1	-	-	-	-	-	-	446	455	-	735	685	-
Stage 2	-	-	-	-	-	-	713	681	-	446	452	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1291	-	-	1254	-	-	193	221	735	212	221	753
Mov Cap-2 Maneuver	-	-	-	-	-	-	193	221	-	212	221	-
Stage 1	-	-	-	-	-	-	382	389	-	629	683	-
Stage 2	-	-	-	-	-	-	667	679	-	379	386	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3	0	19.6	11.1
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	256	1291	-	-	1254	-	-	212	753
HCM Lane V/C Ratio	0.039	0.143	-	-	0.001	-	-	0.019	0.062
HCM Control Delay (s)	19.6	8.3	-	-	7.9	-	-	22.3	10.1
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.1	0.5	-	-	0	-	-	0.1	0.2

HCM 2010 Roundabout
9: NE 65th Avenue/Intel Driveway & NE Butler Street

03/11/2019

Intersection								
Intersection Delay, s/veh	8.8							
Intersection LOS	A							
Approach	EB		WB		NB		SB	
Entry Lanes	2		2		1		2	
Conflicting Circle Lanes	2		2		2		2	
Adj Approach Flow, veh/h	346		902		132		261	
Demand Flow Rate, veh/h	347		904		132		261	
Vehicles Circulating, veh/h	180		359		504		176	
Vehicles Exiting, veh/h	257		277		23		1087	
Follow-Up Headway, s	3.186		3.186		3.186		3.186	
Ped Vol Crossing Leg, #/h	45		22		0		0	
Ped Cap Adj	0.956		0.982		1.000		1.000	
Approach Delay, s/veh	5.9		11.5		6.3		4.8	
Approach LOS	A		B		A		A	
Lane	Left	Right	Left	Right	Left	Left	Right	
Designated Moves	LT	TR	LTR	R	LTR	L	LTR	
Assumed Moves	L	TR	LTR	R	LTR	L	LTR	
RT Channelized								
Lane Util	0.680	0.320	0.470	0.530	1.000	0.529	0.471	
Critical Headway, s	4.293	4.113	4.293	4.113	4.113	4.293	4.113	
Entry Flow, veh/h	236	111	425	479	132	138	123	
Cap Entry Lane, veh/h	987	996	863	879	794	990	999	
Entry HV Adj Factor	1.000	0.991	0.998	0.998	1.000	1.002	0.997	
Flow Entry, veh/h	236	110	424	478	132	138	123	
Cap Entry, veh/h	944	943	846	862	794	993	996	
V/C Ratio	0.250	0.117	0.501	0.555	0.166	0.139	0.123	
Control Delay, s/veh	6.3	4.9	11.0	12.0	6.3	4.9	4.7	
LOS	A	A	B	B	A	A	A	
95th %tile Queue, veh	1	0	3	3	1	0	0	

HCS7 Roundabouts Report

General Information

Analyst	PGP
Agency or Co.	Mackenzie
Date Performed	3/8/2019
Analysis Year	2022
Time Analyzed	Proposed - AM
Project Description	Project Lark

Site Information

Intersection	NE Butler Street/NE 65th Avenue
E/W Street Name	NE Butler Street
N/S Street Name	NE 65th Avenue
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.86
Jurisdiction	City of Hillsboro

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	2	0	0	0	1	1	0	0	1	0	0	1	1	0
Lane Assignment	LT		TR		LTR		R				LTR		L		LTR	
Volume (V), veh/h	0	236	105	5	0	0	168	734	0	6	117	9	0	162	18	81
Percent Heavy Vehicles, %	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Flow Rate (v_{pce}), pc/h	0	274	124	6	0	0	197	853	0	7	136	10	0	188	21	94
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	2				1				2				1			
Pedestrians Crossing, p/h	45				22				0				0			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)	4.6453	4.9763		4.5436	4.5436			4.3276		4.5436	4.5436	
Follow-Up Headway (s)	2.6667	2.5352		2.5352	2.5352			2.5352		2.5352	2.5352	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h	274	130		473	578			153		242	61	
Entry Volume veh/h	273	130		472	576			153		242	61	
Circulating Flow (v_c), pc/h	209			417			586			204		
Exiting Flow (v_{ex}), pc/h	322			298			1263			27		
Capacity (C_{pce}), pc/h	1114	1145		972	972			863		1179	1179	
Capacity (c), veh/h	1062	1092		954	954			863		1179	1179	
v/c Ratio (x)	0.26	0.12		0.49	0.60			0.18		0.21	0.05	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh	5.8	4.3		9.9	12.4			6.0		4.9	3.5	
Lane LOS	A	A		A	B			A		A	A	
95% Queue, veh	1.0	0.4		2.8	4.2			0.6		0.8	0.2	
Approach Delay, s/veh	5.4			11.3			6.0			4.6		
Approach LOS	A			B			A			A		
Intersection Delay, s/veh LOS	8.5						A					

HCM 2010 AWSC
10: Intel Driveway & Internal Circulation

03/11/2019

Intersection

Intersection Delay, s/veh 19.1

Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔			↔	↔		↔	
Traffic Vol, veh/h	32	50	43	85	92	108	251	527	309	6	95	4
Future Vol, veh/h	32	50	43	85	92	108	251	527	309	6	95	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	2	0	0	1	0	0	0	0	0	0	0
Mvmt Flow	32	50	43	85	92	108	251	527	309	6	95	4
Number of Lanes	0	1	1	1	1	0	0	2	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	1	2	2
HCM Control Delay	12.9	15.5	21.3	14
HCM LOS	B	C	C	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	59%	0%	0%	39%	0%	100%	4%	6%
Vol Thru, %	41%	100%	0%	61%	0%	0%	44%	90%
Vol Right, %	0%	0%	100%	0%	100%	0%	52%	4%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	427	351	309	82	43	77	209	105
LT Vol	251	0	0	32	0	77	9	6
Through Vol	176	351	0	50	0	0	92	95
RT Vol	0	0	309	0	43	0	108	4
Lane Flow Rate	427	351	309	82	43	76	208	105
Geometry Grp	7	7	7	8	8	8	8	8
Degree of Util (X)	0.784	0.617	0.481	0.199	0.094	0.181	0.443	0.246
Departure Headway (Hd)	6.617	6.319	5.609	8.731	7.848	8.496	7.655	8.443
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	550	576	646	411	456	423	471	425
Service Time	4.317	4.019	3.309	6.485	5.601	6.24	5.399	6.2
HCM Lane V/C Ratio	0.776	0.609	0.478	0.2	0.094	0.18	0.442	0.247
HCM Control Delay	29.2	18.7	13.4	13.7	11.4	13.1	16.4	14
HCM Lane LOS	D	C	B	B	B	B	C	B
HCM 95th-tile Q	7.3	4.2	2.6	0.7	0.3	0.7	2.2	1

HCM 2010 AWSC

11: Parking Lot/RA3&4 Access & Internal Circulation

03/11/2019

Intersection

Intersection Delay, s/veh 16.8

Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	113	97	10	4	359	236	137	59	0	135	2	83
Future Vol, veh/h	113	97	10	4	359	236	137	59	0	135	2	83
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	0	0	0	0	6	0	0	0	7	0	3
Mvmt Flow	113	97	10	4	359	236	137	59	0	135	2	83
Number of Lanes	1	1	0	1	1	1	1	1	0	1	1	0

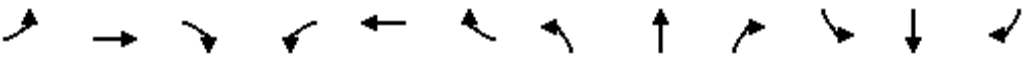
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	13.4	20	14.1	13.7
HCM LOS	B	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	91%	0%	100%	0%	0%	2%
Vol Right, %	0%	0%	0%	9%	0%	0%	100%	0%	98%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	137	59	113	107	4	359	236	135	85
LT Vol	137	0	113	0	4	0	0	135	0
Through Vol	0	59	0	97	0	359	0	0	2
RT Vol	0	0	0	10	0	0	236	0	83
Lane Flow Rate	137	59	113	107	4	359	236	135	85
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.321	0.13	0.26	0.229	0.008	0.696	0.417	0.319	0.169
Departure Headway (Hd)	8.428	7.918	8.295	7.716	7.484	6.975	6.366	8.495	7.168
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	426	453	433	464	478	517	564	423	500
Service Time	6.186	5.676	6.053	5.473	5.23	4.721	4.112	6.253	4.925
HCM Lane V/C Ratio	0.322	0.13	0.261	0.231	0.008	0.694	0.418	0.319	0.17
HCM Control Delay	15.1	11.9	14	12.8	10.3	24.3	13.6	15.2	11.4
HCM Lane LOS	C	B	B	B	B	C	B	C	B
HCM 95th-tile Q	1.4	0.4	1	0.9	0	5.4	2	1.4	0.6

HCM Signalized Intersection Capacity Analysis

12: NE Century Boulevard & NE Butler Street

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	152	46	4	576	275	206	446	4	40	154	90
Future Volume (vph)	74	152	46	4	576	275	206	446	4	40	154	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3428		1798	1900	1577	1803	1830		1752	1666	
Flt Permitted	0.11	1.00		0.63	1.00	1.00	0.44	1.00		0.31	1.00	
Satd. Flow (perm)	217	3428		1187	1900	1577	839	1830		567	1666	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	74	152	46	4	576	275	206	446	4	40	154	90
RTOR Reduction (vph)	0	24	0	0	0	159	0	0	0	0	20	0
Lane Group Flow (vph)	74	174	0	4	576	116	206	450	0	40	224	0
Confl. Peds. (#/hr)	2		4	4		2	2		3	3		2
Confl. Bikes (#/hr)						3			3			
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	2%	50%	3%	6%	0%
Bus Blockages (#/hr)	0	1	0	0	0	0	0	3	33	0	7	0
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4	5	1	6		5	2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)	47.1	42.1		39.0	38.0	43.2	48.3	39.2		40.5	35.3	
Effective Green, g (s)	47.1	42.6		39.0	38.5	43.2	48.3	40.2		40.5	36.3	
Actuated g/C Ratio	0.45	0.41		0.37	0.37	0.41	0.46	0.38		0.39	0.35	
Clearance Time (s)	4.0	4.5		4.0	4.5	4.0	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.0	2.0		1.0	2.0	0.5	0.5	2.5		0.5	2.5	
Lane Grp Cap (vph)	174	1390		446	696	648	469	700		277	575	
v/s Ratio Prot	c0.02	0.05		0.00	c0.30	0.01	c0.04	c0.25		0.01	0.13	
v/s Ratio Perm	0.17			0.00		0.06	0.16			0.05		
v/c Ratio	0.43	0.13		0.01	0.83	0.18	0.44	0.64		0.14	0.39	
Uniform Delay, d1	21.8	19.5		20.8	30.2	19.6	17.9	26.5		21.2	26.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		0.78	0.88	
Incremental Delay, d2	0.6	0.0		0.0	7.6	0.0	0.2	4.5		0.1	1.9	
Delay (s)	22.4	19.6		20.8	37.9	19.7	18.2	31.0		16.7	24.7	
Level of Service	C	B		C	D	B	B	C		B	C	
Approach Delay (s)		20.3			31.9			27.0			23.5	
Approach LOS		C			C			C			C	
Intersection Summary												
HCM 2000 Control Delay		27.7			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.71										
Actuated Cycle Length (s)		105.0			Sum of lost time (s)			16.0				
Intersection Capacity Utilization		83.4%			ICU Level of Service			E				
Analysis Period (min)		15										
c Critical Lane Group												

HCM 2010 TWSC
13: Internal Circulation & NE Ronler Drive

03/11/2019

Intersection						
Int Delay, s/veh	8.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	377	49	93	133	4	301
Future Vol, veh/h	377	49	93	133	4	301
Conflicting Peds, #/hr	0	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	-	85	25	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	2	6	3	25	4
Mvmt Flow	377	49	93	133	4	301

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	403	95	0	0	227
Stage 1	94	-	-	-	-
Stage 2	309	-	-	-	-
Critical Hdwy	6.4	6.22	-	-	4.35
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.318	-	-	2.425
Pot Cap-1 Maneuver	607	962	-	-	1217
Stage 1	935	-	-	-	-
Stage 2	749	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	605	960	-	-	1216
Mov Cap-2 Maneuver	605	-	-	-	-
Stage 1	934	-	-	-	-
Stage 2	747	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 605 960 1216	-	-
HCM Lane V/C Ratio	-	- 0.623 0.051 0.003	-	-
HCM Control Delay (s)	-	- 20.3 9 8	-	-
HCM Lane LOS	-	- C A A	-	-
HCM 95th %tile Q(veh)	-	- 4.3 0.2 0	-	-

HCM Signalized Intersection Capacity Analysis

14: NE Century Boulevard & NE Ronler Drive

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	72	23	116	442	56	171	570	50	45	237	45
Future Volume (vph)	8	72	23	116	442	56	171	570	50	45	237	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.98		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1543	3460		1784	1855		1786	1833		1805	1718	
Flt Permitted	0.22	1.00		0.69	1.00		0.40	1.00		0.15	1.00	
Satd. Flow (perm)	351	3460		1300	1855		756	1833		276	1718	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	8	72	23	116	442	56	171	570	50	45	237	45
RTOR Reduction (vph)	0	19	0	0	3	0	0	3	0	0	9	0
Lane Group Flow (vph)	8	76	0	116	495	0	171	617	0	45	273	0
Confl. Peds. (#/hr)			1	1			2		3	3		2
Confl. Bikes (#/hr)									4			
Heavy Vehicles (%)	17%	0%	0%	1%	0%	6%	1%	2%	5%	0%	9%	0%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	19.5	18.5		45.0	39.5		52.0	44.0		30.5	27.5	
Effective Green, g (s)	19.5	19.0		45.0	40.0		52.0	45.0		30.5	28.5	
Actuated g/C Ratio	0.19	0.18		0.43	0.38		0.50	0.43		0.29	0.27	
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	76	626		658	706		565	785		123	466	
v/s Ratio Prot	0.00	0.02		c0.04	c0.27		c0.06	c0.34		0.01	0.16	
v/s Ratio Perm	0.02			0.04			0.09			0.10		
v/c Ratio	0.11	0.12		0.18	0.70		0.30	0.79		0.37	0.59	
Uniform Delay, d1	47.9	36.0		18.8	27.4		22.5	25.8		46.8	33.1	
Progression Factor	1.00	1.00		1.00	1.00		0.82	0.96		0.63	1.00	
Incremental Delay, d2	0.2	0.0		0.0	2.6		0.1	7.0		0.7	5.3	
Delay (s)	48.1	36.0		18.9	30.0		18.5	31.8		30.1	38.4	
Level of Service	D	D		B	C		B	C		C	D	
Approach Delay (s)		37.0			27.9			29.0			37.2	
Approach LOS		D			C			C			D	
Intersection Summary												
HCM 2000 Control Delay			30.5			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			105.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			73.9%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

15: NE Century Boulevard & RAP1 Access/Parking

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	0	114	0	0	0	206	454	1	0	225	387
Future Volume (vph)	80	0	114	0	0	0	206	454	1	0	225	387
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	3.5				4.0	4.0			4.0	4.0
Lane Util. Factor		1.00	1.00				1.00	1.00			1.00	1.00
Frpb, ped/bikes		1.00	0.97				1.00	1.00			1.00	0.97
Flpb, ped/bikes		1.00	1.00				1.00	1.00			1.00	1.00
Frt		1.00	0.85				1.00	1.00			1.00	0.85
Flt Protected		0.95	1.00				0.95	1.00			1.00	1.00
Satd. Flow (prot)		1805	1570				1801	1826			1792	1556
Flt Permitted		0.95	1.00				0.57	1.00			1.00	1.00
Satd. Flow (perm)		1805	1570				1075	1826			1792	1556
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	80	0	114	0	0	0	206	454	1	0	225	387
RTOR Reduction (vph)	0	0	102	0	0	0	0	0	0	0	0	146
Lane Group Flow (vph)	0	80	12	0	0	0	206	455	0	0	225	241
Confl. Peds. (#/hr)			3	3			3					3
Confl. Bikes (#/hr)									4			2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	6%	1%
Turn Type	Split	NA	Perm	Split			pm+pt	NA		pm+pt	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases			8				6			2		2
Actuated Green, G (s)		11.0	11.0				77.4	77.4			64.4	64.4
Effective Green, g (s)		11.0	11.0				77.4	78.4			65.4	65.4
Actuated g/C Ratio		0.10	0.10				0.74	0.75			0.62	0.62
Clearance Time (s)		3.5	3.5				4.0	5.0			5.0	5.0
Vehicle Extension (s)		3.0	3.0				2.5	4.0			4.0	4.0
Lane Grp Cap (vph)		189	164				854	1363			1116	969
v/s Ratio Prot		c0.04					0.02	c0.25			0.13	
v/s Ratio Perm			0.01				0.16					0.15
v/c Ratio		0.42	0.07				0.24	0.33			0.20	0.25
Uniform Delay, d1		44.0	42.4				4.3	4.5			8.5	8.8
Progression Factor		1.00	1.00				0.66	0.58			1.39	4.00
Incremental Delay, d2		1.5	0.2				0.1	0.5			0.4	0.6
Delay (s)		45.6	42.6				2.9	3.1			12.3	35.9
Level of Service		D	D				A	A			B	D
Approach Delay (s)		43.8			0.0			3.0			27.2	
Approach LOS		D			A			A			C	
Intersection Summary												
HCM 2000 Control Delay			18.5				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.34									
Actuated Cycle Length (s)			105.0				Sum of lost time (s)			15.0		
Intersection Capacity Utilization			49.9%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

16: NE Century Boulevard & RA1/2 Access/Office Driveway

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	4	46	20	11	0	166	284	22	7	526	304
Future Volume (vph)	71	4	46	20	11	0	166	284	22	7	526	304
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5		3.5	3.5		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97		1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	0.99	1.00		0.99	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.86		1.00	1.00		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1793	1401		1790	1900		1769	1826		1803	1863	1580
Flt Permitted	0.75	1.00		0.72	1.00		0.40	1.00		0.57	1.00	1.00
Satd. Flow (perm)	1417	1401		1365	1900		744	1826		1089	1863	1580
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	71	4	46	20	11	0	166	284	22	7	526	304
RTOR Reduction (vph)	0	41	0	0	0	0	0	1	0	0	0	62
Lane Group Flow (vph)	71	9	0	20	11	0	166	305	0	7	526	242
Confl. Peds. (#/hr)	3		4	4		3	1		1	1		1
Confl. Bikes (#/hr)						2			2			
Heavy Vehicles (%)	0%	0%	15%	0%	0%	0%	2%	3%	0%	0%	2%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		2
Actuated Green, G (s)	11.1	11.1		11.1	11.1		85.4	80.3		76.7	75.6	75.6
Effective Green, g (s)	11.1	11.1		11.1	11.1		85.4	81.3		76.7	76.6	76.6
Actuated g/C Ratio	0.11	0.11		0.11	0.11		0.81	0.77		0.73	0.73	0.73
Clearance Time (s)	3.5	3.5		3.5	3.5		4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.5	4.0		2.5	4.0	4.0
Lane Grp Cap (vph)	149	148		144	200		661	1413		802	1359	1152
v/s Ratio Prot		0.01			0.01		c0.01	0.17		0.00	c0.28	
v/s Ratio Perm	c0.05			0.01			0.19			0.01		0.15
v/c Ratio	0.48	0.06		0.14	0.06		0.25	0.22		0.01	0.39	0.21
Uniform Delay, d1	44.2	42.3		42.6	42.2		2.8	3.2		3.8	5.4	4.5
Progression Factor	1.00	1.00		1.00	1.00		0.72	1.01		1.00	1.00	1.00
Incremental Delay, d2	2.4	0.2		0.4	0.1		0.1	0.3		0.0	0.8	0.4
Delay (s)	46.6	42.4		43.1	42.3		2.1	3.6		3.8	6.2	4.9
Level of Service	D	D		D	D		A	A		A	A	A
Approach Delay (s)		44.9			42.8			3.1			5.7	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			8.9				HCM 2000 Level of Service			A		
HCM 2000 Volume to Capacity ratio			0.39									
Actuated Cycle Length (s)			105.0				Sum of lost time (s)			11.5		
Intersection Capacity Utilization			58.7%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

17: NE Century Boulevard & NE Evergreen Parkway

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	515	143	622	760	272	80	56	267	35	23	3
Future Volume (vph)	10	515	143	622	760	272	80	56	267	35	23	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	0.99		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1357	3374	1547	1787	3302		1719	1827	1577	1474	1507	
Flt Permitted	0.28	1.00	1.00	0.30	1.00		0.56	1.00	1.00	0.72	1.00	
Satd. Flow (perm)	396	3374	1547	557	3302		1019	1827	1577	1118	1507	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	10	515	143	622	760	272	80	56	267	35	23	3
RTOR Reduction (vph)	0	0	98	0	19	0	0	0	140	0	3	0
Lane Group Flow (vph)	10	515	45	622	1013	0	80	56	127	35	23	0
Confl. Peds. (#/hr)	4		1	1		4			7	7		
Confl. Bikes (#/hr)			1			3			1			
Heavy Vehicles (%)	33%	7%	2%	1%	5%	2%	5%	4%	2%	22%	27%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)	31.0	29.9	29.9	72.0	66.9		16.3	9.6	47.7	11.7	7.3	
Effective Green, g (s)	31.0	31.4	31.4	72.0	68.4		16.3	10.1	47.7	11.7	7.8	
Actuated g/C Ratio	0.31	0.31	0.31	0.72	0.68		0.16	0.10	0.48	0.12	0.08	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.0	4.5	4.0	4.0	4.5	
Vehicle Extension (s)	2.0	3.1	3.1	2.0	3.1		2.0	2.5	2.0	2.0	2.5	
Lane Grp Cap (vph)	133	1059	485	869	2258		212	184	752	146	117	
v/s Ratio Prot	0.00	0.15		c0.27	0.31		c0.03	0.03	0.06	0.01	0.02	
v/s Ratio Perm	0.02		0.03	c0.24			c0.04		0.02	0.02		
v/c Ratio	0.08	0.49	0.09	0.72	0.45		0.38	0.30	0.17	0.24	0.20	
Uniform Delay, d1	24.4	27.8	24.2	10.0	7.2		36.8	41.7	14.9	39.9	43.2	
Progression Factor	1.08	0.80	1.64	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	1.5	0.4	2.4	0.6		0.4	0.7	0.0	0.3	0.6	
Delay (s)	26.6	23.9	40.2	12.4	7.9		37.2	42.4	14.9	40.2	43.8	
Level of Service	C	C	D	B	A		D	D	B	D	D	
Approach Delay (s)		27.4			9.6			23.2			41.8	
Approach LOS		C			A			C			D	
Intersection Summary												
HCM 2000 Control Delay			16.5			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			84.1%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

EBR - Correct Progression Factor to Match EBT
PF = 0.80, Delay = 19.9, LOS = B

HCM Signalized Intersection Capacity Analysis

18: RA1&2 North Access/Ronler Corporate Center & NE Evergreen Parkway

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	660	93	129	740	37	25	1	33	5	1	2
Future Volume (vph)	3	660	93	129	740	37	25	1	33	5	1	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		3.5	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.85		1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3353		1719	3449		1504	1382		1805	1710	
Flt Permitted	0.36	1.00		0.32	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	679	3353		573	3449		1504	1382		1805	1710	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	3	660	93	129	740	37	25	1	33	5	1	2
RTOR Reduction (vph)	0	6	0	0	2	0	0	30	0	0	2	0
Lane Group Flow (vph)	3	747	0	129	775	0	25	4	0	5	1	0
Confl. Peds. (#/hr)	1		1	1		1						
Confl. Bikes (#/hr)			1			2						
Heavy Vehicles (%)	0%	5%	8%	5%	4%	0%	20%	0%	18%	0%	0%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6								
Actuated Green, G (s)	66.4	65.4		77.2	72.2		2.9	8.3		1.0	6.4	
Effective Green, g (s)	66.4	66.9		77.2	73.7		2.9	8.8		1.0	6.4	
Actuated g/C Ratio	0.66	0.67		0.77	0.74		0.03	0.09		0.01	0.06	
Clearance Time (s)	4.0	5.5		4.0	5.5		4.0	4.5		3.5	4.0	
Vehicle Extension (s)	1.5	3.1		1.5	3.1		1.5	1.0		1.5	0.7	
Lane Grp Cap (vph)	462	2243		531	2541		43	121		18	109	
v/s Ratio Prot	0.00	c0.22		c0.02	0.22		c0.02	c0.00		0.00	0.00	
v/s Ratio Perm	0.00			0.17								
v/c Ratio	0.01	0.33		0.24	0.31		0.58	0.03		0.28	0.01	
Uniform Delay, d1	5.7	7.0		3.4	4.5		48.0	41.7		49.1	43.8	
Progression Factor	1.59	1.04		0.58	0.46		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.4		0.1	0.3		12.2	0.0		3.0	0.0	
Delay (s)	9.0	7.7		2.0	2.4		60.2	41.7		52.2	43.8	
Level of Service	A	A		A	A		E	D		D	D	
Approach Delay (s)		7.7			2.3			49.6			49.1	
Approach LOS		A			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			6.5			HCM 2000 Level of Service			A			
HCM 2000 Volume to Capacity ratio			0.31									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			55.2%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

19: North Access/NE 59th Avenue & NE Evergreen Parkway

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	676	17	17	629	126	8	2	11	68	4	45
Future Volume (vph)	72	676	17	17	629	126	8	2	11	68	4	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3471	1483	1455	3361		1517	1626	1188	1583	1539	
Flt Permitted	0.32	1.00	1.00	0.36	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	610	3471	1483	551	3361		1517	1626	1188	1583	1539	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	72	676	17	17	629	126	8	2	11	68	4	45
RTOR Reduction (vph)	0	0	6	0	9	0	0	0	10	0	40	0
Lane Group Flow (vph)	72	676	11	17	746	0	5	5	1	68	9	0
Confl. Peds. (#/hr)			3	3								
Confl. Bikes (#/hr)			1			2						
Heavy Vehicles (%)	0%	4%	6%	24%	4%	6%	13%	0%	36%	14%	0%	7%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Split	NA	Prot	Split	NA	
Protected Phases	5	2		1	6		8	8	8	4	4	
Permitted Phases	2		2	6								
Actuated Green, G (s)	67.8	61.4	61.4	61.2	58.1		7.2	7.2	7.2	10.3	10.3	
Effective Green, g (s)	67.8	62.9	62.9	61.2	59.6		7.2	7.2	7.2	10.8	10.8	
Actuated g/C Ratio	0.68	0.63	0.63	0.61	0.60		0.07	0.07	0.07	0.11	0.11	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.0	4.0	4.0	4.5	4.5	
Vehicle Extension (s)	1.5	3.1	3.1	1.5	3.1		2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	490	2183	932	365	2003		109	117	85	170	166	
v/s Ratio Prot	c0.01	0.19		0.00	c0.22		c0.00	0.00	0.00	c0.04	0.01	
v/s Ratio Perm	0.09		0.01	0.03								
v/c Ratio	0.15	0.31	0.01	0.05	0.37		0.05	0.04	0.01	0.40	0.05	
Uniform Delay, d1	8.8	8.5	6.9	9.9	10.5		43.2	43.2	43.1	41.6	40.0	
Progression Factor	1.00	1.00	1.00	0.61	0.87		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	0.4	0.0	0.0	0.5		0.1	0.1	0.0	0.6	0.0	
Delay (s)	8.8	8.9	7.0	6.1	9.6		43.3	43.2	43.1	42.1	40.1	
Level of Service	A	A	A	A	A		D	D	D	D	D	
Approach Delay (s)		8.9			9.5			43.2			41.3	
Approach LOS		A			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			11.9			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.33									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			46.0%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

1: NE Brookwood Parkway & NE Evergreen Parkway

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	813	548	126	228	549	185	200	1529	183	121	1092	326
Future Volume (vph)	813	548	126	228	549	185	200	1529	183	121	1092	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	2.5	4.0	4.0	2.5	4.0	4.0		4.0	4.0	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91		0.97	0.91	0.88
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3467	3574	1564	3467	3610	1583	3467	5048		3433	5085	2755
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3467	3574	1564	3467	3610	1583	3467	5048		3433	5085	2755
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	813	548	126	228	549	185	200	1529	183	121	1092	326
RTOR Reduction (vph)	0	0	0	0	0	0	0	11	0	0	0	89
Lane Group Flow (vph)	813	548	126	228	549	185	200	1701	0	121	1092	237
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	1%	2%	1%	0%	2%	1%	1%	2%	2%	2%	2%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA		Prot	NA	pm+ov
Protected Phases	3	8		7	4		1	6		5	2	3
Permitted Phases			Free			Free						2
Actuated Green, G (s)	32.9	44.9	131.8	13.1	25.1	131.8	20.3	45.2		8.6	33.5	66.4
Effective Green, g (s)	33.4	46.4	131.8	13.6	26.6	131.8	20.8	46.7		9.1	35.0	69.4
Actuated g/C Ratio	0.25	0.35	1.00	0.10	0.20	1.00	0.16	0.35		0.07	0.27	0.53
Clearance Time (s)	4.5	5.5		4.5	5.5		4.5	5.5		4.5	5.5	4.5
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	2.0
Lane Grp Cap (vph)	878	1258	1564	357	728	1583	547	1788		237	1350	1513
v/s Ratio Prot	c0.23	0.15		0.07	c0.15		0.06	c0.34		0.04	c0.21	0.04
v/s Ratio Perm			0.08			0.12						0.05
v/c Ratio	0.93	0.44	0.08	0.64	0.75	0.12	0.37	0.95		0.51	0.81	0.16
Uniform Delay, d1	48.0	32.7	0.0	56.7	49.5	0.0	49.6	41.4		59.2	45.3	16.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	15.1	0.2	0.1	2.8	4.4	0.2	0.2	11.8		0.8	3.7	0.0
Delay (s)	63.1	32.9	0.1	59.5	54.0	0.2	49.8	53.2		60.0	49.0	16.1
Level of Service	E	C	A	E	D	A	D	D		E	D	B
Approach Delay (s)		46.6			44.9			52.9			42.9	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			47.4				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.90									
Actuated Cycle Length (s)			131.8				Sum of lost time (s)			16.0		
Intersection Capacity Utilization			89.5%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: NE Brookwood Parkway & T5 Data Center/NE Shute Road

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔		↔	↔	
Traffic Volume (vph)	2	2	1	42	0	1118	0	936	17	252	1287	1
Future Volume (vph)	2	2	1	42	0	1118	0	936	17	252	1287	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	3.5		4.0		3.0	4.0	
Lane Util. Factor		1.00			1.00	0.88		0.95		0.97	0.95	
Frpb, ped/bikes		0.99			1.00	1.00		1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00		1.00		1.00	1.00	
Frt		0.97			1.00	0.85		1.00		1.00	1.00	
Flt Protected		0.98			0.95	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1800			1805	2814		3431		3273	3471	
Flt Permitted		0.98			0.95	1.00		1.00		0.95	1.00	
Satd. Flow (perm)		1800			1805	2814		3431		3273	3471	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	2	1	42	0	1118	0	936	17	252	1287	1
RTOR Reduction (vph)	0	1	0	0	0	216	0	1	0	0	0	0
Lane Group Flow (vph)	0	4	0	0	42	902	0	952	0	252	1288	0
Confl. Peds. (#/hr)			1	1			1		2	2		1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	5%	0%	7%	4%	0%
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	8	8		4	4	7 5	1	6		5 7	2	
Permitted Phases						4						
Actuated Green, G (s)		0.9			5.7	45.6		37.4		39.9	70.5	
Effective Green, g (s)		1.4			6.2	47.1		38.9		42.9	72.0	
Actuated g/C Ratio		0.01			0.06	0.44		0.36		0.40	0.67	
Clearance Time (s)		4.5			4.5			5.5			5.5	
Vehicle Extension (s)		2.0			2.0			3.0			3.0	
Lane Grp Cap (vph)		23			104	1239		1248		1313	2337	
v/s Ratio Prot		c0.00			0.02	c0.28		c0.28		0.08	0.37	
v/s Ratio Perm						0.04						
v/c Ratio		0.17			0.40	0.73		0.76		0.19	0.55	
Uniform Delay, d1		52.2			48.6	24.6		29.9		20.8	9.1	
Progression Factor		1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		1.3			0.9	1.8		2.8		0.0	0.3	
Delay (s)		53.5			49.5	26.5		32.8		20.8	9.3	
Level of Service		D			D	C		C		C	A	
Approach Delay (s)		53.5			27.3			32.8			11.2	
Approach LOS		D			C			C			B	
Intersection Summary												
HCM 2000 Control Delay		22.0			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.74										
Actuated Cycle Length (s)		106.9			Sum of lost time (s)			20.5				
Intersection Capacity Utilization		79.7%			ICU Level of Service			D				
Analysis Period (min)		15										
c Critical Lane Group												

HCM 2010 TWSC
3: NE Shute Road & PERRIN Driveway/RS5 Access

03/11/2019

Intersection												
Int Delay, s/veh	6.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕		↕	↕		↕	↕	
Traffic Vol, veh/h	12	0	8	77	1	237	17	1055	9	12	247	12
Future Vol, veh/h	12	0	8	77	1	237	17	1055	9	12	247	12
Conflicting Peds, #/hr	0	0	2	2	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	125	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	8	0	0	3	0	1	0	1	38	22	4	8
Mvmt Flow	12	0	8	77	1	237	17	1055	9	12	247	12

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	839	1375	132	1244	1377	532	259	0	0	1064	0	0
Stage 1	277	277	-	1094	1094	-	-	-	-	-	-	-
Stage 2	562	1098	-	150	283	-	-	-	-	-	-	-
Critical Hdwy	7.66	6.5	6.9	7.56	6.5	6.92	4.1	-	-	4.54	-	-
Critical Hdwy Stg 1	6.66	5.5	-	6.56	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.66	5.5	-	6.56	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.58	4	3.3	3.53	4	3.31	2.2	-	-	2.42	-	-
Pot Cap-1 Maneuver	249	147	899	129	146	495	1317	-	-	544	-	-
Stage 1	689	685	-	227	292	-	-	-	-	-	-	-
Stage 2	464	291	-	834	681	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	126	142	897	124	141	495	1317	-	-	544	-	-
Mov Cap-2 Maneuver	126	142	-	124	141	-	-	-	-	-	-	-
Stage 1	680	670	-	224	288	-	-	-	-	-	-	-
Stage 2	238	287	-	807	666	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	25.9		32.2		0.1		0.5	
HCM LOS	D		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1317	-	-	192 124 490	544	-	-
HCM Lane V/C Ratio	0.013	-	-	0.104 0.621 0.486	0.022	-	-
HCM Control Delay (s)	7.8	-	-	25.9 72.8 19.1	11.8	-	-
HCM Lane LOS	A	-	-	D F C	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3 3.2 2.6	0.1	-	-

Intersection												
Int Delay, s/veh	58.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	1	175	220	16	247	73	796	26	10	313	11
Future Vol, veh/h	36	1	175	220	16	247	73	796	26	10	313	11
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	105	-	-	0	-	-	215	-	-	210	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	0	1	0	0	1	2	1	0	0	3	10
Mvmt Flow	36	1	175	220	16	247	73	796	26	10	313	11
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	892	1309	163	1133	1301	412	325	0	0	823	0	0
Stage 1	340	340	-	956	956	-	-	-	-	-	-	-
Stage 2	552	969	-	177	345	-	-	-	-	-	-	-
Critical Hdwy	7.56	6.5	6.92	7.5	6.5	6.92	4.14	-	-	4.1	-	-
Critical Hdwy Stg 1	6.56	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4	3.31	3.5	4	3.31	2.22	-	-	2.2	-	-
Pot Cap-1 Maneuver	235	161	856	~ 160	162	592	1231	-	-	816	-	-
Stage 1	645	643	-	281	339	-	-	-	-	-	-	-
Stage 2	483	334	-	813	640	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	119	149	855	~ 120	150	591	1230	-	-	815	-	-
Mov Cap-2 Maneuver	119	149	-	~ 120	150	-	-	-	-	-	-	-
Stage 1	606	635	-	264	319	-	-	-	-	-	-	-
Stage 2	251	314	-	638	632	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	16.9		223.7		0.7		0.3					
HCM LOS	C		F									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	1230	-	-	119	833	120	501	815	-	-		
HCM Lane V/C Ratio	0.059	-	-	0.303	0.211	1.833	0.525	0.012	-	-		
HCM Control Delay (s)	8.1	-	-	47.9	10.5	467.3	19.9	9.5	-	-		
HCM Lane LOS	A	-	-	E	B	F	C	A	-	-		
HCM 95th %tile Q(veh)	0.2	-	-	1.2	0.8	17.3	3	0	-	-		
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined				*: All major volume in platoon				

HCM 2010 TWSC
5: NE Shute Road & D1X Access

03/11/2019

Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	193	690	1	9	690
Future Vol, veh/h	20	193	690	1	9	690
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	130	0	-	225	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	1	0	13	2
Mvmt Flow	20	193	690	1	9	690
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1053	345	0	0	691	0
Stage 1	690	-	-	-	-	-
Stage 2	363	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.36	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.33	-
Pot Cap-1 Maneuver	225	657	-	-	830	-
Stage 1	465	-	-	-	-	-
Stage 2	680	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	223	657	-	-	830	-
Mov Cap-2 Maneuver	223	-	-	-	-	-
Stage 1	465	-	-	-	-	-
Stage 2	673	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	13.6	0	0.1			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 223 657 830	-	-		
HCM Lane V/C Ratio	-	- 0.09 0.294 0.011	-	-		
HCM Control Delay (s)	-	- 22.7 12.7 9.4	-	-		
HCM Lane LOS	-	- C B A	-	-		
HCM 95th %tile Q(veh)	-	- 0.3 1.2 0	-	-		

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	14	16	5	176	37	509	1	8	705	18
Future Vol, veh/h	4	0	14	16	5	176	37	509	1	8	705	18
Conflicting Peds, #/hr	0	0	0	0	0	0	6	0	2	2	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	170	-	0	160	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	1	0	1	0	0	1	0
Mvmt Flow	4	0	14	16	5	176	37	509	1	8	705	18
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1067	1322	368	955	1331	257	729	0	0	512	0	0
Stage 1	736	736	-	586	586	-	-	-	-	-	-	-
Stage 2	331	586	-	369	745	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.92	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.31	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	179	158	635	216	156	745	884	-	-	1064	-	-
Stage 1	381	428	-	468	500	-	-	-	-	-	-	-
Stage 2	662	500	-	629	424	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	127	149	631	203	147	744	879	-	-	1062	-	-
Mov Cap-2 Maneuver	127	149	-	203	147	-	-	-	-	-	-	-
Stage 1	363	422	-	447	478	-	-	-	-	-	-	-
Stage 2	479	478	-	610	418	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	16.4		13		0.6		0.1					
HCM LOS	C		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR					
Capacity (veh/h)	879	-	-	335	186	744	1062	-	-			
HCM Lane V/C Ratio	0.042	-	-	0.054	0.113	0.237	0.008	-	-			
HCM Control Delay (s)	9.3	-	-	16.4	26.8	11.3	8.4	-	-			
HCM Lane LOS	A	-	-	C	D	B	A	-	-			
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.4	0.9	0	-	-			

HCM Signalized Intersection Capacity Analysis

7: NE Shute Road & NE Airport Road/NE Butler Street

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	102	13	214	210	241	12	207	39	216	401	100
Future Volume (vph)	43	102	13	214	210	241	12	207	39	216	401	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	5.5		4.0	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.92		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1804	1845		1798	1723		1802	3423		1783	1881	1543
Flt Permitted	0.50	1.00		0.55	1.00		0.53	1.00		0.47	1.00	1.00
Satd. Flow (perm)	954	1845		1042	1723		998	3423		883	1881	1543
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	43	102	13	214	210	241	12	207	39	216	401	100
RTOR Reduction (vph)	0	2	0	0	18	0	0	11	0	0	0	74
Lane Group Flow (vph)	43	113	0	214	433	0	12	235	0	216	401	26
Confl. Peds. (#/hr)	3		6	6		3	3		4	4		3
Confl. Bikes (#/hr)						3						
Heavy Vehicles (%)	0%	1%	0%	0%	0%	1%	0%	3%	0%	1%	1%	2%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	custom
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		6
Actuated Green, G (s)	20.1	16.6		38.1	30.6		15.4	14.6		31.0	26.2	14.6
Effective Green, g (s)	20.1	16.6		38.1	30.6		15.4	14.6		31.0	26.2	14.6
Actuated g/C Ratio	0.25	0.21		0.48	0.38		0.19	0.18		0.39	0.33	0.18
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	5.5		4.0	5.5	5.5
Vehicle Extension (s)	2.5	2.5		2.5	2.5		1.0	3.0		1.0	3.0	3.0
Lane Grp Cap (vph)	278	384		664	662		201	627		484	619	283
v/s Ratio Prot	0.01	0.06		c0.07	c0.25		0.00	0.07		c0.07	c0.21	
v/s Ratio Perm	0.03			0.08			0.01			0.10		0.02
v/c Ratio	0.15	0.29		0.32	0.65		0.06	0.37		0.45	0.65	0.09
Uniform Delay, d1	22.8	26.6		12.4	20.1		26.1	28.5		17.0	22.8	27.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3		0.2	2.1		0.0	0.4		0.2	2.3	0.1
Delay (s)	23.0	26.9		12.6	22.2		26.1	28.9		17.2	25.1	27.1
Level of Service	C	C		B	C		C	C		B	C	C
Approach Delay (s)		25.8			19.1			28.7			23.0	
Approach LOS		C			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			22.6			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			79.6			Sum of lost time (s)			18.5			
Intersection Capacity Utilization			70.8%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Int Delay, s/veh 4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	339	30	5	432	2	19	1	3	83	0	210
Future Vol, veh/h	20	339	30	5	432	2	19	1	3	83	0	210
Conflicting Peds, #/hr	3	0	3	3	0	3	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	1	3	0	1	0	0	0	33	0	0	0
Mvmt Flow	20	339	30	5	432	2	19	1	3	83	0	210

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	437	0	0	372	0	0	946	844	357	842	858	437
Stage 1	-	-	-	-	-	-	397	397	-	446	446	-
Stage 2	-	-	-	-	-	-	549	447	-	396	412	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.53	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.597	3.5	4	3.3
Pot Cap-1 Maneuver	1134	-	-	1198	-	-	243	302	623	286	297	624
Stage 1	-	-	-	-	-	-	633	607	-	595	577	-
Stage 2	-	-	-	-	-	-	524	577	-	633	598	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1131	-	-	1195	-	-	158	294	621	278	289	622
Mov Cap-2 Maneuver	-	-	-	-	-	-	158	294	-	278	289	-
Stage 1	-	-	-	-	-	-	620	594	-	583	573	-
Stage 2	-	-	-	-	-	-	345	573	-	618	585	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.1			28.1			16.4		
HCM LOS							D			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	179	1131	-	-	1195	-	-	278	622
HCM Lane V/C Ratio	0.128	0.018	-	-	0.004	-	-	0.299	0.338
HCM Control Delay (s)	28.1	8.2	-	-	8	-	-	23.4	13.7
HCM Lane LOS	D	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0	-	-	1.2	1.5

HCM 2010 Roundabout
9: NE 65th Avenue/Intel Driveway & NE Butler Street

03/11/2019

Intersection							
Intersection Delay, s/veh	9.7						
Intersection LOS	A						
Approach	EB		WB		NB		SB
Entry Lanes	2		2		1		2
Conflicting Circle Lanes	2		2		2		2
Adj Approach Flow, veh/h	401		244		13		1064
Demand Flow Rate, veh/h	405		248		13		1064
Vehicles Circulating, veh/h	781		43		1117		192
Vehicles Exiting, veh/h	475		1087		69		99
Follow-Up Headway, s	3.186		3.186		3.186		3.186
Ped Vol Crossing Leg, #/h	29		46		2		0
Ped Cap Adj	0.993		0.949		1.000		1.000
Approach Delay, s/veh	9.9		4.9		7.3		10.7
Approach LOS	A		A		A		B
Lane	Left	Right	Left	Right	Left	Left	Right
Designated Moves	LT	TR	LTR	R	LTR	L	LTR
Assumed Moves	LT	TR	LT	R	LTR	L	LTR
RT Channelized							
Lane Util	0.469	0.531	0.746	0.254	1.000	0.530	0.470
Critical Headway, s	4.293	4.113	4.293	4.113	4.113	4.293	4.113
Entry Flow, veh/h	190	215	185	63	13	564	500
Cap Entry Lane, veh/h	629	654	1094	1096	517	978	988
Entry HV Adj Factor	0.993	0.990	0.981	1.000	1.000	1.000	1.000
Flow Entry, veh/h	189	213	181	63	13	564	500
Cap Entry, veh/h	620	643	1019	1041	517	978	988
V/C Ratio	0.304	0.331	0.178	0.061	0.025	0.576	0.506
Control Delay, s/veh	9.8	10.0	5.2	4.0	7.3	11.4	9.8
LOS	A	B	A	A	A	B	A
95th %tile Queue, veh	1	1	1	0	0	4	3

HCS7 Roundabouts Report

General Information

Analyst	PGP/JTJ
Agency or Co.	Mackenzie
Date Performed	3/8/2019
Analysis Year	2022
Time Analyzed	Proposed - PM
Project Description	Project Lark

Site Information

Intersection	NE Butler Street/NE 65th Avenue
E/W Street Name	NE Butler Street
N/S Street Name	NE 65th Avenue
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.83
Jurisdiction	City of Hillsboro

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	2	0	0	0	1	1	0	0	1	0	0	1	1	0
Lane Assignment	LT		TR		LTR		R				LTR		L		LTR	
Volume (V), veh/h	0	32	354	16	0	4	177	63	0	7	4	2	0	728	49	287
Percent Heavy Vehicles, %	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0
Flow Rate (v_{pce}), pc/h	0	39	432	19	0	5	218	76	0	8	5	2	0	877	59	346
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	2				1				2				1			
Pedestrians Crossing, p/h	29				46				2				0			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)	4.6453	4.9763		4.5436	4.5436			4.3276		4.5436	4.5436	
Follow-Up Headway (s)	2.6667	2.5352		2.5352	2.5352			2.5352		2.5352	2.5352	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h	221	270		223	76			15		897	385	
Entry Volume veh/h	218	267		220	75			15		897	385	
Circulating Flow (v_c), pc/h	941			52			1348			231		
Exiting Flow (v_{ex}), pc/h	1311			572			120			83		
Capacity (C_{pce}), pc/h	568	539		1354	1354			452		1151	1151	
Capacity (c), veh/h	562	533		1268	1268			452		1151	1151	
v/c Ratio (x)	0.39	0.50		0.17	0.06			0.03		0.78	0.33	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh	12.4	15.8		4.3	3.3			8.4		17.1	6.4	
Lane LOS	B	C		A	A			A		C	A	
95% Queue, veh	1.8	2.8		0.6	0.2			0.1		8.4	1.5	
Approach Delay, s/veh	14.3			4.1			8.4			13.9		
Approach LOS	B			A			A			B		
Intersection Delay, s/veh LOS	12.5						B					

HCM 2010 AWSC

10: Intel Driveway & Internal Circulation

03/11/2019

Intersection

Intersection Delay, s/veh 39.2

Intersection LOS E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	178	361	252	22	15	14	51	50	52	391	16
Future Vol, veh/h	6	178	361	252	22	15	14	51	50	52	391	16
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	0	0	0	11	0	0	0	0	0	0	0
Mvmt Flow	6	178	361	252	22	15	14	51	50	52	391	16
Number of Lanes	0	1	1	1	1	0	0	2	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	1	2	2
HCM Control Delay	24.4	17.2	12	77.3
HCM LOS	C	C	B	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	45%	0%	0%	3%	0%	100%	75%	11%
Vol Thru, %	55%	100%	0%	97%	0%	0%	15%	85%
Vol Right, %	0%	0%	100%	0%	100%	0%	10%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	31	34	50	184	361	144	145	459
LT Vol	14	0	0	6	0	144	108	52
Through Vol	17	34	0	178	0	0	22	391
RT Vol	0	0	50	0	361	0	15	16
Lane Flow Rate	31	34	50	184	361	144	145	459
Geometry Grp	7	7	7	8	8	8	8	8
Degree of Util (X)	0.076	0.081	0.11	0.414	0.739	0.36	0.364	1.023
Departure Headway (Hd)	8.984	8.749	8.021	8.105	7.369	9.265	9.252	8.025
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	401	412	450	442	487	391	391	450
Service Time	6.684	6.449	5.721	5.897	5.16	6.965	6.952	5.807
HCM Lane V/C Ratio	0.077	0.083	0.111	0.416	0.741	0.368	0.371	1.02
HCM Control Delay	12.4	12.2	11.7	16.6	28.4	17.1	17.2	77.3
HCM Lane LOS	B	B	B	C	D	C	C	F
HCM 95th-tile Q	0.2	0.3	0.4	2	6.1	1.6	1.6	13.7

HCM 2010 AWSC

11: Parking Lot/RA3&4 Access & Internal Circulation

03/11/2019

Intersection

Intersection Delay, s/veh 20.3

Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	69	460	5	1	66	74	9	5	6	234	6	98
Future Vol, veh/h	69	460	5	1	66	74	9	5	6	234	6	98
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	0	0	0	0	6	0	0	0	2	20	0
Mvmt Flow	69	460	5	1	66	74	9	5	6	234	6	98
Number of Lanes	1	1	0	1	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	26.9	10.6	10.6	14.6
HCM LOS	D	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	45%	0%	99%	0%	100%	0%	0%	6%
Vol Right, %	0%	55%	0%	1%	0%	0%	100%	0%	94%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	9	11	69	465	1	66	74	234	104
LT Vol	9	0	69	0	1	0	0	234	0
Through Vol	0	5	0	460	0	66	0	0	6
RT Vol	0	6	0	5	0	0	74	0	98
Lane Flow Rate	9	11	69	465	1	66	74	234	104
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.021	0.022	0.129	0.8	0.002	0.131	0.134	0.471	0.184
Departure Headway (Hd)	8.231	7.333	6.708	6.194	7.64	7.131	6.522	7.243	6.383
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	437	491	533	581	466	500	546	496	560
Service Time	5.931	5.033	4.468	3.954	5.426	4.916	4.307	5.014	4.154
HCM Lane V/C Ratio	0.021	0.022	0.129	0.8	0.002	0.132	0.136	0.472	0.186
HCM Control Delay	11.1	10.2	10.5	29.3	10.4	11	10.3	16.4	10.6
HCM Lane LOS	B	B	B	D	B	B	B	C	B
HCM 95th-tile Q	0.1	0.1	0.4	7.8	0	0.4	0.5	2.5	0.7

HCM Signalized Intersection Capacity Analysis

12: NE Century Boulevard & NE Butler Street

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	606	224	6	133	69	41	192	12	242	511	76
Future Volume (vph)	142	606	224	6	133	69	41	192	12	242	511	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3393		1803	1881	1583	1750	1792		1786	1785	
Flt Permitted	0.50	1.00		0.18	1.00	1.00	0.32	1.00		0.55	1.00	
Satd. Flow (perm)	947	3393		333	1881	1583	593	1792		1027	1785	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	142	606	224	6	133	69	41	192	12	242	511	76
RTOR Reduction (vph)	0	36	0	0	0	49	0	2	0	0	4	0
Lane Group Flow (vph)	142	794	0	6	133	20	41	202	0	242	583	0
Confl. Peds. (#/hr)			14	14			7		2	2		7
Confl. Bikes (#/hr)			7									4
Heavy Vehicles (%)	0%	0%	1%	0%	1%	2%	3%	4%	0%	1%	1%	1%
Bus Blockages (#/hr)	0	1	0	0	0	0	0	3	33	0	7	0
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4	5	1	6		5	2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)	35.3	30.3		23.8	22.8	32.6	54.6	51.4		65.2	58.0	
Effective Green, g (s)	35.3	30.8		23.8	23.3	32.6	54.6	52.4		65.2	59.0	
Actuated g/C Ratio	0.32	0.28		0.22	0.21	0.30	0.50	0.48		0.59	0.54	
Clearance Time (s)	4.0	4.5		4.0	4.5	4.0	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.0	2.0		1.0	2.0	0.5	0.5	2.5		0.5	2.5	
Lane Grp Cap (vph)	370	950		85	398	469	328	853		676	957	
v/s Ratio Prot	c0.03	c0.23		0.00	0.07	0.00	0.00	0.11		c0.03	c0.33	
v/s Ratio Perm	0.09			0.01		0.01	0.06			0.18		
v/c Ratio	0.38	0.84		0.07	0.33	0.04	0.12	0.24		0.36	0.61	
Uniform Delay, d1	27.8	37.2		34.8	36.8	27.6	15.2	17.0		10.9	17.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		0.68	0.85	
Incremental Delay, d2	0.2	6.2		0.1	0.2	0.0	0.1	0.7		0.1	2.6	
Delay (s)	28.0	43.4		34.9	37.0	27.6	15.3	17.7		7.5	17.5	
Level of Service	C	D		C	D	C	B	B		A	B	
Approach Delay (s)		41.2			33.8			17.3			14.6	
Approach LOS		D			C			B			B	
Intersection Summary												
HCM 2000 Control Delay			28.1									
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			110.0									
Intersection Capacity Utilization			83.5%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 2010 TWSC
13: Internal Circulation & NE Ronler Drive

03/11/2019

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	41	1	203	541	13	86
Future Vol, veh/h	41	1	203	541	13	86
Conflicting Peds, #/hr	0	1	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	-	85	25	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	1	1	0	5
Mvmt Flow	41	1	203	541	13	86

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	315	204	0	0	744	0
Stage 1	203	-	-	-	-	-
Stage 2	112	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	682	842	-	-	873	-
Stage 1	836	-	-	-	-	-
Stage 2	918	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	672	841	-	-	873	-
Mov Cap-2 Maneuver	672	-	-	-	-	-
Stage 1	836	-	-	-	-	-
Stage 2	904	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.7	0	1.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 672 841	873	-
HCM Lane V/C Ratio	-	- 0.061 0.001	0.015	-
HCM Control Delay (s)	-	- 10.7 9.3	9.2	-
HCM Lane LOS	-	- B A	A	-
HCM 95th %tile Q(veh)	-	- 0.2 0	0	-

HCM Signalized Intersection Capacity Analysis

14: NE Century Boulevard & NE Ronler Drive

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	469	88	36	22	6	15	294	147	173	641	6
Future Volume (vph)	52	469	88	36	22	6	15	294	147	173	641	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.97		1.00	0.95		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3483		1804	1839		1671	1760		1804	1878	
Flt Permitted	0.74	1.00		0.42	1.00		0.28	1.00		0.40	1.00	
Satd. Flow (perm)	1377	3483		791	1839		486	1760		769	1878	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	52	469	88	36	22	6	15	294	147	173	641	6
RTOR Reduction (vph)	0	15	0	0	5	0	0	14	0	0	0	0
Lane Group Flow (vph)	52	542	0	36	23	0	15	427	0	173	647	0
Confl. Peds. (#/hr)			1	1			3		2	2		3
Confl. Bikes (#/hr)			1						1			5
Heavy Vehicles (%)	2%	0%	5%	0%	0%	0%	8%	3%	0%	0%	1%	0%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	28.2	20.5		12.8	9.6		59.7	57.7		73.8	66.8	
Effective Green, g (s)	28.2	21.0		12.8	10.1		59.7	58.7		73.8	67.8	
Actuated g/C Ratio	0.26	0.19		0.12	0.09		0.54	0.53		0.67	0.62	
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	403	664		121	168		285	939		620	1157	
v/s Ratio Prot	0.02	c0.16		c0.01	0.01		0.00	0.24		c0.03	c0.34	
v/s Ratio Perm	0.02			0.03			0.03			0.16		
v/c Ratio	0.13	0.82		0.30	0.13		0.05	0.45		0.28	0.56	
Uniform Delay, d1	31.6	42.7		49.0	45.9		22.7	15.8		13.2	12.3	
Progression Factor	1.00	1.00		1.00	1.00		1.07	1.12		0.45	0.47	
Incremental Delay, d2	0.1	7.3		0.5	0.1		0.0	1.6		0.1	1.7	
Delay (s)	31.7	50.0		49.5	46.1		24.5	19.3		6.0	7.6	
Level of Service	C	D		D	D		C	B		A	A	
Approach Delay (s)		48.4			48.0			19.4			7.3	
Approach LOS		D			D			B			A	
Intersection Summary												
HCM 2000 Control Delay			24.3				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)			16.0		
Intersection Capacity Utilization			71.6%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

15: NE Century Boulevard & RAP1 Access/Parking

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	266	1	295	1	0	0	17	309	0	1	586	34
Future Volume (vph)	266	1	295	1	0	0	17	309	0	1	586	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	3.5	3.5			4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00			1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85	1.00			1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00	0.95			0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1810	1615	1805			1805	1863		1802	1881	1444
Flt Permitted		0.95	1.00	0.95			0.32	1.00		0.54	1.00	1.00
Satd. Flow (perm)		1810	1615	1805			606	1863		1028	1881	1444
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	266	1	295	1	0	0	17	309	0	1	586	34
RTOR Reduction (vph)	0	0	236	0	0	0	0	0	0	0	0	14
Lane Group Flow (vph)	0	267	59	1	0	0	17	309	0	1	586	20
Confl. Peds. (#/hr)							1		2	2		1
Confl. Bikes (#/hr)									2			5
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	1%	9%
Turn Type	Split	NA	Perm	Split			pm+pt	NA		pm+pt	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases			8				6			2		2
Actuated Green, G (s)		22.0	22.0	4.6			68.8	66.4		66.0	65.0	65.0
Effective Green, g (s)		22.0	22.0	4.6			68.8	67.4		66.0	66.0	66.0
Actuated g/C Ratio		0.20	0.20	0.04			0.63	0.61		0.60	0.60	0.60
Clearance Time (s)		3.5	3.5	3.5			4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0			2.5	4.0		2.5	4.0	4.0
Lane Grp Cap (vph)		362	323	75			405	1141		623	1128	866
v/s Ratio Prot		c0.15		c0.00			c0.00	0.17		0.00	c0.31	
v/s Ratio Perm			0.04				0.03			0.00		0.01
v/c Ratio		0.74	0.18	0.01			0.04	0.27		0.00	0.52	0.02
Uniform Delay, d1		41.3	36.5	50.5			9.4	9.9		8.9	12.8	8.9
Progression Factor		1.00	1.00	1.00			0.63	0.54		1.04	0.88	1.00
Incremental Delay, d2		7.6	0.3	0.1			0.0	0.6		0.0	1.7	0.0
Delay (s)		48.9	36.8	50.6			6.0	5.9		9.2	13.0	9.0
Level of Service		D	D	D			A	A		A	B	A
Approach Delay (s)		42.6			50.6			5.9			12.7	
Approach LOS		D			D			A			B	
Intersection Summary												
HCM 2000 Control Delay			22.4				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)			15.0		
Intersection Capacity Utilization			64.1%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

16: NE Century Boulevard & RA1/2 Access/Office Driveway

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	11	127	24	0	21	26	548	18	14	420	39
Future Volume (vph)	216	11	127	24	0	21	26	548	18	14	420	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5		3.5	3.5		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.96		1.00	0.98		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.85		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1801	1514		1780	1579		1734	1872		1805	1881	1453
Flt Permitted	0.74	1.00		0.55	1.00		0.46	1.00		0.38	1.00	1.00
Satd. Flow (perm)	1410	1514		1033	1579		842	1872		723	1881	1453
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	216	11	127	24	0	21	26	548	18	14	420	39
RTOR Reduction (vph)	0	102	0	0	17	0	0	1	0	0	0	13
Lane Group Flow (vph)	216	36	0	24	4	0	26	565	0	14	420	26
Confl. Peds. (#/hr)	1		8	8		1	3					3
Confl. Bikes (#/hr)			4						2			5
Heavy Vehicles (%)	0%	0%	4%	0%	0%	0%	4%	1%	0%	0%	1%	8%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		2
Actuated Green, G (s)	21.8	21.8		21.8	21.8		76.5	73.5		74.9	72.7	72.7
Effective Green, g (s)	21.8	21.8		21.8	21.8		76.5	74.5		74.9	73.7	73.7
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.70	0.68		0.68	0.67	0.67
Clearance Time (s)	3.5	3.5		3.5	3.5		4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		0.5	4.0		2.5	4.0	4.0
Lane Grp Cap (vph)	279	300		204	312		609	1267		513	1260	973
v/s Ratio Prot		0.02			0.00		c0.00	c0.30		0.00	0.22	
v/s Ratio Perm	c0.15			0.02			0.03			0.02		0.02
v/c Ratio	0.77	0.12		0.12	0.01		0.04	0.45		0.03	0.33	0.03
Uniform Delay, d1	41.8	36.2		36.2	35.5		5.5	8.2		6.3	7.7	6.1
Progression Factor	1.00	1.00		1.00	1.00		1.45	1.13		1.05	0.88	1.02
Incremental Delay, d2	12.6	0.2		0.3	0.0		0.0	1.1		0.0	0.7	0.0
Delay (s)	54.3	36.4		36.5	35.5		7.9	10.4		6.6	7.4	6.3
Level of Service	D	D		D	D		A	B		A	A	A
Approach Delay (s)		47.3			36.0			10.3			7.3	
Approach LOS		D			D			B			A	
Intersection Summary												
HCM 2000 Control Delay			19.1			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.51									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			11.5			
Intersection Capacity Utilization			56.5%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

17: NE Century Boulevard & NE Evergreen Parkway

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	962	147	199	630	68	136	33	594	214	97	16
Future Volume (vph)	9	962	147	199	630	68	136	33	594	214	97	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1597	3574	1565	1770	3518		1802	1900	1599	1787	1807	
Flt Permitted	0.39	1.00	1.00	0.10	1.00		0.68	1.00	1.00	0.50	1.00	
Satd. Flow (perm)	649	3574	1565	193	3518		1298	1900	1599	948	1807	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	9	962	147	199	630	68	136	33	594	214	97	16
RTOR Reduction (vph)	0	0	94	0	4	0	0	0	92	0	7	0
Lane Group Flow (vph)	9	962	53	199	694	0	136	33	502	214	106	0
Confl. Peds. (#/hr)	1					1	3					3
Confl. Bikes (#/hr)			1			1						1
Heavy Vehicles (%)	13%	1%	1%	2%	1%	0%	0%	0%	1%	1%	1%	13%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)	39.3	38.2	38.2	69.8	64.7		18.2	8.7	36.3	30.2	16.7	
Effective Green, g (s)	39.3	39.7	39.7	69.8	66.2		18.2	9.2	36.3	30.2	17.2	
Actuated g/C Ratio	0.36	0.36	0.36	0.63	0.60		0.17	0.08	0.33	0.27	0.16	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.0	4.5	4.0	4.0	4.5	
Vehicle Extension (s)	2.0	3.1	3.1	2.0	3.1		2.0	2.5	2.0	2.0	2.5	
Lane Grp Cap (vph)	241	1289	564	518	2117		258	158	527	393	282	
v/s Ratio Prot	0.00	c0.27		0.10	0.20		0.05	0.02	c0.24	c0.09	0.06	
v/s Ratio Perm	0.01		0.03	0.15			0.04		0.08	0.06		
v/c Ratio	0.04	0.75	0.09	0.38	0.33		0.53	0.21	0.95	0.54	0.38	
Uniform Delay, d1	22.8	30.7	23.3	14.2	10.9		41.4	47.0	36.0	33.0	41.6	
Progression Factor	1.43	0.93	3.03	1.00	1.00		1.11	1.16	0.89	1.00	1.00	
Incremental Delay, d2	0.0	3.7	0.3	0.2	0.4		0.8	0.4	25.3	0.8	0.6	
Delay (s)	32.6	32.2	70.7	14.3	11.3		46.9	54.9	57.3	33.8	42.2	
Level of Service	C	C	E	B	B		D	D	E	C	D	
Approach Delay (s)		37.3			12.0			55.3			36.7	
Approach LOS		D			B			E			D	
Intersection Summary												
HCM 2000 Control Delay			34.3			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			85.2%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

EBR - Correct Progression Factor to Match EBT
PF = 0.93, Delay = 21.8, LOS = B

HCM Signalized Intersection Capacity Analysis

18: RA1&2 North Access/Ronler Corporate Center & NE Evergreen Parkway

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	1145	15	11	781	3	111	0	113	9	0	6
Future Volume (vph)	2	1145	15	11	781	3	111	0	113	9	0	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		3.5	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1203	3560		1805	3537		1736	1577		1805	1380	
Flt Permitted	0.33	1.00		0.20	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	413	3560		381	3537		1736	1577		1805	1380	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	1145	15	11	781	3	111	0	113	9	0	6
RTOR Reduction (vph)	0	0	0	0	0	0	0	96	0	0	6	0
Lane Group Flow (vph)	2	1160	0	11	784	0	111	17	0	9	0	0
Confl. Peds. (#/hr)			5	5								
Confl. Bikes (#/hr)			8						1			
Heavy Vehicles (%)	50%	1%	13%	0%	2%	0%	4%	0%	1%	0%	0%	17%
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6								
Actuated Green, G (s)	75.6	74.6		75.6	74.6		10.1	15.8		1.1	6.8	
Effective Green, g (s)	75.6	76.1		75.6	76.1		10.1	16.3		1.1	6.8	
Actuated g/C Ratio	0.69	0.69		0.69	0.69		0.09	0.15		0.01	0.06	
Clearance Time (s)	4.0	5.5		4.0	5.5		4.0	4.5		3.5	4.0	
Vehicle Extension (s)	1.5	3.1		1.5	3.1		1.5	1.0		1.5	0.7	
Lane Grp Cap (vph)	291	2462		274	2446		159	233		18	85	
v/s Ratio Prot	0.00	c0.33		c0.00	0.22		c0.06	c0.01		0.00	0.00	
v/s Ratio Perm	0.00			0.03								
v/c Ratio	0.01	0.47		0.04	0.32		0.70	0.07		0.50	0.00	
Uniform Delay, d1	5.6	7.7		6.2	6.7		48.5	40.3		54.2	48.4	
Progression Factor	1.15	0.97		0.60	0.48		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.6		0.0	0.3		10.3	0.0		7.7	0.0	
Delay (s)	6.4	8.1		3.8	3.6		58.7	40.4		61.9	48.4	
Level of Service	A	A		A	A		E	D		E	D	
Approach Delay (s)		8.1			3.6			49.5			56.5	
Approach LOS		A			A			D			E	
Intersection Summary												
HCM 2000 Control Delay			11.0			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.46									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			51.6%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

19: North Access/NE 59th Avenue & NE Evergreen Parkway

03/11/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	848	4	3	802	79	163	9	174	125	0	71
Future Volume (vph)	14	848	4	3	802	79	163	9	174	125	0	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1671	3574	1555	1804	3424		1715	1728	1615	1671	1583	
Flt Permitted	0.26	1.00	1.00	0.27	1.00		0.95	0.96	1.00	0.95	1.00	
Satd. Flow (perm)	456	3574	1555	519	3424		1715	1728	1615	1671	1583	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	14	848	4	3	802	79	163	9	174	125	0	71
RTOR Reduction (vph)	0	0	2	0	4	0	0	0	154	0	61	0
Lane Group Flow (vph)	14	848	2	3	877	0	86	86	20	125	10	0
Confl. Peds. (#/hr)	1		5	5		1			1	1		
Confl. Bikes (#/hr)			10			2						
Heavy Vehicles (%)	8%	1%	0%	0%	2%	22%	0%	0%	0%	8%	0%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Split	NA	Prot	Split	NA	
Protected Phases	5	2		1	6		8	8	8	4	4	
Permitted Phases	2		2	6								
Actuated Green, G (s)	65.9	63.1	63.1	62.3	61.3		12.7	12.7	12.7	15.2	15.2	
Effective Green, g (s)	65.9	64.6	64.6	62.3	62.8		12.7	12.7	12.7	15.7	15.7	
Actuated g/C Ratio	0.60	0.59	0.59	0.57	0.57		0.12	0.12	0.12	0.14	0.14	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.0	4.0	4.0	4.5	4.5	
Vehicle Extension (s)	1.5	3.1	3.1	1.5	3.1		2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	304	2098	913	305	1954		198	199	186	238	225	
v/s Ratio Prot	c0.00	0.24		0.00	c0.26		c0.05	0.05	0.01	c0.07	0.01	
v/s Ratio Perm	0.03		0.00	0.01								
v/c Ratio	0.05	0.40	0.00	0.01	0.45		0.43	0.43	0.11	0.53	0.05	
Uniform Delay, d1	14.9	12.3	9.4	15.7	13.6		45.3	45.3	43.6	43.7	40.7	
Progression Factor	1.00	1.00	1.00	0.61	0.75		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	0.6	0.0	0.0	0.7		0.6	0.5	0.1	1.0	0.0	
Delay (s)	14.9	12.9	9.4	9.6	10.9		45.9	45.8	43.7	44.7	40.7	
Level of Service	B	B	A	A	B		D	D	D	D	D	
Approach Delay (s)		12.9			10.9			44.8			43.2	
Approach LOS		B			B			D			D	
Intersection Summary												
HCM 2000 Control Delay			19.5			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.45									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			51.7%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

1: NE Brookwood Parkway & NE Evergreen Parkway

03/13/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	311	446	150	162	324	113	85	816	176	104	1496	578
Future Volume (vph)	311	446	150	162	324	113	85	816	176	104	1496	578
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	2.5	4.0	4.0	2.5	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91		0.97	0.91	0.88
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3303	3438	1564	3213	3438	1410	3467	4736		3335	5085	2733
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3303	3438	1564	3213	3438	1410	3467	4736		3335	5085	2733
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	311	446	150	162	324	113	85	816	176	104	1496	578
RTOR Reduction (vph)	0	0	0	0	0	0	0	21	0	0	0	188
Lane Group Flow (vph)	311	446	150	162	324	113	85	971	0	104	1496	390
Confl. Peds. (#/hr)	3		1	1		3	2		1	1		2
Confl. Bikes (#/hr)						3			1			1
Heavy Vehicles (%)	6%	5%	2%	9%	5%	13%	1%	6%	8%	5%	2%	4%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA		Prot	NA	pt+ov
Protected Phases	3	8		7	4		1	6		5	2	2 3
Permitted Phases			Free			Free						
Actuated Green, G (s)	15.6	24.6	120.0	10.4	19.4	120.0	6.5	56.9		8.1	58.5	78.6
Effective Green, g (s)	16.1	26.1	120.0	10.9	20.9	120.0	7.0	58.4		8.6	60.0	77.1
Actuated g/C Ratio	0.13	0.22	1.00	0.09	0.17	1.00	0.06	0.49		0.07	0.50	0.64
Clearance Time (s)	4.5	5.5		4.5	5.5		4.5	5.5		4.5	5.5	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	443	747	1564	291	598	1410	202	2304		239	2542	1755
v/s Ratio Prot	c0.09	0.13		0.05	c0.09		0.02	c0.21		0.03	c0.29	0.14
v/s Ratio Perm			0.10			0.08						
v/c Ratio	0.70	0.60	0.10	0.56	0.54	0.08	0.42	0.42		0.44	0.59	0.22
Uniform Delay, d1	49.7	42.2	0.0	52.2	45.2	0.0	54.5	19.9		53.4	21.3	8.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.74	0.42		1.00	1.00	1.00
Incremental Delay, d2	4.1	1.3	0.1	1.3	1.0	0.1	0.5	0.5		0.5	1.0	0.0
Delay (s)	53.7	43.5	0.1	53.5	46.2	0.1	40.9	8.8		53.8	22.3	9.0
Level of Service	D	D	A	D	D	A	D	A		D	C	A
Approach Delay (s)		39.8			39.5			11.3			20.2	
Approach LOS		D			D			B			C	
Intersection Summary												
HCM 2000 Control Delay			24.4				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			120.0				Sum of lost time (s)			16.0		
Intersection Capacity Utilization			66.0%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: NE Brookwood Parkway & T5 Data Center/NE Shute Road

03/13/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔		↔	↔	
Traffic Volume (vph)	1	0	0	4	0	277	0	805	23	825	1037	0
Future Volume (vph)	1	0	0	4	0	277	0	805	23	825	1037	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	3.5		4.0		3.0	4.0	
Lane Util. Factor		1.00			1.00	0.88		0.95		0.97	0.95	
Frpb, ped/bikes		1.00			1.00	1.00		1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00		1.00		1.00	1.00	
Frt		1.00			1.00	0.85		1.00		1.00	1.00	
Flt Protected		0.95			0.95	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1805			1805	2608		3391		3433	3505	
Flt Permitted		0.95			0.95	1.00		1.00		0.95	1.00	
Satd. Flow (perm)		1805			1805	2608		3391		3433	3505	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	0	0	4	0	277	0	805	23	825	1037	0
RTOR Reduction (vph)	0	0	0	0	0	173	0	1	0	0	0	0
Lane Group Flow (vph)	0	1	0	0	4	104	0	827	0	825	1037	0
Confl. Bikes (#/hr)									1			2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	9%	0%	6%	5%	2%	3%	0%
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	8	8		4	4	7 5	1	6		5 7	2	
Permitted Phases						4						
Actuated Green, G (s)		1.0			1.1	43.4		52.6		42.3	90.1	
Effective Green, g (s)		1.5			1.6	44.9		54.1		45.3	91.6	
Actuated g/C Ratio		0.01			0.01	0.37		0.45		0.38	0.76	
Clearance Time (s)		4.5			4.5			5.5			5.5	
Vehicle Extension (s)		2.0			2.0			3.0			3.0	
Lane Grp Cap (vph)		22			24	975		1528		1295	2675	
v/s Ratio Prot		c0.00			c0.00	0.04		c0.24		c0.24	0.30	
v/s Ratio Perm						0.00						
v/c Ratio		0.05			0.17	0.11		0.54		0.64	0.39	
Uniform Delay, d1		58.5			58.5	24.5		23.9		30.6	4.8	
Progression Factor		1.00			1.00	1.00		1.00		1.00	0.45	
Incremental Delay, d2		0.3			1.2	0.0		1.4		0.7	0.4	
Delay (s)		58.9			59.7	24.5		25.3		31.1	2.5	
Level of Service		E			E	C		C		C	A	
Approach Delay (s)		58.9			25.0			25.3			15.2	
Approach LOS		E			C			C			B	
Intersection Summary												
HCM 2000 Control Delay		19.0										
HCM 2000 Volume to Capacity ratio		0.59										
Actuated Cycle Length (s)		120.0										
Intersection Capacity Utilization		60.7%										
Analysis Period (min)		15										
c Critical Lane Group												

HCM 2010 TWSC
3: NE Shute Road & PERRIN Driveway/RS5 Access

03/13/2019

Intersection												
Int Delay, s/veh	4.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕		↕	↕		↕	↕	
Traffic Vol, veh/h	35	3	30	18	0	26	12	244	71	217	661	28
Future Vol, veh/h	35	3	30	18	0	26	12	244	71	217	661	28
Conflicting Peds, #/hr	1	0	1	1	0	1	1	0	7	7	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	125	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	19	0	11	0	5	18	0	2	4
Mvmt Flow	35	3	30	18	0	26	12	244	71	217	661	28

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1257	1456	347	1078	1435	166	690	0	0	322	0	0
Stage 1	1110	1110	-	311	311	-	-	-	-	-	-	-
Stage 2	147	346	-	767	1124	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.88	6.5	7.12	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.88	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.88	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.69	4	3.41	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	130	131	655	152	135	822	914	-	-	1249	-	-
Stage 1	227	287	-	629	662	-	-	-	-	-	-	-
Stage 2	847	639	-	325	283	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	108	106	654	121	109	816	913	-	-	1241	-	-
Mov Cap-2 Maneuver	108	106	-	121	109	-	-	-	-	-	-	-
Stage 1	224	236	-	616	649	-	-	-	-	-	-	-
Stage 2	808	626	-	252	233	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	39.3		22		0.3		2	
HCM LOS	E		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	913	-	-	171 121 816	1241	-	-
HCM Lane V/C Ratio	0.013	-	-	0.398 0.149 0.032	0.175	-	-
HCM Control Delay (s)	9	-	-	39.3 39.9 9.6	8.5	-	-
HCM Lane LOS	A	-	-	E E A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.7 0.5 0.1	0.6	-	-

HCM Signalized Intersection Capacity Analysis

4: NE Shute Road & NE Dawson Creek Drive/Intel RS6

03/13/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	6	48	32	2	26	152	296	147	139	506	80
Future Volume (vph)	2	6	48	32	2	26	152	296	147	139	506	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.87		1.00	0.86		1.00	0.95		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	902	1531		1671	1635		1768	3254		1805	3421	
Flt Permitted	0.95	1.00		0.95	1.00		0.36	1.00		0.50	1.00	
Satd. Flow (perm)	902	1531		1671	1635		672	3254		941	3421	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	6	48	32	2	26	152	296	147	139	506	80
RTOR Reduction (vph)	0	41	0	0	22	0	0	57	0	0	11	0
Lane Group Flow (vph)	2	13	0	32	6	0	152	386	0	139	575	0
Confl. Peds. (#/hr)			3	3			3					3
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	100%	0%	7%	8%	0%	0%	2%	7%	0%	0%	3%	3%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2			6		
Actuated Green, G (s)	0.9	6.5		2.1	7.7		27.8	21.5		26.0	20.6	
Effective Green, g (s)	0.9	7.5		2.1	8.7		27.8	23.0		26.0	22.1	
Actuated g/C Ratio	0.02	0.14		0.04	0.16		0.51	0.43		0.48	0.41	
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	5.5		4.0	5.5	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		1.0	3.0		1.0	3.0	
Lane Grp Cap (vph)	15	212		64	263		473	1385		539	1400	
v/s Ratio Prot	0.00	c0.01		c0.02	0.00		c0.04	0.12		0.03	c0.17	
v/s Ratio Perm							0.13			0.10		
v/c Ratio	0.13	0.06		0.50	0.02		0.32	0.28		0.26	0.41	
Uniform Delay, d1	26.2	20.2		25.4	19.1		7.1	10.1		7.9	11.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.9	0.1		4.4	0.0		0.1	0.1		0.1	0.2	
Delay (s)	29.1	20.3		29.8	19.1		7.2	10.2		8.0	11.5	
Level of Service	C	C		C	B		A	B		A	B	
Approach Delay (s)		20.6			24.8			9.4			10.8	
Approach LOS		C			C			A			B	
Intersection Summary												
HCM 2000 Control Delay			11.2				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.33									
Actuated Cycle Length (s)			54.0				Sum of lost time (s)			16.0		
Intersection Capacity Utilization			43.4%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

1: NE Brookwood Parkway & NE Evergreen Parkway

03/13/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	813	548	126	228	549	185	200	1529	183	121	1092	326
Future Volume (vph)	813	548	126	228	549	185	200	1529	183	121	1092	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	2.5	4.0	4.0	2.5	4.0	4.0		4.0	4.0	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91		0.97	0.91	0.88
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3467	3574	1564	3467	3610	1583	3467	5048		3433	5085	2754
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3467	3574	1564	3467	3610	1583	3467	5048		3433	5085	2754
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	813	548	126	228	549	185	200	1529	183	121	1092	326
RTOR Reduction (vph)	0	0	0	0	0	0	0	11	0	0	0	45
Lane Group Flow (vph)	813	548	126	228	549	185	200	1701	0	121	1092	281
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	1%	2%	1%	0%	2%	1%	1%	2%	2%	2%	2%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA		Prot	NA	pm+ov
Protected Phases	3	8		7	4		1	6		5	2	3
Permitted Phases			Free			Free						2
Actuated Green, G (s)	33.6	45.4	133.3	12.5	24.3	133.3	17.6	48.8		6.6	37.8	71.4
Effective Green, g (s)	34.1	46.9	133.3	13.0	25.8	133.3	18.1	50.3		7.1	39.3	74.4
Actuated g/C Ratio	0.26	0.35	1.00	0.10	0.19	1.00	0.14	0.38		0.05	0.29	0.56
Clearance Time (s)	4.5	5.5		4.5	5.5		4.5	5.5		4.5	5.5	4.5
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	2.0
Lane Grp Cap (vph)	886	1257	1564	338	698	1583	470	1904		182	1499	1599
v/s Ratio Prot	c0.23	0.15		0.07	c0.15		0.06	c0.34		0.04	c0.21	0.05
v/s Ratio Perm			0.08			0.12						0.06
v/c Ratio	0.92	0.44	0.08	0.67	0.79	0.12	0.43	0.89		0.66	0.73	0.18
Uniform Delay, d1	48.2	33.1	0.0	58.1	51.1	0.0	52.8	39.0		61.9	42.2	14.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	13.8	0.2	0.1	4.1	5.8	0.2	0.2	5.8		6.9	1.8	0.0
Delay (s)	62.0	33.3	0.1	62.2	57.0	0.2	53.1	44.8		68.8	44.0	14.4
Level of Service	E	C	A	E	E	A	D	D		E	D	B
Approach Delay (s)		46.2			47.3			45.7			39.7	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			44.5				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			133.3				Sum of lost time (s)			16.0		
Intersection Capacity Utilization			89.5%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: NE Brookwood Parkway & T5 Data Center/NE Shute Road

03/13/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	2	1	42	0	1118	0	936	17	252	1287	1
Future Volume (vph)	2	2	1	42	0	1118	0	936	17	252	1287	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0		3.0	4.0	
Lane Util. Factor		1.00			1.00	0.88		0.95		0.97	0.95	
Frpb, ped/bikes		0.99			1.00	1.00		1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00		1.00		1.00	1.00	
Frt		0.97			1.00	0.85		1.00		1.00	1.00	
Flt Protected		0.98			0.95	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1800			1805	2814		3431		3273	3471	
Flt Permitted		0.98			0.95	1.00		1.00		0.95	1.00	
Satd. Flow (perm)		1800			1805	2814		3431		3273	3471	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	2	1	42	0	1118	0	936	17	252	1287	1
RTOR Reduction (vph)	0	1	0	0	0	196	0	1	0	0	0	0
Lane Group Flow (vph)	0	4	0	0	42	922	0	952	0	252	1288	0
Confl. Peds. (#/hr)			1	1			1		2	2		1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	5%	0%	7%	4%	0%
Turn Type	Split	NA		Split	NA	pt+ov	Prot	NA		Prot	NA	
Protected Phases	8	8		4	4	4 5 7	1	6		5 7	2	
Permitted Phases												
Actuated Green, G (s)		0.9			10.6	59.0		38.0		39.4	70.6	
Effective Green, g (s)		1.4			11.1	59.5		39.5		42.4	72.1	
Actuated g/C Ratio		0.01			0.10	0.53		0.35		0.38	0.64	
Clearance Time (s)		4.5			4.5			5.5			5.5	
Vehicle Extension (s)		2.0			2.0			3.0			3.0	
Lane Grp Cap (vph)		22			179	1496		1211		1240	2236	
v/s Ratio Prot		c0.00			0.02	c0.33		c0.28		0.08	0.37	
v/s Ratio Perm												
v/c Ratio		0.18			0.23	0.62		0.79		0.20	0.58	
Uniform Delay, d1		54.7			46.5	18.3		32.4		23.4	11.3	
Progression Factor		1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		1.5			0.2	0.5		3.4		0.0	0.4	
Delay (s)		56.1			46.7	18.8		35.9		23.4	11.6	
Level of Service		E			D	B		D		C	B	
Approach Delay (s)		56.1			19.8			35.9			13.5	
Approach LOS		E			B			D			B	
Intersection Summary												
HCM 2000 Control Delay		21.4		HCM 2000 Level of Service					C			
HCM 2000 Volume to Capacity ratio		0.74										
Actuated Cycle Length (s)		111.9		Sum of lost time (s)					20.5			
Intersection Capacity Utilization		79.7%		ICU Level of Service					D			
Analysis Period (min)		15										
c Critical Lane Group												

HCM 2010 TWSC
3: NE Shute Road & PERRIN Driveway/RS5 Access

03/13/2019

Intersection												
Int Delay, s/veh	6.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕		↕	↕		↕	↕	
Traffic Vol, veh/h	12	0	8	77	1	237	17	1055	9	12	247	12
Future Vol, veh/h	12	0	8	77	1	237	17	1055	9	12	247	12
Conflicting Peds, #/hr	0	0	2	2	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	125	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	8	0	0	3	0	1	0	1	38	22	4	8
Mvmt Flow	12	0	8	77	1	237	17	1055	9	12	247	12

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	839	1375	132	1244	1377	532	259	0	0	1064	0	0
Stage 1	277	277	-	1094	1094	-	-	-	-	-	-	-
Stage 2	562	1098	-	150	283	-	-	-	-	-	-	-
Critical Hdwy	7.66	6.5	6.9	7.56	6.5	6.92	4.1	-	-	4.54	-	-
Critical Hdwy Stg 1	6.66	5.5	-	6.56	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.66	5.5	-	6.56	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.58	4	3.3	3.53	4	3.31	2.2	-	-	2.42	-	-
Pot Cap-1 Maneuver	249	147	899	129	146	495	1317	-	-	544	-	-
Stage 1	689	685	-	227	292	-	-	-	-	-	-	-
Stage 2	464	291	-	834	681	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	126	142	897	124	141	495	1317	-	-	544	-	-
Mov Cap-2 Maneuver	126	142	-	124	141	-	-	-	-	-	-	-
Stage 1	680	670	-	224	288	-	-	-	-	-	-	-
Stage 2	238	287	-	807	666	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	25.9		32.2		0.1		0.5	
HCM LOS	D		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1317	-	-	192 124 490	544	-	-
HCM Lane V/C Ratio	0.013	-	-	0.104 0.621 0.486	0.022	-	-
HCM Control Delay (s)	7.8	-	-	25.9 72.8 19.1	11.8	-	-
HCM Lane LOS	A	-	-	D F C	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3 3.2 2.6	0.1	-	-

HCM Signalized Intersection Capacity Analysis

4: NE Shute Road & NE Dawson Creek Drive/Intel RS6

03/13/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	1	175	220	16	247	73	796	26	10	313	11
Future Volume (vph)	36	1	175	220	16	247	73	796	26	10	313	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	0.86		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	1601		1805	1617		1769	3556		1805	3476	
Flt Permitted	0.95	1.00		0.95	1.00		0.42	1.00		0.22	1.00	
Satd. Flow (perm)	1752	1601		1805	1617		790	3556		425	3476	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	36	1	175	220	16	247	73	796	26	10	313	11
RTOR Reduction (vph)	0	145	0	0	142	0	0	2	0	0	2	0
Lane Group Flow (vph)	36	31	0	220	121	0	73	820	0	10	322	0
Confl. Peds. (#/hr)							1		1	1		1
Heavy Vehicles (%)	3%	0%	1%	0%	0%	1%	2%	1%	0%	0%	3%	10%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2			6		
Actuated Green, G (s)	2.4	10.9		16.9	25.4		26.6	22.0		18.5	17.9	
Effective Green, g (s)	2.4	11.9		16.9	26.4		26.6	23.5		18.5	19.4	
Actuated g/C Ratio	0.03	0.17		0.25	0.38		0.39	0.34		0.27	0.28	
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	5.5		4.0	5.5	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		1.0	3.0		1.0	3.0	
Lane Grp Cap (vph)	61	276		442	619		371	1212		126	978	
v/s Ratio Prot	c0.02	0.02		c0.12	c0.07		c0.01	c0.23		0.00	0.09	
v/s Ratio Perm							0.06			0.02		
v/c Ratio	0.59	0.11		0.50	0.20		0.20	0.68		0.08	0.33	
Uniform Delay, d1	32.8	24.0		22.4	14.2		13.8	19.4		18.8	19.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	12.1	0.1		0.6	0.1		0.1	1.5		0.1	0.2	
Delay (s)	44.9	24.2		23.0	14.3		13.8	21.0		18.9	19.8	
Level of Service	D	C		C	B		B	C		B	B	
Approach Delay (s)		27.7			18.3			20.4			19.8	
Approach LOS		C			B			C			B	
Intersection Summary												
HCM 2000 Control Delay			20.5			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.52									
Actuated Cycle Length (s)			68.9			Sum of lost time (s)				16.0		
Intersection Capacity Utilization			63.4%			ICU Level of Service				B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

1: NE Brookwood Parkway & NE Evergreen Parkway

03/13/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	311	446	150	162	324	113	85	816	176	104	1496	578
Future Volume (vph)	311	446	150	162	324	113	85	816	176	104	1496	578
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	2.5	4.0	4.0	2.5	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	0.88
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3303	3438	1564	3213	3438	1410	3467	4893	1477	3335	5085	2733
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3303	3438	1564	3213	3438	1410	3467	4893	1477	3335	5085	2733
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	311	446	150	162	324	113	85	816	176	104	1496	578
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	187
Lane Group Flow (vph)	311	446	150	162	324	113	85	816	176	104	1496	391
Confl. Peds. (#/hr)	3		1	1		3	2		1	1		2
Confl. Bikes (#/hr)						3			1			1
Heavy Vehicles (%)	6%	5%	2%	9%	5%	13%	1%	6%	8%	5%	2%	4%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	pt+ov
Protected Phases	3	8		7	4		1	6		5	2	2 3
Permitted Phases			Free			Free			Free			
Actuated Green, G (s)	15.8	24.8	120.0	10.4	19.4	120.0	6.3	56.7	120.0	8.1	58.5	78.8
Effective Green, g (s)	16.3	26.3	120.0	10.9	20.9	120.0	6.8	58.2	120.0	8.6	60.0	77.3
Actuated g/C Ratio	0.14	0.22	1.00	0.09	0.17	1.00	0.06	0.49	1.00	0.07	0.50	0.64
Clearance Time (s)	4.5	5.5		4.5	5.5		4.5	5.5		4.5	5.5	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	448	753	1564	291	598	1410	196	2373	1477	239	2542	1760
v/s Ratio Prot	c0.09	0.13		0.05	c0.09		0.02	c0.17		0.03	c0.29	0.14
v/s Ratio Perm			0.10			0.08			0.12			
v/c Ratio	0.69	0.59	0.10	0.56	0.54	0.08	0.43	0.34	0.12	0.44	0.59	0.22
Uniform Delay, d1	49.5	42.0	0.0	52.2	45.2	0.0	54.7	19.1	0.0	53.4	21.3	8.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.74	0.41	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.7	1.3	0.1	1.3	1.0	0.1	0.5	0.4	0.2	0.5	1.0	0.0
Delay (s)	53.2	43.3	0.1	53.5	46.2	0.1	40.9	8.2	0.2	53.8	22.3	8.9
Level of Service	D	D	A	D	D	A	D	A	A	D	C	A
Approach Delay (s)		39.6			39.5			9.5			20.2	
Approach LOS		D			D			A			C	
Intersection Summary												
HCM 2000 Control Delay			23.9				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			120.0				Sum of lost time (s)			16.0		
Intersection Capacity Utilization			66.0%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: NE Brookwood Parkway & T5 Data Center/NE Shute Road

03/13/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔		↔	↔	
Traffic Volume (vph)	1	0	0	4	0	277	0	805	23	825	1037	0
Future Volume (vph)	1	0	0	4	0	277	0	805	23	825	1037	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	3.5		4.0		3.0	4.0	
Lane Util. Factor		1.00			1.00	0.88		0.95		0.97	0.95	
Frpb, ped/bikes		1.00			1.00	1.00		1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00		1.00		1.00	1.00	
Frt		1.00			1.00	0.85		1.00		1.00	1.00	
Flt Protected		0.95			0.95	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1805			1805	2608		3391		3433	3505	
Flt Permitted		0.95			0.95	1.00		1.00		0.95	1.00	
Satd. Flow (perm)		1805			1805	2608		3391		3433	3505	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	0	0	4	0	277	0	805	23	825	1037	0
RTOR Reduction (vph)	0	0	0	0	0	173	0	1	0	0	0	0
Lane Group Flow (vph)	0	1	0	0	4	104	0	827	0	825	1037	0
Confl. Bikes (#/hr)									1			2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	9%	0%	6%	5%	2%	3%	0%
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	8	8		4	4	7 5	1	6		5 7	2	
Permitted Phases						4						
Actuated Green, G (s)		1.0			1.1	43.4		52.6		42.3	90.1	
Effective Green, g (s)		1.5			1.6	44.9		54.1		45.3	91.6	
Actuated g/C Ratio		0.01			0.01	0.37		0.45		0.38	0.76	
Clearance Time (s)		4.5			4.5			5.5			5.5	
Vehicle Extension (s)		2.0			2.0			3.0			3.0	
Lane Grp Cap (vph)		22			24	975		1528		1295	2675	
v/s Ratio Prot		c0.00			c0.00	0.04		c0.24		c0.24	0.30	
v/s Ratio Perm						0.00						
v/c Ratio		0.05			0.17	0.11		0.54		0.64	0.39	
Uniform Delay, d1		58.5			58.5	24.5		23.9		30.6	4.8	
Progression Factor		1.00			1.00	1.00		1.00		1.00	0.46	
Incremental Delay, d2		0.3			1.2	0.0		1.4		0.7	0.4	
Delay (s)		58.9			59.7	24.5		25.3		31.2	2.6	
Level of Service		E			E	C		C		C	A	
Approach Delay (s)		58.9			25.0			25.3			15.3	
Approach LOS		E			C			C			B	
Intersection Summary												
HCM 2000 Control Delay		19.0										
HCM 2000 Volume to Capacity ratio		0.59										
Actuated Cycle Length (s)		120.0										
Intersection Capacity Utilization		60.7%										
Analysis Period (min)		15										
c Critical Lane Group												

HCM 2010 TWSC
3: NE Shute Road & PERRIN Driveway/RS5 Access

03/13/2019

Intersection												
Int Delay, s/veh	4.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕		↕	↕		↕	↕	
Traffic Vol, veh/h	35	3	30	18	0	26	12	244	71	217	661	28
Future Vol, veh/h	35	3	30	18	0	26	12	244	71	217	661	28
Conflicting Peds, #/hr	1	0	1	1	0	1	1	0	7	7	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	125	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	19	0	11	0	5	18	0	2	4
Mvmt Flow	35	3	30	18	0	26	12	244	71	217	661	28

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1257	1456	347	1078	1435	166	690	0	0	322	0	0
Stage 1	1110	1110	-	311	311	-	-	-	-	-	-	-
Stage 2	147	346	-	767	1124	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.88	6.5	7.12	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.88	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.88	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.69	4	3.41	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	130	131	655	152	135	822	914	-	-	1249	-	-
Stage 1	227	287	-	629	662	-	-	-	-	-	-	-
Stage 2	847	639	-	325	283	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	108	106	654	121	109	816	913	-	-	1241	-	-
Mov Cap-2 Maneuver	108	106	-	121	109	-	-	-	-	-	-	-
Stage 1	224	236	-	616	649	-	-	-	-	-	-	-
Stage 2	808	626	-	252	233	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	39.3		22		0.3		2	
HCM LOS	E		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	913	-	-	171 121 816 1241	-	-	-
HCM Lane V/C Ratio	0.013	-	-	0.398 0.149 0.032 0.175	-	-	-
HCM Control Delay (s)	9	-	-	39.3 39.9 9.6 8.5	-	-	-
HCM Lane LOS	A	-	-	E E A A	-	-	-
HCM 95th %tile Q(veh)	0	-	-	1.7 0.5 0.1 0.6	-	-	-

HCM Signalized Intersection Capacity Analysis

4: NE Shute Road & NE Dawson Creek Drive/Intel RS6

03/13/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	6	48	32	2	26	152	296	147	139	506	80
Future Volume (vph)	2	6	48	32	2	26	152	296	147	139	506	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.87		1.00	0.86		1.00	0.95		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	902	1531		1671	1635		1768	3254		1805	3421	
Flt Permitted	0.95	1.00		0.95	1.00		0.36	1.00		0.50	1.00	
Satd. Flow (perm)	902	1531		1671	1635		672	3254		941	3421	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	6	48	32	2	26	152	296	147	139	506	80
RTOR Reduction (vph)	0	41	0	0	22	0	0	57	0	0	11	0
Lane Group Flow (vph)	2	13	0	32	6	0	152	386	0	139	575	0
Confl. Peds. (#/hr)			3	3			3					3
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	100%	0%	7%	8%	0%	0%	2%	7%	0%	0%	3%	3%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2			6		
Actuated Green, G (s)	0.9	6.5		2.1	7.7		27.8	21.5		26.0	20.6	
Effective Green, g (s)	0.9	7.5		2.1	8.7		27.8	23.0		26.0	22.1	
Actuated g/C Ratio	0.02	0.14		0.04	0.16		0.51	0.43		0.48	0.41	
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	5.5		4.0	5.5	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		1.0	3.0		1.0	3.0	
Lane Grp Cap (vph)	15	212		64	263		473	1385		539	1400	
v/s Ratio Prot	0.00	c0.01		c0.02	0.00		c0.04	0.12		0.03	c0.17	
v/s Ratio Perm							0.13			0.10		
v/c Ratio	0.13	0.06		0.50	0.02		0.32	0.28		0.26	0.41	
Uniform Delay, d1	26.2	20.2		25.4	19.1		7.1	10.1		7.9	11.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.9	0.1		4.4	0.0		0.1	0.1		0.1	0.2	
Delay (s)	29.1	20.3		29.8	19.1		7.2	10.2		8.0	11.5	
Level of Service	C	C		C	B		A	B		A	B	
Approach Delay (s)		20.6			24.8			9.4			10.8	
Approach LOS		C			C			A			B	
Intersection Summary												
HCM 2000 Control Delay			11.2				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.33									
Actuated Cycle Length (s)			54.0				Sum of lost time (s)			16.0		
Intersection Capacity Utilization			43.4%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

1: NE Brookwood Parkway & NE Evergreen Parkway

03/13/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	813	548	126	228	549	185	200	1529	183	121	1092	326
Future Volume (vph)	813	548	126	228	549	185	200	1529	183	121	1092	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	2.5	4.0	4.0	2.5	4.0	4.0	5.5	4.0	4.0	3.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	0.88
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3467	3574	1564	3467	3610	1583	3467	5136	1583	3433	5085	2754
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3467	3574	1564	3467	3610	1583	3467	5136	1583	3433	5085	2754
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	813	548	126	228	549	185	200	1529	183	121	1092	326
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	121	0	0	44
Lane Group Flow (vph)	813	548	126	228	549	185	200	1529	62	121	1092	282
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	1%	2%	1%	0%	2%	1%	1%	2%	2%	2%	2%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	3	8		7	4		1	6		5	2	3
Permitted Phases			Free			Free			6			2
Actuated Green, G (s)	33.7	46.2	129.9	12.3	24.8	129.9	15.3	44.2	44.2	7.2	36.1	69.8
Effective Green, g (s)	34.2	47.7	129.9	12.8	26.3	129.9	15.8	45.7	44.2	7.7	37.6	72.8
Actuated g/C Ratio	0.26	0.37	1.00	0.10	0.20	1.00	0.12	0.35	0.34	0.06	0.29	0.56
Clearance Time (s)	4.5	5.5		4.5	5.5		4.5	5.5	5.5	4.5	5.5	4.5
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	3.0	3.0	2.0	3.0	2.0
Lane Grp Cap (vph)	912	1312	1564	341	730	1583	421	1806	538	203	1471	1607
v/s Ratio Prot	c0.23	0.15		0.07	c0.15		0.06	c0.30		0.04	c0.21	0.05
v/s Ratio Perm			0.08			0.12			0.04			0.05
v/c Ratio	0.89	0.42	0.08	0.67	0.75	0.12	0.48	0.85	0.12	0.60	0.74	0.18
Uniform Delay, d1	46.1	30.7	0.0	56.5	48.7	0.0	53.2	38.9	29.4	59.6	41.8	13.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.7	0.2	0.1	3.8	4.4	0.2	0.3	3.9	0.1	3.1	2.1	0.0
Delay (s)	56.7	30.9	0.1	60.3	53.1	0.2	53.5	42.7	29.5	62.7	43.8	13.9
Level of Service	E	C	A	E	D	A	D	D	C	E	D	B
Approach Delay (s)		42.4			44.6			42.6			39.0	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			41.9				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			129.9				Sum of lost time (s)			16.0		
Intersection Capacity Utilization			85.4%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: NE Brookwood Parkway & T5 Data Center/NE Shute Road

03/13/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	2	1	42	0	1118	0	936	17	252	1287	1
Future Volume (vph)	2	2	1	42	0	1118	0	936	17	252	1287	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0		3.0	4.0	
Lane Util. Factor		1.00			1.00	0.88		0.95		0.97	0.95	
Frpb, ped/bikes		0.99			1.00	1.00		1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00		1.00		1.00	1.00	
Frt		0.97			1.00	0.85		1.00		1.00	1.00	
Flt Protected		0.98			0.95	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1800			1805	2814		3431		3273	3471	
Flt Permitted		0.98			0.95	1.00		1.00		0.95	1.00	
Satd. Flow (perm)		1800			1805	2814		3431		3273	3471	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	2	1	42	0	1118	0	936	17	252	1287	1
RTOR Reduction (vph)	0	1	0	0	0	196	0	1	0	0	0	0
Lane Group Flow (vph)	0	4	0	0	42	922	0	952	0	252	1288	0
Confl. Peds. (#/hr)			1	1			1		2	2		1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	5%	0%	7%	4%	0%
Turn Type	Split	NA		Split	NA	pt+ov	Prot	NA		Prot	NA	
Protected Phases	8	8		4	4	4 5 7	1	6		5 7	2	
Permitted Phases												
Actuated Green, G (s)		0.9			10.6	59.0		38.0		39.4	70.6	
Effective Green, g (s)		1.4			11.1	59.5		39.5		42.4	72.1	
Actuated g/C Ratio		0.01			0.10	0.53		0.35		0.38	0.64	
Clearance Time (s)		4.5			4.5			5.5			5.5	
Vehicle Extension (s)		2.0			2.0			3.0			3.0	
Lane Grp Cap (vph)		22			179	1496		1211		1240	2236	
v/s Ratio Prot		c0.00			0.02	c0.33		c0.28		0.08	0.37	
v/s Ratio Perm												
v/c Ratio		0.18			0.23	0.62		0.79		0.20	0.58	
Uniform Delay, d1		54.7			46.5	18.3		32.4		23.4	11.3	
Progression Factor		1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		1.5			0.2	0.5		3.4		0.0	0.4	
Delay (s)		56.1			46.7	18.8		35.9		23.4	11.6	
Level of Service		E			D	B		D		C	B	
Approach Delay (s)		56.1			19.8			35.9			13.5	
Approach LOS		E			B			D			B	
Intersection Summary												
HCM 2000 Control Delay		21.4		HCM 2000 Level of Service					C			
HCM 2000 Volume to Capacity ratio		0.74										
Actuated Cycle Length (s)		111.9		Sum of lost time (s)					20.5			
Intersection Capacity Utilization		79.7%		ICU Level of Service					D			
Analysis Period (min)		15										
c Critical Lane Group												

HCM 2010 TWSC
3: NE Shute Road & PERRIN Driveway/RS5 Access

03/13/2019

Intersection												
Int Delay, s/veh	6.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕		↕	↕		↕	↕	
Traffic Vol, veh/h	12	0	8	77	1	237	17	1055	9	12	247	12
Future Vol, veh/h	12	0	8	77	1	237	17	1055	9	12	247	12
Conflicting Peds, #/hr	0	0	2	2	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	125	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	8	0	0	3	0	1	0	1	38	22	4	8
Mvmt Flow	12	0	8	77	1	237	17	1055	9	12	247	12

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	839	1375	132	1244	1377	532	259	0	0	1064	0	0
Stage 1	277	277	-	1094	1094	-	-	-	-	-	-	-
Stage 2	562	1098	-	150	283	-	-	-	-	-	-	-
Critical Hdwy	7.66	6.5	6.9	7.56	6.5	6.92	4.1	-	-	4.54	-	-
Critical Hdwy Stg 1	6.66	5.5	-	6.56	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.66	5.5	-	6.56	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.58	4	3.3	3.53	4	3.31	2.2	-	-	2.42	-	-
Pot Cap-1 Maneuver	249	147	899	129	146	495	1317	-	-	544	-	-
Stage 1	689	685	-	227	292	-	-	-	-	-	-	-
Stage 2	464	291	-	834	681	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	126	142	897	124	141	495	1317	-	-	544	-	-
Mov Cap-2 Maneuver	126	142	-	124	141	-	-	-	-	-	-	-
Stage 1	680	670	-	224	288	-	-	-	-	-	-	-
Stage 2	238	287	-	807	666	-	-	-	-	-	-	-

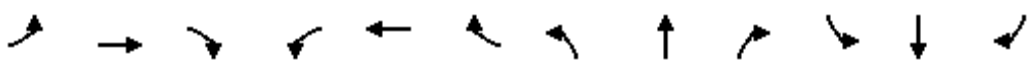
Approach	EB		WB		NB		SB	
HCM Control Delay, s	25.9		32.2		0.1		0.5	
HCM LOS	D		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1317	-	-	192 124 490	544	-	-
HCM Lane V/C Ratio	0.013	-	-	0.104 0.621 0.486	0.022	-	-
HCM Control Delay (s)	7.8	-	-	25.9 72.8 19.1	11.8	-	-
HCM Lane LOS	A	-	-	D F C	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3 3.2 2.6	0.1	-	-

HCM Signalized Intersection Capacity Analysis

4: NE Shute Road & NE Dawson Creek Drive/Intel RS6

03/13/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	1	175	220	16	247	73	796	26	10	313	11
Future Volume (vph)	36	1	175	220	16	247	73	796	26	10	313	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	0.86		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	1601		1805	1617		1769	3556		1805	3476	
Flt Permitted	0.95	1.00		0.95	1.00		0.42	1.00		0.22	1.00	
Satd. Flow (perm)	1752	1601		1805	1617		790	3556		425	3476	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	36	1	175	220	16	247	73	796	26	10	313	11
RTOR Reduction (vph)	0	145	0	0	142	0	0	2	0	0	2	0
Lane Group Flow (vph)	36	31	0	220	121	0	73	820	0	10	322	0
Confl. Peds. (#/hr)							1		1	1		1
Heavy Vehicles (%)	3%	0%	1%	0%	0%	1%	2%	1%	0%	0%	3%	10%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2			6		
Actuated Green, G (s)	2.4	10.9		16.9	25.4		26.6	22.0		18.5	17.9	
Effective Green, g (s)	2.4	11.9		16.9	26.4		26.6	23.5		18.5	19.4	
Actuated g/C Ratio	0.03	0.17		0.25	0.38		0.39	0.34		0.27	0.28	
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	5.5		4.0	5.5	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		1.0	3.0		1.0	3.0	
Lane Grp Cap (vph)	61	276		442	619		371	1212		126	978	
v/s Ratio Prot	c0.02	0.02		c0.12	c0.07		c0.01	c0.23		0.00	0.09	
v/s Ratio Perm							0.06			0.02		
v/c Ratio	0.59	0.11		0.50	0.20		0.20	0.68		0.08	0.33	
Uniform Delay, d1	32.8	24.0		22.4	14.2		13.8	19.4		18.8	19.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	12.1	0.1		0.6	0.1		0.1	1.5		0.1	0.2	
Delay (s)	44.9	24.2		23.0	14.3		13.8	21.0		18.9	19.8	
Level of Service	D	C		C	B		B	C		B	B	
Approach Delay (s)		27.7			18.3			20.4			19.8	
Approach LOS		C			B			C			B	
Intersection Summary												
HCM 2000 Control Delay			20.5			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.52									
Actuated Cycle Length (s)			68.9			Sum of lost time (s)				16.0		
Intersection Capacity Utilization			63.4%			ICU Level of Service				B		
Analysis Period (min)			15									
c Critical Lane Group												

APPENDIX K.
**TRAFFIC VOLUME
PROFILES**

Turning Movement Count														
15 Minute Counts														
DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
11/7/2018	630	1	5	147	36	19	178	49	77	72	19	13	29	2
11/7/2018	645	1	7	134	46	14	228	79	84	103	28	20	45	8
11/7/2018	700	1	10	135	31	18	214	71	74	80	27	31	38	6
11/7/2018	715	1	11	136	25	24	288	81	65	100	35	23	57	8
11/7/2018	730	1	11	187	43	28	309	110	85	105	32	32	65	7
11/7/2018	745	1	29	141	51	28	328	120	67	125	40	21	74	14
11/7/2018	800	1	18	141	32	14	252	153	49	92	23	36	81	10
11/7/2018	815	1	19	134	34	12	237	152	61	72	24	40	58	10
11/7/2018	830	1	22	158	34	10	205	150	67	73	19	28	74	9
11/7/2018	630	2	0	182	5	93	124	1	1	0	0	0	0	16
11/7/2018	645	2	0	176	8	150	130	2	0	0	0	0	1	36
11/7/2018	700	2	0	149	7	134	150	0	1	1	0	1	1	42
11/7/2018	715	2	0	149	3	190	163	0	0	0	0	1	0	54
11/7/2018	730	2	0	163	7	162	231	0	0	0	0	0	0	63
11/7/2018	745	2	0	158	7	165	212	0	0	0	0	1	0	54
11/7/2018	800	2	0	142	4	133	192	0	1	0	0	2	0	59
11/7/2018	815	2	0	127	3	138	178	0	1	0	0	0	0	66
11/7/2018	830	2	0	168	5	99	169	1	0	0	0	2	1	47
11/7/2018	630	3	1	25	14	27	88	6	3	0	1	0	0	3
11/7/2018	645	3	0	32	19	55	104	7	3	0	5	1	0	4
11/7/2018	700	3	2	51	14	33	101	8	11	0	5	1	0	3
11/7/2018	715	3	1	51	14	34	130	5	6	1	3	3	0	4
11/7/2018	730	3	2	45	17	43	130	6	9	2	7	3	0	4
11/7/2018	745	3	6	49	12	38	112	10	11	0	13	4	0	4
11/7/2018	800	3	4	51	19	54	133	7	7	0	4	5	0	5
11/7/2018	815	3	0	47	9	49	118	3	7	1	6	6	0	6
11/7/2018	830	3	0	57	14	50	115	3	3	1	4	3	0	2
11/7/2018	630	4	17	40	28	23	63	6	0	0	14	1	0	1
11/7/2018	645	4	21	49	32	14	79	15	0	0	13	2	0	1
11/7/2018	700	4	20	65	21	24	73	9	0	0	10	3	0	0
11/7/2018	715	4	19	64	19	14	113	13	0	0	10	3	0	1
11/7/2018	730	4	18	67	14	19	103	17	0	0	10	2	1	1
11/7/2018	745	4	49	62	19	14	101	16	1	0	11	2	0	1
11/7/2018	800	4	36	69	12	19	99	26	1	0	13	3	0	3
11/7/2018	815	4	37	46	9	14	100	21	0	0	12	4	0	6
11/7/2018	830	4	19	64	11	5	101	17	0	0	5	3	0	7
11/7/2018	630	5	0	81	0	2	69	0	0	0	0	2	0	4
11/7/2018	645	5	0	94	1	6	93	0	0	0	0	1	0	6
11/7/2018	700	5	0	98	3	4	77	0	0	0	0	0	0	5
11/7/2018	715	5	0	101	2	12	118	0	0	0	0	0	0	5
11/7/2018	730	5	0	92	3	7	107	0	0	0	0	0	0	8
11/7/2018	745	5	0	123	3	3	112	0	0	0	0	1	0	6
11/7/2018	800	5	0	110	5	8	106	0	0	0	0	1	0	3
11/7/2018	815	5	0	92	3	8	101	0	0	0	0	0	0	5
11/7/2018	830	5	0	82	4	5	102	0	0	0	0	2	0	10
11/7/2018	630	6	1	71	0	23	44	0	3	1	7	0	0	6
11/7/2018	645	6	1	93	1	33	64	1	5	1	5	0	0	3
11/7/2018	700	6	0	93	2	27	47	1	6	2	8	0	0	3
11/7/2018	715	6	4	90	1	42	80	0	6	3	7	0	0	7
11/7/2018	730	6	2	84	0	22	84	3	3	3	7	0	1	3
11/7/2018	745	6	3	124	2	19	93	0	2	1	10	2	0	1
11/7/2018	800	6	2	101	0	22	79	3	3	2	9	1	1	9
11/7/2018	815	6	2	89	1	24	81	1	3	1	7	0	1	3
11/7/2018	830	6	2	76	2	16	88	0	7	2	9	2	0	4
11/7/2018	630	7	0	36	42	19	28	6	10	17	3	2	5	15
11/7/2018	645	7	2	56	44	30	34	4	12	26	5	6	1	15
11/7/2018	700	7	3	43	54	22	22	4	19	26	1	4	4	16
11/7/2018	715	7	3	55	64	26	49	3	14	29	0	15	5	21
11/7/2018	730	7	0	50	46	21	52	7	15	25	1	7	4	25
11/7/2018	745	7	0	67	36	24	63	12	10	23	1	19	15	29
11/7/2018	800	7	1	56	27	18	55	8	10	35	3	27	10	38
11/7/2018	815	7	2	48	37	16	60	5	12	27	2	10	18	30
11/7/2018	830	7	1	26	28	11	40	6	11	29	1	13	15	25
11/7/2018	630	8	1	0	0	0	0	2	25	55	0	0	32	5
11/7/2018	645	8	1	0	1	0	0	5	32	69	0	0	33	0
11/7/2018	700	8	2	1	1	3	0	2	39	71	0	0	19	3
11/7/2018	715	8	1	0	1	0	0	11	70	68	1	0	26	6
11/7/2018	730	8	2	1	0	1	0	6	31	57	3	0	35	2
11/7/2018	745	8	1	1	0	2	0	12	28	49	5	0	58	0
11/7/2018	800	8	1	0	2	0	0	11	25	60	6	1	73	2
11/7/2018	815	8	1	0	1	1	0	4	23	48	3	0	44	1
11/7/2018	830	8	2	0	4	2	0	6	14	53	1	0	46	0
11/7/2018	630	9	1	5	0	12	0	15	36	15	3	0	19	72
11/7/2018	645	9	0	12	1	5	1	9	49	24	3	0	22	148
11/7/2018	700	9	2	21	2	14	3	4	65	16	0	0	14	158
11/7/2018	715	9	1	53	2	30	4	17	63	15	0	0	9	175
11/7/2018	730	9	1	20	2	34	6	10	37	23	0	0	26	192
11/7/2018	745	9	1	19	1	33	2	25	34	22	2	0	39	109
11/7/2018	800	9	3	22	5	42	6	25	42	28	3	0	43	115
11/7/2018	815	9	1	12	5	27	7	10	33	17	1	0	28	83
11/7/2018	830	9	2	8	3	12	3	6	29	32	1	3	35	94
11/7/2018	630	10	29	59	36	0	3	0	3	10	2	7	20	23
11/7/2018	645	10	42	103	45	1	4	0	3	10	1	5	20	26
11/7/2018	700	10	51	111	71	1	4	1	6	7	6	11	15	20
11/7/2018	715	10	78	138	79	0	24	1	8	20	8	23	21	23
11/7/2018	730	10	56	123	66	1	14	0	10	9	5	13	23	30
11/7/2018	745	10	28	83	33	3	36	1	3	6	15	23	18	18
11/7/2018	800	10	32	80	41	1	21	0	3	7	15	23	13	11
11/7/2018	815	10	22	89	43	0	14	1	4	6	15	14	16	14
11/7/2018	830	10	20	68	44	2	7	0	3	10	10	8	15	21

Turning Movement Count														
15 Minute Counts														
DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
11/7/2018	630	11	4	2	0	7	1	8	18	6	2	1	59	45
11/7/2018	645	11	16	6	0	9	0	5	26	8	0	2	99	70
11/7/2018	700	11	31	12	0	18	1	9	29	16	2	0	81	52
11/7/2018	715	11	53	23	0	18	0	12	27	23	1	1	81	51
11/7/2018	730	11	33	11	0	21	0	16	23	19	2	1	71	47
11/7/2018	745	11	15	7	0	38	0	23	18	19	3	1	70	49
11/7/2018	800	11	14	13	0	43	1	16	20	29	1	0	70	51
11/7/2018	815	11	2	2	0	14	0	19	23	14	1	0	64	42
11/7/2018	830	11	5	2	1	17	1	7	12	13	3	1	80	40
11/7/2018	630	12	26	58	0	6	32	26	11	13	4	1	72	36
11/7/2018	645	12	39	55	4	4	13	16	10	26	2	0	91	36
11/7/2018	700	12	47	96	2	6	13	15	12	12	7	2	118	59
11/7/2018	715	12	51	122	0	7	21	23	15	36	6	2	133	109
11/7/2018	730	12	43	99	2	13	31	15	14	28	6	0	116	51
11/7/2018	745	12	33	87	0	12	57	11	16	36	15	1	95	41
11/7/2018	800	12	36	97	1	16	54	14	20	36	9	1	91	49
11/7/2018	815	12	40	62	0	15	40	20	16	29	5	2	81	28
11/7/2018	830	12	32	64	0	10	37	16	19	34	0	1	77	30
11/7/2018	630	13	0	5	8	0	59	0	0	0	0	63	0	5
11/7/2018	645	13	0	7	9	0	81	0	0	0	0	90	0	2
11/7/2018	700	13	0	13	14	0	73	0	0	0	0	78	0	9
11/7/2018	715	13	0	23	14	0	89	0	0	0	0	86	0	19
11/7/2018	730	13	0	15	22	0	61	0	0	0	0	74	0	8
11/7/2018	745	13	0	21	30	2	52	0	0	0	0	81	0	16
11/7/2018	800	13	0	24	49	2	53	0	0	0	0	76	0	6
11/7/2018	815	13	0	10	20	2	40	0	0	0	0	77	0	3
11/7/2018	830	13	0	14	17	0	45	0	0	0	0	83	0	2
11/7/2018	630	14	10	62	9	4	26	1	5	4	3	12	71	13
11/7/2018	645	14	15	109	12	1	32	1	2	1	2	21	72	15
11/7/2018	700	14	35	114	10	4	21	3	1	6	2	30	97	14
11/7/2018	715	14	74	161	6	5	30	18	1	13	4	30	79	14
11/7/2018	730	14	31	135	16	9	44	11	1	14	2	28	98	16
11/7/2018	745	14	19	122	7	18	66	2	1	19	5	22	118	11
11/7/2018	800	14	17	119	15	12	75	6	4	18	8	12	62	7
11/7/2018	815	14	9	83	10	2	41	3	3	6	0	11	73	12
11/7/2018	830	14	17	108	18	5	40	5	0	4	2	12	63	4
11/7/2018	630	15	24	55	0	0	27	79	0	0	5	0	0	0
11/7/2018	645	15	36	69	0	1	29	88	4	0	3	1	0	0
11/7/2018	700	15	45	74	0	0	27	110	1	0	4	0	0	0
11/7/2018	715	15	85	90	0	0	45	117	13	0	10	0	0	0
11/7/2018	730	15	43	98	1	0	44	92	17	0	16	0	0	0
11/7/2018	745	15	35	115	0	0	45	79	26	0	45	0	0	0
11/7/2018	800	15	43	125	0	0	43	76	19	0	43	0	0	0
11/7/2018	815	15	19	84	0	0	36	64	10	0	17	0	0	0
11/7/2018	830	15	31	80	0	0	53	60	8	0	9	0	0	0
11/7/2018	630	16	28	39	2	3	95	44	2	0	9	2	1	1
11/7/2018	645	16	39	40	6	3	91	62	2	0	11	0	1	1
11/7/2018	700	16	28	33	4	4	120	59	1	0	6	2	1	5
11/7/2018	715	16	57	45	4	3	131	86	5	0	10	5	3	0
11/7/2018	730	16	32	63	4	1	117	80	5	0	8	5	4	0
11/7/2018	745	16	53	78	7	2	96	68	29	2	12	6	2	0
11/7/2018	800	16	24	74	7	1	114	47	27	2	16	4	2	0
11/7/2018	815	16	12	56	6	2	86	41	10	0	7	0	1	2
11/7/2018	830	16	29	58	5	0	80	57	7	0	10	1	0	1
11/7/2018	630	17	8	7	16	4	4	0	1	70	15	106	98	31
11/7/2018	645	17	5	10	29	6	4	0	1	100	32	104	116	49
11/7/2018	700	17	7	7	24	7	5	0	0	80	35	145	100	34
11/7/2018	715	17	8	10	27	6	3	0	2	73	37	202	117	36
11/7/2018	730	17	13	6	43	7	5	1	1	84	30	121	147	48
11/7/2018	745	17	17	15	84	11	3	1	3	153	28	145	143	84
11/7/2018	800	17	31	15	79	8	3	0	3	112	25	116	132	71
11/7/2018	815	17	17	19	44	12	3	2	0	87	23	115	145	54
11/7/2018	830	17	13	14	40	12	3	0	2	78	18	106	115	50
11/7/2018	630	18	4	0	3	1	0	0	1	108	12	21	63	1
11/7/2018	645	18	6	0	6	0	0	0	0	147	21	34	82	2
11/7/2018	700	18	2	0	3	0	0	1	1	111	22	27	71	7
11/7/2018	715	18	6	0	12	1	0	0	1	116	27	38	79	4
11/7/2018	730	18	4	0	3	2	0	1	1	144	21	37	134	8
11/7/2018	745	18	6	0	15	1	1	0	0	139	25	41	133	6
11/7/2018	800	18	7	1	8	1	0	1	2	142	25	16	142	17
11/7/2018	815	18	6	0	4	0	0	0	0	117	12	18	125	9
11/7/2018	830	18	3	0	4	3	0	2	0	111	11	26	133	11
11/7/2018	630	19	2	0	2	3	0	2	20	122	2	11	52	10
11/7/2018	645	19	1	0	1	5	0	6	25	159	7	4	60	19
11/7/2018	700	19	2	0	4	2	0	5	13	128	7	2	59	12
11/7/2018	715	19	2	0	1	6	2	5	18	137	3	7	74	7
11/7/2018	730	19	1	0	2	2	1	14	8	160	7	6	118	14
11/7/2018	745	19	1	1	3	6	1	9	26	159	5	4	110	19
11/7/2018	800	19	4	1	4	8	1	10	16	155	4	5	132	12
11/7/2018	815	19	2	0	2	12	1	9	17	116	1	2	120	6
11/7/2018	830	19	1	0	2	11	0	15	19	106	5	3	123	12
11/7/2018	630	20	0	0	4	0	0	0	0	8	0	14	68	0
11/7/2018	645	20	0	0	0	0	0	0	0	9	0	0	92	0
11/7/2018	700	20	0	0	0	0	0	0	0	14	0	48	87	0
11/7/2018	715	20	0	0	4	0	0	0	0	14	0	66	105	0
11/7/2018	730	20	0	0	0	0	0	0	0	22	0	58	82	0
11/7/2018	745	20	0	0	0	0	0	0	0	32	0	42	97	0
11/7/2018	800	20	0	0	0	0	0	0	0	51	0	3	82	0
11/7/2018	815	20	0	0	0	0	0	0	0	22	0	5	80	0
11/7/2018	830	20	0	0	0	0	0	0	0	17	0	0	85	0

Turning Movement Count														
15 Minute Counts														
DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
11/7/2018	1545	1	39	256	46	6	257	86	107	75	24	39	86	26
11/7/2018	1600	1	50	349	28	15	206	66	168	80	25	56	111	40
11/7/2018	1615	1	52	380	39	7	201	55	147	93	23	76	129	79
11/7/2018	1630	1	41	302	41	10	216	70	162	98	20	42	124	35
11/7/2018	1645	1	30	252	33	11	181	76	211	127	31	41	110	30
11/7/2018	1700	1	45	306	43	19	225	73	185	136	36	58	113	36
11/7/2018	1715	1	44	269	28	13	202	55	229	173	55	49	129	26
11/7/2018	1730	1	27	229	35	19	195	56	190	124	33	45	93	24
11/7/2018	1745	1	23	202	30	14	198	76	197	120	31	50	101	18
11/7/2018	1545	2	0	177	5	55	250	0	0	0	0	6	0	155
11/7/2018	1600	2	0	187	4	57	241	0	1	1	0	12	0	256
11/7/2018	1615	2	0	165	2	54	250	1	0	1	1	11	0	332
11/7/2018	1630	2	0	186	3	44	222	0	1	0	0	10	0	216
11/7/2018	1645	2	0	159	8	68	204	0	0	0	0	9	1	165
11/7/2018	1700	2	0	204	5	56	252	1	2	0	0	5	0	190
11/7/2018	1715	2	0	194	1	72	247	0	0	0	0	4	0	154
11/7/2018	1730	2	0	183	4	64	203	0	0	0	0	5	0	122
11/7/2018	1745	2	0	182	5	68	211	0	0	0	0	3	1	94
11/7/2018	1545	3	0	160	3	2	48	3	3	0	1	10	0	36
11/7/2018	1600	3	4	208	1	1	56	0	4	0	1	18	0	63
11/7/2018	1615	3	6	308	3	1	57	2	2	0	1	16	1	55
11/7/2018	1630	3	4	193	1	2	51	7	4	0	4	17	0	54
11/7/2018	1645	3	3	155	3	7	51	1	3	0	1	20	0	47
11/7/2018	1700	3	5	154	1	2	81	9	5	0	1	12	0	53
11/7/2018	1715	3	9	136	3	3	67	1	1	0	2	12	1	41
11/7/2018	1730	3	3	120	0	4	66	7	8	0	2	6	0	25
11/7/2018	1745	3	2	83	1	2	60	5	6	0	3	5	0	24
11/7/2018	1545	4	11	132	3	0	60	0	8	0	21	12	0	25
11/7/2018	1600	4	11	171	4	0	73	2	6	0	45	36	3	36
11/7/2018	1615	4	27	266	3	2	71	4	7	0	41	27	3	39
11/7/2018	1630	4	16	135	7	1	68	2	12	0	34	38	3	54
11/7/2018	1645	4	11	127	3	0	71	2	6	0	42	23	2	29
11/7/2018	1700	4	12	122	1	0	92	2	12	0	55	17	3	25
11/7/2018	1715	4	9	117	1	0	80	2	11	0	40	8	1	19
11/7/2018	1730	4	8	103	0	1	72	1	10	0	49	5	0	14
11/7/2018	1745	4	11	76	0	2	62	3	5	0	18	5	1	10
11/7/2018	1545	5	0	114	1	1	93	0	0	0	0	5	0	32
11/7/2018	1600	5	0	135	1	4	148	0	0	0	0	8	0	55
11/7/2018	1615	5	0	199	0	4	133	0	0	0	0	5	0	89
11/7/2018	1630	5	0	144	0	0	139	0	0	0	0	0	0	12
11/7/2018	1645	5	0	131	0	0	130	0	0	0	0	2	0	8
11/7/2018	1700	5	0	139	0	0	160	0	0	0	0	0	0	1
11/7/2018	1715	5	0	127	3	1	128	0	0	0	0	0	0	3
11/7/2018	1730	5	0	99	1	0	125	0	0	0	0	0	0	1
11/7/2018	1745	5	0	81	0	1	82	0	0	0	0	0	0	2
11/7/2018	1545	6	7	85	0	3	92	2	3	0	5	7	0	25
11/7/2018	1600	6	4	86	1	1	148	4	2	0	4	7	0	49
11/7/2018	1615	6	5	117	0	2	136	2	2	0	2	9	0	81
11/7/2018	1630	6	8	102	0	0	142	1	0	0	5	2	0	34
11/7/2018	1645	6	15	102	1	3	125	8	1	0	6	1	1	29
11/7/2018	1700	6	9	128	0	1	155	7	1	0	1	0	4	11
11/7/2018	1715	6	7	97	0	0	119	8	2	0	7	1	2	28
11/7/2018	1730	6	9	83	0	2	123	8	5	0	3	0	0	13
11/7/2018	1745	6	10	66	0	0	71	8	2	0	8	0	1	14
11/7/2018	1545	7	1	40	7	38	65	27	11	14	5	20	27	27
11/7/2018	1600	7	2	57	7	31	94	24	5	20	3	47	38	47
11/7/2018	1615	7	4	42	8	40	68	23	6	24	2	65	60	67
11/7/2018	1630	7	0	49	7	38	72	20	9	24	5	31	42	50
11/7/2018	1645	7	5	44	12	41	96	19	16	26	2	29	45	41
11/7/2018	1700	7	4	84	6	29	84	18	7	28	3	36	35	30
11/7/2018	1715	7	2	58	8	35	74	12	13	34	4	40	55	42
11/7/2018	1730	7	1	44	13	39	74	17	6	42	2	40	60	40
11/7/2018	1745	7	2	43	12	35	65	9	4	33	0	34	37	26
11/7/2018	1545	8	3	0	1	11	1	35	4	43	5	1	81	0
11/7/2018	1600	8	5	0	1	27	0	42	3	64	8	0	67	0
11/7/2018	1615	8	5	0	0	52	0	88	3	59	11	1	108	1
11/7/2018	1630	8	6	1	0	7	0	22	11	68	4	0	84	0
11/7/2018	1645	8	3	0	2	1	0	32	1	61	7	3	92	0
11/7/2018	1700	8	7	0	0	1	0	31	1	63	9	1	96	1
11/7/2018	1715	8	7	0	1	1	2	28	0	53	6	2	106	0
11/7/2018	1730	8	4	0	0	0	0	26	1	68	10	0	76	0
11/7/2018	1745	8	8	0	2	0	1	24	7	53	6	1	61	1
11/7/2018	1545	9	3	0	1	74	8	30	7	44	2	1	48	21
11/7/2018	1600	9	0	0	0	104	8	50	4	79	5	0	21	15
11/7/2018	1615	9	1	1	0	182	10	73	8	103	5	1	38	10
11/7/2018	1630	9	1	1	1	111	16	42	7	67	0	2	40	11
11/7/2018	1645	9	2	1	1	162	8	62	7	59	5	0	41	17
11/7/2018	1700	9	3	1	0	143	11	56	5	51	6	1	41	13
11/7/2018	1715	9	3	1	6	123	13	73	2	57	3	3	50	14
11/7/2018	1730	9	0	0	4	160	14	41	1	54	2	1	37	15
11/7/2018	1745	9	2	0	1	117	18	36	6	46	9	1	33	11
11/7/2018	1545	10	2	19	6	13	42	1	0	13	43	25	10	2
11/7/2018	1600	10	2	10	8	17	79	3	1	34	86	36	7	4
11/7/2018	1615	10	4	10	15	7	100	1	2	63	104	60	3	1
11/7/2018	1630	10	3	9	10	4	69	3	1	25	58	43	4	4
11/7/2018	1645	10	1	12	8	10	60	7	1	25	67	61	1	7
11/7/2018	1700	10	0	6	15	8	65	6	0	29	45	70	6	2
11/7/2018	1715	10	1	6	16	12	86	3	1	30	49	91	9	4
11/7/2018	1730	10	4	7	14	10	80	3	1	16	55	97	4	2
11/7/2018	1745	10	3	8	14	6	69	0	0	29	38	48	4	3

Turning Movement Count														
15 Minute Counts														
DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
11/7/2018	1545	11	1	0	1	12	0	9	11	52	1	0	12	15
11/7/2018	1600	11	3	0	2	42	1	17	13	80	2	0	17	15
11/7/2018	1615	11	5	1	3	48	0	14	8	83	1	1	17	14
11/7/2018	1630	11	2	0	1	20	0	20	10	60	0	0	12	12
11/7/2018	1645	11	1	0	1	38	0	16	11	72	1	0	8	27
11/7/2018	1700	11	1	1	4	47	2	21	12	100	4	0	20	15
11/7/2018	1715	11	3	1	1	45	1	23	16	112	0	0	18	17
11/7/2018	1730	11	1	0	0	54	1	29	17	78	0	1	15	14
11/7/2018	1745	11	2	3	1	30	1	15	8	83	1	0	11	16
11/7/2018	1545	12	4	41	0	20	53	18	17	77	24	6	24	20
11/7/2018	1600	12	8	36	1	46	106	10	42	113	39	2	22	11
11/7/2018	1615	12	4	49	1	44	102	15	43	153	51	3	29	15
11/7/2018	1630	12	4	45	2	40	106	18	37	105	37	2	34	22
11/7/2018	1645	12	5	41	3	41	80	14	32	132	36	2	37	21
11/7/2018	1700	12	6	41	2	68	149	17	28	96	49	2	21	13
11/7/2018	1715	12	14	44	6	66	139	17	19	121	53	1	26	15
11/7/2018	1730	12	10	41	0	60	103	20	28	136	47	1	33	16
11/7/2018	1745	12	6	30	7	30	67	11	17	97	34	2	34	14
11/7/2018	1545	13	0	29	46	0	22	0	0	0	0	4	0	0
11/7/2018	1600	13	0	33	101	1	18	0	0	0	0	10	0	0
11/7/2018	1615	13	0	38	101	2	21	0	0	0	0	13	0	1
11/7/2018	1630	13	0	31	59	1	15	0	0	0	0	7	0	0
11/7/2018	1645	13	0	31	90	3	19	0	0	0	0	14	0	0
11/7/2018	1700	13	0	32	121	7	20	0	0	0	0	9	0	0
11/7/2018	1715	13	0	39	133	2	25	0	0	0	0	11	0	1
11/7/2018	1730	13	0	38	102	0	20	0	0	0	0	2	0	0
11/7/2018	1745	13	0	42	89	2	16	0	0	0	0	13	0	2
11/7/2018	1545	14	3	42	17	20	109	2	3	39	8	12	6	1
11/7/2018	1600	14	4	50	37	33	145	2	5	69	9	6	4	0
11/7/2018	1615	14	4	67	54	33	134	1	15	115	20	11	2	3
11/7/2018	1630	14	6	66	22	52	148	2	7	78	10	2	6	2
11/7/2018	1645	14	2	55	29	27	156	0	10	94	15	5	5	1
11/7/2018	1700	14	1	59	24	48	182	2	12	119	18	14	3	0
11/7/2018	1715	14	5	48	29	48	152	1	8	105	12	8	2	1
11/7/2018	1730	14	3	58	17	26	127	3	12	96	18	9	7	2
11/7/2018	1745	14	5	57	15	25	123	0	10	85	15	14	9	1
11/7/2018	1545	15	7	44	0	0	79	11	37	0	32	0	0	0
11/7/2018	1600	15	1	56	0	0	130	11	40	0	58	0	0	0
11/7/2018	1615	15	8	76	0	0	120	8	76	0	49	0	0	0
11/7/2018	1630	15	9	65	0	0	141	7	38	0	67	0	0	0
11/7/2018	1645	15	2	61	0	1	109	7	54	0	55	1	0	0
11/7/2018	1700	15	4	59	0	0	148	11	67	0	80	0	0	0
11/7/2018	1715	15	1	65	0	0	147	5	73	1	90	0	0	0
11/7/2018	1730	15	1	73	0	0	110	10	59	0	81	0	0	0
11/7/2018	1745	15	5	71	1	0	91	8	52	0	47	0	0	0
11/7/2018	1545	16	5	63	0	4	83	4	21	1	17	6	0	1
11/7/2018	1600	16	5	87	4	3	90	5	52	10	34	1	2	7
11/7/2018	1615	16	7	130	6	2	81	6	45	5	34	2	0	5
11/7/2018	1630	16	6	105	4	4	96	8	40	1	25	7	0	9
11/7/2018	1645	16	10	107	3	4	81	10	44	0	28	7	0	1
11/7/2018	1700	16	5	131	5	1	119	6	47	7	35	5	0	5
11/7/2018	1715	16	5	106	6	4	99	12	53	5	37	6	0	4
11/7/2018	1730	16	5	118	5	1	78	4	39	3	23	6	0	3
11/7/2018	1745	16	14	103	7	3	79	15	28	2	31	1	1	4
11/7/2018	1545	17	16	7	67	28	16	4	4	175	16	50	114	19
11/7/2018	1600	17	22	7	106	51	26	2	2	175	29	45	128	22
11/7/2018	1615	17	24	4	120	26	19	0	4	255	18	45	119	23
11/7/2018	1630	17	27	6	125	83	25	4	1	175	25	41	122	22
11/7/2018	1645	17	30	5	142	35	13	2	1	170	20	44	112	21
11/7/2018	1700	17	25	7	124	52	32	5	2	190	46	44	162	8
11/7/2018	1715	17	21	7	140	28	20	4	4	215	44	53	115	12
11/7/2018	1730	17	19	3	133	37	11	3	2	195	36	48	119	7
11/7/2018	1745	17	19	5	92	23	8	1	3	179	27	53	140	13
11/7/2018	1545	18	9	0	27	12	0	0	0	158	4	4	133	3
11/7/2018	1600	18	19	1	40	8	0	0	0	168	1	4	145	1
11/7/2018	1615	18	30	0	14	3	0	0	2	289	5	2	159	1
11/7/2018	1630	18	32	0	34	1	0	1	0	220	3	2	164	0
11/7/2018	1645	18	17	0	32	3	0	2	0	195	3	5	141	1
11/7/2018	1700	18	32	0	33	2	0	3	0	206	4	2	163	1
11/7/2018	1715	18	14	0	22	4	0	3	0	233	1	3	201	1
11/7/2018	1730	18	12	0	29	5	0	2	1	209	3	1	142	2
11/7/2018	1745	18	23	0	20	4	0	0	0	166	5	0	142	1
11/7/2018	1545	19	14	2	28	12	0	12	3	119	3	2	142	6
11/7/2018	1600	19	64	5	50	18	0	24	1	111	1	2	158	4
11/7/2018	1615	19	88	4	96	10	0	11	3	178	1	0	185	8
11/7/2018	1630	19	10	0	26	11	0	26	4	188	1	0	183	8
11/7/2018	1645	19	7	0	8	13	0	10	6	182	1	0	157	3
11/7/2018	1700	19	2	1	7	8	0	15	3	201	0	2	194	4
11/7/2018	1715	19	2	1	4	10	0	13	4	207	0	1	203	3
11/7/2018	1730	19	1	1	3	12	0	16	6	194	0	0	162	4
11/7/2018	1745	19	1	0	1	5	0	10	3	165	0	0	150	7
11/7/2018	1545	20	0	0	4	0	0	0	0	46	0	7	4	0
11/7/2018	1600	20	0	0	0	0	0	0	0	102	0	0	10	0
11/7/2018	1615	20	0	0	47	0	0	0	0	103	0	0	14	0
11/7/2018	1630	20	0	0	35	0	0	0	0	60	0	7	7	0
11/7/2018	1645	20	0	0	26	0	0	0	0	93	0	0	14	0
11/7/2018	1700	20	0	0	21	0	0	0	0	128	0	0	9	0
11/7/2018	1715	20	0	0	0	0	0	0	0	135	0	0	12	0
11/7/2018	1730	20	0	0	24	0	0	0	0	102	0	11	2	0
11/7/2018	1745	20	0	0	19	0	0	0	0	91	0	0	15	0

Turning Movement Count														
15 Minute Counts														
DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
11/7/2018	630	1	5	194	39	23	222	55	91	81	21	15	34	6
11/7/2018	645	1	9	178	49	17	286	88	99	116	32	23	52	23
11/7/2018	700	1	12	180	33	22	272	79	87	92	30	35	44	17
11/7/2018	715	1	13	183	27	29	363	90	76	114	40	26	66	23
11/7/2018	730	1	13	250	46	34	393	123	100	121	38	36	75	20
11/7/2018	745	1	32	188	55	34	410	134	79	141	45	24	85	40
11/7/2018	800	1	20	189	34	17	320	171	58	106	27	41	93	29
11/7/2018	815	1	21	179	36	15	299	170	72	83	27	45	67	29
11/7/2018	830	1	24	209	36	12	257	167	79	84	22	32	85	26
11/7/2018	630	2	0	239	5	106	161	1	1	0	0	0	0	20
11/7/2018	645	2	0	232	9	169	169	2	0	0	0	0	1	41
11/7/2018	700	2	0	196	8	156	195	0	1	1	0	1	1	48
11/7/2018	715	2	0	196	3	216	212	0	0	0	0	1	0	61
11/7/2018	730	2	0	214	8	194	300	0	0	0	0	0	0	72
11/7/2018	745	2	0	208	8	189	275	0	0	0	0	1	0	61
11/7/2018	800	2	0	187	4	158	250	0	1	0	0	2	0	67
11/7/2018	815	2	0	167	3	159	231	0	1	0	0	0	0	73
11/7/2018	830	2	0	221	5	115	220	1	0	0	0	2	1	53
11/7/2018	630	3	1	29	14	27	102	6	3	0	1	0	0	3
11/7/2018	645	3	0	37	19	55	124	7	3	0	5	1	0	4
11/7/2018	700	3	2	58	14	33	124	8	11	0	5	1	0	3
11/7/2018	715	3	1	58	14	34	157	5	6	1	3	3	0	4
11/7/2018	730	3	2	54	17	43	163	6	9	2	7	3	0	4
11/7/2018	745	3	6	56	12	38	136	10	11	0	13	4	0	4
11/7/2018	800	3	4	59	19	54	160	7	7	0	4	5	0	5
11/7/2018	815	3	0	54	9	49	140	3	7	1	6	6	0	6
11/7/2018	830	3	0	63	14	50	133	3	3	1	4	3	0	2
11/7/2018	630	4	20	44	28	23	77	7	0	0	16	1	0	1
11/7/2018	645	4	25	54	32	14	98	16	0	0	14	2	0	1
11/7/2018	700	4	24	72	21	24	95	10	0	0	11	3	0	0
11/7/2018	715	4	22	71	19	14	140	14	0	0	11	3	0	1
11/7/2018	730	4	21	76	14	19	135	18	0	0	11	2	1	1
11/7/2018	745	4	58	69	19	14	125	17	1	0	12	2	0	1
11/7/2018	800	4	42	77	12	19	125	28	1	0	14	3	0	3
11/7/2018	815	4	44	52	9	14	122	23	0	0	13	4	0	6
11/7/2018	830	4	22	70	11	5	119	18	0	0	6	3	0	7
11/7/2018	630	5	0	89	1	5	80	0	0	0	0	2	0	5
11/7/2018	645	5	0	104	2	10	110	0	0	0	0	1	0	7
11/7/2018	700	5	0	109	4	9	95	0	0	0	0	0	0	6
11/7/2018	715	5	0	112	3	17	140	0	0	0	0	0	0	6
11/7/2018	730	5	0	104	5	14	133	0	0	0	0	0	0	9
11/7/2018	745	5	0	136	4	8	133	0	0	0	0	1	0	7
11/7/2018	800	5	0	122	6	14	128	0	0	0	0	1	0	4
11/7/2018	815	5	0	103	4	13	120	0	0	0	0	0	0	6
11/7/2018	830	5	0	91	5	9	118	0	0	0	0	2	0	11
11/7/2018	630	6	1	78	1	26	52	0	3	1	7	0	0	7
11/7/2018	645	6	1	103	2	38	75	1	5	1	5	0	0	4
11/7/2018	700	6	0	103	3	33	58	1	6	2	8	0	0	4
11/7/2018	715	6	4	101	2	49	95	0	6	3	7	0	0	9
11/7/2018	730	6	2	95	2	31	101	3	3	3	7	0	1	5
11/7/2018	745	6	3	137	3	25	108	0	2	1	10	2	0	3
11/7/2018	800	6	2	112	1	29	94	3	3	2	9	1	1	11
11/7/2018	815	6	2	98	2	30	94	1	3	1	7	0	1	4
11/7/2018	830	6	2	85	3	20	100	0	7	2	9	2	0	5
11/7/2018	630	7	0	38	48	24	30	6	12	20	3	3	6	17
11/7/2018	645	7	2	60	54	38	36	4	14	31	5	8	2	18
11/7/2018	700	7	3	47	66	30	24	4	23	32	1	6	5	19
11/7/2018	715	7	3	60	77	36	53	3	17	36	0	18	7	25
11/7/2018	730	7	0	56	63	33	57	7	18	34	1	11	6	30
11/7/2018	745	7	0	72	48	34	68	13	12	29	1	23	17	33
11/7/2018	800	7	1	61	40	28	59	9	12	42	3	31	12	44
11/7/2018	815	7	2	52	47	24	64	5	14	33	2	12	20	34
11/7/2018	830	7	1	29	36	17	43	6	13	33	1	15	16	29
11/7/2018	630	8	1	0	0	0	0	3	30	65	0	0	36	6
11/7/2018	645	8	1	0	1	0	0	7	40	83	0	0	38	1
11/7/2018	700	8	2	1	1	3	0	4	48	88	0	0	24	4
11/7/2018	715	8	1	0	1	0	0	14	81	87	1	0	32	7
11/7/2018	730	8	2	1	0	1	0	10	45	80	3	0	43	4
11/7/2018	745	8	1	1	0	2	0	15	38	67	5	0	66	1
11/7/2018	800	8	1	0	2	0	0	14	36	79	6	1	82	3
11/7/2018	815	8	1	0	1	1	0	6	32	64	3	0	51	2
11/7/2018	830	8	2	0	4	2	0	8	21	66	1	0	52	1
11/7/2018	630	9	1	6	0	17	0	17	45	16	3	0	22	93
11/7/2018	645	9	0	13	1	12	1	12	62	26	3	0	25	179
11/7/2018	700	9	2	22	2	23	3	8	80	17	0	0	16	194
11/7/2018	715	9	1	54	2	40	4	21	81	16	0	0	11	217
11/7/2018	730	9	1	22	2	47	6	15	59	25	0	0	31	246
11/7/2018	745	9	1	20	1	43	2	29	51	24	2	0	44	149
11/7/2018	800	9	3	23	5	52	6	29	60	31	3	0	48	158
11/7/2018	815	9	1	13	5	35	7	14	48	19	1	0	32	118
11/7/2018	830	9	2	9	3	19	3	9	41	35	1	3	40	122
11/7/2018	630	10	36	72	47	0	6	0	4	11	4	10	23	24
11/7/2018	645	10	52	122	61	1	8	0	4	12	3	9	24	27
11/7/2018	700	10	63	133	90	1	9	1	8	9	9	15	20	22
11/7/2018	715	10	92	164	101	0	30	1	10	23	11	28	26	25
11/7/2018	730	10	73	156	94	2	22	0	12	13	9	20	30	32
11/7/2018	745	10	41	107	53	3	42	1	5	9	18	28	23	20
11/7/2018	800	10	46	107	63	1	27	0	5	10	18	28	19	13
11/7/2018	815	10	33	111	61	0	19	1	6	8	18	18	21	16
11/7/2018	830	10	29	85	58	2	11	0	4	12	12	11	19	22

Turning Movement Count														
15 Minute Counts														
DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
11/7/2018	630	11	7	4	0	10	1	10	21	8	2	1	70	53
11/7/2018	645	11	21	8	0	13	0	9	30	11	1	2	116	81
11/7/2018	700	11	37	15	0	23	1	13	33	20	3	0	101	65
11/7/2018	715	11	60	26	0	24	0	17	32	27	2	1	104	66
11/7/2018	730	11	42	15	0	28	0	22	30	24	3	1	100	66
11/7/2018	745	11	21	10	0	44	0	28	23	23	4	1	91	63
11/7/2018	800	11	21	16	0	49	1	21	25	33	2	0	94	67
11/7/2018	815	11	8	5	0	19	0	23	27	18	2	0	83	55
11/7/2018	830	11	9	4	1	21	1	10	15	16	3	1	95	50
11/7/2018	630	12	31	63	0	6	36	32	13	16	5	1	85	37
11/7/2018	645	12	46	62	4	4	15	24	12	31	4	0	110	37
11/7/2018	700	12	55	105	2	6	16	24	15	17	9	2	141	60
11/7/2018	715	12	61	132	0	7	25	33	18	43	8	2	160	111
11/7/2018	730	12	55	111	2	13	36	28	18	36	9	0	149	52
11/7/2018	745	12	42	97	0	12	65	21	19	42	17	1	119	42
11/7/2018	800	12	46	107	1	16	61	25	23	43	11	1	117	50
11/7/2018	815	12	48	70	0	15	46	29	19	35	7	2	103	29
11/7/2018	830	12	38	70	0	10	42	23	22	39	2	1	94	31
11/7/2018	630	13	0	7	11	0	67	0	0	0	0	74	0	5
11/7/2018	645	13	0	10	14	0	93	0	0	0	0	106	0	2
11/7/2018	700	13	0	16	19	0	87	0	0	0	0	97	0	9
11/7/2018	715	13	0	27	20	0	106	0	0	0	0	108	0	19
11/7/2018	730	13	0	20	30	0	82	0	0	0	0	102	0	8
11/7/2018	745	13	0	25	36	2	68	0	0	0	0	101	0	16
11/7/2018	800	13	0	28	56	2	70	0	0	0	0	98	0	6
11/7/2018	815	13	0	13	25	2	54	0	0	0	0	95	0	3
11/7/2018	830	13	0	16	21	0	56	0	0	0	0	97	0	2
11/7/2018	630	14	14	65	10	4	31	2	5	6	4	14	81	14
11/7/2018	645	14	21	113	14	1	40	3	3	4	3	25	87	16
11/7/2018	700	14	42	118	12	4	29	5	2	10	4	35	115	15
11/7/2018	715	14	82	167	8	5	40	21	2	18	6	36	100	15
11/7/2018	730	14	41	140	18	10	56	15	2	20	4	34	124	17
11/7/2018	745	14	27	127	9	19	78	5	2	23	7	27	137	12
11/7/2018	800	14	25	124	17	13	88	9	5	23	10	16	83	8
11/7/2018	815	14	16	86	12	2	50	5	4	10	2	14	90	13
11/7/2018	830	14	22	112	20	5	47	7	0	7	3	15	76	4
11/7/2018	630	15	24	58	0	0	35	83	1	0	5	0	0	0
11/7/2018	645	15	36	74	0	1	40	94	5	0	3	1	0	0
11/7/2018	700	15	45	79	0	0	38	117	3	0	4	0	0	0
11/7/2018	715	15	85	96	0	0	60	125	15	0	10	0	0	0
11/7/2018	730	15	43	105	1	0	61	102	19	0	16	0	0	0
11/7/2018	745	15	35	122	0	0	60	87	28	0	45	0	0	0
11/7/2018	800	15	43	133	0	0	58	84	21	0	43	0	0	0
11/7/2018	815	15	19	90	0	0	48	71	12	0	17	0	0	0
11/7/2018	830	15	31	86	0	0	66	65	9	0	9	0	0	0
11/7/2018	630	16	28	43	2	3	108	48	3	0	9	2	1	1
11/7/2018	645	16	39	45	6	3	108	68	3	0	11	0	1	1
11/7/2018	700	16	28	39	4	4	140	66	3	0	6	2	1	5
11/7/2018	715	16	57	51	4	3	154	94	7	0	10	5	3	0
11/7/2018	730	16	32	71	4	1	144	90	7	0	8	5	4	0
11/7/2018	745	16	53	86	7	2	117	76	31	2	12	6	2	0
11/7/2018	800	16	24	81	7	1	137	55	29	2	16	4	2	0
11/7/2018	815	16	12	63	6	2	105	48	12	0	7	0	1	2
11/7/2018	830	16	29	64	5	0	95	62	8	0	10	1	0	1
11/7/2018	630	17	9	7	19	4	5	0	1	85	20	115	134	34
11/7/2018	645	17	6	11	33	7	6	0	1	121	40	117	158	53
11/7/2018	700	17	8	8	29	8	7	0	0	97	44	160	137	37
11/7/2018	715	17	9	11	32	7	6	0	2	88	47	220	160	39
11/7/2018	730	17	15	7	50	8	9	1	1	102	41	143	201	52
11/7/2018	745	17	19	17	92	12	6	1	3	185	37	162	195	91
11/7/2018	800	17	33	17	87	9	6	0	3	135	34	134	180	77
11/7/2018	815	17	19	21	50	13	5	2	0	105	31	130	198	59
11/7/2018	830	17	15	15	45	13	5	0	2	94	24	118	157	54
11/7/2018	630	18	4	0	3	1	0	0	1	132	12	21	90	1
11/7/2018	645	18	6	0	6	0	0	0	0	180	21	34	117	2
11/7/2018	700	18	2	0	3	0	0	1	1	138	22	27	102	7
11/7/2018	715	18	6	0	12	1	0	0	1	144	27	38	113	4
11/7/2018	730	18	4	0	3	2	0	1	1	179	21	37	191	8
11/7/2018	745	18	6	0	15	1	1	0	0	171	25	41	189	6
11/7/2018	800	18	7	1	8	1	0	1	2	176	25	16	202	17
11/7/2018	815	18	6	0	4	0	0	0	0	145	12	18	178	9
11/7/2018	830	18	3	0	4	3	0	2	0	137	11	26	189	11
11/7/2018	630	19	2	0	2	8	0	2	21	138	2	11	68	24
11/7/2018	645	19	1	0	1	14	0	6	27	180	7	4	79	46
11/7/2018	700	19	2	0	4	6	0	5	14	147	7	2	77	29
11/7/2018	715	19	2	0	1	17	2	5	19	157	3	7	97	17
11/7/2018	730	19	1	0	2	6	1	15	9	184	7	6	154	34
11/7/2018	745	19	1	1	3	17	1	10	28	181	5	4	143	46
11/7/2018	800	19	4	1	4	23	1	11	17	178	4	5	172	29
11/7/2018	815	19	2	0	2	34	1	10	18	134	1	2	156	15
11/7/2018	830	19	1	0	2	31	0	16	20	121	5	3	160	29
11/7/2018	630	20	0	0	4	0	0	0	0	11	0	19	79	0
11/7/2018	645	20	0	0	1	0	0	0	0	14	0	7	108	0
11/7/2018	700	20	0	0	1	0	0	0	0	19	0	57	106	0
11/7/2018	715	20	0	0	5	0	0	0	0	20	0	76	127	0
11/7/2018	730	20	0	0	1	0	0	0	0	30	0	71	110	0
11/7/2018	745	20	0	0	1	0	0	0	0	38	0	51	117	0
11/7/2018	800	20	0	0	1	0	0	0	0	58	0	13	104	0
11/7/2018	815	20	0	0	1	0	0	0	0	27	0	13	98	0
11/7/2018	830	20	0	0	1	0	0	0	0	21	0	6	99	0

Turning Movement Count														
15 Minute Counts														
DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
11/7/2018	1545	1	42	309	50	15	340	99	121	84	26	42	96	29
11/7/2018	1600	1	54	421	30	38	273	76	189	90	27	60	125	44
11/7/2018	1615	1	58	468	42	18	267	63	166	105	25	82	147	88
11/7/2018	1630	1	46	377	44	26	287	80	183	111	22	45	142	39
11/7/2018	1645	1	34	313	36	28	241	87	238	142	34	44	124	33
11/7/2018	1700	1	50	373	46	49	298	84	209	152	39	62	128	40
11/7/2018	1715	1	49	332	30	33	269	63	258	194	60	53	146	29
11/7/2018	1730	1	30	283	38	49	259	64	214	139	36	48	106	27
11/7/2018	1745	1	26	250	32	36	263	87	222	135	34	54	114	20
11/7/2018	1545	2	0	232	5	59	326	0	0	0	0	7	0	170
11/7/2018	1600	2	0	245	4	62	314	0	1	1	0	13	0	276
11/7/2018	1615	2	0	216	2	59	326	1	0	1	1	12	0	364
11/7/2018	1630	2	0	244	3	49	289	0	1	0	0	11	0	246
11/7/2018	1645	2	0	208	8	74	266	0	0	0	0	10	1	189
11/7/2018	1700	2	0	267	5	62	329	1	2	0	0	5	0	212
11/7/2018	1715	2	0	254	1	79	322	0	0	0	0	4	0	178
11/7/2018	1730	2	0	240	4	70	265	0	0	0	0	5	0	143
11/7/2018	1745	2	0	239	5	73	275	0	0	0	0	3	1	112
11/7/2018	1545	3	0	178	3	2	52	3	3	0	1	10	0	36
11/7/2018	1600	3	4	231	1	1	60	0	4	0	1	18	0	63
11/7/2018	1615	3	6	345	3	1	62	2	2	0	1	16	1	55
11/7/2018	1630	3	4	227	1	2	56	7	4	0	4	17	0	54
11/7/2018	1645	3	3	182	3	7	56	1	3	0	1	20	0	47
11/7/2018	1700	3	5	179	1	2	88	9	5	0	1	12	0	53
11/7/2018	1715	3	9	162	3	3	73	1	1	0	2	12	1	41
11/7/2018	1730	3	3	143	0	4	72	7	8	0	2	6	0	25
11/7/2018	1745	3	2	102	1	2	65	5	6	0	3	5	0	24
11/7/2018	1545	4	12	150	3	0	64	0	9	0	24	12	0	25
11/7/2018	1600	4	12	194	4	0	77	2	6	0	51	36	3	36
11/7/2018	1615	4	30	303	3	2	76	4	8	0	46	27	3	39
11/7/2018	1630	4	18	168	7	1	73	2	13	0	39	38	3	54
11/7/2018	1645	4	12	154	3	0	76	2	6	0	48	23	2	29
11/7/2018	1700	4	13	146	1	0	98	2	13	0	62	17	3	25
11/7/2018	1715	4	10	143	1	0	86	2	12	0	45	8	1	19
11/7/2018	1730	4	9	126	0	1	77	1	11	0	56	5	0	14
11/7/2018	1745	4	12	95	0	2	66	3	5	0	20	5	1	10
11/7/2018	1545	5	0	128	1	1	100	0	0	0	0	6	0	35
11/7/2018	1600	5	0	153	1	4	159	0	0	0	0	9	0	59
11/7/2018	1615	5	0	230	0	5	144	0	0	0	0	7	0	97
11/7/2018	1630	5	0	172	0	1	150	0	0	0	0	2	0	19
11/7/2018	1645	5	0	153	0	0	140	0	0	0	0	3	0	14
11/7/2018	1700	5	0	159	0	0	172	0	0	0	0	1	0	6
11/7/2018	1715	5	0	149	3	1	137	0	0	0	0	1	0	9
11/7/2018	1730	5	0	118	1	0	134	0	0	0	0	1	0	6
11/7/2018	1745	5	0	97	0	1	88	0	0	0	0	1	0	6
11/7/2018	1545	6	7	96	0	3	99	2	3	0	5	8	0	29
11/7/2018	1600	6	4	99	1	2	160	4	2	0	4	8	0	55
11/7/2018	1615	6	5	137	0	3	148	2	2	0	2	11	0	90
11/7/2018	1630	6	8	120	0	1	154	1	0	0	5	4	0	43
11/7/2018	1645	6	15	117	1	4	135	8	1	0	6	2	1	36
11/7/2018	1700	6	9	144	0	2	167	7	1	0	1	1	4	17
11/7/2018	1715	6	7	112	0	1	129	8	2	0	7	2	2	35
11/7/2018	1730	6	9	96	0	3	133	8	5	0	3	1	0	19
11/7/2018	1745	6	10	78	0	0	77	8	2	0	8	1	1	19
11/7/2018	1545	7	1	42	8	41	71	29	13	15	5	28	32	34
11/7/2018	1600	7	2	60	8	35	102	26	6	22	3	58	45	56
11/7/2018	1615	7	4	45	9	45	76	24	7	26	2	84	70	82
11/7/2018	1630	7	0	52	8	42	79	21	10	26	5	48	52	64
11/7/2018	1645	7	5	46	14	46	105	20	19	29	2	42	53	52
11/7/2018	1700	7	4	88	7	33	91	19	8	31	3	48	42	40
11/7/2018	1715	7	2	61	9	39	81	13	15	37	4	54	63	53
11/7/2018	1730	7	1	46	15	43	80	18	7	45	2	52	67	50
11/7/2018	1745	7	2	45	14	38	71	10	5	35	0	44	43	34
11/7/2018	1545	8	3	0	1	12	1	42	5	48	5	1	94	0
11/7/2018	1600	8	5	0	1	28	0	51	4	71	8	0	83	0
11/7/2018	1615	8	5	0	0	54	0	103	4	66	11	1	136	1
11/7/2018	1630	8	6	1	0	9	0	37	12	76	4	0	110	0
11/7/2018	1645	8	3	0	2	2	0	43	2	68	7	3	113	0
11/7/2018	1700	8	7	0	0	2	0	41	2	70	9	1	116	1
11/7/2018	1715	8	7	0	1	2	2	39	1	60	6	2	127	0
11/7/2018	1730	8	4	0	0	1	0	36	2	75	10	0	94	0
11/7/2018	1745	8	8	0	2	1	1	32	8	59	6	1	77	1
11/7/2018	1545	9	3	0	1	100	9	41	8	48	2	1	52	23
11/7/2018	1600	9	0	0	0	138	9	64	5	85	5	0	23	18
11/7/2018	1615	9	1	1	0	241	12	98	10	112	5	1	41	15
11/7/2018	1630	9	1	1	1	168	18	66	9	74	0	2	44	16
11/7/2018	1645	9	2	1	1	206	9	80	9	64	5	0	45	21
11/7/2018	1700	9	3	1	0	183	12	73	6	55	6	1	45	16
11/7/2018	1715	9	3	1	6	167	14	91	4	62	3	3	54	18
11/7/2018	1730	9	0	0	4	198	15	57	2	59	2	1	40	18
11/7/2018	1745	9	2	0	1	150	19	50	7	50	9	1	36	14
11/7/2018	1545	10	3	20	7	15	58	2	0	20	51	39	11	2
11/7/2018	1600	10	3	12	10	20	100	4	1	43	97	54	8	4
11/7/2018	1615	10	6	13	18	11	136	2	2	78	123	90	5	1
11/7/2018	1630	10	5	12	13	8	104	4	1	39	76	72	6	4
11/7/2018	1645	10	2	14	10	13	86	8	1	36	81	84	2	7
11/7/2018	1700	10	1	8	17	11	89	7	0	39	58	91	7	2
11/7/2018	1715	10	2	8	18	15	113	4	1	41	63	114	10	4
11/7/2018	1730	10	5	9	16	13	103	4	1	26	67	117	5	2
11/7/2018	1745	10	4	10	15	8	89	1	0	37	49	65	5	3

Turning Movement Count														
15 Minute Counts														
DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
11/7/2018	1545	11	1	0	1	22	0	11	14	71	1	0	13	16
11/7/2018	1600	11	4	0	2	55	1	19	17	105	2	0	18	16
11/7/2018	1615	11	6	1	4	70	1	18	14	126	1	1	19	16
11/7/2018	1630	11	3	0	2	41	1	24	16	101	0	0	14	14
11/7/2018	1645	11	2	0	1	54	0	19	16	104	1	0	10	29
11/7/2018	1700	11	2	1	4	62	2	24	16	129	4	0	21	16
11/7/2018	1715	11	4	1	1	61	1	26	21	144	0	0	20	19
11/7/2018	1730	11	2	0	0	68	1	31	21	105	0	1	16	15
11/7/2018	1745	11	2	3	1	42	1	17	12	107	1	0	12	17
11/7/2018	1545	12	5	46	0	21	60	20	24	93	30	6	27	21
11/7/2018	1600	12	10	42	1	48	117	12	52	134	47	2	25	12
11/7/2018	1615	12	5	56	1	46	117	17	58	189	64	3	34	16
11/7/2018	1630	12	5	52	2	41	121	20	51	139	50	2	39	23
11/7/2018	1645	12	7	47	3	42	91	16	43	158	46	2	41	22
11/7/2018	1700	12	8	47	2	70	162	19	38	120	58	2	24	14
11/7/2018	1715	12	16	51	7	68	152	19	30	148	63	1	30	16
11/7/2018	1730	12	12	47	0	62	114	23	38	159	56	1	37	17
11/7/2018	1745	12	8	34	8	31	75	13	25	117	41	2	38	15
11/7/2018	1545	13	0	39	65	0	23	0	0	0	0	5	0	0
11/7/2018	1600	13	0	46	126	1	19	0	0	0	0	11	0	0
11/7/2018	1615	13	0	60	144	2	23	0	0	0	0	15	0	1
11/7/2018	1630	13	0	53	100	1	17	0	0	0	0	9	0	0
11/7/2018	1645	13	0	48	122	3	20	0	0	0	0	16	0	0
11/7/2018	1700	13	0	47	150	7	21	0	0	0	0	11	0	0
11/7/2018	1715	13	0	56	165	2	26	0	0	0	0	13	0	1
11/7/2018	1730	13	0	52	129	0	21	0	0	0	0	4	0	0
11/7/2018	1745	13	0	54	113	2	17	0	0	0	0	14	0	2
11/7/2018	1545	14	3	50	20	22	112	2	5	52	13	13	7	1
11/7/2018	1600	14	5	61	42	36	150	2	7	86	16	7	5	0
11/7/2018	1615	14	5	83	62	36	139	1	19	143	31	12	4	3
11/7/2018	1630	14	7	82	28	56	154	2	11	105	21	2	8	2
11/7/2018	1645	14	3	68	34	29	162	0	13	115	23	5	7	1
11/7/2018	1700	14	2	71	29	52	189	2	15	138	26	15	5	0
11/7/2018	1715	14	6	60	34	52	158	1	11	126	20	9	4	1
11/7/2018	1730	14	4	70	20	28	132	3	14	114	25	10	9	2
11/7/2018	1745	14	5	68	18	27	127	0	12	101	21	15	10	1
11/7/2018	1545	15	7	54	0	0	85	11	42	0	32	0	0	0
11/7/2018	1600	15	1	69	0	0	140	12	47	0	58	0	0	0
11/7/2018	1615	15	8	96	0	0	129	9	87	0	49	0	0	0
11/7/2018	1630	15	9	84	0	0	152	8	49	0	67	0	0	0
11/7/2018	1645	15	2	77	0	1	118	8	62	0	55	1	0	0
11/7/2018	1700	15	4	73	0	0	159	12	75	0	80	0	0	0
11/7/2018	1715	15	1	81	0	0	158	6	81	1	90	0	0	0
11/7/2018	1730	15	1	89	0	0	119	11	66	0	81	0	0	0
11/7/2018	1745	15	5	85	1	0	98	8	58	0	47	0	0	0
11/7/2018	1545	16	5	77	0	4	91	4	26	1	17	6	0	1
11/7/2018	1600	16	5	105	4	3	98	6	59	10	34	1	2	7
11/7/2018	1615	16	7	162	6	2	90	7	56	5	34	2	0	5
11/7/2018	1630	16	6	134	4	4	106	9	51	1	25	7	0	9
11/7/2018	1645	16	10	130	3	4	90	11	52	0	28	7	0	1
11/7/2018	1700	16	5	155	5	1	130	7	55	7	35	5	0	5
11/7/2018	1715	16	5	129	6	4	109	13	61	5	37	6	0	4
11/7/2018	1730	16	5	140	5	1	85	5	46	3	23	6	0	3
11/7/2018	1745	16	14	122	7	3	86	15	34	2	31	1	1	4
11/7/2018	1545	17	21	9	79	30	17	4	5	218	18	54	140	20
11/7/2018	1600	17	29	9	122	55	28	2	2	218	32	49	157	23
11/7/2018	1615	17	34	8	147	28	20	0	5	317	21	50	146	25
11/7/2018	1630	17	38	10	151	90	27	4	1	218	29	46	150	23
11/7/2018	1645	17	39	8	163	38	14	2	1	211	22	49	137	22
11/7/2018	1700	17	34	10	143	56	34	5	2	236	51	48	199	9
11/7/2018	1715	17	30	10	160	30	21	4	5	267	48	59	141	13
11/7/2018	1730	17	27	5	151	40	12	3	2	242	40	52	146	7
11/7/2018	1745	17	26	7	108	25	9	1	3	223	30	58	172	14
11/7/2018	1545	18	9	0	27	12	0	0	0	195	4	4	164	3
11/7/2018	1600	18	19	1	40	8	0	0	0	208	1	4	180	1
11/7/2018	1615	18	30	0	14	3	0	0	2	358	5	2	200	1
11/7/2018	1630	18	32	0	34	1	0	1	0	273	3	2	206	0
11/7/2018	1645	18	17	0	32	3	0	2	0	241	3	5	176	1
11/7/2018	1700	18	32	0	33	2	0	3	0	254	4	2	203	1
11/7/2018	1715	18	14	0	22	4	0	3	0	288	1	3	250	1
11/7/2018	1730	18	12	0	29	5	0	2	1	258	3	1	177	2
11/7/2018	1745	18	23	0	20	4	0	0	0	205	5	0	176	1
11/7/2018	1545	19	14	2	28	33	0	13	3	141	3	2	160	21
11/7/2018	1600	19	64	5	50	49	0	26	1	132	1	2	179	14
11/7/2018	1615	19	88	4	96	27	0	12	3	212	1	0	212	27
11/7/2018	1630	19	10	0	26	30	0	28	4	224	1	0	210	27
11/7/2018	1645	19	7	0	8	36	0	11	6	216	1	0	179	10
11/7/2018	1700	19	2	1	7	22	0	16	3	239	0	2	220	14
11/7/2018	1715	19	2	1	4	27	0	14	4	246	0	1	231	10
11/7/2018	1730	19	1	1	3	33	0	17	6	230	0	0	184	14
11/7/2018	1745	19	1	0	1	14	0	11	3	196	0	0	170	24
11/7/2018	1545	20	0	0	4	0	0	0	0	65	0	8	5	0
11/7/2018	1600	20	0	0	1	0	0	0	0	127	0	1	11	0
11/7/2018	1615	20	0	0	48	0	0	0	0	146	0	1	16	0
11/7/2018	1630	20	0	0	36	0	0	0	0	101	0	8	9	0
11/7/2018	1645	20	0	0	27	0	0	0	0	125	0	1	16	0
11/7/2018	1700	20	0	0	22	0	0	0	0	157	0	1	11	0
11/7/2018	1715	20	0	0	1	0	0	0	0	167	0	1	14	0
11/7/2018	1730	20	0	0	25	0	0	0	0	129	0	12	4	0
11/7/2018	1745	20	0	0	19	0	0	0	0	115	0	1	16	0

Turning Movement Count														
15 Minute Counts														
DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
11/7/2018	630	1	5	196	40	23	227	55	91	80	22	17	33	6
11/7/2018	645	1	9	180	50	17	293	88	99	115	33	26	52	23
11/7/2018	700	1	12	182	34	22	281	79	87	90	32	39	44	17
11/7/2018	715	1	13	185	28	29	373	90	76	113	42	30	66	23
11/7/2018	730	1	14	253	47	34	406	123	100	118	40	41	75	20
11/7/2018	745	1	32	191	56	34	420	134	79	139	47	28	85	40
11/7/2018	800	1	20	191	35	17	331	171	58	104	29	45	93	29
11/7/2018	815	1	21	181	37	15	307	170	72	81	29	49	67	29
11/7/2018	830	1	24	210	37	12	264	167	79	82	23	35	84	26
11/7/2018	630	2	0	239	5	114	161	1	1	0	0	0	0	22
11/7/2018	645	2	0	232	9	180	169	2	0	0	0	0	1	44
11/7/2018	700	2	0	196	8	169	195	0	1	1	0	1	1	51
11/7/2018	715	2	0	196	3	232	212	0	0	0	0	1	0	66
11/7/2018	730	2	0	214	8	214	300	0	0	0	0	0	0	76
11/7/2018	745	2	0	208	8	204	275	0	0	0	0	1	0	64
11/7/2018	800	2	0	187	4	175	250	0	1	0	0	2	0	71
11/7/2018	815	2	0	167	3	173	231	0	1	0	0	0	0	76
11/7/2018	830	2	0	221	5	125	220	1	0	0	0	2	1	55
11/7/2018	630	3	1	30	15	31	106	6	3	0	1	0	0	4
11/7/2018	645	3	0	39	21	60	130	7	3	0	5	1	0	5
11/7/2018	700	3	2	59	16	39	131	8	11	0	5	1	0	4
11/7/2018	715	3	1	61	16	41	166	5	6	1	3	3	0	6
11/7/2018	730	3	2	56	20	52	174	6	9	2	7	4	0	6
11/7/2018	745	3	6	58	14	45	145	10	11	0	13	4	0	6
11/7/2018	800	3	4	61	21	61	170	7	7	0	4	5	0	7
11/7/2018	815	3	0	55	11	55	148	3	7	1	6	6	0	7
11/7/2018	830	3	0	64	16	55	139	3	3	1	4	3	0	3
11/7/2018	630	4	20	44	38	31	73	7	0	1	16	3	0	3
11/7/2018	645	4	25	55	47	26	92	16	0	1	14	5	0	4
11/7/2018	700	4	24	72	38	38	88	10	0	1	11	7	0	3
11/7/2018	715	4	22	72	39	31	132	14	0	1	11	8	0	5
11/7/2018	730	4	21	76	39	40	126	18	0	2	11	8	1	6
11/7/2018	745	4	58	69	38	30	118	17	1	1	12	6	0	5
11/7/2018	800	4	42	77	33	36	118	28	1	1	14	8	0	7
11/7/2018	815	4	44	52	26	28	116	23	0	1	13	8	0	9
11/7/2018	830	4	22	70	24	16	114	18	0	1	6	6	0	10
11/7/2018	630	5	0	99	0	4	80	0	0	0	0	2	0	4
11/7/2018	645	5	0	119	2	9	110	0	0	0	0	1	0	7
11/7/2018	700	5	0	126	4	7	94	0	0	0	0	0	0	6
11/7/2018	715	5	0	133	3	16	140	0	0	0	0	0	0	6
11/7/2018	730	5	0	130	4	11	132	0	0	0	0	0	0	9
11/7/2018	745	5	0	155	4	6	133	0	0	0	0	1	0	7
11/7/2018	800	5	0	144	6	12	127	0	0	0	0	1	0	4
11/7/2018	815	5	0	120	4	11	119	0	0	0	0	0	0	6
11/7/2018	830	5	0	105	5	7	117	0	0	0	0	2	0	11
11/7/2018	630	6	1	88	0	25	53	0	3	1	7	0	0	6
11/7/2018	645	6	1	118	2	36	77	1	5	1	5	0	0	4
11/7/2018	700	6	0	121	3	31	59	1	6	2	8	0	0	4
11/7/2018	715	6	4	122	2	46	96	0	6	3	7	0	0	8
11/7/2018	730	6	2	121	1	28	104	3	3	3	7	0	1	4
11/7/2018	745	6	3	156	3	23	110	0	2	1	10	2	0	2
11/7/2018	800	6	2	134	1	27	96	3	3	2	9	1	1	10
11/7/2018	815	6	2	116	2	28	95	1	3	1	7	0	1	4
11/7/2018	830	6	2	99	3	19	101	0	7	2	9	2	0	5
11/7/2018	630	7	0	43	46	23	31	6	13	19	3	3	5	23
11/7/2018	645	7	2	66	51	37	38	4	15	29	5	7	2	25
11/7/2018	700	7	3	55	62	29	26	4	25	30	1	6	5	28
11/7/2018	715	7	3	68	73	36	55	3	19	33	0	17	6	35
11/7/2018	730	7	0	66	57	32	60	8	20	31	1	9	5	43
11/7/2018	745	7	0	80	44	33	70	13	14	27	1	22	16	43
11/7/2018	800	7	1	70	35	27	61	9	14	40	3	30	11	54
11/7/2018	815	7	2	60	44	23	66	5	16	31	2	12	20	42
11/7/2018	830	7	1	34	33	17	44	6	14	32	1	14	16	35
11/7/2018	630	8	1	0	0	0	0	3	29	63	0	0	41	5
11/7/2018	645	8	1	0	1	0	0	6	37	80	0	0	45	1
11/7/2018	700	8	2	1	1	3	0	3	45	85	0	0	32	4
11/7/2018	715	8	1	0	1	0	0	13	77	84	1	0	42	7
11/7/2018	730	8	2	1	0	1	0	8	40	76	3	0	56	3
11/7/2018	745	8	1	1	0	2	0	14	35	63	5	0	75	1
11/7/2018	800	8	1	0	2	0	0	13	32	76	6	1	92	3
11/7/2018	815	8	1	0	1	1	0	5	29	61	3	0	58	2
11/7/2018	830	8	2	0	4	2	0	7	19	64	1	0	58	1
11/7/2018	630	9	1	5	0	15	0	16	42	17	3	0	27	86
11/7/2018	645	9	0	13	1	10	1	11	57	28	3	0	33	168
11/7/2018	700	9	2	22	2	20	3	6	75	19	0	0	26	182
11/7/2018	715	9	1	54	2	37	4	20	75	19	0	0	22	203
11/7/2018	730	9	1	21	2	42	6	14	52	28	0	0	44	227
11/7/2018	745	9	1	20	1	39	2	28	45	26	2	0	54	135
11/7/2018	800	9	3	23	5	49	6	28	54	34	3	0	59	143
11/7/2018	815	9	1	13	5	33	7	12	43	21	1	0	41	106
11/7/2018	830	9	2	9	3	16	3	8	37	37	1	3	47	112
11/7/2018	630	10	33	67	43	0	5	0	4	11	3	9	22	25
11/7/2018	645	10	48	115	55	1	7	0	4	11	3	8	23	29
11/7/2018	700	10	59	126	83	1	7	1	7	9	8	14	18	23
11/7/2018	715	10	87	155	93	0	28	1	9	22	10	27	25	27
11/7/2018	730	10	67	145	84	1	19	0	11	11	8	17	27	35
11/7/2018	745	10	36	99	46	3	40	1	4	8	17	26	21	22
11/7/2018	800	10	41	97	56	1	25	0	4	9	17	27	17	15
11/7/2018	815	10	30	103	55	0	17	1	5	8	17	17	19	17
11/7/2018	830	10	26	79	53	2	10	0	4	11	11	10	17	24

Turning Movement Count														
15 Minute Counts														
DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
11/7/2018	630	11	6	3	0	9	1	10	20	7	2	1	67	50
11/7/2018	645	11	19	7	0	12	0	7	29	10	0	2	110	77
11/7/2018	700	11	35	14	0	21	1	12	32	18	2	0	94	61
11/7/2018	715	11	57	25	0	22	0	15	31	26	1	1	96	61
11/7/2018	730	11	39	13	0	26	0	20	27	23	3	1	90	60
11/7/2018	745	11	19	9	0	42	0	26	21	22	3	1	84	58
11/7/2018	800	11	19	15	0	47	1	19	24	32	1	0	86	61
11/7/2018	815	11	6	4	0	17	0	22	26	16	1	0	77	50
11/7/2018	830	11	8	3	1	19	1	9	14	15	3	1	90	46
11/7/2018	630	12	30	62	0	6	36	30	13	16	5	1	86	37
11/7/2018	645	12	45	60	4	4	15	21	11	32	3	0	111	37
11/7/2018	700	12	54	103	2	6	15	21	14	17	8	2	142	60
11/7/2018	715	12	59	129	0	7	24	30	18	43	7	2	160	111
11/7/2018	730	12	53	108	2	13	35	24	17	37	9	0	150	52
11/7/2018	745	12	41	94	0	12	64	18	19	43	16	1	120	42
11/7/2018	800	12	45	105	1	16	60	21	23	43	10	1	118	50
11/7/2018	815	12	47	68	0	15	45	26	18	35	6	2	103	29
11/7/2018	830	12	37	69	0	10	42	21	21	38	1	1	95	31
11/7/2018	630	13	0	6	10	0	64	0	0	0	0	70	0	5
11/7/2018	645	13	0	9	12	0	89	0	0	0	0	100	0	2
11/7/2018	700	13	0	15	18	0	82	0	0	0	0	90	0	9
11/7/2018	715	13	0	25	18	0	100	0	0	0	0	100	0	19
11/7/2018	730	13	0	18	27	0	75	0	0	0	0	92	0	8
11/7/2018	745	13	0	23	34	2	62	0	0	0	0	94	0	16
11/7/2018	800	13	0	26	53	2	64	0	0	0	0	91	0	6
11/7/2018	815	13	0	12	24	2	49	0	0	0	0	89	0	3
11/7/2018	830	13	0	16	20	0	52	0	0	0	0	92	0	2
11/7/2018	630	14	13	65	10	4	30	2	5	6	4	14	78	14
11/7/2018	645	14	19	113	13	1	38	2	2	3	3	24	82	16
11/7/2018	700	14	40	118	11	4	27	5	1	9	3	35	108	15
11/7/2018	715	14	79	166	7	5	37	20	1	16	5	35	92	15
11/7/2018	730	14	38	139	18	10	53	13	2	18	3	32	115	17
11/7/2018	745	14	24	126	8	19	76	4	1	22	6	26	130	12
11/7/2018	800	14	23	123	16	13	85	8	4	21	9	15	76	8
11/7/2018	815	14	14	86	11	2	48	5	3	9	1	14	84	13
11/7/2018	830	14	21	112	20	5	46	6	0	6	3	14	72	4
11/7/2018	630	15	24	58	0	0	33	82	1	0	5	0	0	0
11/7/2018	645	15	36	73	0	1	37	92	5	0	3	1	0	0
11/7/2018	700	15	45	78	0	0	35	115	2	0	4	0	0	0
11/7/2018	715	15	85	96	0	0	57	122	14	0	10	0	0	0
11/7/2018	730	15	43	104	1	0	57	99	18	0	16	0	0	0
11/7/2018	745	15	35	122	0	0	57	84	27	0	45	0	0	0
11/7/2018	800	15	43	133	0	0	54	82	20	0	43	0	0	0
11/7/2018	815	15	19	89	0	0	45	69	11	0	17	0	0	0
11/7/2018	830	15	31	85	0	0	64	64	9	0	9	0	0	0
11/7/2018	630	16	28	42	2	3	105	47	3	0	9	2	1	1
11/7/2018	645	16	39	44	6	3	103	66	3	0	11	0	1	1
11/7/2018	700	16	28	37	4	4	135	64	2	0	6	2	1	5
11/7/2018	715	16	57	50	4	3	148	91	6	0	10	5	3	0
11/7/2018	730	16	32	70	4	1	137	87	6	0	8	5	4	0
11/7/2018	745	16	53	85	7	2	111	73	30	2	12	6	2	0
11/7/2018	800	16	24	80	7	1	131	53	28	2	16	4	2	0
11/7/2018	815	16	12	61	6	2	100	46	11	0	7	0	1	2
11/7/2018	830	16	29	63	5	0	91	61	8	0	10	1	0	1
11/7/2018	630	17	8	7	18	4	5	0	1	86	19	112	136	34
11/7/2018	645	17	6	10	32	7	5	0	1	122	39	112	161	53
11/7/2018	700	17	8	7	27	8	7	0	0	98	42	155	141	37
11/7/2018	715	17	9	10	31	7	5	0	2	89	46	214	164	39
11/7/2018	730	17	15	7	49	8	7	1	1	103	38	136	206	52
11/7/2018	745	17	19	16	91	12	5	1	3	186	35	156	199	91
11/7/2018	800	17	33	16	86	9	5	0	3	136	32	128	184	77
11/7/2018	815	17	19	20	48	13	5	2	0	106	29	125	202	59
11/7/2018	830	17	14	15	44	13	4	0	2	95	22	114	160	54
11/7/2018	630	18	4	0	3	1	0	0	1	132	12	21	91	1
11/7/2018	645	18	6	0	6	0	0	0	0	180	21	34	120	2
11/7/2018	700	18	2	0	3	0	0	1	1	137	22	27	106	7
11/7/2018	715	18	6	0	12	1	0	0	1	144	27	38	117	4
11/7/2018	730	18	4	0	3	2	0	1	1	177	21	37	196	8
11/7/2018	745	18	6	0	15	1	1	0	0	170	25	41	193	6
11/7/2018	800	18	7	1	8	1	0	1	2	175	25	16	206	17
11/7/2018	815	18	6	0	4	0	0	0	0	144	12	18	182	9
11/7/2018	830	18	3	0	4	3	0	2	0	136	11	26	191	11
11/7/2018	630	19	2	0	2	8	0	2	21	138	2	11	69	24
11/7/2018	645	19	1	0	1	14	0	6	27	180	7	4	82	46
11/7/2018	700	19	2	0	4	6	0	5	14	146	7	2	81	29
11/7/2018	715	19	2	0	1	17	2	5	19	157	3	7	101	17
11/7/2018	730	19	1	0	2	6	1	15	9	182	7	6	159	34
11/7/2018	745	19	1	1	3	17	1	10	28	180	5	4	147	46
11/7/2018	800	19	4	1	4	23	1	11	17	177	4	5	176	29
11/7/2018	815	19	2	0	2	34	1	10	18	133	1	2	160	15
11/7/2018	830	19	1	0	2	31	0	16	20	120	5	3	162	29
11/7/2018	630	20	0	0	4	0	0	0	0	10	0	17	75	0
11/7/2018	645	20	0	0	0	0	0	0	0	12	0	5	102	0
11/7/2018	700	20	0	0	0	0	0	0	0	18	0	53	99	0
11/7/2018	715	20	0	0	4	0	0	0	0	18	0	72	119	0
11/7/2018	730	20	0	0	1	0	0	0	0	27	0	66	100	0
11/7/2018	745	20	0	0	0	0	0	0	0	36	0	48	110	0
11/7/2018	800	20	0	0	0	0	0	0	0	55	0	10	97	0
11/7/2018	815	20	0	0	0	0	0	0	0	26	0	10	92	0
11/7/2018	830	20	0	0	0	0	0	0	0	20	0	4	94	0

Turning Movement Count														
15 Minute Counts														
DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
11/7/2018	1545	1	43	315	53	15	341	99	121	84	26	42	95	29
11/7/2018	1600	1	55	428	33	38	274	76	189	90	27	60	124	44
11/7/2018	1615	1	60	481	48	18	268	63	166	104	25	83	145	88
11/7/2018	1630	1	48	390	50	26	288	80	183	110	22	46	140	39
11/7/2018	1645	1	36	323	40	28	242	87	238	142	34	44	123	33
11/7/2018	1700	1	52	382	50	49	299	84	209	152	39	62	127	40
11/7/2018	1715	1	51	342	34	33	270	63	258	194	60	53	144	29
11/7/2018	1730	1	32	292	42	49	260	64	214	139	36	48	104	27
11/7/2018	1745	1	27	258	35	36	264	87	222	135	34	54	113	20
11/7/2018	1545	2	0	232	5	60	326	0	0	0	0	7	0	180
11/7/2018	1600	2	0	245	4	64	314	0	1	1	0	13	0	288
11/7/2018	1615	2	0	216	2	62	326	1	0	1	1	12	0	385
11/7/2018	1630	2	0	244	3	52	289	0	1	0	0	11	0	267
11/7/2018	1645	2	0	208	8	75	266	0	0	0	0	10	1	204
11/7/2018	1700	2	0	267	5	63	329	1	2	0	0	5	0	226
11/7/2018	1715	2	0	254	1	80	322	0	0	0	0	4	0	195
11/7/2018	1730	2	0	240	4	71	265	0	0	0	0	5	0	157
11/7/2018	1745	2	0	239	5	75	275	0	0	0	0	3	1	124
11/7/2018	1545	3	0	185	3	2	53	3	3	0	1	11	0	39
11/7/2018	1600	3	4	239	1	2	61	0	4	0	1	19	0	67
11/7/2018	1615	3	6	360	3	2	64	2	2	0	1	17	1	61
11/7/2018	1630	3	4	242	1	3	58	7	4	0	4	18	0	60
11/7/2018	1645	3	3	192	3	8	57	1	3	0	1	21	0	52
11/7/2018	1700	3	5	189	1	3	88	9	5	0	1	13	0	57
11/7/2018	1715	3	9	174	3	4	74	1	1	0	2	13	1	46
11/7/2018	1730	3	3	153	0	5	72	7	8	0	2	7	0	29
11/7/2018	1745	3	2	110	1	2	66	5	6	0	3	6	0	28
11/7/2018	1545	4	12	145	4	1	65	0	9	0	24	25	1	37
11/7/2018	1600	4	12	187	5	1	78	2	6	0	51	53	4	51
11/7/2018	1615	4	30	292	5	4	77	4	8	0	46	56	5	65
11/7/2018	1630	4	18	158	9	3	74	2	13	0	39	66	5	79
11/7/2018	1645	4	12	145	5	2	76	2	6	0	48	45	4	48
11/7/2018	1700	4	13	138	2	1	98	2	13	0	62	37	4	43
11/7/2018	1715	4	10	135	3	2	86	2	12	0	45	30	3	39
11/7/2018	1730	4	9	119	1	2	77	1	11	0	56	24	1	31
11/7/2018	1745	4	12	89	1	3	67	3	5	0	20	21	2	24
11/7/2018	1545	5	0	126	1	1	114	0	0	0	0	6	0	34
11/7/2018	1600	5	0	149	1	4	177	0	0	0	0	9	0	58
11/7/2018	1615	5	0	223	0	4	173	0	0	0	0	6	0	94
11/7/2018	1630	5	0	166	0	0	178	0	0	0	0	1	0	17
11/7/2018	1645	5	0	149	0	0	163	0	0	0	0	3	0	12
11/7/2018	1700	5	0	156	0	0	193	0	0	0	0	1	0	4
11/7/2018	1715	5	0	145	3	1	160	0	0	0	0	1	0	7
11/7/2018	1730	5	0	114	1	0	154	0	0	0	0	1	0	4
11/7/2018	1745	5	0	93	0	1	105	0	0	0	0	1	0	5
11/7/2018	1545	6	7	95	0	3	113	2	3	0	5	8	0	28
11/7/2018	1600	6	4	97	1	1	177	4	2	0	4	8	0	53
11/7/2018	1615	6	5	133	0	3	177	2	2	0	2	10	0	87
11/7/2018	1630	6	8	117	0	1	182	1	0	0	5	3	0	40
11/7/2018	1645	6	15	115	1	3	158	8	1	0	6	2	1	34
11/7/2018	1700	6	9	143	0	1	187	7	1	0	1	1	4	15
11/7/2018	1715	6	7	110	0	0	152	8	2	0	7	2	2	33
11/7/2018	1730	6	9	94	0	2	152	8	5	0	3	1	0	17
11/7/2018	1745	6	10	76	0	0	94	8	2	0	8	1	1	17
11/7/2018	1545	7	1	43	7	48	76	30	13	15	5	25	31	32
11/7/2018	1600	7	2	61	8	44	109	28	6	21	3	55	43	54
11/7/2018	1615	7	4	45	9	60	87	27	7	26	2	78	67	78
11/7/2018	1630	7	0	52	8	56	91	24	10	26	5	43	49	60
11/7/2018	1645	7	5	47	14	57	114	22	19	28	2	38	51	49
11/7/2018	1700	7	4	89	7	43	100	21	8	30	3	45	40	38
11/7/2018	1715	7	2	62	9	50	90	15	15	36	4	49	61	50
11/7/2018	1730	7	1	47	15	53	88	20	7	44	2	48	65	47
11/7/2018	1745	7	2	46	13	46	77	11	5	35	0	41	41	32
11/7/2018	1545	8	3	0	1	12	1	39	4	55	5	1	90	0
11/7/2018	1600	8	5	0	1	28	0	48	4	80	8	0	79	0
11/7/2018	1615	8	5	0	0	53	0	98	4	80	11	1	128	1
11/7/2018	1630	8	6	1	0	8	0	31	12	89	4	0	102	0
11/7/2018	1645	8	3	0	2	2	0	39	2	78	7	3	108	0
11/7/2018	1700	8	7	0	0	2	0	38	2	80	9	1	111	1
11/7/2018	1715	8	7	0	1	2	2	35	1	70	6	2	122	0
11/7/2018	1730	8	4	0	0	1	0	32	2	85	10	0	89	0
11/7/2018	1745	8	8	0	2	1	1	29	7	67	6	1	72	1
11/7/2018	1545	9	3	0	1	91	9	37	8	55	2	1	52	23
11/7/2018	1600	9	0	0	0	126	9	59	5	94	5	0	24	17
11/7/2018	1615	9	1	1	0	220	11	89	9	126	5	1	42	14
11/7/2018	1630	9	1	1	1	148	17	57	8	87	0	2	45	14
11/7/2018	1645	9	2	1	1	190	9	74	8	75	5	0	46	20
11/7/2018	1700	9	3	1	0	169	12	67	6	65	6	1	46	15
11/7/2018	1715	9	3	1	6	152	14	85	3	73	3	3	55	17
11/7/2018	1730	9	0	0	4	185	15	51	2	69	2	1	41	17
11/7/2018	1745	9	2	0	1	138	19	45	7	58	9	1	36	13
11/7/2018	1545	10	3	20	7	14	52	1	0	17	49	34	11	2
11/7/2018	1600	10	3	11	9	19	93	4	1	40	93	48	8	4
11/7/2018	1615	10	5	12	17	10	123	2	2	73	116	80	4	1
11/7/2018	1630	10	4	11	12	7	92	4	1	34	70	62	5	4
11/7/2018	1645	10	2	14	9	12	77	8	1	32	76	76	2	7
11/7/2018	1700	10	1	7	16	10	81	7	0	36	53	83	7	2
11/7/2018	1715	10	2	8	17	14	104	4	1	37	58	106	10	4
11/7/2018	1730	10	5	8	15	12	95	4	1	22	63	110	5	2
11/7/2018	1745	10	4	9	15	8	82	0	0	34	45	59	5	3

Turning Movement Count														
15 Minute Counts														
DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
11/7/2018	1545	11	1	0	1	18	0	10	13	65	1	0	13	16
11/7/2018	1600	11	3	0	2	50	1	19	15	96	2	0	18	16
11/7/2018	1615	11	6	1	3	62	0	17	12	111	1	1	18	15
11/7/2018	1630	11	3	0	1	34	0	23	14	87	0	0	13	13
11/7/2018	1645	11	1	0	1	49	0	18	14	93	1	0	9	28
11/7/2018	1700	11	1	1	4	57	2	23	15	119	4	0	21	16
11/7/2018	1715	11	3	1	1	56	1	25	19	133	0	0	19	18
11/7/2018	1730	11	1	0	0	63	1	31	20	96	0	1	16	15
11/7/2018	1745	11	2	3	1	38	1	16	10	99	1	0	12	17
11/7/2018	1545	12	4	46	0	21	58	19	22	93	29	6	27	21
11/7/2018	1600	12	10	41	1	48	114	12	49	134	46	2	24	12
11/7/2018	1615	12	5	56	1	46	113	17	54	189	63	3	34	16
11/7/2018	1630	12	5	52	2	41	117	20	47	139	48	2	39	23
11/7/2018	1645	12	7	46	3	42	88	16	40	158	44	2	40	22
11/7/2018	1700	12	8	46	2	70	159	19	35	120	57	2	23	14
11/7/2018	1715	12	16	50	7	68	150	19	27	148	61	1	29	16
11/7/2018	1730	12	12	46	0	62	112	23	35	159	55	1	36	17
11/7/2018	1745	12	7	34	8	31	73	12	23	117	40	2	37	15
11/7/2018	1545	13	0	36	58	0	23	0	0	0	0	5	0	0
11/7/2018	1600	13	0	42	117	1	19	0	0	0	0	11	0	0
11/7/2018	1615	13	0	53	129	2	22	0	0	0	0	15	0	1
11/7/2018	1630	13	0	45	86	1	16	0	0	0	0	9	0	0
11/7/2018	1645	13	0	42	111	3	20	0	0	0	0	15	0	0
11/7/2018	1700	13	0	42	140	7	21	0	0	0	0	10	0	0
11/7/2018	1715	13	0	50	154	2	26	0	0	0	0	12	0	1
11/7/2018	1730	13	0	48	120	0	21	0	0	0	0	3	0	0
11/7/2018	1745	13	0	50	104	2	17	0	0	0	0	14	0	2
11/7/2018	1545	14	3	49	19	22	112	2	4	47	11	13	7	1
11/7/2018	1600	14	4	59	41	36	149	2	6	80	13	7	5	0
11/7/2018	1615	14	5	80	60	36	139	1	17	134	27	12	4	3
11/7/2018	1630	14	7	79	26	56	154	2	9	96	17	2	8	2
11/7/2018	1645	14	2	66	33	29	161	0	12	108	20	5	6	1
11/7/2018	1700	14	1	69	28	52	188	2	14	132	23	15	4	0
11/7/2018	1715	14	5	58	33	52	157	1	10	119	18	9	3	1
11/7/2018	1730	14	3	68	20	28	131	3	14	108	23	10	8	2
11/7/2018	1745	14	5	67	17	27	127	0	11	95	19	15	10	1
11/7/2018	1545	15	7	52	0	0	84	11	40	0	32	0	0	0
11/7/2018	1600	15	1	66	0	0	140	11	44	0	58	0	0	0
11/7/2018	1615	15	8	92	0	0	129	9	83	0	49	0	0	0
11/7/2018	1630	15	9	80	0	0	152	8	45	0	67	0	0	0
11/7/2018	1645	15	2	74	0	1	118	7	59	0	55	1	0	0
11/7/2018	1700	15	4	70	0	0	159	11	72	0	80	0	0	0
11/7/2018	1715	15	1	78	0	0	158	5	79	1	90	0	0	0
11/7/2018	1730	15	1	86	0	0	119	10	64	0	81	0	0	0
11/7/2018	1745	15	5	83	1	0	97	8	56	0	47	0	0	0
11/7/2018	1545	16	5	73	0	4	91	4	24	1	17	6	0	1
11/7/2018	1600	16	5	101	4	3	98	5	56	10	34	1	2	7
11/7/2018	1615	16	7	153	6	2	89	7	52	5	34	2	0	5
11/7/2018	1630	16	6	126	4	4	105	9	47	1	25	7	0	9
11/7/2018	1645	16	10	124	3	4	89	10	49	0	28	7	0	1
11/7/2018	1700	16	5	149	5	1	130	6	52	7	35	5	0	5
11/7/2018	1715	16	5	123	6	4	108	12	59	5	37	6	0	4
11/7/2018	1730	16	5	134	5	1	85	4	44	3	23	6	0	3
11/7/2018	1745	16	14	117	7	3	86	15	32	2	31	1	1	4
11/7/2018	1545	17	20	8	75	30	17	4	5	221	18	54	140	20
11/7/2018	1600	17	28	8	117	55	28	2	2	221	32	49	157	23
11/7/2018	1615	17	32	6	138	28	20	0	5	323	20	49	147	25
11/7/2018	1630	17	36	8	142	90	27	4	1	224	28	45	151	23
11/7/2018	1645	17	38	7	157	38	14	2	1	215	22	48	137	22
11/7/2018	1700	17	33	9	137	56	34	5	2	240	51	48	199	9
11/7/2018	1715	17	28	9	154	30	21	4	5	271	48	58	141	13
11/7/2018	1730	17	25	5	145	40	12	3	2	246	40	52	146	7
11/7/2018	1745	17	25	6	103	25	9	1	3	226	30	58	172	14
11/7/2018	1545	18	9	0	27	12	0	0	0	198	4	4	163	3
11/7/2018	1600	18	19	1	40	8	0	0	0	211	1	4	179	1
11/7/2018	1615	18	30	0	14	3	0	0	2	363	5	2	199	1
11/7/2018	1630	18	32	0	34	1	0	1	0	278	3	2	205	0
11/7/2018	1645	18	17	0	32	3	0	2	0	245	3	5	175	1
11/7/2018	1700	18	32	0	33	2	0	3	0	258	4	2	202	1
11/7/2018	1715	18	14	0	22	4	0	3	0	292	1	3	248	1
11/7/2018	1730	18	12	0	29	5	0	2	1	262	3	1	175	2
11/7/2018	1745	18	23	0	20	4	0	0	0	208	5	0	175	1
11/7/2018	1545	19	14	2	28	33	0	13	3	144	3	2	159	21
11/7/2018	1600	19	64	5	50	49	0	26	1	135	1	2	178	14
11/7/2018	1615	19	88	4	96	27	0	12	3	217	1	0	211	27
11/7/2018	1630	19	10	0	26	30	0	28	4	229	1	0	209	27
11/7/2018	1645	19	7	0	8	36	0	11	6	220	1	0	178	10
11/7/2018	1700	19	2	1	7	22	0	16	3	243	0	2	219	14
11/7/2018	1715	19	2	1	4	27	0	14	4	250	0	1	229	10
11/7/2018	1730	19	1	1	3	33	0	17	6	234	0	0	182	14
11/7/2018	1745	19	1	0	1	14	0	11	3	199	0	0	169	24
11/7/2018	1545	20	0	0	4	0	0	0	0	58	0	7	5	0
11/7/2018	1600	20	0	0	0	0	0	0	0	118	0	1	11	0
11/7/2018	1615	20	0	0	48	0	0	0	0	131	0	1	16	0
11/7/2018	1630	20	0	0	36	0	0	0	0	87	0	8	9	0
11/7/2018	1645	20	0	0	26	0	0	0	0	114	0	1	15	0
11/7/2018	1700	20	0	0	21	0	0	0	0	147	0	1	10	0
11/7/2018	1715	20	0	0	0	0	0	0	0	156	0	1	13	0
11/7/2018	1730	20	0	0	24	0	0	0	0	120	0	12	3	0
11/7/2018	1745	20	0	0	19	0	0	0	0	106	0	0	16	0

[illegible][illegible]

APPENDIX L.
QUEUING ANALYSIS

Queuing Analysis – All Intersections																
Intersection		Lane Group	Available Storage		2018 Existing				2022 Approved				2022 Proposed			
					50th		95th		50th		95th		50th		95th	
			Striped	Effective	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	NE Evergreen Parkway/ NE Brookwood Parkway (Signalized)	EB L	445	540	142	362	221	562	165	492	256	711	167	485	253	713
		EB T		1650	126	188	208	535	135	926	218	2184	136	886	220	2127
		EB R	220	310	5	13	36	87	14	26	67	140	19	21	83	122
		WB L	190	360	68	139	139	247	74	168	144	318	83	163	162	300
		WB T	870	1900	104	189	178	297	112	233	193	417	114	226	203	353
		WB R	390	510	0	40	0	149	4	51	34	158	7	50	48	159
		NB L	300	440	41	89	87	180	48	267	96	604	49	285	95	630
		NB TR		870	119	303	226	434	166	732	295	1133	155	783	289	1120
		SB L	405	550	53	48	110	123	83	184	266	484	147	159	479	425
		SB T	970	2100	219	244	343	351	356	461	706	731	461	452	975	696
		SB R	345	400	36	28	121	109	91	134	318	447	142	133	459	439
2	NE Shute Road/ NE Brookwood Parkway (Signalized)	EB LTR		100	3	3	17	16	2	4	15	23	2	4	15	23
		WB LT		115	4	21	18	61	4	36	22	119	5	40	23	124
		WB R		490	37	77	70	144	45	221	78	615	41	237	65	554
		NB L	100	115	0	0	0	0	0	0	0	0	0	0	0	0
		NB TR		650	132	159	242	267	202	672	341	1512	215	694	344	1488
		SB L	300	875	162	41	311	94	140	56	285	122	146	56	388	131
		SB TR		875	8	69	40	223	14	131	76	376	24	136	124	376
3	NE Shute Road/ RS4&RS5 Access (Unsignalized)	EB LTR		50	32	20	65	51	38	22	82	54	37	20	80	59
		WB L		55	46	54	46	143	14	66	48	171	13	93	47	215
		WB TR		55	51	77	51	163	19	102	53	204	20	129	55	240
		NB L	115	125	2	3	13	18	2	4	12	31	2	4	15	22
		SB L	110	125	40	6	93	29	40	7	94	32	43	9	103	39
4	NE Shute Road/NE Dawson Creek Drive/RS6 Access (Unsignalized)	EB L	100	125	2	27	21	59	1	27	12	60	1	27	12	61
		EB TR		250	28	49	58	84	30	54	62	90	31	59	62	105
		WB L	135	175	12	62	42	159	12	72	43	187	24	285	59	612
		WB TR		330	9	79	36	248	11	118	38	361	20	267	50	602
		NB L	215	230	31	13	72	41	40	13	49	41	39	14	88	43
		SB L	205	220	18	2	50	13	18	1	50	10	36	4	76	21
5	NE Shute Road/ D1X Access (Unsignalized)	WB L		125	2	7	15	31	2	13	12	56	2	10	12	45
		WB R		260	21	26	61	91	26	43	65	141	23	43	63	149
		SB L	195	240	10	2	42	16	21	4	67	20	18	3	59	18
6	NE Shute Road/ NE Tandem Way (Unsignalized)	EB LTR		100	34	20	61	51	35	22	64	52	36	22	69	53
		WB LT	170	185	4	13	23	43	3	17	19	49	4	20	23	57
		WB R	330	1000	15	49	49	93	21	53	58	106	19	51	56	94
		NB L	105	175	2	13	16	41	2	13	14	40	2	16	16	44
		SB L	200	215	22	2	56	11	26	2	59	14	29	1	62	12

Queuing Analysis – All Intersections																
Intersection		Lane Group	Available Storage		2018 Existing				2022 Approved				2022 Proposed			
					50th		95th		50th		95th		50th		95th	
			Striped	Effective	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
7	NE Shute Road/NE Airport Road/NE Butler Street (Signalized)	EB L	70	80	27	20	67	58	32	27	74	74	36	25	74	63
		EB TR		200	48	62	94	126	64	75	129	154	63	66	129	128
		WB L	90	165	28	78	68	147	35	106	78	183	35	109	81	187
		WB TR		250	49	136	93	264	55	184	104	374	65	200	129	393
		NB L	50	85	3	8	20	38	3	8	19	38	4	9	20	37
		NB TR		570	52	81	103	146	66	86	120	152	68	87	143	157
		SB L		85	40	74	87	133	55	81	107	144	59	99	110	155
		SB T		570	56	123	130	236	68	147	156	275	67	174	148	315
8	NE Butler Street/NE 60th Avenue (Unsignalized)	SB R		570	13	28	42	56	12	29	40	59	13	33	45	62
		EB L		310	16	4	47	22	23	6	58	29	27	7	62	29
		WB L		225	0	1	3	8	0	1	4	10	0	1	0	8
		NB LTR		100	13	22	41	54	12	21	39	54	12	23	40	56
		SB L		100	5	22	25	73	4	30	23	118	4	5	23	84
9	NE Butler Street/NE 65th Avenue (Unsignalized)	SB TR		100	19	54	50	112	27	68	60	156	26	62	58	120
		EB LT		125	25	37	69	76	37	45	86	87	32	48	79	91
		EB TR		740	8	35	39	64	11	38	37	68	10	43	37	79
		WB LTR		1200	74	20	140	66	152	27	414	78	157	29	465	86
		WB R	225	250	54	3	113	20	112	4	254	23	103	5	244	25
		NB LTR	135	1000	19	7	53	30	24	9	63	35	24	10	63	37
		SB L		200	4	31	23	73	8	39	31	80	10	39	36	81
10	Internal Circulation/NE 65th Avenue (Unsignalized)	SB LTR		205	4	18	24	66	6	25	27	78	5	27	29	81
		EB LT		570	32	58	62	160	35	252	67	671	32	143	60	453
		EB R	225	250	22	88	51	188	28	214	54	443	25	160	52	353
		WB L	75	90	14	40	45	102	18	82	47	186	16	68	51	163
		WB LTR		250	50	81	82	159	60	135	102	258	60	124	103	239
		NB LT		200	60	17	110	40	82	21	158	45	74	18	145	43
		NB T		200	55	10	101	32	79	14	166	39	69	13	145	35
		NB R		105	19	0	78	6	44	1	139	12	32	2	110	23
11	Internal Circulation/RA3&RA4 Access/Parking Lot (Unsignalized)	SB LTR	75	250	32	170	64	365	39	383	72	478	36	372	69	496
		EB L	70	85	36	30	60	63	41	42	69	106	40	40	68	94
		EB TR		215	33	67	53	110	35	108	63	214	34	100	52	195
		WB L	115	115	4	1	36	11	4	1	33	11	5	1	37	8
		WB TR		215	122	43	240	72								
		WB T		215					129	32	332	57	105	34	251	58
		WB R	150	150					47	0	175	12	41	0	160	0
		NB L		50	34	9	75	33	42	8	83	32	38	8	78	32
		NB TR		50	23	9	54	33	31	9	62	34	27	8	59	32
		SB L	175	190	38	45	68	74	41	60	80	108	40	53	74	92
SB TR		270	28	31	57	53	36	38	68	62	35	38	63	61		

Queuing Analysis – All Intersections																
Intersection		Lane Group	Available Storage		2018 Existing				2022 Approved				2022 Proposed			
					50th		95th		50th		95th		50th		95th	
			Striped	Effective	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12	NE Century Boulevard/ NE Butler Street (Signalized)	EB L	415	430	41	78	90	159	49	94	106	177	41	85	87	167
		EB TR		1150	50	209	95	303	54	232	102	343	54	238	103	341
		WB L	170	185	7	7	60	26	8	7	75	27	3	6	31	23
		WB T		840	254	82	426	160	388	88	742	164	340	89	606	168
		WB R	270	840	70	31	154	62	173	31	614	65	98	27	335	61
		NB L	150	220	73	14	160	42	108	23	213	64	108	23	211	58
		NB TR		700	141	55	305	127	249	80	603	175	204	75	470	155
		SB L	125	240	21	81	56	192	29	94	91	223	30	92	102	210
		SB TR		740	75	152	162	366	121	205	241	504	120	201	255	490
13	Internal Circulation/ NE Ronler Drive (Unsignalized)	WB L		185	115	24	196	53	153	29	244	59	142	26	233	58
		WB R		370	25	1	97	10	59	2	233	12	48	2	205	17
		SB L		30	1	6	13	26	1	5	10	25	1	6	14	26
14	NE Century Boulevard/ NE Ronler Drive (Signalized)	EB L		300	7	28	32	74	13	36	45	81	8	35	33	84
		EB TR		550	34	185	84	257	50	202	116	243	45	198	108	248
		WB L	85	100	76	31	193	78	91	35	213	78	94	33	218	78
		WB TR	350	2000	231	18	455	55	339	28	688	76	303	24	610	66
		NB L	150	250	64	14	171	57	99	25	234	93	83	18	202	78
		NB TR		740	193	123	399	254	336	199	709	410	260	180	532	367
		SBL	135	240	20	90	68	212	27	119	96	253	26	116	91	255
		SB TR		750	65	235	159	546	115	370	282	761	91	344	224	738
15	NE Century Boulevard/ RAP1 Access (Signalized)	EB LT		250	40	166	102	281	46	176	108	289	45	172	109	295
		EB R		250	29	90	68	182	32	109	72	229	27	108	65	229
		WB L		50	1	1	8	8	0	1	5	7	0	0	6	8
		WB TR		50	0	0	0	0	0	0	0	0	0	0	0	0
		NB L	120	220	61	11	132	41	66	12	149	42	63	12	138	43
		NB TR		750	39	53	154	14	42	70	155	178	46	56	165	145
		SB L	100	175	0	0	6	4	0	1	8	9	0	0	4	3
		SB T		1170	32	139	104	313	43	202	123	557	45	217	136	636
		SB R	135	185	46	18	129	107	50	20	124	105	48	16	118	93

Queuing Analysis – All Intersections																
Intersection		Lane Group	Available Storage		2018 Existing				2022 Approved				2022 Proposed			
					50th		95th		50th		95th		50th		95th	
			Striped	Effective	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
16	NE Century Boulevard/ RA1&2 Access (Signalized)	EB L		225	28	113	83	204	39	141	112	241	38	135	114	240
		EB TR		225	23	52	60	112	22	54	55	112	24	54	59	115
		WB L		50	12	17	46	53	11	19	41	57	13	16	47	53
		WB TR		50	12	14	41	43	11	15	38	45	12	15	39	45
		NB L	90	175	54	18	121	63	57	15	113	56	55	17	115	68
		NB TR		1160	44	93	135	119	43	119	124	262	46	113	132	249
		SB L	90	155	2	8	12	38	3	7	24	36	3	7	27	36
		SB T		1370	72	68	179	156	80	84	195	191	76	75	208	164
		SBR	135	185	33	9	24	43	41	8	114	32	39	8	118	43
17	NE Evergreen Parkway/ NE Century Boulevard (Signalized)	EB L	100	115	4	11	24	68	7	14	47	81	6	13	38	77
		EB T		1020	89	188	179	363	131	308	251	544	120	308	226	607
		EB R	375	390	45	34	104	76	59	67	129	252	59	80	35	294
		WB L	245	270	204	84	366	160	287	95	450	175	254	95	422	167
		WB TR		585	141	78	491	164	447	87	1009	184	282	92	780	196
		NB L	135	150	43	75	108	141	50	97	118	174	54	102	123	192
		NB T		1350	41	53	104	235	49	132	113	506	41	168	98	648
		NB R	250	275	48	199	117	363	60	251	150	431	63	260	152	438
		SB L	100	225	38	116	92	228	44	130	101	244	43	133	100	249
18	NE Evergreen Parkway/ RA1&2 North Access (Signalized)	SB TR	225	600	22	108	65	320	31	129	82	360	32	136	80	361
		EB L	110	185	1	1	9	8	1	2	12	19	1	1	9	12
		EB TR		925	56	67	153	171	64	78	176	206	64	85	167	225
		WB L	195	270	48	7	102	28	51	6	114	28	46	7	97	28
		WB TR		1040	23	47	81	126	37	58	114	150	34	55	105	141
		NB L	250	500	23	80	68	163	25	81	72	164	27	80	70	158
		NB TR	250	500	21	49	59	90	23	52	64	101	23	54	62	102
		SB L		50	6	16	30	50	4	17	22	54	4	17	24	50
		SB TR		50	4	6	20	29	3	6	18	30	2	6	15	29
19	NE Evergreen Parkway/ NE 59th Avenue (Signalized)	EB L	285	340	29	9	70	36	36	8	81	33	36	9	80	36
		EB T		1900	49	80	140	201	67	122	166	266	67	126	171	278
		EB R	220	240	3	1	22	11	5	1	23	9	3	1	20	9
		WB L	265	450	9	1	36	8	9	1	34	11	11	2	44	14
		WB TR		925	30	73	102	207	64	114	170	299	68	104	177	252
		NB L		400	7	41	30	136	5	43	23	147	4	41	24	132
		NB LT		400	2	26	14	106	2	28	16	111	3	25	17	101
		NB R		350	13	71	48	225	13	66	46	208	10	66	37	215
		SB L	155	185	29	46	81	105	68	98	147	185	68	98	145	187
		SB TR	200	1300	31	36	70	75	27	46	65	128	32	44	83	122

Intersection: 1: NE Brookwood Parkway & NE Evergreen Parkway

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	L	L	T	T	L	L	T
Maximum Queue (ft)	263	284	274	275	77	157	184	210	212	82	113	254
Average Queue (ft)	102	142	126	116	5	51	68	90	104	16	41	96
95th Queue (ft)	201	221	208	208	36	113	139	167	178	53	87	197
Link Distance (ft)			1742	1742				1953	1953			888
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	475	475			225	275	275			325	325	
Storage Blk Time (%)				1								0
Queuing Penalty (veh)				1								0

Intersection: 1: NE Brookwood Parkway & NE Evergreen Parkway

Movement	NB	NB	SB	SB	SB	SB	SB	SB	SB
Directions Served	T	TR	L	L	T	T	T	R	R
Maximum Queue (ft)	283	302	139	219	431	406	392	208	194
Average Queue (ft)	114	119	27	53	219	200	155	36	18
95th Queue (ft)	217	226	76	110	343	324	284	121	83
Link Distance (ft)	888	888			1998	1998	1998		
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			425	425				320	320
Storage Blk Time (%)				0	0		0		
Queuing Penalty (veh)				0	0		1		

Intersection: 2: NE Brookwood Parkway & T5 Data Center/NE Shute Road

Movement	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LT	R	R	T	TR	L	L	T	TR
Maximum Queue (ft)	41	34	94	99	297	293	361	548	78	104
Average Queue (ft)	3	4	29	37	132	111	162	125	5	8
95th Queue (ft)	17	18	58	70	242	226	311	294	29	40
Link Distance (ft)	428		465	465	1423	1423		888	888	888
Upstream Blk Time (%)								0		
Queuing Penalty (veh)								0		
Storage Bay Dist (ft)		95					310			
Storage Blk Time (%)			0		13		1	0		
Queuing Penalty (veh)			0		0		3	0		

Intersection: 3: NE Shute Road & PERRIN Driveway/RS5 Access

Movement	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	LTR	L	TR	L	TR	L	T	TR
Maximum Queue (ft)	85	72	87	28	24	148	60	5
Average Queue (ft)	32	13	16	2	1	40	1	0
95th Queue (ft)	65	46	51	13	7	93	28	3
Link Distance (ft)	291	176	176		916		465	465
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)				125		125		
Storage Blk Time (%)						0		
Queuing Penalty (veh)						0		

Intersection: 4: NE Shute Road & NE Dawson Creek Drive/Intel RS6

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	59	82	60	51	111	13	25	85	31	26
Average Queue (ft)	2	28	12	9	31	0	1	18	1	1
95th Queue (ft)	21	58	42	36	72	5	8	50	10	8
Link Distance (ft)		881		458		919	919		916	916
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	105		165		215			210		
Storage Blk Time (%)	0	0								
Queuing Penalty (veh)	0	0								

Intersection: 5: NE Shute Road & D1X Access

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	34	83	79
Average Queue (ft)	2	21	10
95th Queue (ft)	15	61	42
Link Distance (ft)		392	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	130		200
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: NE Shute Road & NE Tandem Way/NETandem Way

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	T	L	T
Maximum Queue (ft)	74	35	76	32	18	90	14
Average Queue (ft)	34	4	15	2	0	22	0
95th Queue (ft)	61	23	49	16	7	56	5
Link Distance (ft)	300		313		594		501
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		170		160		200	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 7: NE Shute Road & NE Airport Road/NE Butler Street

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	R
Maximum Queue (ft)	102	131	91	125	39	138	137	128	213	64
Average Queue (ft)	27	48	28	49	3	52	50	40	56	13
95th Queue (ft)	64	94	68	93	20	103	94	87	130	42
Link Distance (ft)		1938		1618		1634			594	594
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	70		90		80		100	80		
Storage Blk Time (%)	0	3	0	1		2	1	0	3	
Queuing Penalty (veh)	1	2	0	1		6	1	1	2	

Intersection: 8: NE 60th Avenue/Intel Driveway & NE Butler Street

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	L	TR	LTR	L	TR
Maximum Queue (ft)	62	11	6	7	45	35	58
Average Queue (ft)	16	0	0	0	13	5	19
95th Queue (ft)	47	4	3	4	41	25	50
Link Distance (ft)		1618		602	458	264	264
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	25		25				
Storage Blk Time (%)	2	0	0	0			
Queuing Penalty (veh)	4	0	0	0			

Intersection: 9: NE 65th Avenue/Intel Driveway & NE Butler Street

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	LT	TR	LTR	R	LTR	L	LTR
Maximum Queue (ft)	107	80	175	154	66	42	52
Average Queue (ft)	25	8	74	54	19	4	4
95th Queue (ft)	69	39	140	113	53	23	24
Link Distance (ft)		723	1178		304	186	186
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	125			235			
Storage Blk Time (%)	0						
Queuing Penalty (veh)	0						

Intersection: 10: Intel Driveway & Internal Circulation

Movement	EB	EB	WB	WB	NB	NB	NB	SB
Directions Served	LT	R	L	LTR	LT	T	R	LTR
Maximum Queue (ft)	91	60	62	124	148	169	148	84
Average Queue (ft)	32	22	14	50	60	55	19	32
95th Queue (ft)	62	51	45	82	110	101	78	64
Link Distance (ft)	592			537	186	186		380
Upstream Blk Time (%)					0	0		
Queuing Penalty (veh)					0	0		
Storage Bay Dist (ft)		250	80				105	
Storage Blk Time (%)				1		1	0	
Queuing Penalty (veh)				0		2	1	

Intersection: 11: Parking Lot/RA3&4 Access & Internal Circulation

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	71	68	102	377	120	74	95	74
Average Queue (ft)	36	33	4	122	34	23	38	28
95th Queue (ft)	60	53	36	240	75	54	68	57
Link Distance (ft)		537		705	224	224		622
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	70		115				175	
Storage Blk Time (%)	0	0		15				
Queuing Penalty (veh)	0	0		1				

Intersection: 12: NE Century Boulevard & NE Butler Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	R	L	TR	L	TR
Maximum Queue (ft)	136	96	128	212	527	266	204	442	90	208
Average Queue (ft)	41	24	50	7	254	70	73	141	21	75
95th Queue (ft)	90	63	95	60	426	154	160	305	56	162
Link Distance (ft)		1178	1178		841	841		744		727
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	415			170			100		125	
Storage Blk Time (%)					22		4	14	0	3
Queuing Penalty (veh)					1		16	24	0	2

Intersection: 13: Internal Circulation & NE Ronler Drive

Movement	WB	WB	NB	SB	SB
Directions Served	L	R	T	L	T
Maximum Queue (ft)	229	282	9	38	6
Average Queue (ft)	115	25	0	1	0
95th Queue (ft)	196	97	5	13	3
Link Distance (ft)		364	705		393
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	200			25	
Storage Blk Time (%)	1			0	0
Queuing Penalty (veh)	1			0	0

Intersection: 14: NE Century Boulevard & NE Ronler Drive

Movement	EB	EB	EB	WB	WB	B55	NB	NB	SB	SB
Directions Served	L	T	TR	L	TR	T	L	TR	L	TR
Maximum Queue (ft)	67	109	79	215	366	242	220	551	141	265
Average Queue (ft)	7	34	11	76	220	11	64	193	20	65
95th Queue (ft)	32	84	43	193	379	76	171	399	68	159
Link Distance (ft)	142	142			298	1693		727		794
Upstream Blk Time (%)		0	0		5					
Queuing Penalty (veh)		0	0		0					
Storage Bay Dist (ft)			90	80			145		135	
Storage Blk Time (%)		2	0	5	38		1	12	0	3
Queuing Penalty (veh)		1	0	19	33		4	14	0	1

Intersection: 15: NE Century Boulevard & RAP1 Access/Parking

Movement	EB	EB	WB	NB	NB	SB	SB	SB
Directions Served	LT	R	L	L	TR	L	T	R
Maximum Queue (ft)	151	88	20	203	346	19	201	238
Average Queue (ft)	40	29	1	61	39	0	32	46
95th Queue (ft)	102	68	8	132	154	6	104	129
Link Distance (ft)	284	284	177		794		1227	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)				115		100		140
Storage Blk Time (%)				2	1		1	1
Queuing Penalty (veh)				7	2		4	2

Intersection: 16: NE Century Boulevard & RA1/2 Access/Office Driveway

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	T	R
Maximum Queue (ft)	125	96	75	60	166	229	26	267	235
Average Queue (ft)	28	23	12	12	54	44	2	72	33
95th Queue (ft)	83	60	46	41	121	135	12	179	98
Link Distance (ft)	288	288	720	720		1227		1366	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)					90		90		125
Storage Blk Time (%)					3	1		5	0
Queuing Penalty (veh)					8	2		12	0

Intersection: 17: NE Century Boulevard & NE Evergreen Parkway

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	R	L	TR
Maximum Queue (ft)	46	250	244	177	360	726	602	166	164	216	127	100
Average Queue (ft)	4	77	89	45	204	141	109	43	41	48	38	22
95th Queue (ft)	24	167	179	104	366	491	372	108	104	117	92	65
Link Distance (ft)		1056	1056			754	754		1366			943
Upstream Blk Time (%)						2	0					
Queuing Penalty (veh)						0	0					
Storage Bay Dist (ft)	100			375	250			140		250	100	
Storage Blk Time (%)		7			12	0		1	1	0	2	0
Queuing Penalty (veh)		1			31	0		2	1	0	0	0

Intersection: 18: RA1&2 North Access/Ronler Corporate Center & NE Evergreen Parkway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	26	189	234	151	164	152	107	94	62	32
Average Queue (ft)	1	32	56	48	19	23	23	21	6	4
95th Queue (ft)	9	108	153	102	76	81	68	59	30	20
Link Distance (ft)		979	979		1056	1056	536	536	389	389
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	110			240						
Storage Blk Time (%)		1			0					
Queuing Penalty (veh)		0			0					

Intersection: 19: North Access/NE 59th Avenue & NE Evergreen Parkway

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	LT	R	L	TR
Maximum Queue (ft)	98	197	214	51	71	165	198	60	42	93	121	107
Average Queue (ft)	29	31	49	3	9	28	30	7	2	13	29	31
95th Queue (ft)	70	107	140	22	36	93	102	30	14	48	81	70
Link Distance (ft)		1953	1953			979	979	460	460	460		560
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	285			225	275						150	
Storage Blk Time (%)		0	0			0					0	0
Queuing Penalty (veh)		0	0			0					0	0

Zone Summary

Zone wide Queuing Penalty: 217

Intersection: 1: NE Brookwood Parkway & NE Evergreen Parkway

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	L	L
Maximum Queue (ft)	537	591	932	838	198	244	347	359	379	291	151	304
Average Queue (ft)	324	362	188	173	13	80	139	174	189	40	52	89
95th Queue (ft)	520	562	535	445	87	179	247	288	297	149	110	180
Link Distance (ft)			1742	1742				1953	1953			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	475	475			225	275	275			400	325	325
Storage Blk Time (%)	2	6		2		0	0	1	0			0
Queuing Penalty (veh)	7	17		4		0	1	2	0			0

Intersection: 1: NE Brookwood Parkway & NE Evergreen Parkway

Movement	NB	NB	NB	SB	SB	SB	SB	SB	SB	SB
Directions Served	T	T	TR	L	L	T	T	T	R	R
Maximum Queue (ft)	491	506	490	75	251	387	408	378	238	83
Average Queue (ft)	255	283	303	15	48	214	244	210	28	8
95th Queue (ft)	388	415	434	48	123	324	351	313	109	45
Link Distance (ft)	888	888	888			1998	1998	1998		
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)				425	425				320	320
Storage Blk Time (%)	2				0	0		0		
Queuing Penalty (veh)	4				0	0		1		

Intersection: 2: NE Brookwood Parkway & T5 Data Center/NE Shute Road

Movement	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LT	R	R	T	TR	L	L	T	TR
Maximum Queue (ft)	36	109	211	215	335	307	120	143	363	368
Average Queue (ft)	3	21	71	77	159	131	35	41	57	69
95th Queue (ft)	16	61	144	141	267	242	85	94	202	223
Link Distance (ft)	428		465	465	1423	1423		888	888	888
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)		95					310			
Storage Blk Time (%)		0	3		21					
Queuing Penalty (veh)		1	1		0					

Intersection: 3: NE Shute Road & PERRIN Driveway/RS5 Access

Movement	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	72	190	198	38	16	17	60	16	13
Average Queue (ft)	20	54	77	3	0	0	6	0	0
95th Queue (ft)	51	143	163	18	8	5	29	5	5
Link Distance (ft)	291	176	176		916	916		465	465
Upstream Blk Time (%)		6	8						
Queuing Penalty (veh)		0	0						
Storage Bay Dist (ft)				125			125		
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 4: NE Shute Road & NE Dawson Creek Drive/Intel RS6

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	L	L
Maximum Queue (ft)	71	125	198	357	60	36
Average Queue (ft)	27	49	62	79	13	2
95th Queue (ft)	59	84	159	248	41	13
Link Distance (ft)		881		458		
Upstream Blk Time (%)				3		
Queuing Penalty (veh)				0		
Storage Bay Dist (ft)	105		165		215	210
Storage Blk Time (%)	0	0	6	3		
Queuing Penalty (veh)	0	0	11	4		

Intersection: 5: NE Shute Road & D1X Access

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	52	175	41
Average Queue (ft)	7	26	2
95th Queue (ft)	31	91	16
Link Distance (ft)		392	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	130		200
Storage Blk Time (%)		1	
Queuing Penalty (veh)		0	

Intersection: 6: NE Shute Road & NE Tandem Way/NETandem Way

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	LT	R	L	L
Maximum Queue (ft)	61	65	141	60	25
Average Queue (ft)	20	13	49	13	2
95th Queue (ft)	51	43	93	41	11
Link Distance (ft)	300		313		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		170		160	200
Storage Blk Time (%)			0		
Queuing Penalty (veh)			0		

Intersection: 7: NE Shute Road & NE Airport Road/NE Butler Street

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	R
Maximum Queue (ft)	99	181	165	388	70	196	171	135	334	73
Average Queue (ft)	20	62	78	136	8	81	45	74	123	28
95th Queue (ft)	58	126	147	264	38	146	110	133	236	56
Link Distance (ft)		1938		1618		1634			594	594
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	70		90		80		100	80		
Storage Blk Time (%)	0	8	4	14	0	9	0	4	14	
Queuing Penalty (veh)	0	3	16	23	0	14	0	13	20	

Intersection: 8: NE 60th Avenue/Intel Driveway & NE Butler Street

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	L	TR	LTR	L	TR
Maximum Queue (ft)	35	6	28	5	72	129	221
Average Queue (ft)	4	0	1	0	22	22	54
95th Queue (ft)	22	3	8	2	54	73	112
Link Distance (ft)		1618		602	458	264	264
Upstream Blk Time (%)							0
Queuing Penalty (veh)							0
Storage Bay Dist (ft)	25		25				
Storage Blk Time (%)	0	0	0	0			
Queuing Penalty (veh)	1	0	0	0			

Intersection: 9: NE 65th Avenue/Intel Driveway & NE Butler Street

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	LT	TR	LTR	R	LTR	L	LTR
Maximum Queue (ft)	96	85	101	40	41	117	133
Average Queue (ft)	37	35	20	3	7	31	18
95th Queue (ft)	76	64	66	20	30	73	66
Link Distance (ft)		723	1178		304	186	186
Upstream Blk Time (%)							0
Queuing Penalty (veh)							0
Storage Bay Dist (ft)	125			235			
Storage Blk Time (%)	0	0					
Queuing Penalty (veh)	0	0					

Intersection: 10: Intel Driveway & Internal Circulation

Movement	EB	EB	WB	WB	NB	NB	NB	SB
Directions Served	LT	R	L	LTR	LT	T	R	LTR
Maximum Queue (ft)	311	292	178	230	47	45	12	398
Average Queue (ft)	58	88	40	81	17	10	0	170
95th Queue (ft)	160	188	102	159	40	32	6	365
Link Distance (ft)	592			537	186	186		380
Upstream Blk Time (%)	0							9
Queuing Penalty (veh)	0							0
Storage Bay Dist (ft)		250	80				105	
Storage Blk Time (%)	1	1	0	11				
Queuing Penalty (veh)	5	3	0	19				

Intersection: 11: Parking Lot/RA3&4 Access & Internal Circulation

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	114	165	32	98	34	38	110	68
Average Queue (ft)	30	67	1	43	9	9	45	31
95th Queue (ft)	63	110	11	72	33	33	74	53
Link Distance (ft)		537		705	224	224		622
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	70		115				175	
Storage Blk Time (%)	0	6		0				
Queuing Penalty (veh)	0	3		0				

Intersection: 12: NE Century Boulevard & NE Butler Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	R	L	TR	L	TR
Maximum Queue (ft)	224	345	379	46	216	80	60	178	235	523
Average Queue (ft)	78	167	209	7	82	31	14	55	81	152
95th Queue (ft)	159	265	303	26	160	62	42	127	192	366
Link Distance (ft)		1178	1178		841	841		744		727
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	415			170			100		125	
Storage Blk Time (%)					1			3	1	8
Queuing Penalty (veh)					0			1	4	16

Intersection: 13: Internal Circulation & NE Ronler Drive

Movement	WB	WB	NB	SB
Directions Served	L	R	R	L
Maximum Queue (ft)	65	31	30	35
Average Queue (ft)	24	1	1	6
95th Queue (ft)	53	10	7	26
Link Distance (ft)		364		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	200		85	25
Storage Blk Time (%)				1
Queuing Penalty (veh)				1

Intersection: 14: NE Century Boulevard & NE Ronler Drive

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	114	218	142	108	85	106	394	234	751
Average Queue (ft)	28	185	99	31	18	14	123	90	235
95th Queue (ft)	74	257	183	78	55	57	254	212	546
Link Distance (ft)	142	142			298		727		794
Upstream Blk Time (%)	0	28	1						0
Queuing Penalty (veh)	0	70	0						2
Storage Bay Dist (ft)			90	80		145		135	
Storage Blk Time (%)		42	4	2	0		6	2	17
Queuing Penalty (veh)		108	8	1	0		1	15	27

Intersection: 15: NE Century Boulevard & RAP1 Access/Parking

Movement	EB	EB	WB	NB	NB	SB	SB	SB
Directions Served	LT	R	L	L	TR	L	T	R
Maximum Queue (ft)	304	290	34	69	244	14	479	273
Average Queue (ft)	166	90	1	11	53	0	139	18
95th Queue (ft)	281	182	8	41	144	4	313	107
Link Distance (ft)	284	284	177		794		1227	
Upstream Blk Time (%)	2	0						
Queuing Penalty (veh)	0	0						
Storage Bay Dist (ft)				115		100		140
Storage Blk Time (%)					2		11	
Queuing Penalty (veh)					0		4	

Intersection: 16: NE Century Boulevard & RA1/2 Access/Office Driveway

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	T	R
Maximum Queue (ft)	254	196	81	60	126	284	82	248	98
Average Queue (ft)	113	52	17	14	18	93	8	68	9
95th Queue (ft)	204	112	53	43	63	199	38	156	43
Link Distance (ft)	288	288	720	720		1227		1366	
Upstream Blk Time (%)	0								
Queuing Penalty (veh)	0								
Storage Bay Dist (ft)					90		90		125
Storage Blk Time (%)					0	6		4	
Queuing Penalty (veh)					0	2		2	

Intersection: 17: NE Century Boulevard & NE Evergreen Parkway

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	R	L	TR
Maximum Queue (ft)	155	459	472	109	227	209	230	176	430	397	264	508
Average Queue (ft)	11	180	188	34	84	78	66	75	53	199	116	108
95th Queue (ft)	68	352	363	76	160	164	158	141	235	363	228	320
Link Distance (ft)		1056	1056			754	754		1366			943
Upstream Blk Time (%)												0
Queuing Penalty (veh)												0
Storage Bay Dist (ft)	100			375	250			140		250	100	
Storage Blk Time (%)	0	24	1		0	0		2	0	9	18	8
Queuing Penalty (veh)	0	2	1		0	0		11	0	11	19	16

Intersection: 18: RA1&2 North Access/Ronler Corporate Center & NE Evergreen Parkway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	15	269	260	48	206	210	248	129	83	61
Average Queue (ft)	1	54	67	7	44	47	80	49	16	6
95th Queue (ft)	8	152	171	28	121	126	163	90	50	29
Link Distance (ft)		979	979		1056	1056	536	536	389	389
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	110			240						
Storage Blk Time (%)		2			0					
Queuing Penalty (veh)		0			0					

Intersection: 19: North Access/NE 59th Avenue & NE Evergreen Parkway

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	LT	R	L	TR
Maximum Queue (ft)	64	289	291	27	21	309	380	211	198	428	151	113
Average Queue (ft)	9	68	80	1	1	70	73	41	26	71	46	36
95th Queue (ft)	36	187	201	11	8	186	207	136	106	225	105	75
Link Distance (ft)		1953	1953			979	979	460	460	460		560
Upstream Blk Time (%)										0		
Queuing Penalty (veh)										0		
Storage Bay Dist (ft)	285			225	275						150	
Storage Blk Time (%)		0	1			0					0	0
Queuing Penalty (veh)		0	0			0					0	0

Zone Summary

Zone wide Queuing Penalty: 496

Intersection: 1: NE Brookwood Parkway & NE Evergreen Parkway

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	L	L
Maximum Queue (ft)	295	319	278	278	133	162	197	253	252	121	112	129
Average Queue (ft)	125	165	135	131	14	58	74	99	112	4	21	48
95th Queue (ft)	230	256	218	218	67	118	144	187	193	34	67	96
Link Distance (ft)			1742	1742				1953	1953			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	475	475			225	275	275			400	325	325
Storage Blk Time (%)				1				0				
Queuing Penalty (veh)				1				0				

Intersection: 1: NE Brookwood Parkway & NE Evergreen Parkway

Movement	NB	NB	NB	SB	SB	SB	SB	SB	SB	SB
Directions Served	T	T	TR	L	L	T	T	T	R	R
Maximum Queue (ft)	318	357	361	133	512	877	854	835	435	193
Average Queue (ft)	127	156	166	30	83	356	339	304	91	34
95th Queue (ft)	260	288	295	80	266	705	706	698	318	122
Link Distance (ft)	888	888	888			1998	1998	1998		
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)				425	425				320	320
Storage Blk Time (%)	0					9		7		
Queuing Penalty (veh)	0					10		39		

Intersection: 2: NE Brookwood Parkway & T5 Data Center/NE Shute Road

Movement	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LT	R	R	T	TR	L	L	T	TR
Maximum Queue (ft)	34	49	99	107	432	399	368	533	198	205
Average Queue (ft)	2	4	31	45	202	184	140	100	12	14
95th Queue (ft)	15	22	65	78	341	318	285	258	69	76
Link Distance (ft)	428		465	465	1423	1423		888	888	888
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)		95					310			
Storage Blk Time (%)			0		24		1	0		
Queuing Penalty (veh)			0		0		3	1		

Intersection: 3: NE Shute Road & PERRIN Driveway/RS5 Access

Movement	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	LTR	L	TR	L	TR	L	T	TR
Maximum Queue (ft)	124	82	74	26	18	166	18	11
Average Queue (ft)	38	14	19	2	0	40	0	0
95th Queue (ft)	82	48	53	12	7	94	7	4
Link Distance (ft)	291	176	176		916		465	465
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)				125		125		
Storage Blk Time (%)						0		
Queuing Penalty (veh)						1		

Intersection: 4: NE Shute Road & NE Dawson Creek Drive/Intel RS6

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	37	91	67	55	140	12	21	76	24	18
Average Queue (ft)	1	30	12	11	40	0	1	18	1	0
95th Queue (ft)	12	62	43	38	89	4	9	50	8	6
Link Distance (ft)		881		458		919	919		916	916
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	105		165		215			210		
Storage Blk Time (%)		0								
Queuing Penalty (veh)		0								

Intersection: 5: NE Shute Road & D1X Access

Movement	WB	WB	NB	SB
Directions Served	L	R	R	L
Maximum Queue (ft)	29	96	6	111
Average Queue (ft)	2	26	0	21
95th Queue (ft)	12	65	3	67
Link Distance (ft)		392		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	130		225	200
Storage Blk Time (%)		0		
Queuing Penalty (veh)		0		

Intersection: 6: NE Shute Road & NE Tandem Way/NETandem Way

Movement	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	T	TR	L	T
Maximum Queue (ft)	83	41	87	31	20	32	83	19
Average Queue (ft)	35	3	21	2	0	1	26	0
95th Queue (ft)	64	19	58	14	6	9	59	7
Link Distance (ft)	300		313		594	594		501
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		170		160			200	
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 7: NE Shute Road & NE Airport Road/NE Butler Street

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	R
Maximum Queue (ft)	121	203	114	150	27	155	169	134	245	60
Average Queue (ft)	32	64	35	55	3	60	66	55	68	12
95th Queue (ft)	74	129	78	104	19	115	120	107	156	40
Link Distance (ft)		1938		1618		1634			594	594
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	70		90		80		100	80		
Storage Blk Time (%)	1	7	0	2		4	1	2	4	
Queuing Penalty (veh)	1	4	1	1		13	2	5	4	

Intersection: 8: NE 60th Avenue/Intel Driveway & NE Butler Street

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	L	TR	LTR	L	TR
Maximum Queue (ft)	75	11	11	5	46	40	86
Average Queue (ft)	23	0	0	0	12	4	27
95th Queue (ft)	58	6	4	2	39	23	60
Link Distance (ft)		1618		602	458	264	264
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	25		25				
Storage Blk Time (%)	3	0	0	0			
Queuing Penalty (veh)	8	0	0	0			

Intersection: 9: NE 65th Avenue/Intel Driveway & NE Butler Street

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	LT	TR	LTR	R	LTR	L	LTR
Maximum Queue (ft)	121	42	747	310	94	46	43
Average Queue (ft)	37	11	152	112	24	8	6
95th Queue (ft)	86	37	414	254	63	31	27
Link Distance (ft)		723	1178		304	186	186
Upstream Blk Time (%)			0				
Queuing Penalty (veh)			0				
Storage Bay Dist (ft)	125			235			
Storage Blk Time (%)	0		8	5			
Queuing Penalty (veh)	0		38	29			

Intersection: 10: Intel Driveway & Internal Circulation

Movement	EB	EB	WB	WB	NB	NB	NB	SB
Directions Served	LT	R	L	LTR	LT	T	R	LTR
Maximum Queue (ft)	94	64	50	150	218	240	160	107
Average Queue (ft)	35	28	18	60	82	79	44	39
95th Queue (ft)	67	54	47	102	158	166	139	72
Link Distance (ft)	592			537	186	186		380
Upstream Blk Time (%)					1	1		
Queuing Penalty (veh)					5	7		
Storage Bay Dist (ft)		250	80				105	
Storage Blk Time (%)			0	3		4	2	
Queuing Penalty (veh)			0	2		16	6	

Intersection: 11: Parking Lot/RA3&4 Access & Internal Circulation

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	TR	L	TR
Maximum Queue (ft)	98	97	79	522	190	123	84	119	96
Average Queue (ft)	41	35	4	129	47	42	31	41	36
95th Queue (ft)	69	63	33	332	175	83	62	80	68
Link Distance (ft)		537		707		224	224		617
Upstream Blk Time (%)				0					
Queuing Penalty (veh)				0					
Storage Bay Dist (ft)	70		115		140			175	
Storage Blk Time (%)	1	0		14	3			0	
Queuing Penalty (veh)	1	0		38	14			0	

Intersection: 12: NE Century Boulevard & NE Butler Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	R	L	TR	L	TR
Maximum Queue (ft)	155	110	127	170	797	645	205	742	148	315
Average Queue (ft)	49	29	54	8	388	173	108	249	29	121
95th Queue (ft)	106	73	102	75	742	614	213	603	91	241
Link Distance (ft)		1178	1178		841	841		744		727
Upstream Blk Time (%)					8	5		4		
Queuing Penalty (veh)					0	0		0		
Storage Bay Dist (ft)	415			170			100		125	
Storage Blk Time (%)					34		12	26		9
Queuing Penalty (veh)					2		49	54		5

Intersection: 13: Internal Circulation & NE Ronler Drive

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	T
Maximum Queue (ft)	230	376	5	7	30	18
Average Queue (ft)	153	59	0	0	1	0
95th Queue (ft)	244	233	3	0	10	7
Link Distance (ft)		364	707			393
Upstream Blk Time (%)		1				
Queuing Penalty (veh)		7				
Storage Bay Dist (ft)	200			85	25	
Storage Blk Time (%)	9				0	0
Queuing Penalty (veh)	4				0	0

Intersection: 14: NE Century Boulevard & NE Ronler Drive

Movement	EB	EB	EB	WB	WB	B55	NB	NB	SB	SB
Directions Served	L	T	TR	L	TR	T	L	TR	L	TR
Maximum Queue (ft)	77	189	125	215	375	519	220	746	192	435
Average Queue (ft)	13	50	23	91	277	62	99	336	27	115
95th Queue (ft)	45	116	72	213	429	259	234	709	96	282
Link Distance (ft)	142	142			298	1693		727		794
Upstream Blk Time (%)		1	0		12			2		
Queuing Penalty (veh)		1	0		0			17		
Storage Bay Dist (ft)			90	80			145		135	
Storage Blk Time (%)		4	0	8	45		2	24	0	8
Queuing Penalty (veh)		3	0	37	46		13	38	0	4

Intersection: 15: NE Century Boulevard & RAP1 Access/Parking

Movement	EB	EB	WB	NB	NB	SB	SB	SB
Directions Served	LT	R	L	L	TR	L	T	R
Maximum Queue (ft)	150	99	14	210	369	18	210	213
Average Queue (ft)	46	32	0	66	42	0	43	50
95th Queue (ft)	108	72	5	149	155	8	123	124
Link Distance (ft)	284	284	177		794		1227	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)				115		100		140
Storage Blk Time (%)				3	1		2	1
Queuing Penalty (veh)				14	1		6	1

Intersection: 16: NE Century Boulevard & RA1/2 Access/Office Driveway

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	T	R
Maximum Queue (ft)	188	86	69	45	160	204	51	339	255
Average Queue (ft)	39	22	11	11	57	43	3	80	41
95th Queue (ft)	112	55	41	38	113	124	24	195	114
Link Distance (ft)	288	288	720	720		1227		1366	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)					90		90		125
Storage Blk Time (%)					3	2		5	0
Queuing Penalty (veh)					9	2		13	0

Intersection: 17: NE Century Boulevard & NE Evergreen Parkway

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	R	L	TR
Maximum Queue (ft)	129	333	340	194	360	807	773	177	167	247	166	109
Average Queue (ft)	7	117	131	59	287	447	359	50	49	60	44	31
95th Queue (ft)	47	237	251	129	450	1009	862	118	113	150	101	82
Link Distance (ft)		1056	1056			754	754		1366			943
Upstream Blk Time (%)						24	2					
Queuing Penalty (veh)						0	0					
Storage Bay Dist (ft)	100			375	250			140		250	100	
Storage Blk Time (%)	0	15	0		36	0		1	1	0	2	1
Queuing Penalty (veh)	0	1	0		132	2		3	3	0	0	0

Intersection: 18: RA1&2 North Access/Ronler Corporate Center & NE Evergreen Parkway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	31	193	295	183	160	180	106	95	44	37
Average Queue (ft)	1	40	64	51	26	37	25	23	4	3
95th Queue (ft)	12	126	176	114	90	114	72	64	22	18
Link Distance (ft)		979	979		1056	1056	536	536	389	389
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	110			240						
Storage Blk Time (%)		2		0						
Queuing Penalty (veh)		0		0						

Intersection: 19: North Access/NE 59th Avenue & NE Evergreen Parkway

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	LT	R	L	TR
Maximum Queue (ft)	110	239	252	37	56	233	267	36	40	94	208	107
Average Queue (ft)	36	46	67	5	9	48	64	5	2	13	68	27
95th Queue (ft)	81	136	166	23	34	142	170	23	16	46	147	65
Link Distance (ft)		1953	1953			979	979	460	460	460		560
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	285			225	275						150	
Storage Blk Time (%)		0	0			0					1	
Queuing Penalty (veh)		0	0			0					1	

Zone Summary

Zone wide Queuing Penalty: 725

Intersection: 1: NE Brookwood Parkway & NE Evergreen Parkway

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	L	L
Maximum Queue (ft)	537	600	1790	1778	250	332	438	550	480	257	166	500
Average Queue (ft)	440	492	926	889	26	101	168	229	233	51	69	267
95th Queue (ft)	642	711	2184	2144	140	239	318	417	375	158	133	604
Link Distance (ft)			1742	1742				1953	1953			
Upstream Blk Time (%)			26	8								
Queuing Penalty (veh)			0	0								
Storage Bay Dist (ft)	475	475			225	275	275			400	325	325
Storage Blk Time (%)	22	34	0	4		1	4	4	0			
Queuing Penalty (veh)	69	104	1	7		4	12	8	0			

Intersection: 1: NE Brookwood Parkway & NE Evergreen Parkway

Movement	NB	NB	NB	SB	SB	SB	SB	SB	SB	SB
Directions Served	T	T	TR	L	L	T	T	T	R	R
Maximum Queue (ft)	919	935	932	258	509	745	784	742	492	148
Average Queue (ft)	712	727	731	71	184	433	461	424	134	25
95th Queue (ft)	1130	1133	1123	168	484	715	731	701	447	89
Link Distance (ft)	888	888	888			1998	1998	1998		
Upstream Blk Time (%)	6	10	13							
Queuing Penalty (veh)	39	62	84							
Storage Bay Dist (ft)				425	425				320	320
Storage Blk Time (%)	48				0	15		27		
Queuing Penalty (veh)	88				0	22		77		

Intersection: 2: NE Brookwood Parkway & T5 Data Center/NE Shute Road

Movement	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LT	R	R	T	TR	L	L	T	TR
Maximum Queue (ft)	55	169	481	483	1227	1215	184	165	607	615
Average Queue (ft)	4	36	193	196	672	645	53	56	122	131
95th Queue (ft)	23	119	435	434	1512	1491	122	117	363	376
Link Distance (ft)	428		465	465	1423	1423		888	888	888
Upstream Blk Time (%)			3	3	15	15				
Queuing Penalty (veh)			18	20	0	0				
Storage Bay Dist (ft)		95					310			
Storage Blk Time (%)		0	27		54					
Queuing Penalty (veh)		2	11		0					

Intersection: 3: NE Shute Road & PERRIN Driveway/RS5 Access

Movement	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	74	200	206	78	359	365	67	6	30
Average Queue (ft)	22	66	102	4	23	25	7	0	1
95th Queue (ft)	54	171	204	31	175	180	32	3	10
Link Distance (ft)	291	176	176		916	916		465	465
Upstream Blk Time (%)		9	22						
Queuing Penalty (veh)		0	0						
Storage Bay Dist (ft)				125			125		
Storage Blk Time (%)					2				
Queuing Penalty (veh)					1				

Intersection: 4: NE Shute Road & NE Dawson Creek Drive/Intel RS6

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	L	L
Maximum Queue (ft)	78	135	215	455	56	30
Average Queue (ft)	27	54	72	118	13	1
95th Queue (ft)	60	90	187	361	41	10
Link Distance (ft)		881		458		
Upstream Blk Time (%)				10		
Queuing Penalty (veh)				0		
Storage Bay Dist (ft)	105		165		215	210
Storage Blk Time (%)	0	0	9	8		
Queuing Penalty (veh)	0	0	16	11		

Intersection: 5: NE Shute Road & D1X Access

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	133	322	38
Average Queue (ft)	13	43	4
95th Queue (ft)	56	141	20
Link Distance (ft)		392	
Upstream Blk Time (%)		0	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)	130		200
Storage Blk Time (%)		3	
Queuing Penalty (veh)		1	

Intersection: 6: NE Shute Road & NE Tandem Way/NETandem Way

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	LT	R	L	L
Maximum Queue (ft)	67	68	157	54	32
Average Queue (ft)	22	17	53	13	2
95th Queue (ft)	52	49	106	40	14
Link Distance (ft)	300		313		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		170		160	200
Storage Blk Time (%)			0		
Queuing Penalty (veh)			0		

Intersection: 7: NE Shute Road & NE Airport Road/NE Butler Street

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	R
Maximum Queue (ft)	124	229	165	571	88	204	171	135	369	82
Average Queue (ft)	27	75	106	184	8	86	49	81	147	29
95th Queue (ft)	74	154	183	374	38	152	117	144	275	59
Link Distance (ft)		1938		1618		1634			594	594
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	70		90		80		100	80		
Storage Blk Time (%)	0	10	9	20		11	0	7	17	
Queuing Penalty (veh)	1	4	40	44		19	1	26	28	

Intersection: 8: NE 60th Avenue/Intel Driveway & NE Butler Street

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	L	TR	LTR	L	TR
Maximum Queue (ft)	50	25	28	12	68	258	266
Average Queue (ft)	6	1	1	0	21	30	68
95th Queue (ft)	29	10	10	7	54	118	156
Link Distance (ft)		1618		602	458	264	264
Upstream Blk Time (%)						1	2
Queuing Penalty (veh)						0	0
Storage Bay Dist (ft)	25		25				
Storage Blk Time (%)	1	0	0	0			
Queuing Penalty (veh)	2	0	1	0			

Intersection: 9: NE 65th Avenue/Intel Driveway & NE Butler Street

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	LT	TR	LTR	R	LTR	L	LTR
Maximum Queue (ft)	120	92	118	36	46	102	130
Average Queue (ft)	45	38	27	4	9	39	25
95th Queue (ft)	87	68	78	23	35	80	78
Link Distance (ft)		723	1178		304	186	186
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	125			235			
Storage Blk Time (%)	0	0					
Queuing Penalty (veh)	0	0					

Intersection: 10: Intel Driveway & Internal Circulation

Movement	EB	EB	WB	WB	NB	NB	NB	SB
Directions Served	LT	R	L	LTR	LT	T	R	LTR
Maximum Queue (ft)	611	380	195	324	55	53	36	399
Average Queue (ft)	252	214	82	135	21	14	1	383
95th Queue (ft)	671	443	186	258	45	39	12	478
Link Distance (ft)	592			537	186	186		380
Upstream Blk Time (%)	22							91
Queuing Penalty (veh)	0							0
Storage Bay Dist (ft)		250	80				105	
Storage Blk Time (%)	3	37	3	36				
Queuing Penalty (veh)	10	71	7	71				

Intersection: 11: Parking Lot/RA3&4 Access & Internal Circulation

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	TR	L	TR
Maximum Queue (ft)	150	310	26	63	23	40	38	173	86
Average Queue (ft)	42	108	1	32	0	8	9	60	38
95th Queue (ft)	106	214	11	57	12	32	34	108	62
Link Distance (ft)		537		707		224	224		617
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	70		115		140			175	
Storage Blk Time (%)	0	23						0	
Queuing Penalty (veh)	1	15						0	

Intersection: 12: NE Century Boulevard & NE Butler Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	R	L	TR	L	TR
Maximum Queue (ft)	237	354	398	40	209	98	133	279	234	654
Average Queue (ft)	94	190	232	7	88	31	23	80	94	205
95th Queue (ft)	177	304	343	27	164	65	64	175	223	504
Link Distance (ft)		1178	1178		841	841		744		727
Upstream Blk Time (%)										0
Queuing Penalty (veh)										0
Storage Bay Dist (ft)	415			170			100		125	
Storage Blk Time (%)					1		0	7	2	11
Queuing Penalty (veh)					0		0	3	9	24

Intersection: 13: Internal Circulation & NE Ronler Drive

Movement	WB	WB	NB	NB	SB
Directions Served	L	R	T	R	L
Maximum Queue (ft)	72	30	77	91	45
Average Queue (ft)	29	2	3	4	5
95th Queue (ft)	59	12	51	40	25
Link Distance (ft)		364	707		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	200			85	25
Storage Blk Time (%)				0	2
Queuing Penalty (veh)				1	2

Intersection: 14: NE Century Boulevard & NE Ronler Drive

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	118	222	142	107	122	219	524	235	806
Average Queue (ft)	36	202	108	35	28	25	199	119	370
95th Queue (ft)	81	243	189	78	76	93	410	253	761
Link Distance (ft)	142	142			298		727		794
Upstream Blk Time (%)	0	36	1						1
Queuing Penalty (veh)	1	112	0						11
Storage Bay Dist (ft)			90	80		145		135	
Storage Blk Time (%)		48	7	2	1		18	4	31
Queuing Penalty (veh)		158	16	1	0		3	29	51

Intersection: 15: NE Century Boulevard & RAP1 Access/Parking

Movement	EB	EB	WB	NB	NB	SB	SB	SB
Directions Served	LT	R	L	L	TR	L	T	R
Maximum Queue (ft)	304	296	21	69	269	32	839	227
Average Queue (ft)	176	109	1	12	70	1	202	20
95th Queue (ft)	289	229	7	42	178	9	557	105
Link Distance (ft)	284	284	177		794		1227	
Upstream Blk Time (%)	2	1						
Queuing Penalty (veh)	0	0						
Storage Bay Dist (ft)				115		100		140
Storage Blk Time (%)					4		16	
Queuing Penalty (veh)					1		6	

Intersection: 16: NE Century Boulevard & RA1/2 Access/Office Driveway

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	T	R
Maximum Queue (ft)	303	166	75	60	115	388	87	292	57
Average Queue (ft)	141	54	19	15	15	119	7	84	8
95th Queue (ft)	241	112	57	45	56	262	36	191	32
Link Distance (ft)	288	288	720	720		1227		1366	
Upstream Blk Time (%)	1								
Queuing Penalty (veh)	0								
Storage Bay Dist (ft)					90		90		125
Storage Blk Time (%)					0	8		6	
Queuing Penalty (veh)					0	2		3	

Intersection: 17: NE Century Boulevard & NE Evergreen Parkway

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	R	L	TR
Maximum Queue (ft)	224	684	718	459	234	263	239	231	818	400	264	624
Average Queue (ft)	14	299	308	67	95	87	74	97	132	251	130	129
95th Queue (ft)	81	524	544	252	175	184	166	174	506	431	244	360
Link Distance (ft)		1056	1056			754	754		1366			943
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100			375	250			140		250	100	
Storage Blk Time (%)		41	8		0	0		6	0	17	23	10
Queuing Penalty (veh)		4	10		0	0		36	0	28	25	20

Intersection: 18: RA1&2 North Access/Ronler Corporate Center & NE Evergreen Parkway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	60	307	351	58	213	223	216	141	87	61
Average Queue (ft)	2	62	78	6	54	58	81	52	17	6
95th Queue (ft)	19	175	206	28	139	150	164	101	54	30
Link Distance (ft)		979	979		1056	1056	536	536	389	389
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	110			240						
Storage Blk Time (%)		2			0					
Queuing Penalty (veh)		0			0					

Intersection: 19: North Access/NE 59th Avenue & NE Evergreen Parkway

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	LT	R	L	TR
Maximum Queue (ft)	48	323	338	27	33	355	545	241	224	337	240	275
Average Queue (ft)	8	109	122	1	1	100	114	43	28	66	98	46
95th Queue (ft)	33	253	266	9	11	244	299	147	111	208	185	128
Link Distance (ft)		1953	1953			979	979	460	460	460		560
Upstream Blk Time (%)							0			0		
Queuing Penalty (veh)							0			0		
Storage Bay Dist (ft)	285			225	275						150	
Storage Blk Time (%)		1	2			1					4	0
Queuing Penalty (veh)		0	0			0					3	0

Zone Summary

Zone wide Queuing Penalty: 1559

Intersection: 1: NE Brookwood Parkway & NE Evergreen Parkway

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	L	L
Maximum Queue (ft)	278	313	265	276	148	181	218	266	280	122	120	136
Average Queue (ft)	126	167	136	133	19	66	83	101	114	7	22	49
95th Queue (ft)	232	253	217	220	83	136	162	198	203	48	68	95
Link Distance (ft)			1742	1742				1953	1953			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	475	475			225	275	275			400	325	325
Storage Blk Time (%)				0				0				
Queuing Penalty (veh)				1				0				

Intersection: 1: NE Brookwood Parkway & NE Evergreen Parkway

Movement	NB	NB	NB	SB	SB	SB	SB	SB	SB	SB
Directions Served	T	T	TR	L	L	T	T	T	R	R
Maximum Queue (ft)	323	327	329	143	600	1180	1171	1191	495	208
Average Queue (ft)	113	139	155	36	147	461	441	398	142	42
95th Queue (ft)	251	273	289	91	479	975	961	944	459	141
Link Distance (ft)	888	888	888			1998	1998	1998		
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)				425	425				320	320
Storage Blk Time (%)	0				0	21		15		
Queuing Penalty (veh)	0				0	23		83		

Intersection: 2: NE Brookwood Parkway & T5 Data Center/NE Shute Road

Movement	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LT	R	R	T	TR	L	L	T	TR
Maximum Queue (ft)	35	45	92	94	410	408	354	785	261	182
Average Queue (ft)	2	5	33	41	215	194	146	121	22	24
95th Queue (ft)	15	23	65	74	344	335	283	388	124	98
Link Distance (ft)	428		465	465	1423	1423		888	888	888
Upstream Blk Time (%)								0		
Queuing Penalty (veh)								1		
Storage Bay Dist (ft)		95					310			
Storage Blk Time (%)			0		29		1	0		
Queuing Penalty (veh)			0		0		4	2		

Intersection: 3: NE Shute Road & PERRIN Driveway/RS5 Access

Movement	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	LTR	L	TR	L	TR	L	T	TR
Maximum Queue (ft)	119	73	80	32	18	158	71	21
Average Queue (ft)	37	13	20	2	1	43	1	0
95th Queue (ft)	80	47	55	15	6	103	28	3
Link Distance (ft)	291	176	176		916		465	465
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)				125		125		
Storage Blk Time (%)						0		
Queuing Penalty (veh)						1		

Intersection: 4: NE Shute Road & NE Dawson Creek Drive/Intel RS6

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	24	85	77	60	133	5	46	111	41	36
Average Queue (ft)	1	31	24	20	39	0	2	36	1	1
95th Queue (ft)	12	62	59	50	88	3	18	76	12	13
Link Distance (ft)		881	458	458		919	919		916	916
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	105				215			210		
Storage Blk Time (%)		0								
Queuing Penalty (veh)		0								

Intersection: 5: NE Shute Road & D1X Access

Movement	WB	WB	NB	SB
Directions Served	L	R	T	L
Maximum Queue (ft)	29	89	10	87
Average Queue (ft)	2	23	0	18
95th Queue (ft)	12	63	4	59
Link Distance (ft)		392	501	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	130		200	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: NE Shute Road & NE Tandem Way/NETandem Way

Movement	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LT	R	L	T	TR	L	T	TR
Maximum Queue (ft)	99	41	87	32	31	38	100	19	14
Average Queue (ft)	36	4	19	2	1	1	29	1	0
95th Queue (ft)	69	23	56	16	7	13	62	9	6
Link Distance (ft)	300		313		594	594		501	501
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)		170		160			200		
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 7: NE Shute Road & NE Airport Road/NE Butler Street

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	R
Maximum Queue (ft)	113	203	123	188	34	241	172	130	234	80
Average Queue (ft)	36	63	35	65	4	68	66	59	67	13
95th Queue (ft)	74	129	81	128	20	143	127	110	148	45
Link Distance (ft)		1938		1618		1634			594	594
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	70		90		80		100	80		
Storage Blk Time (%)	1	7	1	3		4	2	3	4	
Queuing Penalty (veh)	2	4	1	2		13	3	6	5	

Intersection: 8: NE 60th Avenue/Intel Driveway & NE Butler Street

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	TR	LTR	L	TR
Maximum Queue (ft)	81	21	13	45	40	84
Average Queue (ft)	27	0	0	12	4	26
95th Queue (ft)	62	6	5	40	23	58
Link Distance (ft)		1618	602	458	264	264
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	25					
Storage Blk Time (%)	4	0	0			
Queuing Penalty (veh)	11	0	0			

Intersection: 9: NE 65th Avenue/Intel Driveway & NE Butler Street

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	LT	TR	LTR	R	LTR	L	LTR
Maximum Queue (ft)	118	58	681	308	93	54	63
Average Queue (ft)	32	10	157	103	24	10	5
95th Queue (ft)	79	37	465	244	63	36	29
Link Distance (ft)		723	1178		304	186	186
Upstream Blk Time (%)			0				
Queuing Penalty (veh)			1				
Storage Bay Dist (ft)	125			235			
Storage Blk Time (%)	0		7	3			
Queuing Penalty (veh)	0		27	17			

Intersection: 10: Intel Driveway & Internal Circulation

Movement	EB	EB	WB	WB	NB	NB	NB	SB
Directions Served	LT	R	L	LTR	LT	T	R	LTR
Maximum Queue (ft)	84	62	86	149	216	234	151	99
Average Queue (ft)	32	25	16	60	74	69	32	36
95th Queue (ft)	60	52	51	103	145	145	110	69
Link Distance (ft)	592			537	186	186		380
Upstream Blk Time (%)					1	1		
Queuing Penalty (veh)					7	5		
Storage Bay Dist (ft)		250	80				105	
Storage Blk Time (%)			0	3		3	1	
Queuing Penalty (veh)			0	1		10	2	

Intersection: 11: Parking Lot/RA3&4 Access & Internal Circulation

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	TR	L	TR
Maximum Queue (ft)	96	61	103	464	190	121	81	97	76
Average Queue (ft)	40	34	5	105	41	38	27	40	35
95th Queue (ft)	68	52	37	251	160	78	59	74	63
Link Distance (ft)		537		707		224	224		617
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	70		115		140			175	
Storage Blk Time (%)	1	0		8	4				
Queuing Penalty (veh)	1	0		20	13				

Intersection: 12: NE Century Boulevard & NE Butler Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	R	L	TR	L	TR
Maximum Queue (ft)	124	97	118	77	752	532	205	675	234	407
Average Queue (ft)	41	29	54	3	340	98	108	204	30	120
95th Queue (ft)	87	71	103	31	606	335	211	470	102	255
Link Distance (ft)		1178	1178		841	841		744		727
Upstream Blk Time (%)					2	1		1		
Queuing Penalty (veh)					0	0		0		
Storage Bay Dist (ft)	415			170			100		125	
Storage Blk Time (%)					31		12	23	0	11
Queuing Penalty (veh)					1		51	46	0	5

Intersection: 13: Internal Circulation & NE Ronler Drive

Movement	WB	WB	NB	SB	SB
Directions Served	L	R	R	L	T
Maximum Queue (ft)	230	377	7	43	12
Average Queue (ft)	142	48	0	1	0
95th Queue (ft)	233	205	4	14	6
Link Distance (ft)		364			393
Upstream Blk Time (%)		1			
Queuing Penalty (veh)		3			
Storage Bay Dist (ft)	200		85	25	
Storage Blk Time (%)	6			0	0
Queuing Penalty (veh)	2			0	0

Intersection: 14: NE Century Boulevard & NE Ronler Drive

Movement	EB	EB	EB	WB	WB	B55	NB	NB	SB	SB
Directions Served	L	T	TR	L	TR	T	L	TR	L	TR
Maximum Queue (ft)	54	172	124	215	379	389	220	698	210	346
Average Queue (ft)	8	45	18	94	260	43	83	260	26	91
95th Queue (ft)	33	108	65	218	416	194	202	532	91	224
Link Distance (ft)	142	142			298	1693		727		794
Upstream Blk Time (%)		0	0		9			0		
Queuing Penalty (veh)		0	0		0			2		
Storage Bay Dist (ft)			90	80			145		135	
Storage Blk Time (%)		3	0	9	43		1	17	0	5
Queuing Penalty (veh)		2	0	39	43		9	25	1	2

Intersection: 15: NE Century Boulevard & RAP1 Access/Parking

Movement	EB	EB	WB	NB	NB	SB	SB	SB
Directions Served	LT	R	L	L	TR	L	T	R
Maximum Queue (ft)	176	96	20	198	312	14	232	202
Average Queue (ft)	45	27	0	63	46	0	45	48
95th Queue (ft)	109	65	6	138	165	4	136	118
Link Distance (ft)	284	284	177		794		1227	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)				115		100		140
Storage Blk Time (%)				2	1		2	1
Queuing Penalty (veh)				9	2		9	1

Intersection: 16: NE Century Boulevard & RA1/2 Access/Office Driveway

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	T	R
Maximum Queue (ft)	191	96	74	45	151	235	51	375	239
Average Queue (ft)	38	24	13	12	55	46	3	76	39
95th Queue (ft)	114	59	47	39	115	132	27	208	118
Link Distance (ft)	288	288	720	720		1227		1366	
Upstream Blk Time (%)	0								
Queuing Penalty (veh)	0								
Storage Bay Dist (ft)					90		90		125
Storage Blk Time (%)					4	2		5	0
Queuing Penalty (veh)					10	2		13	0

Intersection: 17: NE Century Boulevard & NE Evergreen Parkway

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	R	L	TR
Maximum Queue (ft)	102	297	307	217	360	796	786	172	148	254	128	116
Average Queue (ft)	6	109	120	59	254	282	240	54	41	63	43	32
95th Queue (ft)	38	217	226	135	422	780	687	123	98	152	100	80
Link Distance (ft)		1056	1056			754	754		1366			943
Upstream Blk Time (%)						9	1					
Queuing Penalty (veh)						0	0					
Storage Bay Dist (ft)	100			375	250			140		250	100	
Storage Blk Time (%)	0	12			23	0		1	0	0	2	1
Queuing Penalty (veh)	0	1			86	0		4	0	0	0	0

Intersection: 18: RA1&2 North Access/Ronler Corporate Center & NE Evergreen Parkway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	30	236	239	139	134	165	89	91	49	32
Average Queue (ft)	1	39	64	46	27	34	27	23	4	2
95th Queue (ft)	9	126	167	97	86	105	70	62	24	15
Link Distance (ft)		979	979		1056	1056	536	536	389	389
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	110			240						
Storage Blk Time (%)		2								
Queuing Penalty (veh)		0								

Intersection: 19: North Access/NE 59th Avenue & NE Evergreen Parkway

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	LT	R	L	TR
Maximum Queue (ft)	124	259	301	48	86	227	266	55	36	67	186	151
Average Queue (ft)	36	46	67	3	11	51	68	4	3	10	68	32
95th Queue (ft)	80	141	171	20	44	142	177	24	17	37	145	83
Link Distance (ft)		1953	1953			979	979	460	460	460		560
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	285			225	275						150	
Storage Blk Time (%)		0	1			0					1	0
Queuing Penalty (veh)		0	0			0					1	0

Zone Summary

Zone wide Queuing Penalty: 641

Intersection: 1: NE Brookwood Parkway & NE Evergreen Parkway

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	L	L
Maximum Queue (ft)	537	600	1776	1775	308	303	374	464	433	284	168	500
Average Queue (ft)	434	485	886	842	21	92	163	216	226	50	66	285
95th Queue (ft)	642	713	2127	2065	122	204	300	353	348	159	127	630
Link Distance (ft)			1742	1742				1953	1953			
Upstream Blk Time (%)			19	6								
Queuing Penalty (veh)			0	0								
Storage Bay Dist (ft)	475	475			225	275	275			400	325	325
Storage Blk Time (%)	24	33	0	5		0	2	4	0			
Queuing Penalty (veh)	73	102	0	9		0	5	9	1			

Intersection: 1: NE Brookwood Parkway & NE Evergreen Parkway

Movement	NB	NB	NB	SB	SB	SB	SB	SB	SB	SB
Directions Served	T	T	TR	L	L	T	T	T	R	R
Maximum Queue (ft)	928	950	936	198	599	796	843	806	495	189
Average Queue (ft)	766	782	783	63	159	421	452	409	133	25
95th Queue (ft)	1113	1120	1113	147	425	679	696	664	439	94
Link Distance (ft)	888	888	888			1998	1998	1998		
Upstream Blk Time (%)	6	11	14							
Queuing Penalty (veh)	40	71	92							
Storage Bay Dist (ft)				425	425				320	320
Storage Blk Time (%)	53				0	14		25		
Queuing Penalty (veh)	98				0	19		73		

Intersection: 2: NE Brookwood Parkway & T5 Data Center/NE Shute Road

Movement	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LT	R	R	T	TR	L	L	T	TR
Maximum Queue (ft)	50	170	486	493	1291	1254	190	185	616	612
Average Queue (ft)	4	40	222	223	694	668	56	55	122	136
95th Queue (ft)	23	124	460	461	1488	1470	131	124	353	376
Link Distance (ft)	428		465	465	1423	1423		888	888	888
Upstream Blk Time (%)			3	2	15	16				0
Queuing Penalty (veh)			18	16	0	0				0
Storage Bay Dist (ft)		95					310			
Storage Blk Time (%)		0	32		59					
Queuing Penalty (veh)		2	12		0					

Intersection: 3: NE Shute Road & PERRIN Driveway/RS5 Access

Movement	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	95	198	224	73	217	214	82	23	16
Average Queue (ft)	20	93	129	4	14	15	9	1	0
95th Queue (ft)	59	215	240	22	92	93	39	12	6
Link Distance (ft)	291	176	176		916	916		465	465
Upstream Blk Time (%)		18	39						
Queuing Penalty (veh)		0	0						
Storage Bay Dist (ft)				125			125		
Storage Blk Time (%)					1			0	
Queuing Penalty (veh)					0			0	

Intersection: 4: NE Shute Road & NE Dawson Creek Drive/Intel RS6

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	78	161	487	498	61	5	38	10
Average Queue (ft)	27	59	285	267	14	0	4	0
95th Queue (ft)	61	105	612	602	43	3	21	3
Link Distance (ft)		881	458	458		919		916
Upstream Blk Time (%)			43	40				
Queuing Penalty (veh)			0	0				
Storage Bay Dist (ft)	105				215		210	
Storage Blk Time (%)		1						
Queuing Penalty (veh)		0						

Intersection: 5: NE Shute Road & D1X Access

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	86	256	36
Average Queue (ft)	10	43	3
95th Queue (ft)	45	149	18
Link Distance (ft)		392	
Upstream Blk Time (%)		0	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)	130		200
Storage Blk Time (%)		3	
Queuing Penalty (veh)		1	

Intersection: 6: NE Shute Road & NE Tandem Way/NETandem Way

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	LT	R	L	L
Maximum Queue (ft)	66	87	144	58	30
Average Queue (ft)	22	20	51	16	1
95th Queue (ft)	53	57	94	44	12
Link Distance (ft)	300		313		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		170		160	200
Storage Blk Time (%)			0		
Queuing Penalty (veh)			0		

Intersection: 7: NE Shute Road & NE Airport Road/NE Butler Street

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	R
Maximum Queue (ft)	117	180	165	522	66	243	174	135	424	91
Average Queue (ft)	25	66	109	200	9	87	48	99	174	33
95th Queue (ft)	63	128	187	393	37	157	114	155	315	62
Link Distance (ft)		1938		1618		1634			594	594
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	70		90		80		100	80		
Storage Blk Time (%)	0	10	9	24		12	1	12	21	
Queuing Penalty (veh)	0	4	38	46		20	1	46	42	

Intersection: 8: NE 60th Avenue/Intel Driveway & NE Butler Street

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	L	LTR	L	TR
Maximum Queue (ft)	35	34	22	75	188	220
Average Queue (ft)	7	1	1	23	25	62
95th Queue (ft)	29	14	8	56	84	120
Link Distance (ft)		1618		458	264	264
Upstream Blk Time (%)					0	0
Queuing Penalty (veh)					0	0
Storage Bay Dist (ft)	25		25			
Storage Blk Time (%)	1	0	0			
Queuing Penalty (veh)	3	0	0			

Intersection: 9: NE 65th Avenue/Intel Driveway & NE Butler Street

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	LT	TR	LTR	R	LTR	L	LTR
Maximum Queue (ft)	134	115	150	49	45	114	143
Average Queue (ft)	48	43	29	5	10	39	27
95th Queue (ft)	91	79	86	25	37	81	81
Link Distance (ft)		723	1178		304	186	186
Upstream Blk Time (%)							0
Queuing Penalty (veh)							0
Storage Bay Dist (ft)	125			235			
Storage Blk Time (%)	0	0					
Queuing Penalty (veh)	1	0					

Intersection: 10: Intel Driveway & Internal Circulation

Movement	EB	EB	WB	WB	NB	NB	NB	SB
Directions Served	LT	R	L	LTR	LT	T	R	LTR
Maximum Queue (ft)	593	380	195	310	57	51	66	399
Average Queue (ft)	143	160	68	124	18	13	2	372
95th Queue (ft)	453	353	163	239	43	35	23	496
Link Distance (ft)	592			537	186	186		380
Upstream Blk Time (%)	8							81
Queuing Penalty (veh)	0							0
Storage Bay Dist (ft)		250	80				105	
Storage Blk Time (%)	1	18	1	30			0	
Queuing Penalty (veh)	6	39	3	56			0	

Intersection: 11: Parking Lot/RA3&4 Access & Internal Circulation

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	L	TR	L	TR
Maximum Queue (ft)	149	295	26	74	34	49	131	83
Average Queue (ft)	40	100	1	34	8	8	53	38
95th Queue (ft)	94	195	8	58	32	32	92	61
Link Distance (ft)		537		707	224	224		617
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	70		115				175	
Storage Blk Time (%)	0	18					0	
Queuing Penalty (veh)	1	11					0	

Intersection: 12: NE Century Boulevard & NE Butler Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	R	L	TR	L	TR
Maximum Queue (ft)	215	350	389	39	248	94	82	201	235	662
Average Queue (ft)	85	193	238	6	89	27	23	75	92	201
95th Queue (ft)	167	302	341	23	168	61	58	155	210	490
Link Distance (ft)		1178	1178		841	841		744		727
Upstream Blk Time (%)										0
Queuing Penalty (veh)										1
Storage Bay Dist (ft)	415			170			100		125	
Storage Blk Time (%)					1		0	5	2	12
Queuing Penalty (veh)					0		0	2	10	25

Intersection: 13: Internal Circulation & NE Ronler Drive

Movement	WB	WB	NB	NB	SB
Directions Served	L	R	T	R	L
Maximum Queue (ft)	74	36	12	40	35
Average Queue (ft)	26	2	0	1	6
95th Queue (ft)	58	17	6	23	26
Link Distance (ft)		364	707		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	200			85	25
Storage Blk Time (%)				0	1
Queuing Penalty (veh)				0	1

Intersection: 14: NE Century Boulevard & NE Ronler Drive

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	120	225	142	109	99	197	521	235	804
Average Queue (ft)	35	198	104	33	24	18	180	116	344
95th Queue (ft)	84	248	184	78	66	78	367	255	738
Link Distance (ft)	142	142			298		727		794
Upstream Blk Time (%)	0	31	1						1
Queuing Penalty (veh)	0	93	0						12
Storage Bay Dist (ft)			90	80		145		135	
Storage Blk Time (%)		45	7	2	1		14	3	27
Queuing Penalty (veh)		137	15	1	0		2	18	45

Intersection: 15: NE Century Boulevard & RAP1 Access/Parking

Movement	EB	EB	WB	NB	NB	SB	SB	SB
Directions Served	LT	R	L	L	TR	L	T	R
Maximum Queue (ft)	304	289	23	81	234	41	840	184
Average Queue (ft)	172	108	0	12	56	0	217	16
95th Queue (ft)	295	229	8	43	145	3	636	93
Link Distance (ft)	284	284	177		794		1227	
Upstream Blk Time (%)	3	2					0	
Queuing Penalty (veh)	0	0					1	
Storage Bay Dist (ft)				115		100		140
Storage Blk Time (%)				0	2		17	
Queuing Penalty (veh)				0	0		6	

Intersection: 16: NE Century Boulevard & RA1/2 Access/Office Driveway

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	T	R
Maximum Queue (ft)	293	169	86	60	166	371	87	228	108
Average Queue (ft)	135	54	16	15	17	113	7	75	8
95th Queue (ft)	240	115	53	45	68	249	36	164	43
Link Distance (ft)	288	288	720	720		1227		1366	
Upstream Blk Time (%)	0								
Queuing Penalty (veh)	0								
Storage Bay Dist (ft)					90		90		125
Storage Blk Time (%)					0	8		5	
Queuing Penalty (veh)					0	2		2	

Intersection: 17: NE Century Boulevard & NE Evergreen Parkway

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	R	L	TR
Maximum Queue (ft)	224	800	837	525	225	261	265	243	1005	400	264	588
Average Queue (ft)	13	299	308	80	95	92	84	102	169	260	133	136
95th Queue (ft)	77	589	607	294	167	196	193	192	648	438	249	361
Link Distance (ft)		1056	1056			754	754		1366			943
Upstream Blk Time (%)		0	0						0			
Queuing Penalty (veh)		0	0						0			
Storage Bay Dist (ft)	100			375	250			140		250	100	
Storage Blk Time (%)	0	38	9		0	0		7	0	20	25	11
Queuing Penalty (veh)	0	4	12		0	0		40	0	32	25	20

Intersection: 18: RA1&2 North Access/Ronler Corporate Center & NE Evergreen Parkway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	38	330	353	39	205	200	213	160	78	53
Average Queue (ft)	1	68	85	7	52	55	80	54	17	6
95th Queue (ft)	12	198	225	28	131	141	158	102	50	29
Link Distance (ft)		979	979		1056	1056	536	536	389	389
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	110			240						
Storage Blk Time (%)		3			0					
Queuing Penalty (veh)		0			0					

Intersection: 19: North Access/NE 59th Avenue & NE Evergreen Parkway

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	LT	R	L	TR
Maximum Queue (ft)	62	402	411	21	27	341	366	205	211	392	240	244
Average Queue (ft)	9	108	126	1	2	98	104	41	25	66	98	44
95th Queue (ft)	36	263	278	9	14	234	252	132	101	215	187	122
Link Distance (ft)		1953	1953			979	979	460	460	460		560
Upstream Blk Time (%)										0		
Queuing Penalty (veh)										0		
Storage Bay Dist (ft)	285			225	275						150	
Storage Blk Time (%)		1	2			1					4	0
Queuing Penalty (veh)		0	0			0					4	0

Zone Summary

Zone wide Queuing Penalty: 1473

3: NE Shute Road & PERRIN Driveway/RS5 Access Performance by lane

Lane	EB	WB	WB	NB	NB	NB	SB	SB	SB	All
Movements Served	LTR	L	TR	L	T	TR	L	T	TR	
Denied Del/Veh (s)										0.2
Total Del/Veh (s)	16.2	20.6	3.5	4.2	0.7	1.2	4.3	3.1	1.5	3.2

4: NE Shute Road & NE Dawson Creek Drive/Intel RS6 Performance by lane

Lane	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB	All
Movements Served	L	TR	L	TR	L	T	TR	L	T	TR	
Denied Del/Veh (s)											0.0
Total Del/Veh (s)	17.4	7.8	24.6	4.4	6.0	1.5	1.5	4.7	2.0	1.8	3.1

3: NE Shute Road & PERRIN Driveway/RS5 Access Performance by lane

Lane	EB	WB	WB	NB	NB	NB	SB	SB	SB	All
Movements Served	LTR	L	TR	L	T	TR	L	T	TR	
Denied Del/Veh (s)										34.1
Total Del/Veh (s)	28.4	90.1	49.7	2.1	3.7	4.0	12.2	1.1	1.0	13.2

4: NE Shute Road & NE Dawson Creek Drive/Intel RS6 Performance by lane

Lane	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB	All
Movements Served	L	TR	L	TR	L	T	TR	L	T	TR	
Denied Del/Veh (s)											49.4
Total Del/Veh (s)	15.4	9.8	181.6	63.0	2.4	0.9	1.3	4.1	1.3	1.2	28.7

1: NE Brookwood Parkway & NE Evergreen Parkway Performance by lane

Lane	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Movements Served	L	L	T	T	R	L	L	T	T	R	L	L
Denied Del/Veh (s)												
Total Del/Veh (s)	33.9	48.4	35.8	33.9	2.8	50.3	51.3	36.0	36.3	2.0	33.8	44.4

1: NE Brookwood Parkway & NE Evergreen Parkway Performance by lane

Lane	NB	NB	NB	SB	SB	SB	SB	SB	SB	SB	All
Movements Served	T	T	TR	L	L	T	T	T	R	R	
Denied Del/Veh (s)											0.7
Total Del/Veh (s)	18.1	19.5	20.4	51.0	62.0	80.3	67.1	63.8	4.8	3.0	38.8

2: NE Brookwood Parkway & T5 Data Center/NE Shute Road Performance by lane

Lane	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB	All
Movements Served	LTR	LT	R	R	T	TR	L	L	T	TR	
Denied Del/Veh (s)											0.1
Total Del/Veh (s)	51.5	60.0	5.8	4.7	23.6	21.9	14.7	32.1	8.4	9.1	16.0

3: NE Shute Road & PERRIN Driveway/RS5 Access Performance by lane

Lane	EB	WB	WB	NB	NB	NB	SB	SB	SB	All
Movements Served	LTR	L	TR	L	T	TR	L	T	TR	
Denied Del/Veh (s)										0.1
Total Del/Veh (s)	14.0	15.6	3.5	5.7	2.5	2.7	4.3	3.1	1.4	3.4

4: NE Shute Road & NE Dawson Creek Drive/Intel RS6 Performance by lane

Lane	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB	All
Movements Served	L	TR	L	TR	L	T	TR	L	T	TR	
Denied Del/Veh (s)											0.0
Total Del/Veh (s)	21.7	8.0	21.9	4.4	9.8	7.5	6.8	9.1	10.4	7.3	8.7

Total Zone Performance

Denied Del/Veh (s)											0.8
Total Del/Veh (s)											939.8

Intersection: 1: NE Brookwood Parkway & NE Evergreen Parkway

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	L	L
Maximum Queue (ft)	276	291	299	287	190	163	200	216	232	124	92	110
Average Queue (ft)	124	163	137	131	21	62	80	98	108	8	20	48
95th Queue (ft)	224	249	233	226	95	120	150	177	185	49	62	92
Link Distance (ft)			1742	1742				1953	1953			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	475	475			225	275	275			400	325	325
Storage Blk Time (%)				1								
Queuing Penalty (veh)				2								

Intersection: 1: NE Brookwood Parkway & NE Evergreen Parkway

Movement	NB	NB	NB	SB	SB	SB	SB	SB	SB	SB
Directions Served	T	T	TR	L	L	T	T	T	R	R
Maximum Queue (ft)	300	305	361	128	600	1134	1164	1155	495	190
Average Queue (ft)	118	144	162	32	130	431	409	358	122	35
95th Queue (ft)	248	268	294	80	440	868	866	822	413	119
Link Distance (ft)	888	888	888			1998	1998	1998		
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)				425	425				320	320
Storage Blk Time (%)	0					18		12		
Queuing Penalty (veh)	0					22		65		

Intersection: 2: NE Brookwood Parkway & T5 Data Center/NE Shute Road

Movement	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LT	R	R	T	TR	L	L	T	TR
Maximum Queue (ft)	34	38	107	105	420	434	369	762	169	195
Average Queue (ft)	2	3	34	43	210	193	149	99	18	21
95th Queue (ft)	14	19	71	80	341	338	298	294	78	92
Link Distance (ft)	428		465	465	1423	1423		888	888	888
Upstream Blk Time (%)								0		
Queuing Penalty (veh)								0		
Storage Bay Dist (ft)		95					310			
Storage Blk Time (%)			0		28		1	0		
Queuing Penalty (veh)			0		0		4	1		

Intersection: 3: NE Shute Road & PERRIN Driveway/RS5 Access

Movement	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	104	64	80	34	14	26	159	66	5
Average Queue (ft)	35	14	23	3	0	1	44	1	0
95th Queue (ft)	74	44	59	16	4	9	100	27	3
Link Distance (ft)	291	176	176		916	916		465	465
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)				125			125		
Storage Blk Time (%)							0		
Queuing Penalty (veh)							1		

Intersection: 4: NE Shute Road & NE Dawson Creek Drive/Intel RS6

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	66	92	88	50	153	136	180	133	341	254
Average Queue (ft)	3	31	26	19	51	32	68	49	86	52
95th Queue (ft)	24	65	63	48	103	81	133	99	202	137
Link Distance (ft)		881	458	458		919	919		916	916
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	105				215			210		
Storage Blk Time (%)	0	0			0				1	
Queuing Penalty (veh)	0	0			0				1	

Zone Summary

Zone wide Queuing Penalty: 95

1: NE Brookwood Parkway & NE Evergreen Parkway Performance by lane

Lane	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Movements Served	L	L	T	T	R	L	L	T	T	R	L	L
Denied Del/Veh (s)												
Total Del/Veh (s)	81.1	108.9	198.4	48.8	2.5	111.5	137.8	87.0	80.8	7.9	58.6	73.3

1: NE Brookwood Parkway & NE Evergreen Parkway Performance by lane

Lane	NB	NB	NB	SB	SB	SB	SB	SB	SB	SB	All
Movements Served	T	T	TR	L	L	T	T	T	R	R	
Denied Del/Veh (s)											8.7
Total Del/Veh (s)	83.3	92.3	97.9	179.1	195.9	54.4	61.4	45.8	3.7	1.7	80.5

2: NE Brookwood Parkway & T5 Data Center/NE Shute Road Performance by lane

Lane	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB	All
Movements Served	LTR	LT	R	R	T	TR	L	L	T	TR	
Denied Del/Veh (s)											2.1
Total Del/Veh (s)	45.8	38.9	23.2	26.8	98.4	85.0	14.5	20.9	22.4	23.6	42.1

3: NE Shute Road & PERRIN Driveway/RS5 Access Performance by lane

Lane	EB	WB	WB	NB	NB	NB	SB	SB	SB	All
Movements Served	LTR	L	TR	L	T	TR	L	T	TR	
Denied Del/Veh (s)										18.5
Total Del/Veh (s)	22.8	55.1	35.7	1.8	6.6	6.0	9.0	1.2	1.0	11.5

4: NE Shute Road & NE Dawson Creek Drive/Intel RS6 Performance by lane

Lane	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB	All
Movements Served	L	TR	L	TR	L	T	TR	L	T	TR	
Denied Del/Veh (s)											0.2
Total Del/Veh (s)	51.0	9.3	42.2	16.8	11.0	10.4	10.0	12.4	9.5	9.9	15.0

Total Zone Performance

Denied Del/Veh (s)											17.2
Total Del/Veh (s)											1624.4

Intersection: 1: NE Brookwood Parkway & NE Evergreen Parkway

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	L	L
Maximum Queue (ft)	537	600	1777	1774	234	362	449	807	730	435	167	500
Average Queue (ft)	427	477	741	698	19	161	239	328	305	65	67	232
95th Queue (ft)	626	693	1930	1878	93	355	448	709	595	219	134	558
Link Distance (ft)			1742	1742				1953	1953			
Upstream Blk Time (%)			16	5								
Queuing Penalty (veh)			0	0								
Storage Bay Dist (ft)	475	475			225	275	275			400	325	325
Storage Blk Time (%)	17	27		4		5	20	10	3			0
Queuing Penalty (veh)	50	84		7		15	55	23	4			0

Intersection: 1: NE Brookwood Parkway & NE Evergreen Parkway

Movement	NB	NB	NB	SB	SB	SB	SB	SB	SB	SB
Directions Served	T	T	TR	L	L	T	T	T	R	R
Maximum Queue (ft)	908	936	923	303	408	483	494	451	225	122
Average Queue (ft)	602	628	639	120	158	286	321	279	40	12
95th Queue (ft)	1050	1069	1067	280	320	421	445	399	135	56
Link Distance (ft)	888	888	888			1998	1998	1998		
Upstream Blk Time (%)	2	4	6							
Queuing Penalty (veh)	16	30	45							
Storage Bay Dist (ft)				425	425				320	320
Storage Blk Time (%)	36			0	0	1		3		
Queuing Penalty (veh)	71			0	0	1		8		

Intersection: 2: NE Brookwood Parkway & T5 Data Center/NE Shute Road

Movement	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LT	R	R	T	TR	L	L	T	TR
Maximum Queue (ft)	40	169	494	490	1133	1099	152	286	592	617
Average Queue (ft)	4	36	207	224	523	492	59	64	200	215
95th Queue (ft)	21	117	430	434	1143	1113	125	156	508	532
Link Distance (ft)	428		465	465	1423	1423		888	888	888
Upstream Blk Time (%)			2	2	5	4				0
Queuing Penalty (veh)			13	16	0	0				0
Storage Bay Dist (ft)		95					310			
Storage Blk Time (%)		0	23		52					
Queuing Penalty (veh)		2	9		0					

Intersection: 3: NE Shute Road & PERRIN Driveway/RS5 Access

Movement	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	L	TR	L	T	TR	L	T
Maximum Queue (ft)	109	200	200	39	278	298	59	6
Average Queue (ft)	24	67	112	3	17	20	8	0
95th Queue (ft)	69	178	214	19	130	143	34	3
Link Distance (ft)	291	176	176		916	916		465
Upstream Blk Time (%)		9	25					
Queuing Penalty (veh)		0	0					
Storage Bay Dist (ft)				125			125	
Storage Blk Time (%)					2			
Queuing Penalty (veh)					0			

Intersection: 4: NE Shute Road & NE Dawson Creek Drive/Intel RS6

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	124	177	329	336	102	291	292	39	191	164
Average Queue (ft)	38	59	130	94	26	82	94	5	60	42
95th Queue (ft)	87	106	243	205	68	195	205	25	138	107
Link Distance (ft)		881	458	458		919	919		916	916
Upstream Blk Time (%)				0						
Queuing Penalty (veh)				0						
Storage Bay Dist (ft)	105				215			210		
Storage Blk Time (%)	1	0				1			0	
Queuing Penalty (veh)	3	0				1			0	

Zone Summary

Zone wide Queuing Penalty: 454

1: NE Brookwood Parkway & NE Evergreen Parkway Performance by lane

Lane	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Movements Served	L	L	T	T	R	L	L	T	T	R	L	L
Denied Del/Veh (s)												
Total Del/Veh (s)	34.1	49.2	37.6	34.5	2.7	52.4	49.4	35.4	37.3	1.9	33.4	45.3

1: NE Brookwood Parkway & NE Evergreen Parkway Performance by lane

Lane	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB	SB	All
Movements Served	T	T	T	R	L	L	T	T	T	R	R	
Denied Del/Veh (s)												0.7
Total Del/Veh (s)	17.2	18.9	20.2	2.4	51.2	61.0	94.1	76.6	75.5	5.5	3.8	42.0

2: NE Brookwood Parkway & T5 Data Center/NE Shute Road Performance by lane

Lane	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB	All
Movements Served	LTR	LT	R	R	T	TR	L	L	T	TR	
Denied Del/Veh (s)											0.1
Total Del/Veh (s)	82.4	59.2	5.5	4.6	23.8	22.4	13.7	30.3	8.4	9.0	15.8

3: NE Shute Road & PERRIN Driveway/RS5 Access Performance by lane

Lane	EB	WB	WB	NB	NB	NB	SB	SB	SB	All
Movements Served	LTR	L	TR	L	T	TR	L	T	TR	
Denied Del/Veh (s)										0.1
Total Del/Veh (s)	15.5	20.8	3.9	5.8	2.4	2.7	4.3	3.1	1.5	3.6

4: NE Shute Road & NE Dawson Creek Drive/Intel RS6 Performance by lane

Lane	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB	All
Movements Served	L	TR	L	TR	L	T	TR	L	T	TR	
Denied Del/Veh (s)											0.0
Total Del/Veh (s)	24.5	7.9	25.2	4.0	9.8	7.8	6.8	9.6	10.5	7.7	8.9

Total Zone Performance

Denied Del/Veh (s)												0.9
Total Del/Veh (s)												981.2

Intersection: 1: NE Brookwood Parkway & NE Evergreen Parkway

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	L	L
Maximum Queue (ft)	286	313	272	263	135	192	199	238	258	79	113	128
Average Queue (ft)	122	162	140	134	16	66	84	100	111	5	24	52
95th Queue (ft)	224	251	234	226	72	133	161	184	191	35	71	102
Link Distance (ft)			1742	1742				1954	1954			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	475	475			225	275	275			400	325	325
Storage Blk Time (%)				1				0				
Queuing Penalty (veh)				1				0				

Intersection: 1: NE Brookwood Parkway & NE Evergreen Parkway

Movement	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB	SB
Directions Served	T	T	T	R	L	L	T	T	T	R	R
Maximum Queue (ft)	289	291	262	122	124	600	1255	1232	1269	495	243
Average Queue (ft)	103	124	109	9	34	157	492	465	416	131	45
95th Queue (ft)	226	244	214	53	84	504	1094	1073	1024	431	147
Link Distance (ft)	889	889	889				1998	1998	1998		
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)				400	425	425				320	320
Storage Blk Time (%)	0					0	21		13	0	0
Queuing Penalty (veh)	0					0	24		74	0	0

Intersection: 2: NE Brookwood Parkway & T5 Data Center/NE Shute Road

Movement	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LT	R	R	T	TR	L	L	T	TR
Maximum Queue (ft)	36	35	108	117	402	386	378	667	180	205
Average Queue (ft)	3	3	33	43	208	191	139	98	17	22
95th Queue (ft)	17	17	75	80	334	322	281	285	87	102
Link Distance (ft)	428		465	465	1423	1423		889	889	889
Upstream Blk Time (%)								0		
Queuing Penalty (veh)								0		
Storage Bay Dist (ft)		95					310			
Storage Blk Time (%)			0		28		1	0		
Queuing Penalty (veh)			0		0		2	0		

Intersection: 3: NE Shute Road & PERRIN Driveway/RS5 Access

Movement	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	106	101	66	32	11	37	157	47	16
Average Queue (ft)	36	15	18	3	0	1	46	1	0
95th Queue (ft)	75	54	50	18	3	12	103	17	8
Link Distance (ft)	291	176	176		916	916		465	465
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)				125			125		
Storage Blk Time (%)							0	0	
Queuing Penalty (veh)							1	0	

Intersection: 4: NE Shute Road & NE Dawson Creek Drive/Intel RS6

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	53	79	103	46	145	104	176	168	295	246
Average Queue (ft)	2	27	28	17	50	30	63	52	87	54
95th Queue (ft)	16	59	68	46	102	73	125	106	200	139
Link Distance (ft)		881	458	458		919	919		916	916
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	105				215			210		
Storage Blk Time (%)		0						0	1	
Queuing Penalty (veh)		0						0	1	

Zone Summary

Zone wide Queuing Penalty: 104

1: NE Brookwood Parkway & NE Evergreen Parkway Performance by lane

Lane	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Movements Served	L	L	T	T	R	L	L	T	T	R	L	L
Denied Del/Veh (s)												
Total Del/Veh (s)	78.6	104.7	176.2	51.6	2.8	109.9	124.6	59.3	65.3	7.6	56.0	72.5

1: NE Brookwood Parkway & NE Evergreen Parkway Performance by lane

Lane	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB	SB	All
Movements Served	T	T	T	R	L	L	T	T	T	R	R	
Denied Del/Veh (s)												6.8
Total Del/Veh (s)	62.7	69.7	75.1	3.5	150.9	161.0	59.9	69.5	50.1	3.9	2.3	69.2

2: NE Brookwood Parkway & T5 Data Center/NE Shute Road Performance by lane

Lane	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB	All
Movements Served	LTR	LT	R	R	T	TR	L	L	T	TR	
Denied Del/Veh (s)											0.1
Total Del/Veh (s)	55.9	40.8	17.4	19.9	51.3	40.4	12.6	19.8	19.8	21.5	26.9

3: NE Shute Road & PERRIN Driveway/RS5 Access Performance by lane

Lane	EB	WB	WB	NB	NB	NB	SB	SB	SB	All
Movements Served	LTR	L	TR	L	T	TR	L	T	TR	
Denied Del/Veh (s)										9.1
Total Del/Veh (s)	9.7	37.8	29.3	2.1	4.7	4.7	9.8	1.1	1.0	8.9

4: NE Shute Road & NE Dawson Creek Drive/Intel RS6 Performance by lane

Lane	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB	All
Movements Served	L	TR	L	TR	L	T	TR	L	T	TR	
Denied Del/Veh (s)											0.2
Total Del/Veh (s)	24.4	8.2	20.1	10.6	13.2	13.6	14.0	16.8	13.9	12.2	13.5

Total Zone Performance

Denied Del/Veh (s)												10.7
Total Del/Veh (s)												1335.4

Intersection: 1: NE Brookwood Parkway & NE Evergreen Parkway

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	L	L
Maximum Queue (ft)	537	600	1770	1602	298	362	441	599	551	306	180	500
Average Queue (ft)	423	471	756	705	25	153	218	244	239	54	73	171
95th Queue (ft)	635	703	1929	1854	124	337	400	433	391	165	142	431
Link Distance (ft)			1742	1742				1954	1954			
Upstream Blk Time (%)			15	4								
Queuing Penalty (veh)			0	0								
Storage Bay Dist (ft)	475	475			225	275	275			400	325	325
Storage Blk Time (%)	18	28	0	4	0	5	17	5	1			
Queuing Penalty (veh)	57	86	0	8	0	14	46	13	1			

Intersection: 1: NE Brookwood Parkway & NE Evergreen Parkway

Movement	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB	SB
Directions Served	T	T	T	R	L	L	T	T	T	R	R
Maximum Queue (ft)	908	910	902	475	260	383	532	528	538	302	154
Average Queue (ft)	444	467	470	145	103	137	305	340	299	41	17
95th Queue (ft)	835	846	862	488	242	283	450	469	424	137	71
Link Distance (ft)	889	889	889				1998	1998	1998		
Upstream Blk Time (%)	1	1	2								
Queuing Penalty (veh)	5	8	13								
Storage Bay Dist (ft)				400	425	425				320	320
Storage Blk Time (%)	22		20			0	1		5		
Queuing Penalty (veh)	43		37			0	2		15		

Intersection: 2: NE Brookwood Parkway & T5 Data Center/NE Shute Road

Movement	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LT	R	R	T	TR	L	L	T	TR
Maximum Queue (ft)	40	170	439	440	766	738	174	401	599	616
Average Queue (ft)	4	36	183	204	338	310	53	56	171	188
95th Queue (ft)	21	111	369	382	639	613	118	140	456	487
Link Distance (ft)	428		465	465	1423	1423		889	889	889
Upstream Blk Time (%)			1	1					0	0
Queuing Penalty (veh)			4	5					0	0
Storage Bay Dist (ft)		95					310			
Storage Blk Time (%)		0	18		44					
Queuing Penalty (veh)		1	7		0					

Intersection: 3: NE Shute Road & PERRIN Driveway/RS5 Access

Movement	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	L	TR	L	T	TR	L	TR
Maximum Queue (ft)	73	197	202	30	115	147	79	4
Average Queue (ft)	18	64	102	3	7	8	9	0
95th Queue (ft)	51	168	200	18	70	75	40	2
Link Distance (ft)	291	176	176		916	916		465
Upstream Blk Time (%)		8	19					
Queuing Penalty (veh)		0	0					
Storage Bay Dist (ft)				125			125	
Storage Blk Time (%)					0		0	
Queuing Penalty (veh)					0		0	

Intersection: 4: NE Shute Road & NE Dawson Creek Drive/Intel RS6

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	95	128	249	237	106	323	338	61	193	176
Average Queue (ft)	31	56	90	77	34	97	105	7	76	54
95th Queue (ft)	73	95	176	164	74	195	198	31	150	120
Link Distance (ft)		881	458	458		919	919		916	916
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	105				215			210		
Storage Blk Time (%)	0	0				1			0	
Queuing Penalty (veh)	0	0				1			0	

Zone Summary

Zone wide Queuing Penalty: 366

APPENDIX M.
SIGNAL WARRANTS

TRAFFIC SIGNAL WARRANTS - BASED ON 2009 MUTCD

1/17/2019

INTERSECTION INFORMATION						
City:	Hillsboro, Oregon	Condition:	Proposed Weekday Volumes Based on 2-lane approach			
Population:	90,000					
Intersection Location: (Rural/Urban)	Urban					
Major Street Name:	NE Shute Road	Minor Street Name:	Lark Access/Dawson Creek L			
Number of Moving Lanes for Each Approach:	2	Number of Moving Lanes for Each Approach:	2			
Speed:	40 mph	Speed:	25 mph			
Street		Street				
Width:	70 ft	Width:	50 ft			
Direction:	NB	Direction:	EB	WB	Total	
Hour Beginning:		Hour Beginning:				
12:00 AM		12:00 AM			0	
1:00 AM		1:00 AM			0	
2:00 AM		2:00 AM			0	
3:00 AM		3:00 AM			0	
4:00 AM		4:00 AM			0	
5:00 AM	214	5:00 AM	14	26	863	
6:00 AM	390	6:00 AM	42	29	854	
7:00 AM	577	7:00 AM	54	49	1,349	
8:00 AM	496	8:00 AM	44	58	1,213	
9:00 AM		9:00 AM			0	
10:00 AM		10:00 AM			0	
11:00 AM		11:00 AM			0	
12:00 PM		12:00 PM			0	
1:00 PM		1:00 PM			0	
2:00 PM	238	2:00 PM	75	100	593	
3:00 PM	439	3:00 PM	125	191	988	
4:00 PM	881	4:00 PM	222	459	1,899	
5:00 PM	531	5:00 PM	230	233	1,348	
6:00 PM	292	6:00 PM	69	109	670	
7:00 PM		7:00 PM			0	
8:00 PM		8:00 PM			0	
9:00 PM		9:00 PM			0	
10:00 PM		10:00 PM			0	
11:00 PM		11:00 PM			0	
24-hour Total	4,058	24-hour Total	875	1,254	9,777	

Warrants Evaluted:

Warrant 1, 8-Hour Vehicular Volume - Evaluated for Conditions A & B

Warrant 2 , 4-Hour Vehicular Volume - Evaluated

Warrant 3, Peak Hour - Evaluated for Conditions A-2, A-3 (A-1 needs to be evaluated separately), and Condition B

Warrant 4, Pedestrian Volume - Not Analyzed

Warrant 5, School Crossing - Not Analyzed

Warrant 6, Coordinated Signal System - Not Analyzed

Warrant 7, Accident Experience - Not Analyzed

Warrant 8, Roadway Network - Not Analyzed

Warrant 9, Intersection Near a Grade Crossing - Not Analyzed

WARRANT 1, 8-HOUR VEHICULAR VOLUME

	MAJOR			MINOR			<u>A</u>	<u>B</u>
	NB	SB	Total	EB	WB	Max		
4:00 PM	881	337	1218	222	459	459	Y	Y
7:00 AM	577	669	1246	54	49	54	N	N
5:00 PM	531	354	885	230	233	233	Y	N
8:00 AM	496	615	1111	44	58	58	N	N
3:00 PM	439	233	672	125	191	191	N	N
5:00 AM	214	609	823	14	26	26	N	N
6:00 AM	390	393	783	42	29	42	N	N
6:00 PM	292	200	492	69	109	109	N	N
2:00 PM	238	180	418	75	100	100	N	N
12:00 AM	0	0	0	0	0	0	N	N
2:00 AM	0	0	0	0	0	0	N	N
2:00 AM	0	0	0	0	0	0	N	N

Warrant Requirements:

Major Street Lanes: 2

Minor Street Lanes: 2

CONDITION A - Minimum Vehicular Volume

Minimum Volume on Combined Major Street Approaches: 600

Minimum Volume on Higher Minor Street Approach: 200

CONDITION B - Interruption of Continuous Traffic

Minimum Volume on Combined Major Street Approaches: 900

Minimum Volume on Higher Minor Street Approach: 100

IS CONDITION A OF SIGNAL WARRANT 1 MET? NO**IS CONDITION B OF SIGNAL WARRANT 1 MET? NO****IS COMBINED CONDITIONS A & B MET AT 80% LEVEL? NO**

Note: Signal Warrant 1 is met if either Condition A or Condition B is met.

WARRANT 2, FOUR HOUR VEHICULAR VOLUME

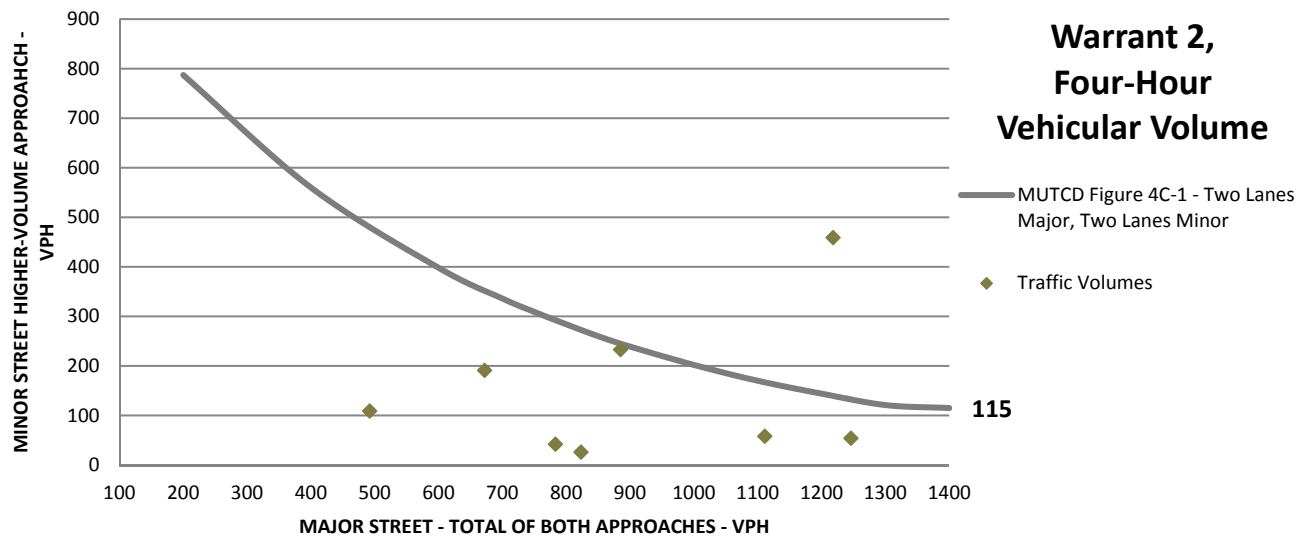
	MAJOR			MINOR			Calculated Threshold	
	NB	SB	Total	EB	WB	Max		
4:00 PM	881	337	1,218	222	459	459	139	Y
7:00 AM	577	669	1,246	54	49	54	133	N
5:00 PM	531	354	885	230	233	233	245	N
8:00 AM	496	615	1,111	44	58	58	167	N
3:00 PM	439	233	672	125	191	191	353	N
5:00 AM	214	609	823	14	26	26	273	N
6:00 AM	390	393	783	42	29	42	292	N
6:00 PM	292	200	492	69	109	109	479	N

Warrant Requirements:

Major Street Lanes: 2

Minor Street Lanes: 2

IS SIGNAL WARRANT 2 MET? NO



WARRANT 3, PEAK HOUR VEHICULAR VOLUME

	MAJOR			MINOR			Calculated Threshold (B)	A-2&3	B
	NB	SB	Total	EB	WB	Max			
4:00 PM	881	337	1,218	222	459	459	276	Y	Y
7:00 AM	577	669	1,246	54	49	54	266	N	N
5:00 PM	531	354	885	230	233	233	426	Y	N
8:00 AM	496	615	1,111	44	58	58	317	N	N

Warrant Requirements:

Major Street Lanes: 2

Minor Street Lanes: 2

CONDITION A-1 - Stopped Delay

Cannot be evaluated based on volumes alone. Condition met if traffic on one minor-street approach (one direction only) controlled by STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach.

CONDITION A-2 - Minor Street Volume

Minimum Volume on Higher Minor Street Approach: 150

CONDITION A-3 - Total Approach Volume

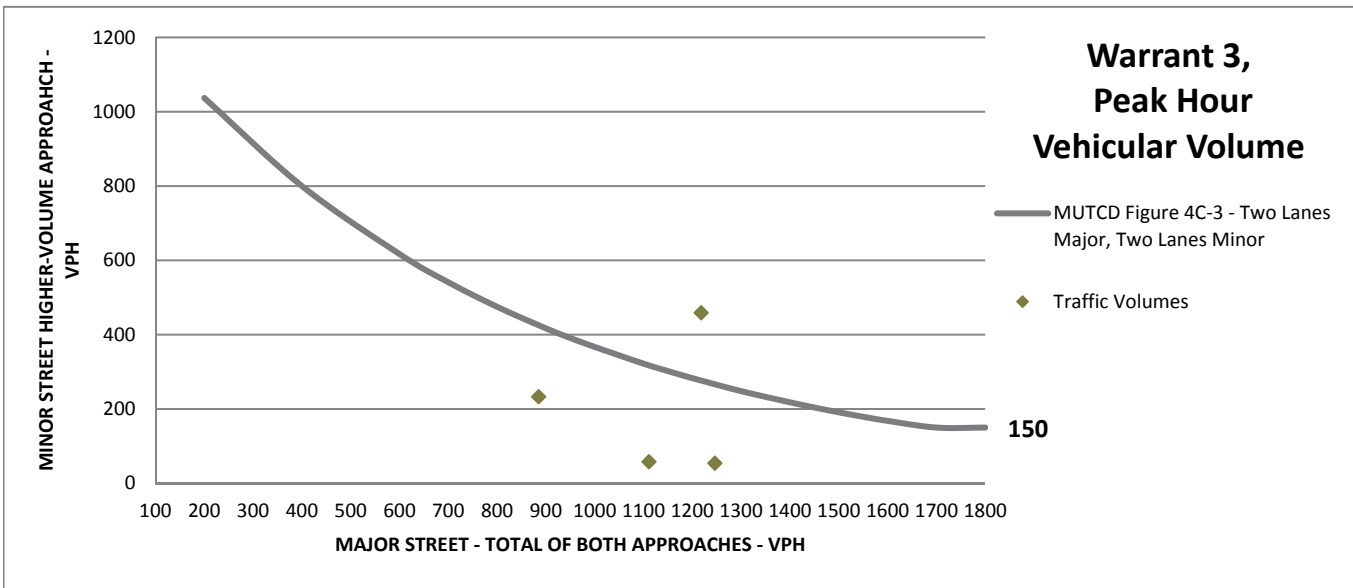
Minimum Volume of Total Approaches: 800

CONDITION B - Plot of Minor Street Volume (high vol approach) vs. Major Street Volume (Both approaches)**ARE CONDITIONS A-2 AND A-3 OF SIGNAL WARRANT 3 MET?****YES** *Stopped Delay Needs to be Checked*

Note: All 3 subsections of Condition A must be met to warrant signal.

IS CONDITION B OF SIGNAL WARRANT 3 MET?**YES**

Note: Signal Warrant 3 is met if either Condition A or Condition B is met.



TRAFFIC SIGNAL WARRANTS - BASED ON 2009 MUTCD

1/17/2019

INTERSECTION INFORMATION					
City:	Hillsboro, Oregon	Condition:	Proposed Weekday Volumes Based on Westbound Left		
Population:	90,000				
Intersection Location: (Rural/Urban)	Urban				
Major Street Name:	NE Shute Road	Minor Street Name:	Lark Access/Dawson Creek E		
Number of Moving Lanes for Each Approach:	2	Number of Moving Lanes for Each Approach:	1		
Speed:	40 mph	Speed:	25 mph		
Street		Street			
Width:	70 ft	Width:	50 ft		
Direction:	NB SB	Direction:	EB WB	Total	
Hour Beginning:		Hour Beginning:			
12:00 AM		12:00 AM		0	
1:00 AM		1:00 AM		0	
2:00 AM		2:00 AM		0	
3:00 AM		3:00 AM		0	
4:00 AM		4:00 AM		0	
5:00 AM	215 609	5:00 AM	0 17	841	
6:00 AM	394 393	6:00 AM	0 18	805	
7:00 AM	577 669	7:00 AM	2 30	1,278	
8:00 AM	500 615	8:00 AM	1 27	1,143	
9:00 AM		9:00 AM		0	
10:00 AM		10:00 AM		0	
11:00 AM		11:00 AM		0	
12:00 PM		12:00 PM		0	
1:00 PM		1:00 PM		0	
2:00 PM	238 197	2:00 PM	24 51	510	
3:00 PM	439 257	3:00 PM	34 95	825	
4:00 PM	881 389	4:00 PM	34 217	1,521	
5:00 PM	531 393	5:00 PM	42 105	1,071	
6:00 PM	292 225	6:00 PM	21 60	598	
7:00 PM		7:00 PM		0	
8:00 PM		8:00 PM		0	
9:00 PM		9:00 PM		0	
10:00 PM		10:00 PM		0	
11:00 PM		11:00 PM		0	
24-hour Total	4,067 3,747	24-hour Total	158 620	8,592	

Warrants Evaluted:

Warrant 1, 8-Hour Vehicular Volume - Evaluated for Conditions A & B

Warrant 2, 4-Hour Vehicular Volume - Evaluated

Warrant 3, Peak Hour - Evaluated for Conditions A-2, A-3 (A-1 needs to be evaluated separately), and Condition B

Warrant 4, Pedestrian Volume - Not Analyzed

Warrant 5, School Crossing - Not Analyzed

Warrant 6, Coordinated Signal System - Not Analyzed

Warrant 7, Accident Experience - Not Analyzed

Warrant 8, Roadway Network - Not Analyzed

Warrant 9, Intersection Near a Grade Crossing - Not Analyzed

WARRANT 1, 8-HOUR VEHICULAR VOLUME

	MAJOR			MINOR			<u>A</u>	<u>B</u>
	NB	SB	Total	EB	WB	Max		
4:00 PM	881	389	1270	34	217	217	Y	Y
7:00 AM	577	669	1246	2	30	30	N	N
8:00 AM	500	615	1115	1	27	27	N	N
5:00 PM	531	393	924	42	105	105	N	Y
5:00 AM	215	609	824	0	17	17	N	N
3:00 PM	439	257	696	34	95	95	N	N
6:00 AM	394	393	787	0	18	18	N	N
6:00 PM	292	225	517	21	60	60	N	N
2:00 PM	238	197	435	24	51	51	N	N
12:00 AM	0	0	0	0	0	0	N	N
2:00 AM	0	0	0	0	0	0	N	N
2:00 AM	0	0	0	0	0	0	N	N

Warrant Requirements:

Major Street Lanes: 2

Minor Street Lanes: 1

CONDITION A - Minimum Vehicular Volume

Minimum Volume on Combined Major Street Approaches: 600

Minimum Volume on Higher Minor Street Approach: 150

CONDITION B - Interruption of Continuous Traffic

Minimum Volume on Combined Major Street Approaches: 900

Minimum Volume on Higher Minor Street Approach: 75

IS CONDITION A OF SIGNAL WARRANT 1 MET? NO**IS CONDITION B OF SIGNAL WARRANT 1 MET? NO****IS COMBINED CONDITIONS A & B MET AT 80% LEVEL? NO**

Note: Signal Warrant 1 is met if either Condition A or Condition B is met.

WARRANT 2, FOUR HOUR VEHICULAR VOLUME

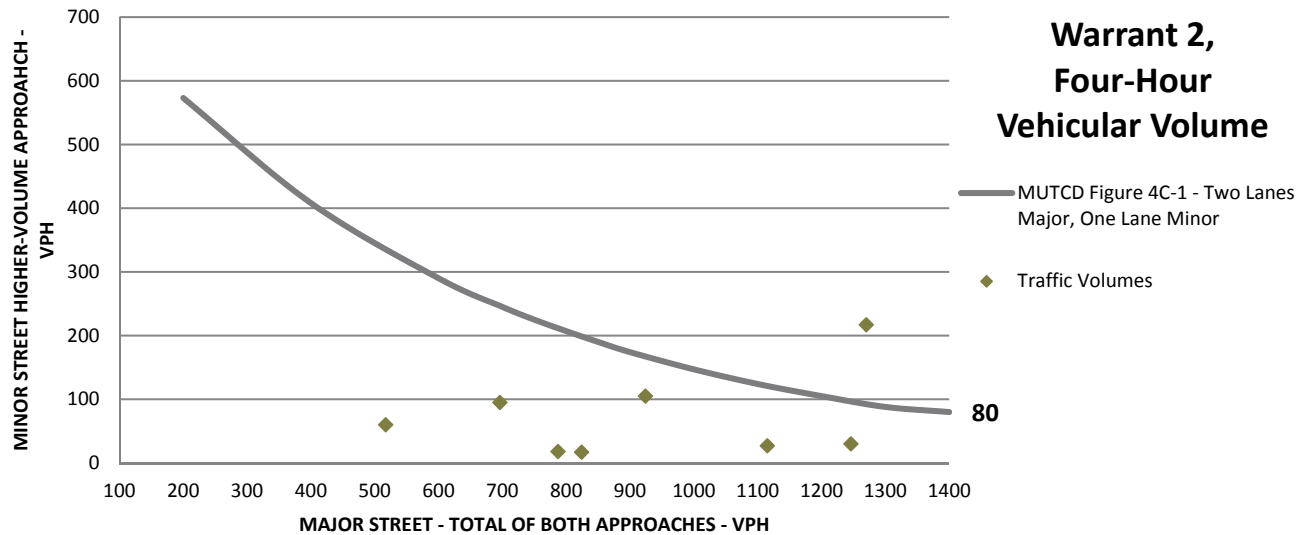
	MAJOR			MINOR			Calculated	
	NB	SB	Total	EB	WB	Max	Threshold	
4:00 PM	881	389	1,270	34	217	217	93	Y
7:00 AM	577	669	1,246	2	30	30	97	N
8:00 AM	500	615	1,115	1	27	27	121	N
5:00 PM	531	393	924	42	105	105	167	N
5:00 AM	215	609	824	0	17	17	198	N
3:00 PM	439	257	696	34	95	95	247	N
6:00 AM	394	393	787	0	18	18	211	N
6:00 PM	292	225	517	21	60	60	334	N

Warrant Requirements:

Major Street Lanes: 2

Minor Street Lanes: 1

IS SIGNAL WARRANT 2 MET? NO



WARRANT 3, PEAK HOUR VEHICULAR VOLUME

	MAJOR			MINOR			Calculated Threshold (B)	A-2&3	B
	NB	SB	Total	EB	WB	Max			
4:00 PM	881	389	1,270	34	217	217	200	Y	Y
7:00 AM	577	669	1,246	2	30	30	207	N	N
8:00 AM	500	615	1,115	1	27	27	245	N	N
5:00 PM	531	393	924	42	105	105	314	Y	N

Warrant Requirements:

Major Street Lanes: 2

Minor Street Lanes: 1

CONDITION A-1 - Stopped Delay

Cannot be evaluated based on volumes alone. Condition met if traffic on one minor-street approach (one direction only) controlled by STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach.

CONDITION A-2 - Minor Street Volume

Minimum Volume on Higher Minor Street Approach: 100

CONDITION A-3 - Total Approach Volume

Minimum Volume of Total Approaches: 800

CONDITION B - Plot of Minor Street Volume (high vol approach) vs. Major Street Volume (Both approaches)**ARE CONDITIONS A-2 AND A-3 OF SIGNAL WARRANT 3 MET?****YES** Stopped Delay Needs to be Checked

Note: All 3 subsections of Condition A must be met to warrant signal.

IS CONDITION B OF SIGNAL WARRANT 3 MET?**YES**

Note: Signal Warrant 3 is met if either Condition A or Condition B is met.

