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# Lake Loon Development

## Transportation Impact Study

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# EXECUTIVE SUMMARY

## LAKE LOON DEVELOPMENT

This study was prepared to identify the anticipated impacts of the proposed Lake Loon development on the surrounding roadway and active transportation networks. The development is located along the Lake Loon waterfront in Dartmouth, Nova Scotia and consists of about 300 units in a dedicated Retirement Living Complex, and about 300 Seniors Apartments in a second building that is targeted as complementary senior adult housing.

The development is located immediately adjacent to the Main Street and Forest Hills Parkway / Forest Hills Extension transportation corridors and has direct access to Main Street at two locations, including the existing Loonview Lane. Loonview was constructed to service an earlier proposed development on these lands, of which one small residential building was constructed on the site at that time and is fully functional. Since then, the lands have been consolidated and re-envisioned as presented in this report.

It is recognized that Main Street is a busy corridor and occasionally experiences some congestion during peak hours. It is also recognized that the current zoning allows for a variety of different land uses that could potentially generate significantly more traffic than is being proposed in this report. The current proposed development strives to find a balance between: a reasonable level of density to make the redevelopment of the lands financially feasible; a location close to major transportation routes and commercial centers to limit kilometers traveled from more distant development areas; and, land uses that complement the surrounding area.

The study shows that the retirement living complex has very low trip generation rates that contribute relatively few peak hour trips to the road network. The remaining residential units are also oriented towards an adult seniors

population and are therefore expected to result in peak hour trip generation rates lower than typical residential land uses.

In the overall context of the Main Street corridor, the critical intersection is the Main Street and Forest Hills Parkway / Extension intersection due to the substantial volumes on all four legs of the intersection. All other intersections and driveways experience heavy peak directional movements on Main Street (westbound in the AM peak and eastbound in the PM peak) though side street volumes are comparatively low and function at reasonable levels of service.

Corridor operations benefit significantly by the presence of 3 sets of traffic signals in relatively close proximity (~160 meters between Forest Hills and Panavista, and ~500 meters between Panavista and Montague), which generates frequent gaps in traffic on Main Street. These gaps aid in allowing side street traffic from the various roads and driveways connecting to Main Street to operate with reasonable levels of service.

At the Forest Hills / Main Street intersection, changes in all measures of performance related to the proposed

development are negligible given the magnitude of new development traffic compared to the existing and future traffic already on the road network. The results show that the intersection occasionally operates near capacity today, and will continue to do so in the future in the absence of network upgrades. It is expected that with the development and background traffic in place, future operations in the corridor will be indistinguishable from current operations.

It is understood that HRM is currently in the process of reviewing the Main Street corridor for potential improvements. This parcel of land near the Forest Hills / Main Street intersection is being developed in a manner that respects the existing characteristics of the Main Street corridor, and presents a number of opportunities to help facilitate improvements that could be mutually beneficial to HRM, Nova Scotia Public Works and the various land owners in area. This could include considerations such as improvements to traffic signal technologies, improvements to active transportation trails and sidewalks, or intersection geometric improvements to aid in capacity accommodation.

We trust that this report satisfies the Halifax Regional Municipalities requirements for the preparation of a development Transportation Impact Study. Should there be any questions or comments regarding the content of the study, please do not hesitate to contact the undersigned.

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# 01 Introduction and Existing Conditions



## 1.1 Background and Context

This study was prepared to determine the anticipated impacts of a proposed development located in the northeast quadrant of the Main Street intersection with the Forest Hills Parkway / Forest Hills Extension in Dartmouth, Nova Scotia. This proposal represents the consolidation of number of land parcels to supplement past construction that has occurred on one of the sites. Past development includes two, 2-story multi-unit residential buildings and the construction of the Loonview Lane connection to Main Street.

This area has been subject to a variety of development proposals over the past decade and traffic studies have been previously prepared by SNC-Lavalin (2011 and 2013) and Genivar (2013). A supplementary access options report was also prepared for this area by WSP (2017).

The larger undeveloped portion of land proposed to include a seniors retirement living complex and a multi-unit residential building targeted toward adult senior living. The development will be accessed by two connection points with the main access at the existing Loonview Lane, and a second access point is proposed at a location similar to the driveway that was used for access to the former multi-tenant commercial complex that was demolished in 2014.

These access points are located between three sets of Main Street traffic signals located at Forest Hills Parkway/Extension, the Sobeys entrance at Panavista Drive, and the Montague Road/Hillsboro Drive intersection. The area is commercial in nature and is a primary commuter route with direct connections to major roadway corridors in all directions.



## 1.2 Study Area

The development fronts onto Main Street and is in close proximity to the Forest Hills Parkway / Extension located immediately to the west of the site. To effectively determine the potential impacts of the development and the ability of the transportation network to accommodate the proposed development, the study area extends from the intersection of Main Street and Forest Hills, to the intersection of Main Street with Montague Road / Hillsboro Drive. Beyond these points, development traffic is too insignificant to have any discernible impacts.

## 1.3 Roadway Infrastructure

### Main Street

Main Street (Route 7) is a major arterial roadway extending from the Circumferential Highway (Highway 111) at its east end and transitions to Highway 107 extending to Musquodoboit Harbour close to 25 kilometers to the east. In the vicinity of the development, Main Street is a 4-lane undivided roadway with left turn auxiliary lanes. The left turn lanes are configured as dedicated left turn lanes between Forest Hills and Panavista Drive and transition to mostly two-way-left turn lanes east of Panavista.

Concrete sidewalks are present on both sides of the roadway separated by a grassed boulevard in most areas with the exception of approximately 80 meters of sidewalk on the north side of Main Street adjacent to the development site where it is placed directly on the back of the curb. The signalized intersections at Panavista and Forest Hills are about 160 meters apart, and the Panavista Signals are about 500 meters away from the Montague signals to the west. There are numerous commercial driveways along this section of roadway.

### Forest Hills Parkway / Forest Hills Extension

The Forest Hills Extension between Main Street and north to Highway 118 is a two-lane highway with rural cross section and a posted speed of 100 k/hr. It is an access controlled highway connecting Portland Street and Main Street to the Burnside Industrial Park, and in the near future, to the Burnside Connector with access directly to Highway 102.

South of Main Street, Forest Hills Parkway is two-lane urban undivided roadway connecting Main Street to Portland Street approximately 2.6 kilometers to the south. There are multiple signalized intersections with dedicated left turn lanes and additional intersections servicing the surrounding residential neighbourhoods on either side of the road. Over the past couple years, a new off-road multi-use trail has been constructed along the east side of Forest Hills



Main Street at Forest Hills



Main Street at Panavista



Main at Loonview Lane



Forest Hills Facing North to Main



Forest Hills Facing South to Main

Parkway between Main Street and Portland Street and includes direct access to the various Cole Harbour Place facilities adjacent to the roadway.



## 1.4 Other Transportation Infrastructure

### Active Transportation

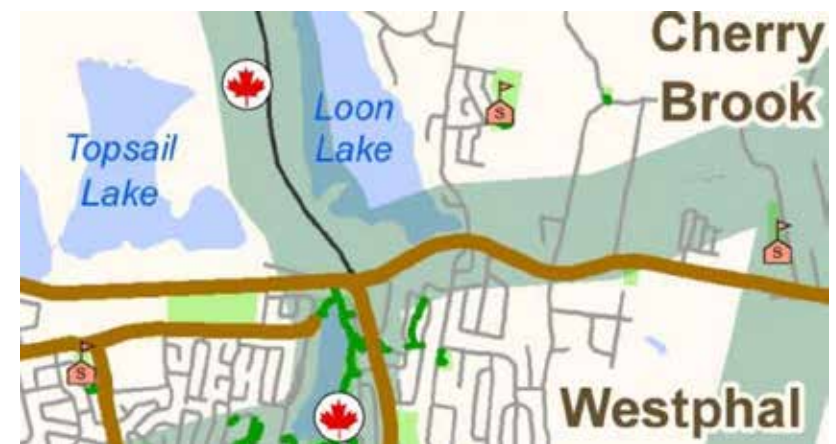
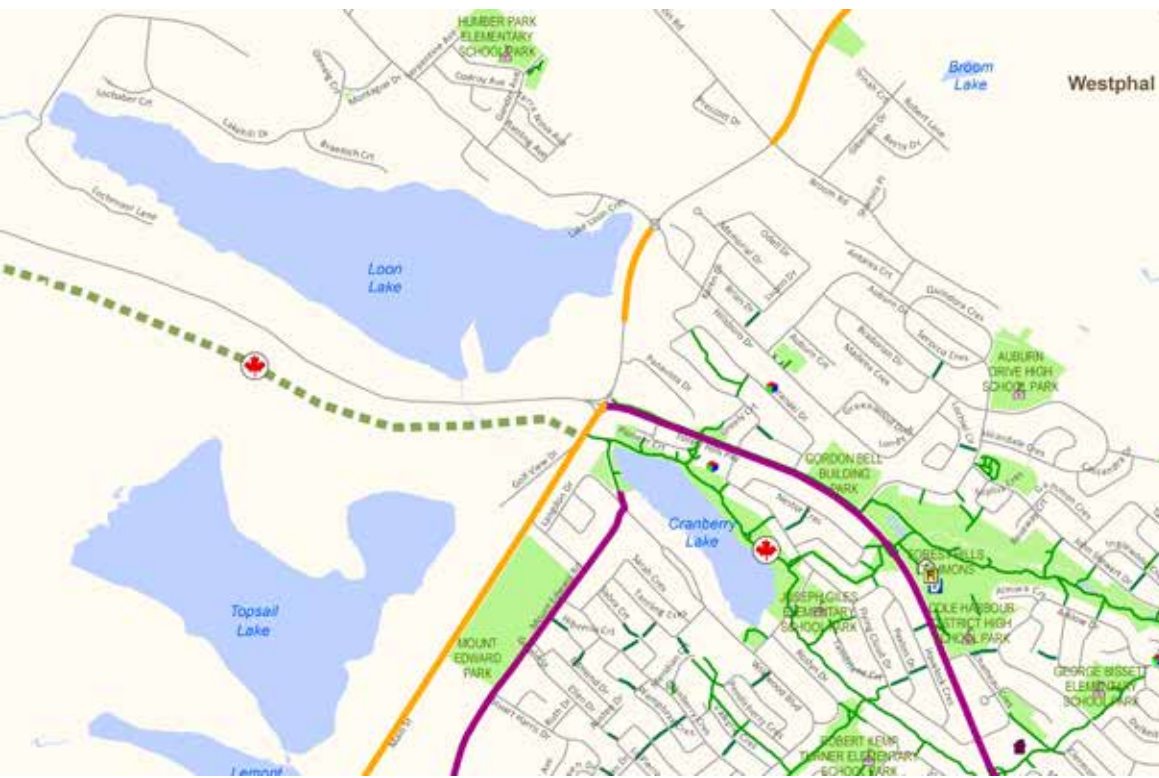
The HRM active transportation web site shows a variety of existing and future pedestrian and cycling facilities through the project area. Existing sidewalks are in place in many locations but do not provide a consistent level of connectivity and facility type. For example, sidewalks on Main Street adjacent to the development do not include a boulevard for separation in some locations, and the northeast crossing of the Forest Hills / Main intersection terminates at an informal gravel/mud pathway leading to the commercial complex on that corner.

Sidewalks west of Forest Hills exist only on the south side of Main Street and sidewalks along Forest Hills Parkway south of Main Street terminate at Cedarwood Drive. That said, this south portion of the Forest Hill Parkway has just undergone a significant upgrade to include a full multi-use trail along the east side of the street that extends from Main Street to Portland Street. The figure below was taken from the Candidate Bicycle Routes and Greenway

Network maps available on the HRM website and shows that this recent upgrade (purple line) fulfills a portion of the envisioned AT network in this area. The figure also shows:

- Existing on-road bike lanes currently along much of Main Street (yellow lines), though gaps exist between MacLaughlin / Broom Road and Montague / Hillsboro Drive, as well as between Loonview Lane and Forest Hills.
- The extension of the Trans Canada Trail on the west side of the Forest Hills Extension is a significant future AT initiative for the area.

The figure below and to the right, shows the future intent of AT connectivity through this area including completion of facilities along Main Street past the development.



## Transit

Transit routes existing within the vicinity of the development, through a direct route past the site is not available at present. Existing service includes routes 61 and 68 that travel through the Hillsboro / Montague / Main Street intersection about 450 metres to the east of the development, and routes 62, 68 and 78 that pass through the intersection of the Forest Hills Parkway with Taranaki / Flying Cloud Drive about 500 meters to the south of the development.

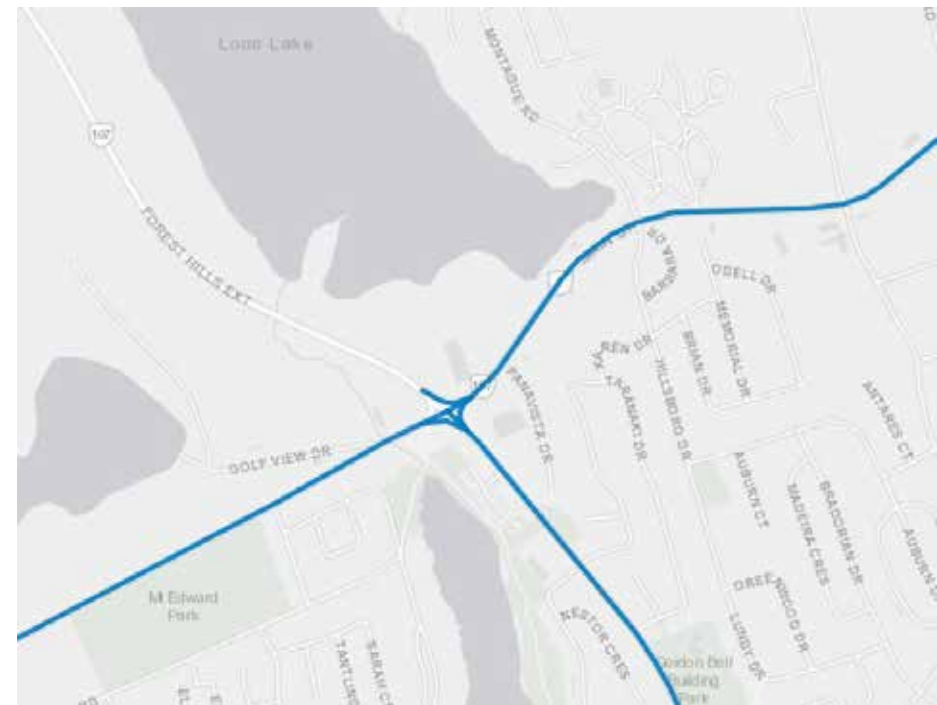
Discussions contained within the Halifax Transit Moving Forward Together Plan suggest that transit demands do not clearly identify the need for a route along Main Street and at this time, it is our understanding the no additional transit services are planned for the portions of Main Street adjacent to the development. With respect to the development, the developer has indicated that there will be a shuttle service provided for residents wishing to access off-site destinations individually or as small groups.



## Truck Routes

Data contained on the HRM Open Data web portal indicated that Main Street and Forest Hills Parkway adjacent to the development are designated as full time truck routes as per By-Law T400, Respecting The Establishment Of Truck Routes For Certain Trucking Motor Vehicles Within The Halifax Regional Municipality.

The truck routes are shown in blue below. While they do not extend along Forest Hills Extension to the north of Main Street as this section of roadway falls under Provincial jurisdiction, the Forest Hills Extension is a designated truck route providing direct access to Highway 118 and the Burnside Industrial Park.



## 02 Existing and Future Traffic Conditions

## 2.1 Existing Traffic

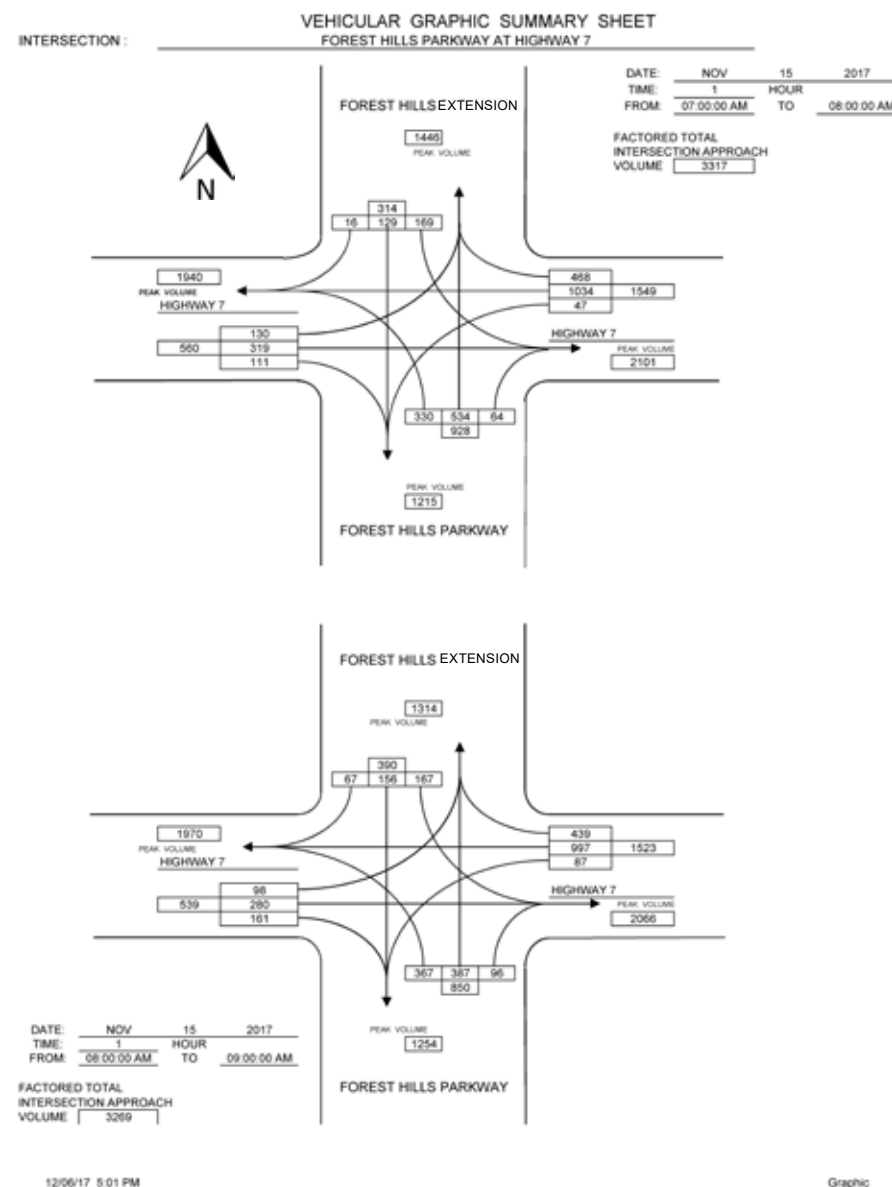
Recent traffic count data was obtained from the Halifax Regional Municipality and included data between 2014 and 2019. Counts were included for the following intersections:

- Main Street and Forest Hills Parkway / Extension (2016 and 2017),
- Main Street and Panavista Drive (2014 and 2017),
- Main Street and Hillsboro Drive / Montague Road (2019),
- Forest Hills Parkway and Taranaki / Flying Cloud Drive (2014), and
- Main Street and Ridgecrest Drive (2017)

To supplement this data, additional counts were carried out at the Main / Forest Hills, and the Main / Panavista intersections in April 2021 prior to the most recent shutdown. Counts were performed between 7:30 to 9:30 AM, 11:30 AM to 1:30 PM and 3:30 to 6:30 PM. Based on previous traffic count data, raw counts were processed for the relevant periods surrounding AM and PM peak hour with a summary of the processed data as well as the AM and PM peak hour data being presented in Appendix A of the report.

The challenge with the most recent counts volumes are understanding the impacts of the COVID-19 pandemic response which has generally reduced traffic volumes across North America. At the time of the counts, volumes on the road network appeared to be closer to normal peak hour conditions than during shutdown periods, though it was not possible to confirm their accuracy relative to pre-pandemic conditions. Similarly, the 2017 pre-pandemic volumes are available but challenging to establish a accurate growth rate that may have reasonably occurred between 2017 and 2021.

For the purposes of this study, both sets of volumes were reviewed and reasonable assumptions were made in order to estimate practical traffic volumes to use for analysis purposes.



## 2.2 Project Time Horizons

The analysis establishes a 2021 base year with the overall development expected to be constructed over the next 5-year time horizon. For the purposes of evaluating future traffic impacts, a 10-year time horizon extending to 2031 (built out + 5 years) was assumed.

## 2.3 Analysis Periods

The development is located in the middle of a commercial corridor that also serve as primary commuter routes during weekday travel periods. As such, both weekday and weekend traffic is significant, though the highest volumes along the corridor can consistently be found during the weekday commuter peak hours. Therefore, the AM and PM weekday peak hours have been selected as the analysis periods for the study.

## 2.4 Traffic Growth

Estimating future traffic growth has become a more challenging endeavor given a wide variety of impacts that affect travel decisions. Some of these considerations include:

- Timing and extent of recovery from the COVID related impacts to the traffic network, including impacts on transit, AT traffic and vehicle traffic;
- Shifts to alternate modes of travel (both natural and COVID induced) including aggressive initiatives and investment by HRM in AT and transit shifts;
- Increasing opportunities for alternate work arrangements including work from home opportunities, flexible travel arrangements and location options;
- Natural wider area traffic growth;
- Technology shifts toward electric automobile and self-driving vehicles;
- The pending opening of the Burnside Connector; and,
- Future road improvements including the potential for the Cherry Brook Connector.

To quantify all of these in a meaningful manner is very challenging and speculative at best, though there are a number of criteria that point towards relatively low average annual growth rates in this study area:

1. Review of historical NSPW counts on the Forest Hills Extension near the development suggest growth in traffic between 2012 and 2017 but then limited growth (or potentially a negative growth rate) between 2017 and 2021. Historic counts along Main Street east of the site are in the range of 0.5 - 0.7%.
2. The combination of limited route options and frequent congestion on Main Street discourage peak hour growth and typically result in the spreading of peak traffic volumes over a longer period of time. This limits growth potential within the critical peak hours.
3. Areas feeding traffic growth on Main Street have not been identified as primary growth areas in the regional planning process. This limits growth opportunities that factor into traffic growth projections.
4. Longer term growth projections used in the Downtown Dartmouth Traffic Study used annual growth rates of 0.5% based guidance from HRM using their longer term regional planning modeling exercises. While the study was carried out a number of years ago, the underlying growth principles for this area remain similar.

For these reasons, this study was completed considering a sensitivity analysis approach in order to identify key triggers in the network that suggest certain upgrades or modifications to existing infrastructure. Baseline volumes were established for 2021 by consolidating historical and recent traffic counts and adjusting to the 2021 base year. In consideration of the above noted future growth impacts, most of which are likely to limit vehicular traffic growth, an annual traffic growth rate of 0.5% was applied to all traffic along the corridor to account for general background traffic growth above and beyond what is accounted for specifically by additional development traffic.

# 03 Proposed Development



### Proposed Development

The proposed site is focused around the construction of an approximately 300-unit seniors retirement living complex (Building B) and an additional 300 units aimed towards seniors residential apartments (Building A). Both buildings are serviced by surface and underground parking structures with access to both Loonview Lane and to a new driveway located just west of the existing Fast Fuels development. This secondary driveway is in approximately the same location as the driveway that previously served the commercial development on the same parcel of land as Building B up to 2014.

The development is expected to include a variety of resident-use only amenities and services, and may include: a dining rooms; bistro/bar; small convenience store; hair salon; spa / wellness facilities; pool / sauna; fitness facilities / exercise classes; golf simulator; on-site medical; theatre; chapel; activity rooms; courts (badminton, pickleball, etc...); hobby kitchens / cooking classes / family dining functions; package delivery systems to facilitate on line shopping; and, outdoor amenity spaces.

## 3.1 Trip Generation

### Trips Generated by the Development

New trips generated by the development were estimated based on the Institute of Transportation Engineers (ITE) Trip Generation Guide (10th Edition). The trip generation table below shows the anticipated new trips to and from the road network for a 300-unit retirement living complex, and a 300-unit seniors apartment building. Due to the nature of the development and proposed land uses, peak hour trip generation rates are relatively low as compared to regular residential apartments or condominiums.

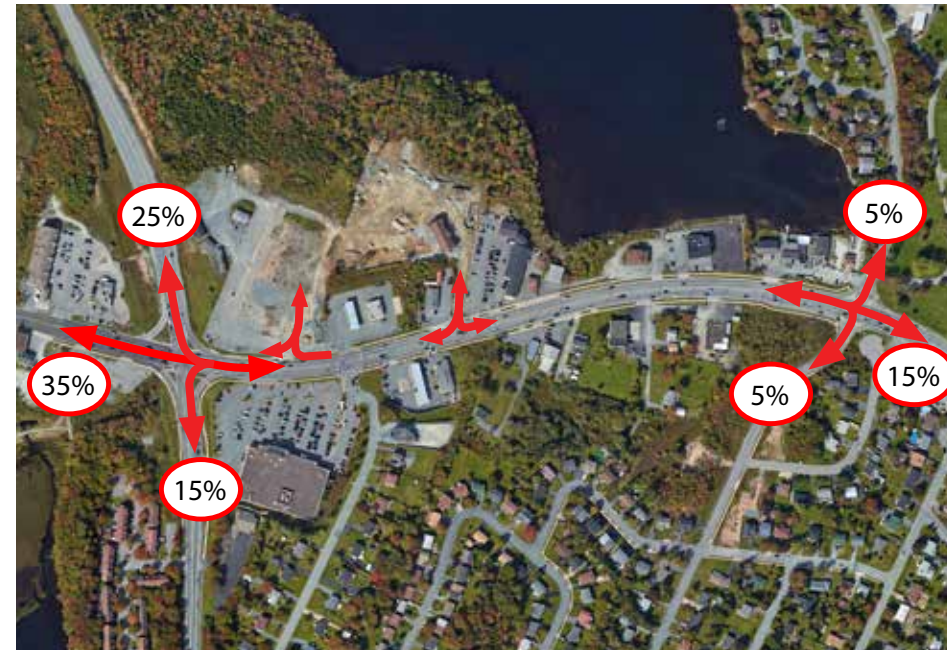
### Transit and Active Transportation Impacts

The development is located in close proximity to major transportation routes, though at this time does not have a transit route directly adjacent to the development. It is expected that residents of the seniors buildings and their visitors will have a low likelihood of using transit services, particularly with a 400 - 500 meter walking requirement to the nearest stop locations. It is more likely that residents will utilize the proposed shuttle services provided by the development, taxis or public shuttle services to access off-site destinations, with such services being unlikely to impact the overall number of vehicle trips to and from the site. For the purposes of this study, no further reductions in trip generation rates were applied for increased bus service. Note that this assumption could change if more direct transit service were to be provided adjacent to this development.

With respect to AT traffic, again some uptake is expected primarily from the residential components of the development. Similar to transit, modal shares to AT are expected to be consistent with similar developments and therefore have some modal split already accounted for in the trip generation rates below. Therefore, no further reductions to trip generation rates were accounted for due to active transportation uptake.

Land Use	Trip Code	# Units	Variable	AM Peak			PM Peak		
				Enter	Exit	TOTAL	Enter	Exit	TOTAL
Retirement Living Complex	253	300	Units	10	7	17	25	22	47
Seniors Apartments	252	300	Units	21	39	60	41	33	74
<b>TOTAL</b>				<b>31</b>	<b>46</b>	<b>77</b>	<b>66</b>	<b>55</b>	<b>121</b>

## 3.2 Trip Distribution and Assignment



### Trip Distribution

Trips to and from the proposed site are expected to distribute themselves in a manner similar to today's traffic distribution. The distributions in the above figure were based on existing movements at various intersections throughout the study area which consistently suggest that movements to and from Main Street occur at a ratio of about 75% to and from the west and 25% to and from the east. At the intersections, existing trip distribution by movement was used to further distribute traffic through the network. These assumptions were further evaluated based on field observations and assumptions regarding logical route choices to and from the development.

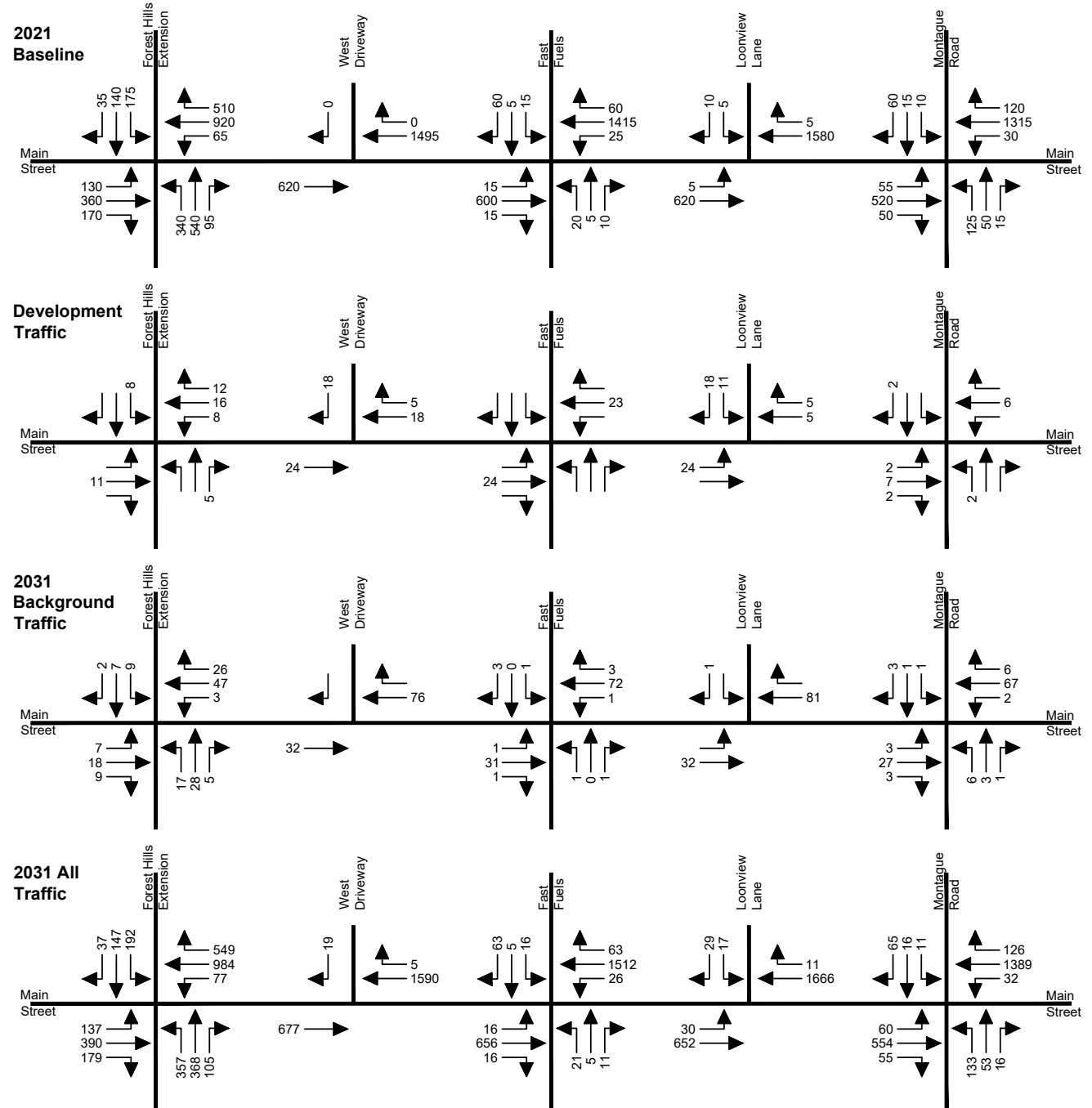
### Trip Assignment

The new traffic volumes to and from the development were assigned to the road network based on the most logical access points to the site given the above distribution and the portion of units located in each segment of the site. The assignment process also assumed that the west site driveway is configured as a right-in, right-out access only. The traffic volume assignments used in the analysis included in Appendix C of this report and summarized on the following page.

## AM Peak Hour Trip Summaries

The figure to the right shows the breakdown of traffic volumes composing the full 2031 analysis volumes during the AM peak period. This includes:

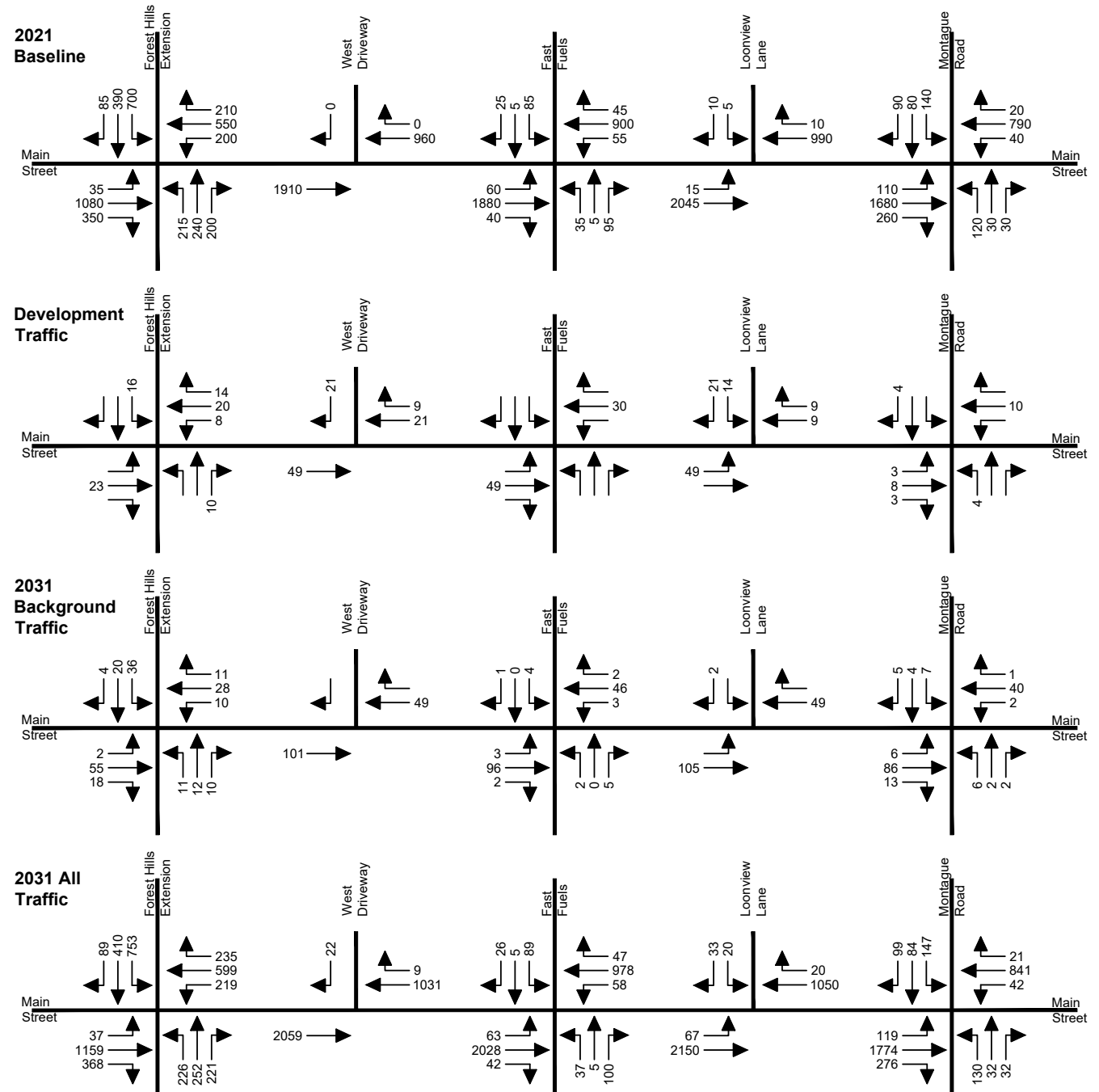
- 2021 Baseline Volumes
- Development Volumes
- Background traffic growth between 2021 and 2031



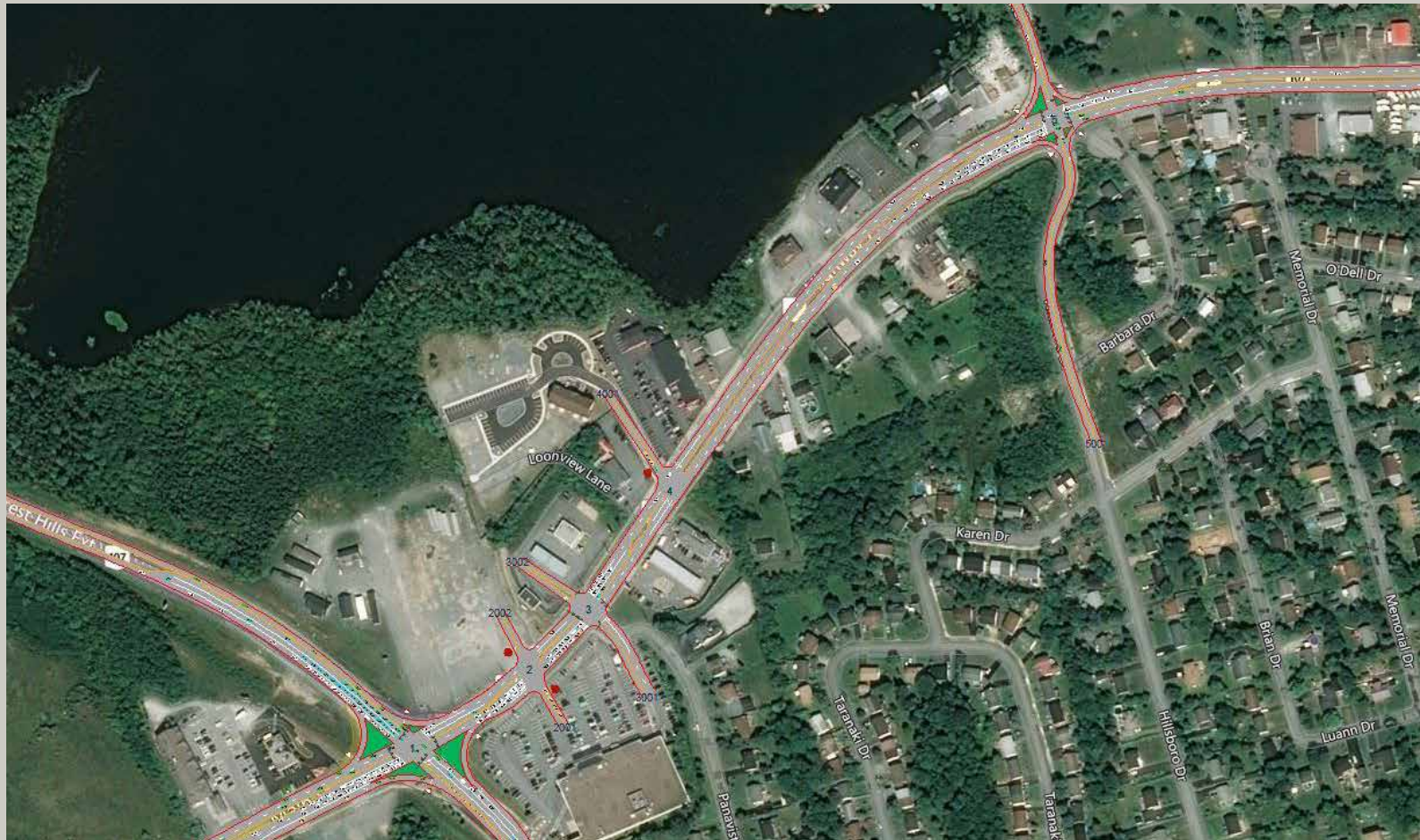
## PM Peak Hour Trip Summaries

The figure to the right shows the breakdown of traffic volumes composing the full 2031 analysis volumes during the PM peak period. This includes:

- 2021 Baseline Volumes
- Development Volumes
- Background traffic growth between 2021 and 2031



# 04 Transportation Analysis



## 4.1 Transportation Modeling

A detailed traffic model was prepared using the Synchro/SimTraffic (v.11) platform for the weekday AM and PM peak hours of analysis. The model was used to gain insight into operations and capacity utilization at the various intersections directly impacted by the proposed development under each of the traffic loading scenarios. The analysis included the following models for each of the AM and PM peak hours:

- **2021 Baseline** conditions,
- **2026** conditions with **development** traffic only,
- **2031** future conditions with **background** traffic only, and
- **2031** Future conditions with **background and full development** traffic.

The model preparation utilized the Traffic Impact Analysis tool set contained within the Synchro model to distribute development traffic throughout the study area and for the application of future growth of background traffic. The figure below identifies the main intersections reviewed in the analysis.

The results of the modeling exercise are summarized by individual intersection for both the AM and PM peak hours. Results are shown in both graphical format and tabular form where required to allow for the quick comparison of key performance criteria between the different analysis scenarios. All sections include supporting text that highlights key considerations at the intersection and connecting roadways.

Key performance indicators used in this report include:

- Peak hour volumes (vehicles / hour) by intersection turning movement,
- Volume to capacity ratios (V/C) by movement,
- Average Delay (sec/vehicle), and
- 95% Queue lengths.

The summary figures and tables are followed by a brief discussion of the results for each peak period at each intersection highlighting key findings. Additional details are provided in the Synchro reports provided in Appendix D of this report.





## 4.3 Main Street and Panavista Drive

Peak direction volumes on Main Street remain high during the peak hours with the highest volumes occurring the in westbound (inbound) direction during the AM peak hour, and the eastbound (outbound direction during the PM peak hour). These volumes result in peak movement capacity utilization of about 90%.

Side road volumes from the Sobeys / Panavista and the Fast Fuels approaches are very low requiring only minimum green time allocations required for pedestrian crossing accommodation. This allows the majority of green time to be attributed to Main Street movements which helps limit delays and queues on Main Street. Two key factors need to be considered and balanced at this location:

1. Traffic signal timing needs to be optimized to maximize green time to Main Street movements, but at the same time they should not be too long resulting in excessive delays for side street movements; and,
2. Coordination of green time progression between these signals and the Main / Forest Hills intersection signals is essential to minimize the potential of eastbound queuing at the Panavista / Sobeys intersection interfering with (reducing the capacity of) the eastbound through and southbound left movements at the Forest Hills intersection.

		Main and Panavista AM PEAK											
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
		↖	→	↗	↖	→	↗	↖	→	↗	↖	→	↗
2021 Baseline	Vol, veh/h	15	600	15	25	1415	60	21	5	11	16	5	63
	V/C Ratio	0.14	0.52		0.13	0.84		0.04	0.02			0.13	
	Control Delay (s/veh)	20.4	20.5		30.2	20.6		13.8	9			11.5	
	95th %Queue (m)	6	50.1		10	115.6		5.9	3.9			13.6	
2026 Development	Vol, veh/h	15	624	15	25	1438	60	21	5	11	16	5	63
	V/C Ratio	0.14	0.54		0.13	0.85		0.04	0.02			0.13	
	Control Delay (s/veh)	20.4	20.8		30.2	21.3		13.8	9			11.6	
	95th %Queue (m)	6	52.2		10	118.7		5.9	3.9			13.7	
2031 Background	Vol, veh/h	16	631	16	26	1487	63	22	5	12	17	5	66
	V/C Ratio	0.15	0.55		0.14	0.88		0.04	0.03			0.14	
	Control Delay (s/veh)	20.7	20.9		30.3	23.1		13.8	8.8			12.2	
	95th %Queue (m)	6.3	52.9		10.1	134.8		6	4			14.6	
2031 ALL	Vol, veh/h	16	656	16	26	1512	63	22	5	12	17	5	66
	V/C Ratio	0.15	0.57		0.14	0.89		0.04	0.03			0.14	
	Control Delay (s/veh)	20.7	21.2		30.3	24.2		13.8	8.8			12.3	
	95th %Queue (m)	6.3	55.3		10.1	147.9		6	4			14.7	

		Main and Panavista PM PEAK											
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
		↖	→	↗	↖	→	↗	↖	→	↗	↖	→	↗
2021 Baseline	Vol, veh/h	60	1880	40	55	900	45	37	5	100	89	5	26
	V/C Ratio	0.18	0.85		0.45	0.39		0.12	0.22			0.36	
	Control Delay (s/veh)	15.1	25.1		61.5	7.7		33.6	8.7			34.6	
	95th %Queue (m)	8.2	199.6		25.9	49.5		15.6	14.6			38.1	
2026 Development	Vol, veh/h	60	1929	40	55	930	45	37	5	100	89	5	26
	V/C Ratio	0.18	0.87		0.45	0.37		0.12	0.22			0.36	
	Control Delay (s/veh)	15.2	26.4		61.5	7.8		33.6	8.7			34.6	
	95th %Queue (m)	8	204.5		25.9	51.4		15.6	14.6			38.1	
2031 Background	Vol, veh/h	63	1976	42	58	946	47	39	5	105	94	5	27
	V/C Ratio	0.19	0.9		0.48	0.37		0.12	0.23			0.39	
	Control Delay (s/veh)	15.4	27.9		62.7	7.9		33.7	8.5			35.6	
	95th %Queue (m)	8.3	205.4		26.8	52.8		16.2	15			40.2	
2031 ALL	Vol, veh/h	63	2028	42	58	978	47	39	5	105	94	5	27
	V/C Ratio	0.2	0.92		0.48	0.39		0.12	0.23			0.39	
	Control Delay (s/veh)	15.6	29.5		62.7	8		33.7	8.5			35.6	
	95th %Queue (m)	8.2	208		26.8	54.9		16.2	15			40.2	

## 4.4 Main Street and Montague Road / Hillsboro Drive

Volumes at the Montague / Hillsboro intersection are significantly lower than those at the Forest Hills intersection, with the exception of peak direction through movements on Main Street. This intersection also sees a much smaller portion of development related traffic as the majority of development traffic is destined to and from the west.

Similar to the Panavista intersection, side road volumes on Montague and Hillsborough are significantly lower than the volumes on Main Street again resulting in the majority of green time being attributed to Main Street movements.

The highest volumes on Montague and Hillsboro are for the left and right turn movements and volumes suggest that simple full movement green phases in the north and southbound direction will be adequate to accommodate the left turn movements onto Main Street.

Similar to the Panavista intersection, signal optimization to balance maximum green time allocation to Main Street while not causing excessive delays on the side streets is important. Unlike Panavista, there is limited need to coordinate traffic signal timing between adjacent intersection due to the distance between Panavista and Montague / Hillsboro combined with the operational impacts related to the numerous driveways and commercial interests along the corridor.

		Main and Montague / Hillsboro AM PEAK											
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2021 Baseline	Vol, veh/h	58	547	53	32	1384	126	139	56	17	11	17	67
	V/C Ratio	0.26	0.28	0.06	0.06	0.82			0.57			0.2	
	Control Delay (s/veh)	9.7	12	1	6.9	23			35.4			11.7	
	95th %Queue (m)	8.2	40.3	2.2	5.3	152.8			56.3			15.8	
2026 Development	Vol, veh/h	60	555	55	32	1391	126	141	56	17	11	17	69
	V/C Ratio	0.27	0.28	0.06	0.06	0.82			0.58			0.21	
	Control Delay (s/veh)	9.9	12.1	1.1	6.9	23.2			35.6			11.6	
	95th %Queue (m)	8.5	41	2.5	5.3	153.8			56.9			15.9	
2031 Background	Vol, veh/h	61	576	56	34	1455	133	146	59	18	12	18	70
	V/C Ratio	0.27	0.3	0.06	0.07	0.86			0.6			0.21	
	Control Delay (s/veh)	10	12.2	1.2	6.9	25.3			36.5			11.7	
	95th %Queue (m)	8.5	42.7	2.6	5.6	185			59.3			16.6	
2031 ALL	Vol, veh/h	63	583	58	34	1462	133	148	59	18	12	18	72
	V/C Ratio	0.28	0.3	0.06	0.07	0.86			0.61			0.22	
	Control Delay (s/veh)	10.1	12.2	1.3	6.9	25.5			36.7			11.6	
	95th %Queue (m)	8.8	43.2	3	5.6	186.4			60			16.6	

		Main and Montague / Hillsboro PM PEAK											
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2021 Baseline	Vol, veh/h	116	1768	274	42	832	21	126	32	32	147	84	95
	V/C Ratio	0.31	0.9	0.28	0.19	0.46			0.61			0.79	
	Control Delay (s/veh)	9	27.4	3.8	8.5	14.6			36			43.3	
	95th %Queue (m)	14.2	219.4	17.2	6.4	66.2			52			95.2	
2026 Development	Vol, veh/h	119	1777	277	42	842	21	131	32	32	147	84	99
	V/C Ratio	0.33	0.91	0.28	0.19	0.48			0.63			0.8	
	Control Delay (s/veh)	9.4	27.8	3.8	8.5	15.6			37.2			43.8	
	95th %Queue (m)	14.5	221.3	17.4	6.4	67.3			53.8			96.4	
2031 Background	Vol, veh/h	122	1859	287	44	874	22	133	34	34	155	88	100
	V/C Ratio	0.35	0.95	0.29	0.2	0.5			0.65			0.83	
	Control Delay (s/veh)	9.7	32.6	4.1	8.6	15.9			38.2			47.6	
	95th %Queue (m)	14.8	238	119	6.6	70.4			57.2			103	
2031 ALL	Vol, veh/h	125	1867	291	44	885	22	137	34	34	155	88	104
	V/C Ratio	0.36	0.95	0.3	0.2	0.51			0.67			0.84	
	Control Delay (s/veh)	9.9	33.2	4.2	8.6	16			39.5			48.3	
	95th %Queue (m)	15.1	239.8	19.2	6.6	71.5			62			104.6	

## 4.5 Development Driveways - Loonview Lane

The tables to the right show the analysis results for the intersection of Main Street with Loonview Lane. This intersection was constructed as a stop controlled, full movement intersection connecting to Main Street, though it is noted that a stop sign is not presently installed on the southbound Loonview Lane approach. The modeling work for this report assumed a single enter lane and single exit lane to accommodate left turn and right turn movements to and from Main Street. The left turn entry movement to Loonview Lane also assumes the presence of a dedicated left turn lane on Main Street. This lane is already present in the form of a two-way left turn lane which services the existing Loonview Lane, the Gateway Meat Market, and the automotive / barbershop commercial complex on the east side of Loonview Lane. In its current configuration, it also suggests access to the east driveway of the Esso gas station on the south side of Main Street.

The Esso has two driveways and entering left turns are only permitted at the west driveway (closest to Panavista). The eastern-most driveway has a variety of internal conflict points near Main Street and therefore has been restricted to exiting movements only using signage and pavement markings. Pavement markings on Main Street conflict with these restrictions and suggest that a left turn movement is permitted. It is recommended that the center lane left turn markings on Main Street approaching this east driveway be removed and the left turn lane be converted to a dedicated left turn lane in the eastbound direction serving properties on the north side of Main Street.

The Loonview intersection (and adjacent driveways) benefit from the presence of traffic signals on either side of the driveway (Panavista is about 120 meters west and Montague is about 380 meters east). This creates regular gaps in Main Street traffic that allows vehicles to and from the side roads and driveway to operate at a relatively good level of service despite the significant traffic volumes on Main Street. In general, volumes destined to and from the development are considered to be relatively low compared to other intersections and driveways connecting to Main Street in the surrounding areas. It is also expected that future volumes after the development is in place will remain comparatively low.

		East Driveway AM Peak					
		EBL	EBT	WBT	WBR	SBL	SBR
2021 Baseline	Vol, veh/h	5	674	1717	5	5	11
	V/C Ratio	0.01	0.2	0.67	0.34	0.04	0.04
	Control Delay (s/veh)	13.2	0	0	0	13.9	13.9
	95th %Queue (m)	0.3	0	0	0	1	1
2026 Development	Vol, veh/h	32	674	1723	11	17	30
	V/C Ratio	0.07	0.2	0.68	0.34	0.13	0.13
	Control Delay (s/veh)	13.8	0	0	0	16.6	16.6
	95th %Queue (m)	1.9	0	0	0	3.6	3.6
2031 Background	Vol, veh/h	5	709	1805	5	5	12
	V/C Ratio	0.01	0.21	0.71	0.36	0.04	0.04
	Control Delay (s/veh)	13.8	0	0	0	14.1	14.1
	95th %Queue (m)	0.3	0	0	0	1	1
2031 ALL	Vol, veh/h	33	709	1811	12	18	32
	V/C Ratio	0.08	0.21	0.71	0.36	0.15	0.15
	Control Delay (s/veh)	14.6	0	0	0	17.3	17.3
	95th %Queue (m)	2.1	0	0	0	4.1	4.1

		East Driveway PM Peak					
		EBL	EBT	WBT	WBR	SBL	SBR
2021 Baseline	Vol, veh/h	16	2153	1042	11	5	11
	V/C Ratio	0.02	0.63	0.41	0.21	0.04	0.04
	Control Delay (s/veh)	10	0	0	0	13.3	13.3
	95th %Queue (m)	0.5	0	0	0	0.9	0.9
2026 Development	Vol, veh/h	67	2153	1052	20	21	34
	V/C Ratio	0.09	0.63	0.41	0.22	0.15	0.15
	Control Delay (s/veh)	10.4	0	0	0	16.7	16.7
	95th %Queue (m)	2.4	0	0	0	4.2	4.2
2031 Background	Vol, veh/h	17	2263	1096	12	5	12
	V/C Ratio	0.02	0.67	0.43	0.22	0.03	0.03
	Control Delay (s/veh)	10.2	0	0	0	12.2	12.2
	95th %Queue (m)	0.6	0	0	0	0.8	0.8
2031 ALL	Vol, veh/h	71	2263	1105	21	22	36
	V/C Ratio	0.1	0.67	0.43	0.23	0.15	0.15
	Control Delay (s/veh)	10.7	0	0	0	15.5	15.5
	95th %Queue (m)	2.7	0	0	0	4	4

## 4.6 Development Driveways - West Driveway

The western driveway to the development is located just east of the Main Street intersection with Forest Hills and directly across from the Sobeys right-in, right-out driveway on the south side of Main Street. At this location, Main Street consists of two through lanes in each direction with back-to-back dedicated left turn lanes present in the median lane.

To facilitate a left turn lane entry movement from Main Street to the proposed development, an extension of the existing eastbound left turn lane currently servicing the intersection of Main Street with Panavista and the Fast Fuels driveway would be required along with a corresponding reduction of the westbound left turn lane at Forest Hills. Alternatively, a two-way left turn lane could be used, though both options are not considered desirable and are likely to cause operational and safety challenges in this section of the corridor. For these reasons, a left turn entry movement is not recommended.

Similar arguments exist for the provision of a left turn exit movement from the proposed development to Main Street as it would require reconfiguration of the median treatments to allow the left turn movement, while minimizing operational and safety implications given the close proximity to Forest Hills and the opposing Sobeys driveway movements.

From an operational perspective, Synchro model results are not provided for the intersection as the Main Street movements through this intersection are free-flowing, and both the northbound Sobeys and the southbound development driveway are configured as right-in, right-out only movements. This results in minimal delays for vehicles entering and exiting Main Street from the development. Any delays

incurred will typically be related to queues that extend from the Forest Hills / Main intersection during the red-light phase for the westbound movements.

From a geometric design perspective, Nova Scotia Public Works has indicated that the new driveway should be located a minimum of 50 meters from the Forest Hills intersection (measured from end of curb returns). The figure at the bottom of this page shows the 50 meter offset in **RED** and indicates that there is adequate space to accommodate a right-in, right-out driveway at this location.

Nova Scotia Public works has indicated that a permit for this driveway will be required prior to construction. It is recommended that the specific design details for this driveway, including confirmation of spacing, should be provided as part of the detailed design and building approvals stages of the project.



*Note: The west driveway is approximately 100 meters from the northbound through lanes of the Forest Hills Extension, and between 50 and 60 meters from the ends of radius between the driveway and the Main Street right turn channelizations. It is anticipated that a permit for this access will be required through Nova Scotia Public Works.*

# 05 Conclusions and Recommendations



This study was prepared to evaluate the impacts of the proposed Lake Loon development on the surrounding transportation networks. The development is comprised of a seniors retirement living complex and a seniors apartment building, both with low trip generation characteristics. The location is considered a prominent and desirable location given the convenient connections to a variety of major transportation routes, the proximity of numerous amenities, the ability to accommodate additional resident amenities on site, the robust active transportation network surrounding the site, and proximity to Lake Loon.

It is recognized that Main Street is a busy corridor that occasionally experiences some congestion during the peak hours of traffic. In modeling the corridor and reviewing operations, it becomes clear that the quality of travel on the corridor is directly tied to the ability of vehicles to get through the intersection of Main Street and Forest Hills Parkway / Extension. Outside of this intersection, the other signalized intersections at Panavista Road and Montague / Hillsboro can reasonably manage additional traffic with limited impact on intersection level of performance. Furthermore, the relatively close spacing of signalized intersections along this corridor help provide gaps in Main Street traffic that allow lower volume side roads and driveways to operate at a reasonable level of service.

The analysis and investigations contained in this report suggest a number of conclusions and recommendations:

1. The development is intended to include two seniors related land uses, both of which generate traffic volumes significantly lower than traditional residential development. Many of the trips generated by the development are likely to take place outside of typical commuter peak hours, minimizing impacts on the adjacent road network during the highest volume periods of the day.
2. At the critical Main / Forest Hills intersection, the full proposed development contributes less than 2% of the total traffic through the intersection. These volumes are distributed over multiple movements at the intersection, resulting in negligible impacts.
3. The consolidation of lands for this development provides a distinct advantage by allowing entering and exiting traffic to be distributed over two driveways. The consolidation and density also allows the development to include a variety of on-site amenities that further help limit the amount of new traffic contributed to the adjacent road network.
4. The Loonview Lane driveway permits left turn in and out movements and both movements are aided by the presence of traffic signals on either side of this access that creates gaps in Main Street traffic. As such, left turns in and out of the site operate at good levels of service. It is recommended that the two-way left turn lane currently present on Main Street be converted to a dedicated left turn lane in the eastbound direction, servicing properties on the north side of Main Street. This conversion simply enforces the turn restrictions that are already in place at the opposing Esso driveway. It was also noted that a stop sign is not currently present on the Loonview approach to Main Street and it is recommended that a sign and associated stop bar be installed.
5. The west development driveway is located in close proximity to the Main Street / Forest Hill Intersection. As a right-in, right-out access only, the intersection operates with minimal delay or queuing. Nova Scotia Public Works has indicated that a permit will be required for this driveway and that it should be placed 50 meters from the intersection. A preliminary analysis indicates that this spacing can be achieved and should be confirmed during the detailed design stages of the project.

6. Traffic signal coordination is a critical feature of this corridor, particularly between Forest Hills and Panavista signalized intersections. While it is not specifically required to accommodate the proposed development, functional improvements to traffic signal actuation and coordinate between these two intersections can result in improved corridor operations and improved operations of the developments two driveways. Such coordination and that associated queue managements could also provide improved opportunities to permit a left turn exit movement from the west development driveway.
7. There are a number of active transportation improvements that should occur as part of this development work. The three most significant of these include:
  - The existing sidewalk along the north side of Main Street adjacent to the development is located directly on the back of the Main Street curb. Given the volume and speed of traffic on Main Street, it is recommended that the sidewalk or active transportation trail be separated from the roadway by a minimum of 1.5 meters. Site planning should account for such separation, and may also require some coordination with property ownership in the northeast quadrant of the Main / Forest Hills intersection immediately adjacent to the intersection.
  - There is expected to be an increased desire line created between this development and the commercial facilities in the northwest quadrant of the Main / Forest Hills intersection. There is currently only a gravel pathway at this location and it is recommended that the sidewalk connection between the intersection and the lands adjacent to the Tim Horton's building be upgraded to improve connectivity.
  - Internal active transportation facilities should be designed to promote internal AT circulation between the various proposed facilities, routes and loops internal to the site that minimize conflicts with vehicular traffic circulation, and provide safe and efficient connections to the surrounding AT network.
8. HRM is currently undergoing functional planning studies along the Main Street corridor between Forest Hills and Ross Road. It is possible that there may be some mutually beneficial synergies between this development and the functional planning work (i.e. right turn upgrades, traffic signal upgrades, space for AT accommodation etc.). It is recommended that ongoing discussions be initiated to coordinate these opportunities.
9. The Cherry Brook connector has been long discussed as a potential connector route between Main Street and Burnside. Such a connection would significantly reduce traffic on Main Street and reduce the demand on the Main / Forest Hills intersection. In discussions with HRM, it appears that such a connection is likely at least 10 - 20 years in the future.
10. There are a variety of larger scale Transportation Demand Management considerations that must be kept in mind as this and other future developments move forward. These include:
  - COVID related travel impacts (i.e. work from home, work flexibility);
  - HRM's aggressive initiatives for transit and active transportation modal shifts;
  - Autonomous driving vehicles; and,
  - Electric vehicles and other shifts in environmental stewardship.

# APPENDIX A

## TRAFFIC COUNTS

# MANUAL TRAFFIC COUNTS

INTERSECTION:

HIGHWAY 7 AT PANA VISTA DRIVE

WEATHER  
RECORDER

SUNNY & CLEAR  
AA

DAY DATE MONTH YEAR  
THURSDAY 21 SEPT 2017

TIME: 15 MIN INTERVALS		HIGHWAY 7 FROM THE EAST			HIGHWAY 7 FROM THE WEST			FAST FUEL GAS STATION FROM THE NORTH			PANA VISTA DRIVE FROM THE SOUTH			TOTAL
		L	S	R	L	S	R	L	S	R	L	S	R	
07:00:00 AM	07:15:00 AM	6	388	18	1	109	0	1	0	16	3	0	1	543
07:15:00 AM	07:30:00 AM	3	365	12	1	106	0	0	0	12	4	0	2	505
07:30:00 AM	07:45:00 AM	8	336	16	3	96	0	2	0	15	2	0	0	478
07:45:00 AM	08:00:00 AM	6	355	11	3	112	3	0	0	11	7	1	2	511

TOTAL	23	1444	57	8	423	3	3	0	54	16	1	5	2037
PEAK	1524			434			57			22			FACTOR
15 MIN PEAK	1648			472			68			40			
PEAK HOUR FACTOR	0.92			0.92			0.84			0.55			
TWO WAY TOTALS	1955			1948			123			48			
													0.97
													1976

DAY DATE MONTH YEAR  
THURSDAY 21 SEPT 2017

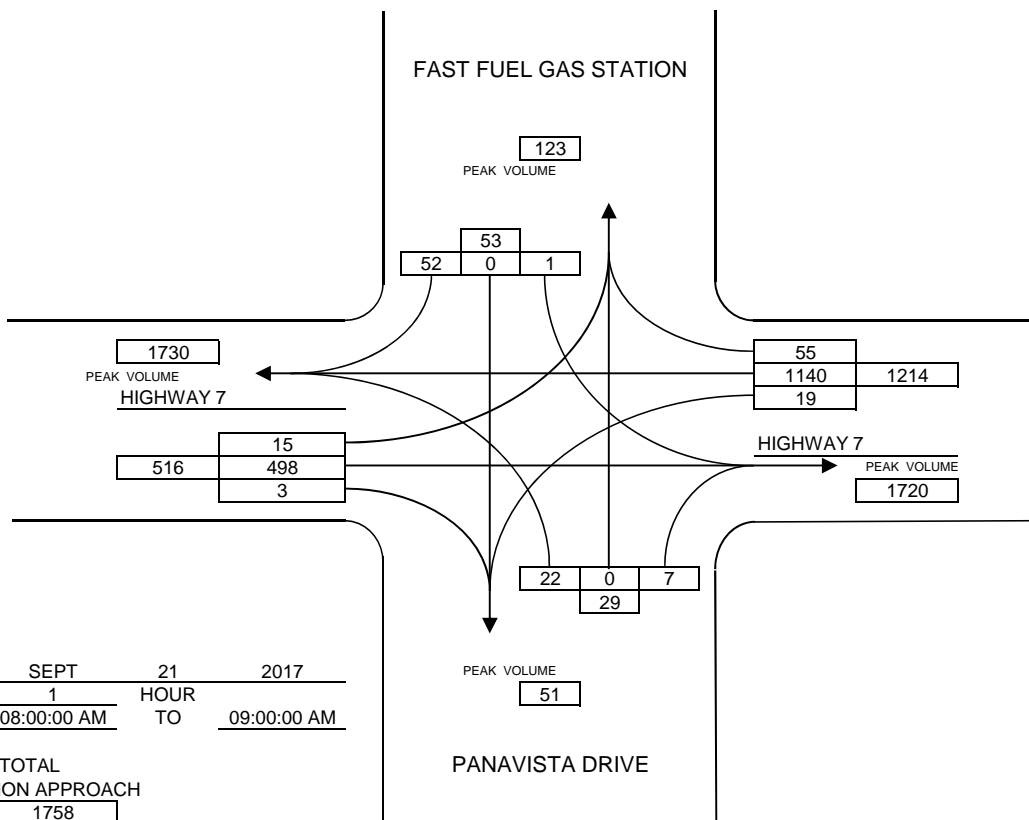
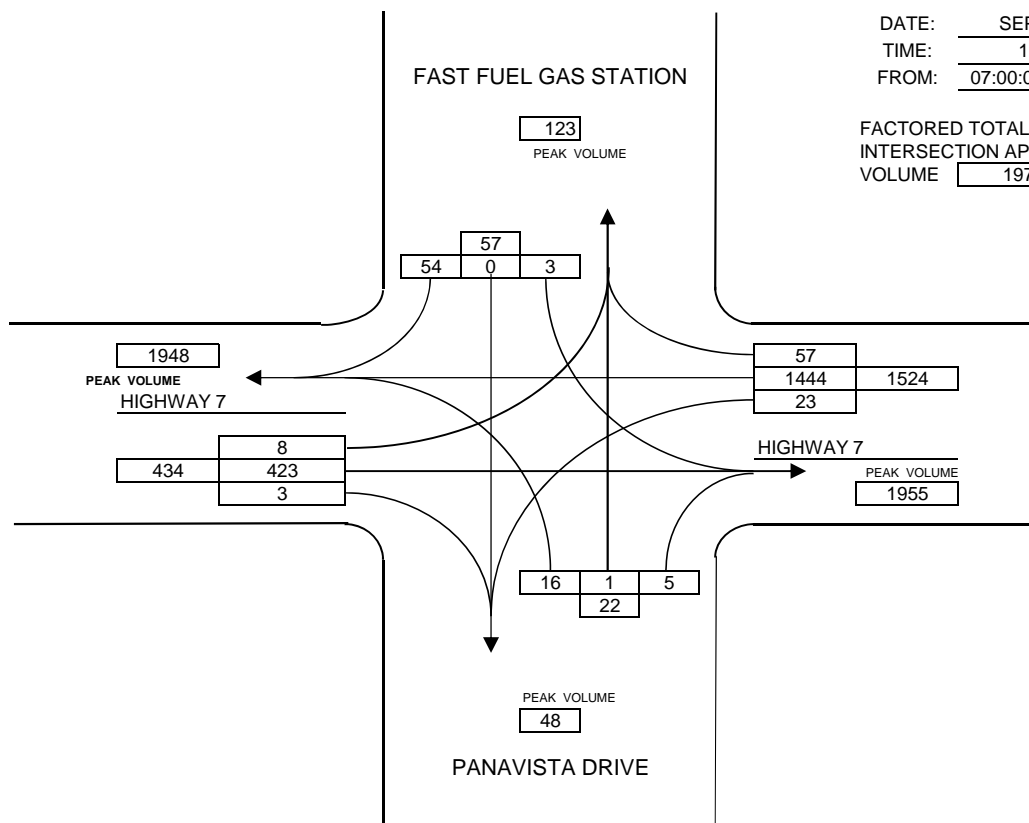
TIME: 15 MIN INTERVALS		FROM THE EAST			FROM THE WEST			FROM THE NORTH			FROM THE SOUTH			TOTAL
		L	S	R	L	S	R	L	S	R	L	S	R	
08:00:00 AM	08:15:00 AM	5	326	14	6	103	0	0	0	15	7	0	3	479
08:15:00 AM	08:30:00 AM	6	299	13	3	151	2	0	0	17	6	0	1	498
08:30:00 AM	08:45:00 AM	5	274	16	2	115	0	1	0	9	5	0	0	427
08:45:00 AM	09:00:00 AM	3	241	12	4	129	1	0	0	11	4	0	3	408

TOTAL	19	1140	55	15	498	3	1	0	52	22	0	7	1812
PEAK	1214			516			53			29			FACTOR
15 MIN PEAK	1380			624			68			40			
PEAK HOUR FACTOR	0.88			0.83			0.78			0.73			
TWO WAY TOTALS	1720			1730			123			51			
													0.97
													1758

# VEHICULAR GRAPHIC SUMMARY SHEET

INTERSECTION :

HIGHWAY 7 AT PANAVIDA DRIVE



# MANUAL TRAFFIC COUNTS

INTERSECTION:

HIGHWAY 7 AT PANA VISTA DRIVE

WEATHER  
RECORDER

SUNNY & CLEAR  
AA

DAY DATE MONTH YEAR  
THURSDAY 21 SEPT 2017

STREET: TIME: 15 MIN INTERVALS		HIGHWAY 7 FROM THE EAST			HIGHWAY 7 FROM THE WEST			FAST FUEL GAS STATION FROM THE NORTH			PANA VISTA DRIVE FROM THE SOUTH			TOTAL
		L	S	R	L	S	R	L	S	R	L	S	R	
04:00:00 PM	04:15:00 PM	9	139	9	7	411	2	19	1	7	6	0	24	634
04:15:00 PM	04:30:00 PM	16	163	12	9	436	3	22	2	5	11	0	19	698
04:30:00 PM	04:45:00 PM	19	176	13	11	413	2	19	0	4	10	1	14	682
04:45:00 PM	05:00:00 PM	7	193	8	13	416	4	23	1	7	6	0	21	699

TOTAL	51	671	42	40	1676	11	83	4	23	33	1	78	2713	
PEAK	764			1727			110			112			FACTOR	
15 MIN PEAK	832			1792			124			120				
PEAK HOUR FACTOR	0.92			0.96			0.89			0.93				
TWO WAY TOTALS	2601			2454			193			178				
														0.97
														2632

DAY DATE MONTH YEAR  
THURSDAY 21 SEPT 2017

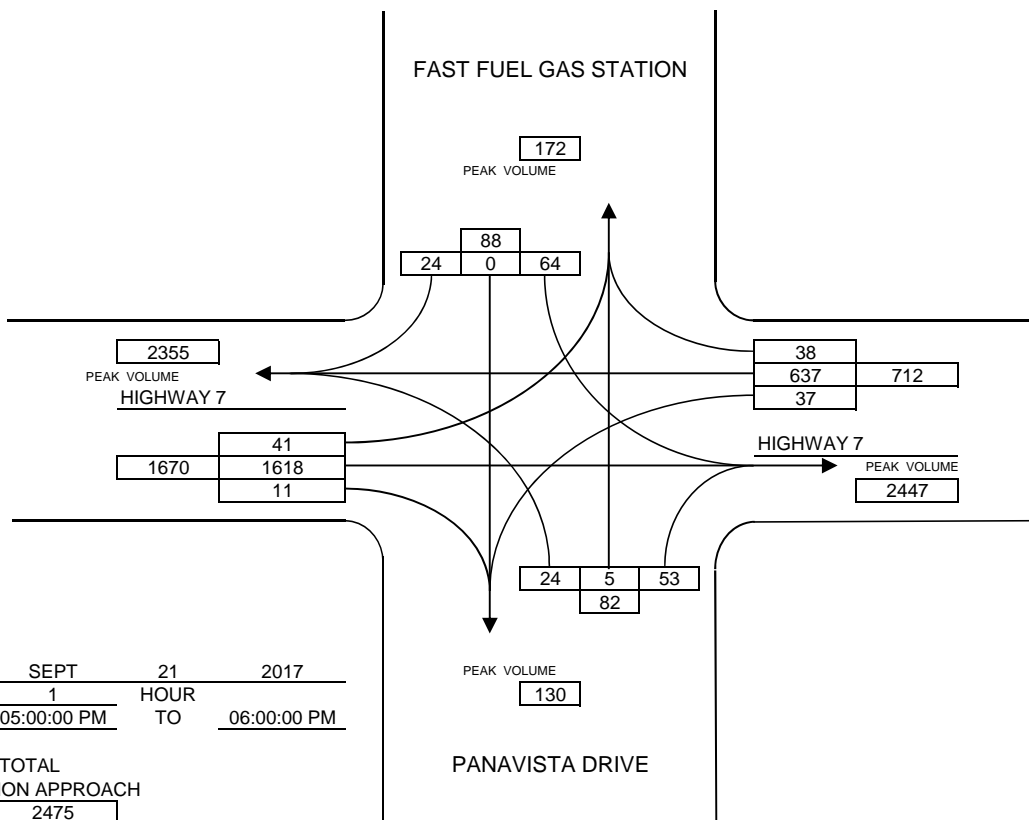
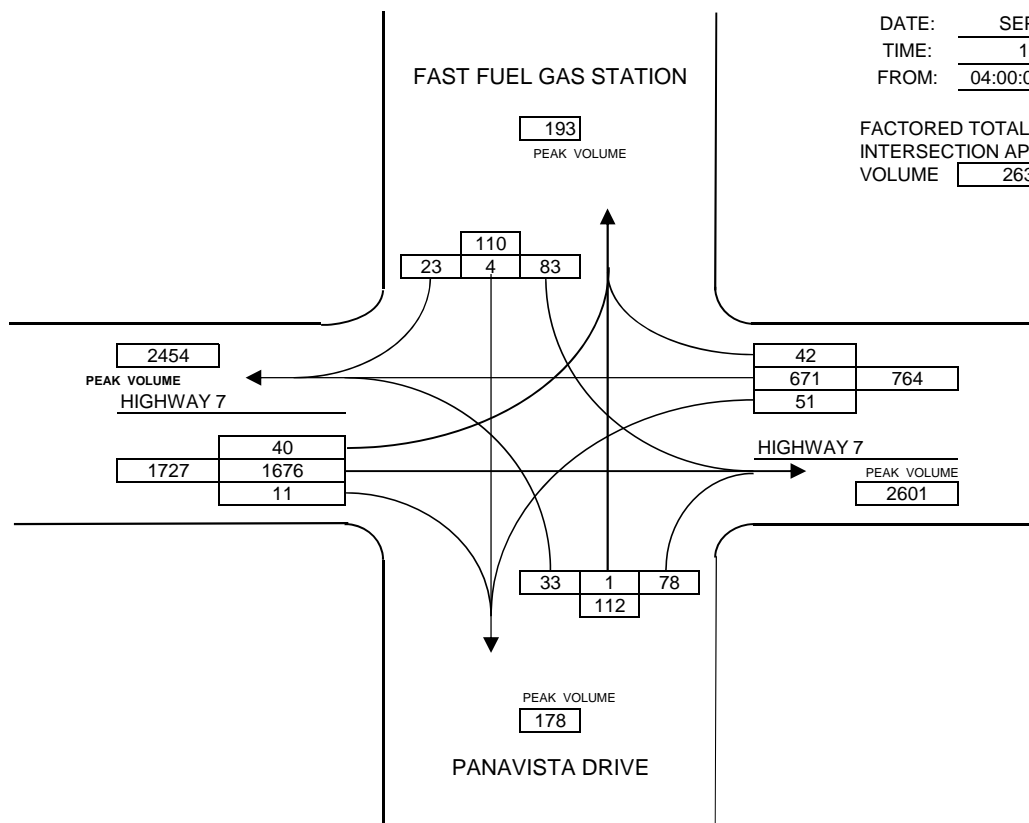
TIME: 15 MIN INTERVALS		FROM THE EAST			FROM THE WEST			FROM THE NORTH			FROM THE SOUTH			TOTAL
		L	S	R	L	S	R	L	S	R	L	S	R	
05:00:00 PM	05:15:00 PM	12	178	6	11	433	3	18	0	8	8	2	14	693
05:15:00 PM	05:30:00 PM	11	163	11	13	429	3	16	0	5	6	0	16	673
05:30:00 PM	05:45:00 PM	8	152	13	9	386	2	19	0	3	6	3	14	615
05:45:00 PM	06:00:00 PM	6	144	8	8	370	3	11	0	8	4	0	9	571

TOTAL	37	637	38	41	1618	11	64	0	24	24	5	53	2552
PEAK	712			1670			88			82			FACTOR
15 MIN PEAK	784			1788			104			96			
PEAK HOUR FACTOR	0.91			0.93			0.85			0.85			
TWO WAY TOTALS	2447			2355			172			130			
0.97													
2475													

# VEHICULAR GRAPHIC SUMMARY SHEET

INTERSECTION :

HIGHWAY 7 AT PANAVIDA DRIVE



# MANUAL TRAFFIC COUNTS

INTERSECTION:

FOREST HILLS PARKWAY AT HIGHWAY 7

WEATHER  
RECORDER

CLEAR  
SS&AA

DAY DATE MONTH YEAR  
WEDNESDAY 15 NOV 2017

TIME: 15 MIN INTERVALS		HIGHWAY 7 FROM THE EAST			HIGHWAY 7 FROM THE WEST			FOREST HILLS PARKWAY FROM THE NORTH			FOREST HILLS PARKWAY FROM THE SOUTH			TOTAL
		L	S	R	L	S	R	L	S	R	L	S	R	
07:00:00 AM	07:15:00 AM	11	317	115	23	77	16	41	30	1	117	136	15	899
07:15:00 AM	07:30:00 AM	14	229	90	37	65	17	36	22	0	122	151	11	794
07:30:00 AM	07:45:00 AM	8	243	136	40	78	29	41	47	3	86	123	16	850
07:45:00 AM	08:00:00 AM	14	245	127	30	99	49	51	30	12	5	124	22	808

TOTAL	47	1034	468	130	319	111	169	129	16	330	534	64	3351
PEAK	1549			560			314			928			FACTOR
15 MIN PEAK	1772			712			372			1136			
PEAK HOUR FACTOR	0.87			0.79			0.84			0.82			
TWO WAY TOTALS	2101			1940			1446			1215			
0.99													
3317													

DAY DATE MONTH YEAR  
WEDNESDAY 15 NOV 2017

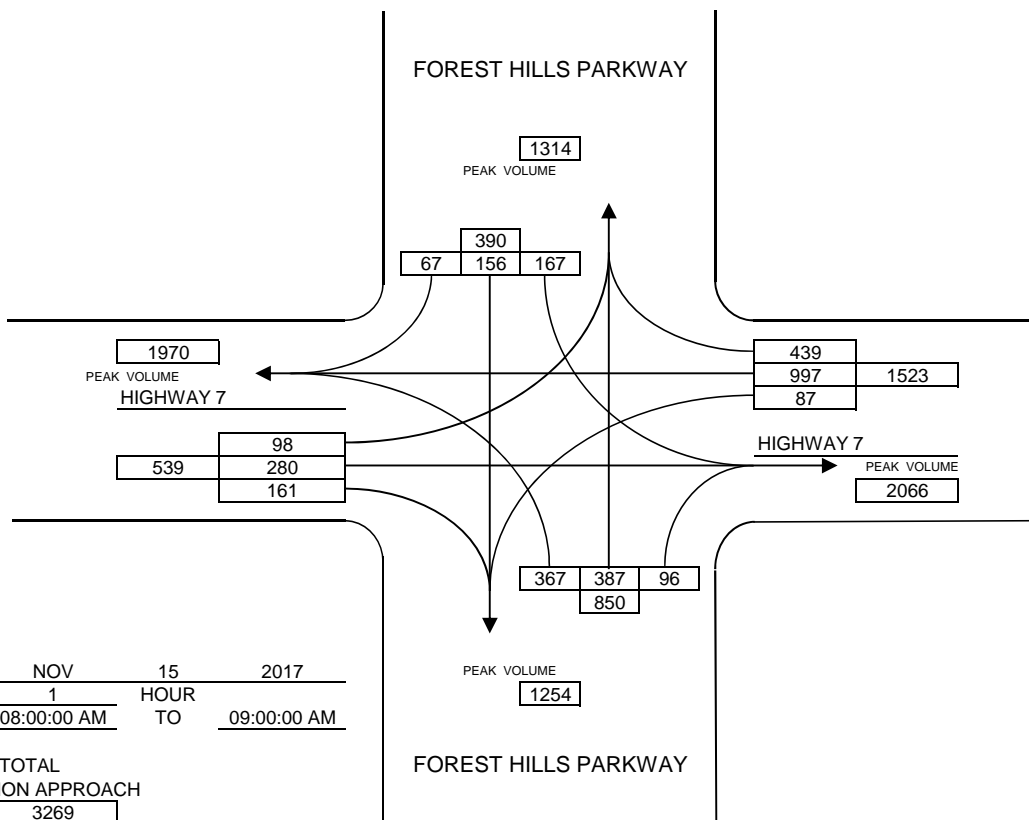
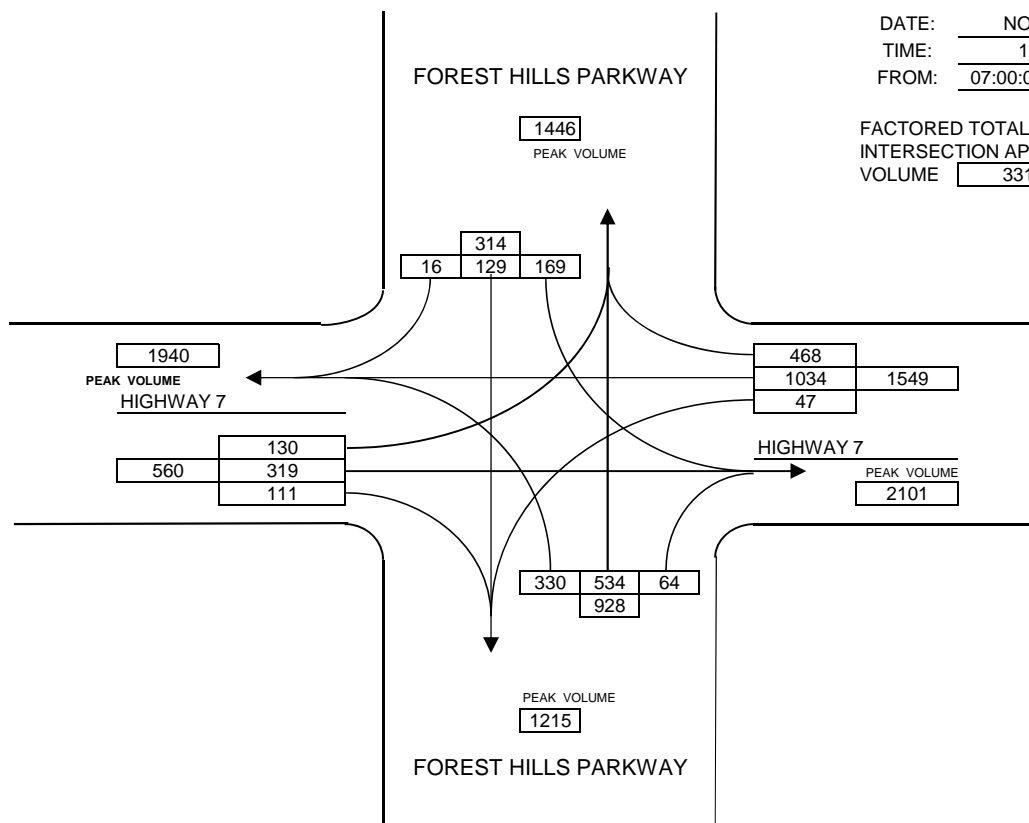
TIME: 15 MIN INTERVALS		FROM THE EAST			FROM THE WEST			FROM THE NORTH			FROM THE SOUTH			TOTAL
		L	S	R	L	S	R	L	S	R	L	S	R	
08:00:00 AM	08:15:00 AM	14	289	97	28	62	33	35	38	23	96	93	17	825
08:15:00 AM	08:30:00 AM	21	266	115	31	75	39	38	39	12	99	101	23	859
08:30:00 AM	08:45:00 AM	27	219	116	18	69	50	52	42	18	92	104	34	841
08:45:00 AM	09:00:00 AM	25	223	111	21	74	39	42	37	14	80	89	22	777

TOTAL	87	997	439	98	280	161	167	156	67	367	387	96	3302	
PEAK	1523			539			390			850			FACTOR	
15 MIN PEAK	1608			580			448			920				
PEAK HOUR FACTOR	0.95			0.93			0.87			0.92				
TWO WAY TOTALS	2066			1970			1314			1254				
														0.99
														3269

# VEHICULAR GRAPHIC SUMMARY SHEET

INTERSECTION :

FOREST HILLS PARKWAY AT HIGHWAY 7



# MANUAL TRAFFIC COUNTS

INTERSECTION:

FOREST HILLS PARKWAY AT HIGHWAY 7

WEATHER  
RECORDER

CLEAR  
SS&AA

DAY DATE MONTH YEAR  
WEDNESDAY 15 NOV 2017

TIME: 15 MIN INTERVALS		HIGHWAY 7 FROM THE EAST			HIGHWAY 7 FROM THE WEST			FOREST HILLS PARKWAY FROM THE NORTH			FOREST HILLS PARKWAY FROM THE SOUTH			TOTAL
		L	S	R	L	S	R	L	S	R	L	S	R	
04:00:00 PM	04:15:00 PM	59	150	43	14	281	62	191	98	18	61	62	48	1087
04:15:00 PM	04:30:00 PM	49	131	46	13	222	69	180	99	23	62	48	55	997
04:30:00 PM	04:45:00 PM	43	109	59	12	230	110	197	105	11	51	51	44	1022
04:45:00 PM	05:00:00 PM	47	151	39	-7	264	109	163	87	15	35	73	54	1030

TOTAL	198	541	187	32	997	350	731	389	67	209	234	201	4136
PEAK	926			1379			1187			644			FACTOR
15 MIN PEAK	1008			1464			1252			684			
PEAK HOUR FACTOR	0.92			0.94			0.95			0.94			
TWO WAY TOTALS	2855			2196			1640			1581			
													0.99
													4095

DAY DATE MONTH YEAR  
WEDNESDAY 15 NOV 2017

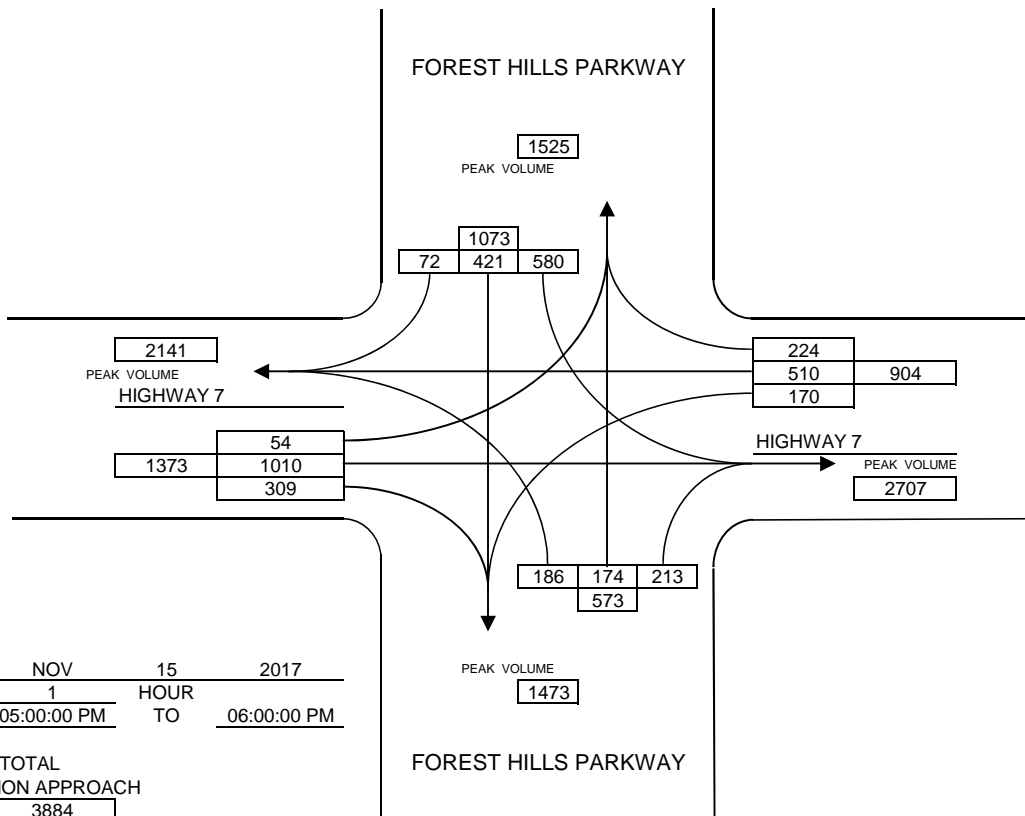
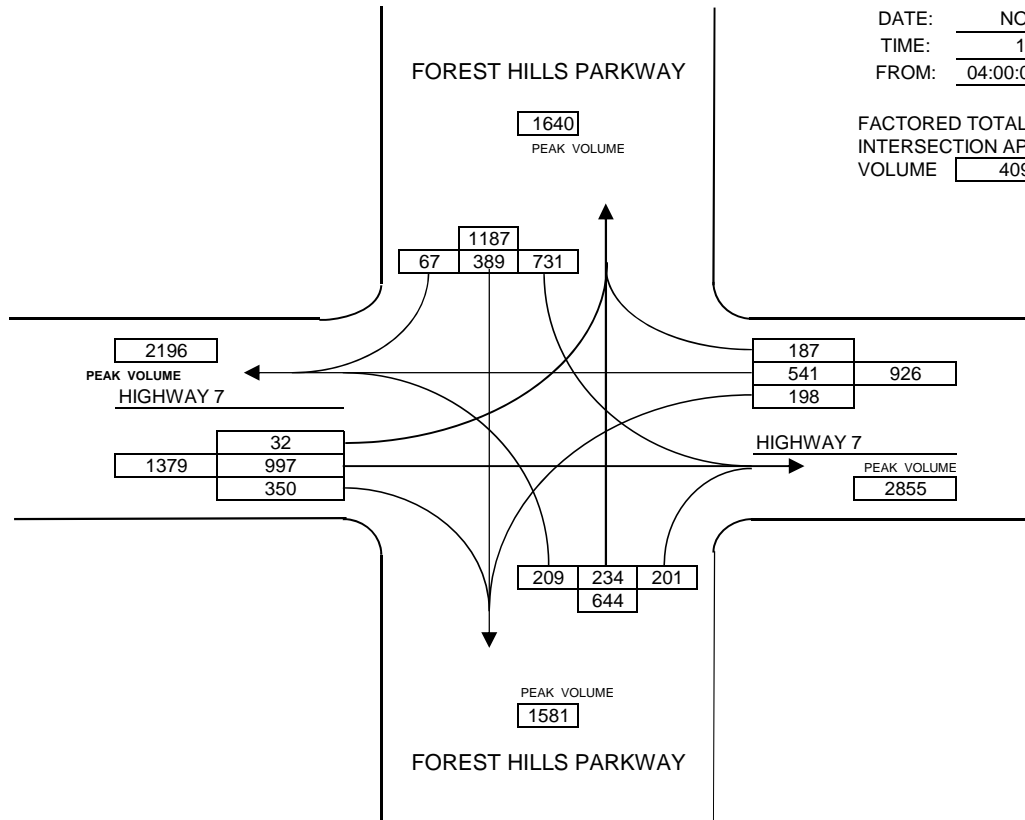
TIME: 15 MIN INTERVALS		FROM THE EAST			FROM THE WEST			FROM THE NORTH			FROM THE SOUTH			TOTAL
		L	S	R	L	S	R	L	S	R	L	S	R	
05:00:00 PM	05:15:00 PM	37	150	71	28	255	91	73	95	24	51	47	67	989
05:15:00 PM	05:30:00 PM	36	147	56	8	261	70	177	96	11	49	39	46	996
05:30:00 PM	05:45:00 PM	45	63	56	8	289	74	163	115	24	32	51	51	971
05:45:00 PM	06:00:00 PM	52	150	41	10	205	74	167	115	13	54	37	49	967

TOTAL	170	510	224	54	1010	309	580	421	72	186	174	213	3923
PEAK	904			1373			1073			573			FACTOR
15 MIN PEAK	1032			1496			1208			660			
PEAK HOUR FACTOR	0.88			0.92			0.89			0.87			
TWO WAY TOTALS	2707			2141			1525			1473			
													0.99
													3884

# VEHICULAR GRAPHIC SUMMARY SHEET

INTERSECTION :

FOREST HILLS PARKWAY AT HIGHWAY 7



## MANUAL TRAFFIC COUNTS

INTERSECTION:

MAIN ST AT MONTAGUE RD & HILLSBORO DR

WEATHER

OVERCAST

DAY DATE MONTH YEAR  
THURS 22 AUGUST 2019

RECORDER JACOB COSMAN & SAM CRIMP

STREET:

TIME: 15 MIN. INTERVALS	FROM THE EAST			FROM THE WEST			FROM THE NORTH			FROM THE SOUTH			TOTAL
	L	S	R	L	S	R	L	S	R	L	S	R	
07:00:00 AM    07:15:00 AM	1	333	10	7	71	2	0	1	15	23	7	1	471
07:15:00 AM    07:30:00 AM	9	326	19	10	81	8	1	4	13	37	9	3	520
07:30:00 AM    07:45:00 AM	7	338	47	14	88	8	1	4	7	35	14	3	566
07:45:00 AM    08:00:00 AM	4	324	35	15	107	15	4	1	20	28	13	2	568

TOTAL	21	1321	111	46	347	33	6	10	55	123	43	9	2125
PEAK		1453			426			71			175		
4(15 MIN. PEAK)		1568			548			100			208		
PEAK HOUR FACTOR		0.93			0.78			0.71			0.84		AAWT FACTOR
TWO WAY TOTALS		1815			1925			271			239		
													0.98
													2083

DAY DATE MONTH YEAR  
THURS 22 AUGUST 2019

TIME:	FROM THE EAST			FROM THE WEST			FROM THE NORTH			FROM THE SOUTH			TOTAL
15 MIN. INTERVALS	L	S	R	L	S	R	L	S	R	L	S	R	
08:00:00 AM 08:15:00 AM	3	274	16	13	101	10	6	4	19	44	10	4	504
08:15:00 AM 08:30:00 AM	4	342	8	11	145	12	3	0	8	25	1	5	564
08:30:00 AM 08:45:00 AM	3	274	8	11	102	10	3	3	12	41	4	1	472
08:45:00 AM 09:00:00 AM	4	252	11	17	131	12	3	0	14	24	4	5	477

TOTAL	14	1142	43	52	479	44	15	7	53	134	19	15	2017
PEAK		1199			575			75			168		
4(15 MIN. PEAK)		1416			672			116			232		
PEAK HOUR FACTOR		0.85			0.86			0.65			0.72		AAWT FACTOR
TWO WAY TOTALS		1708			1904			189			233		
													0.98
													1977

### Intersection Peak Hour

		MAIN ST			MAIN ST			MONTAGUE RD			HILLSBORO DR			Total
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:30 - 08:30	Car	15	1234	105	52	398	45	14	8	54	130	36	12	2103
	Truck	3	44	1	1	43	0	0	1	0	2	2	2	99
	Bicycle	0	0	0	0	0	0	0	0	0	0	0	0	0
	Vehicle Total	18	1278	106	53	441	45	14	9	54	132	38	14	2202
	Approach Factor	0.93			0.86			0.65			0.84			FACTOR
														1
														2202

### Peak Hour Pedestrians

07:30 - 08:30		NE			NW			SW			SE			Total
		Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
	Pedestrians	0	0	0	0	1	0	0	0	1	0	0	0	1

### Car traffic

Interval starts	MAIN ST			MAIN ST			MONTAGUE RD			HILLSBORO DR			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00	1	327	10	6	64	2	0	1	15	23	7	1	457
7:15	8	319	19	10	69	8	1	4	11	37	9	2	497
7:30	6	327	46	14	84	8	1	4	7	34	14	3	548
7:45	4	306	35	15	95	15	4	1	20	28	12	1	536
8:00	2	268	16	13	92	10	6	3	19	44	9	4	486
8:15	3	333	8	10	127	12	3	0	8	24	1	4	533
8:30	2	266	8	11	93	10	3	3	12	41	4	1	454
8:45	4	242	11	17	127	12	3	0	14	24	4	4	462
TOTAL	30	2388	153	96	751	77	21	16	106	255	60	20	3973

### Truck traffic

Interval starts	MAIN ST			MAIN ST			MONTAGUE RD			HILLSBORO DR			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00	0	6	0	1	7	0	0	0	0	0	0	0	14
7:15	1	7	0	0	12	0	0	0	2	0	0	1	23
7:30	1	11	1	0	4	0	0	0	0	1	0	0	18
7:45	0	18	0	0	12	0	0	0	0	0	1	1	32
8:00	1	6	0	0	9	0	0	1	0	0	1	0	18
8:15	1	9	0	1	18	0	0	0	1	0	1	1	31
8:30	1	8	0	0	9	0	0	0	0	0	0	0	18
8:45	0	10	0	0	4	0	0	0	0	0	0	1	15
TOTAL	5	75	1	2	75	0	0	1	2	2	2	4	169

### Bicycle traffic

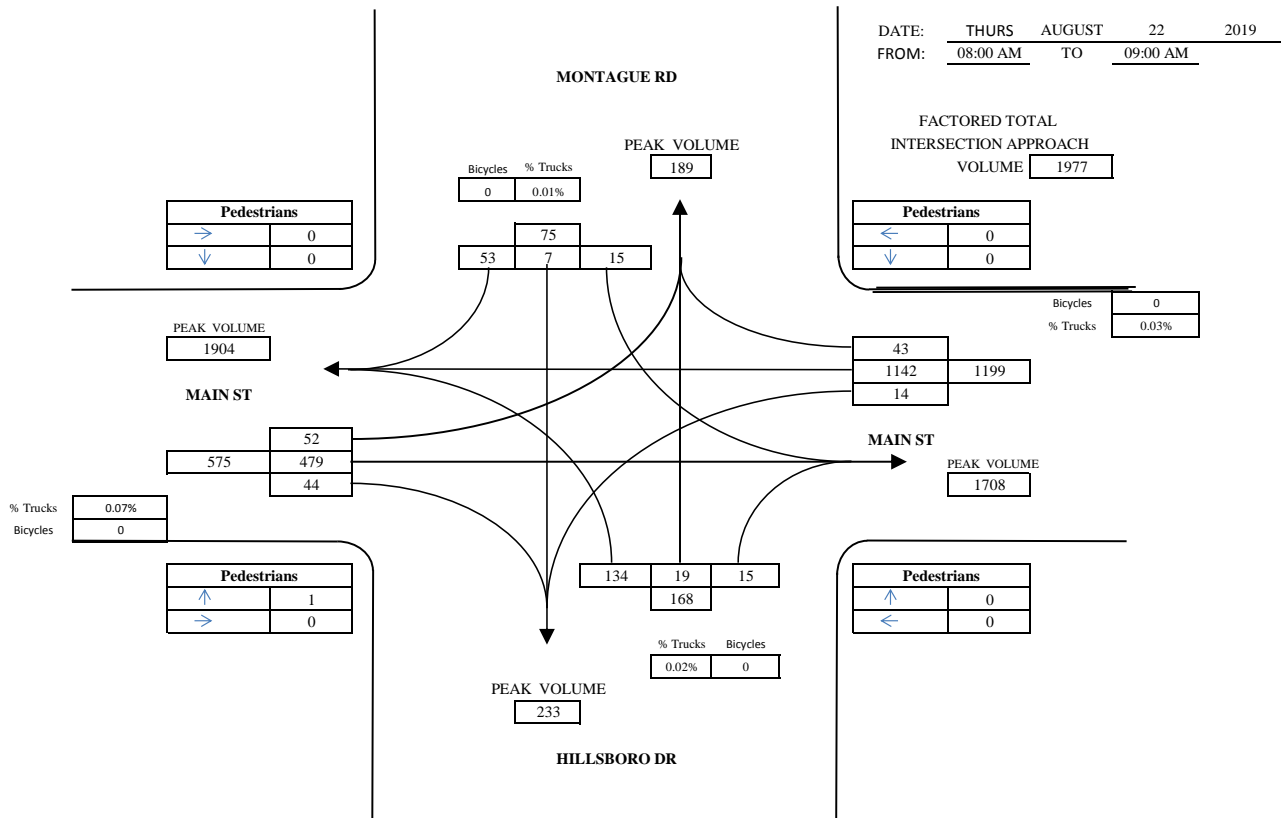
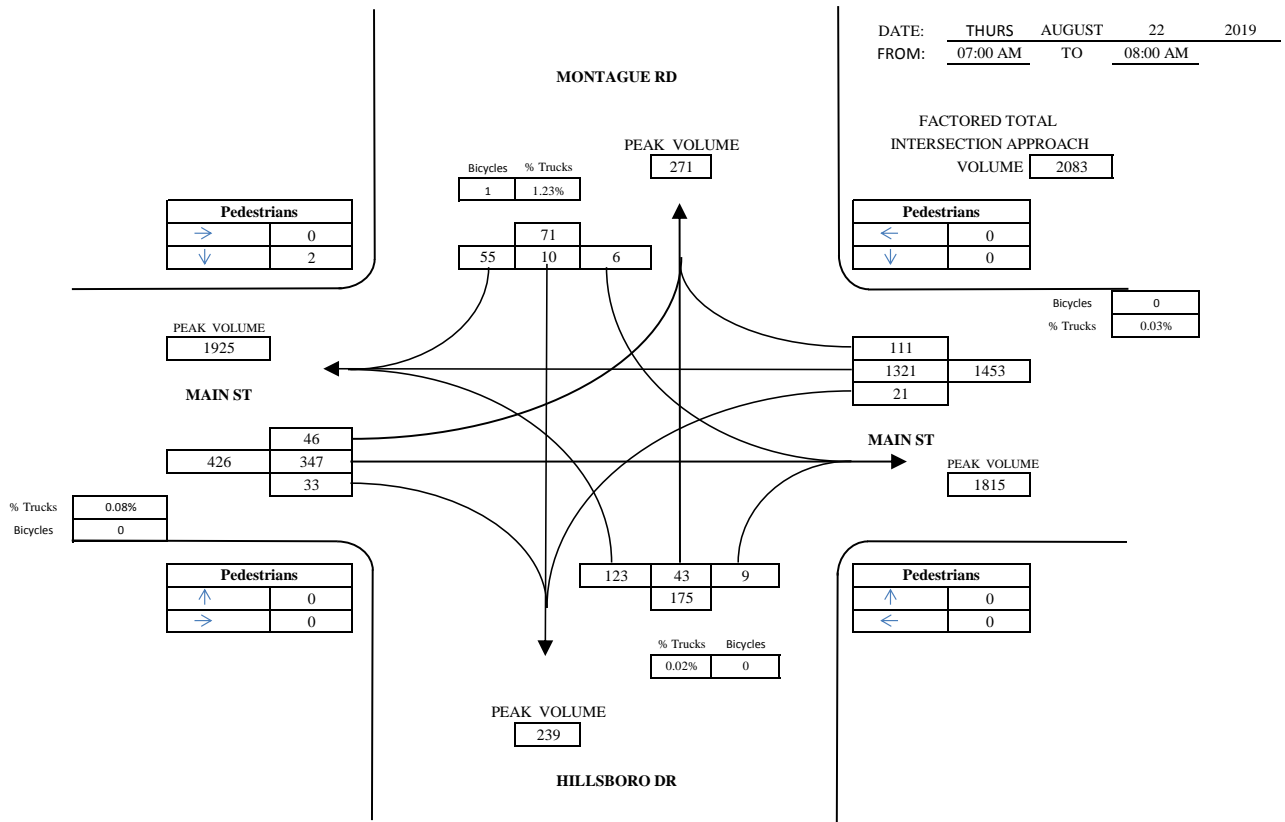
Interval starts	MAIN ST			MAIN ST			MONTAGUE RD			HILLSBORO DR			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	1	0	0	0	0	0	0	1
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	1	0	0	0	1

### Pedestrian volumes

Interval starts	NE			NW			SW			SE			Total
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	0	1	1	0	0	0	0	0	0	1
7:30	0	0	0	0	1	1	0	0	0	0	0	0	1
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	1	0	1	0	0	0	1
TOTAL	0	0	0	0	2	2	1	0	1	0	0	0	3

# VEHICULAR GRAPHIC SUMMARY SHEET

## MAIN ST AT MONTAGUE RD & HILLSBORO DR



## MANUAL TRAFFIC COUNTS

INTERSECTION:

MAIN ST AT MONTAGUE RD & HILLSBORO DR

WEATHER

SUNNY

DAY DATE MONTH YEAR  
THURS 22 AUGUST 2019

RECORDER JACOB COSMAN & SAM CRIMP

STREET:

TIME:	MAIN ST			MAIN ST			MONTAGUE RD			HILLSBORO DR			TOTAL
15 MIN INTERVALS	FROM THE EAST			FROM THE WEST			FROM THE NORTH			FROM THE SOUTH			
	L	S	R	L	S	R	L	S	R	L	S	R	
04:00:00 PM 04:15:00 PM	5	165	7	18	441	65	7	6	15	21	7	6	763
04:15:00 PM 04:30:00 PM	8	179	9	26	447	45	30	16	17	26	7	10	820
04:30:00 PM 04:45:00 PM	9	168	8	18	455	48	39	17	22	30	5	3	822
04:45:00 PM 05:00:00 PM	9	166	6	25	444	61	24	16	33	26	9	8	827

TOTAL	31	678	30	87	1787	219	100	55	87	103	28	27	3232
PEAK		739			2093			242			158		
4(15 MIN PEAK)		784			2120			312			172		
PEAK HOUR FACTOR		0.94			0.99			0.78			0.92		
TWO WAY TOTALS		2653			2961			387			463		
													AAWT FACTOR
													0.98
													3167

DAY DATE MONTH YEAR  
THURS 22 AUGUST 2019

TIME:	FROM THE EAST			FROM THE WEST			FROM THE NORTH			FROM THE SOUTH			TOTAL
15 MIN INTERVALS	L	S	R	L	S	R	L	S	R	L	S	R	
05:00:00 PM 05:15:00 PM	5	191	3	31	463	70	40	23	15	25	4	7	877
05:15:00 PM 05:30:00 PM	8	174	2	24	424	64	34	24	20	33	6	6	819
05:30:00 PM 05:45:00 PM	8	182	7	25	404	61	41	22	28	15	3	4	800
05:45:00 PM 06:00:00 PM	13	150	5	29	380	38	19	7	20	36	11	5	713

TOTAL	34	697	17	109	1671	233	134	76	83	109	24	22	3209
PEAK		748			2013			293			155		
4(15 MIN PEAK)		796			2256			364			208		
PEAK HOUR FACTOR		0.94			0.89			0.8			0.75		
TWO WAY TOTALS		2575			2902			443			498		
													AAWT FACTOR
													0.98
													3145

### Intersection Peak Hour

		MAIN ST			MAIN ST			MONTAGUE RD			HILLSBORO DR			Total
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:15 -17:15	Car	27	678	26	100	1773	223	133	72	86	106	23	26	3273
	Truck	4	26	0	0	36	1	0	0	1	1	2	2	73
	Bicycle	0	0	0	0	0	0	0	0	0	0	0	0	0
	Vehicle Total	31	704	26	100	1809	224	133	72	87	107	25	28	3346
	Approach Factor	0.96			0.94			0.98			0.93			FACTOR
														1
														3346

### Peak Hour Pedestrians

16:15 -17:15		NE			NW			SW			SE			Total
		Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
	Pedestrians	0	0	0	0	0	0	0	0	0	1	0	0	1

### Car traffic

Interval starts	MAIN ST			MAIN ST			MONTAGUE RD			HILLSBORO DR			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:00	4	155	6	18	431	65	7	5	14	21	6	6	738
16:15	7	173	9	26	437	45	30	16	17	25	6	9	800
16:30	8	160	8	18	446	47	39	17	21	30	5	3	802
16:45	7	159	6	25	433	61	24	16	33	26	8	8	806
17:00	5	186	3	31	457	70	40	23	15	25	4	6	865
17:15	7	166	2	23	416	64	32	24	19	33	6	6	798
17:30	7	177	7	24	393	61	41	22	28	15	3	3	781
17:45	13	142	5	29	376	37	19	7	20	36	10	5	699
TOTAL	58	1318	46	194	3389	450	232	130	167	211	48	46	6289

### Truck traffic

Interval starts	MAIN ST			MAIN ST			MONTAGUE RD			HILLSBORO DR			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:00	1	10	1	0	10	0	0	1	1	0	1	0	25
16:15	1	6	0	0	10	0	0	0	0	1	1	1	20
16:30	1	8	0	0	9	1	0	0	1	0	0	0	20
16:45	2	7	0	0	11	0	0	0	0	0	1	0	21
17:00	0	5	0	0	6	0	0	0	0	0	0	1	12
17:15	1	8	0	1	8	0	2	0	1	0	0	0	21
17:30	1	5	0	1	11	0	0	0	0	0	0	1	19
17:45	0	8	0	0	4	1	0	0	0	0	1	0	14
TOTAL	7	57	1	2	69	2	2	1	3	1	4	3	152

### Bicycle traffic

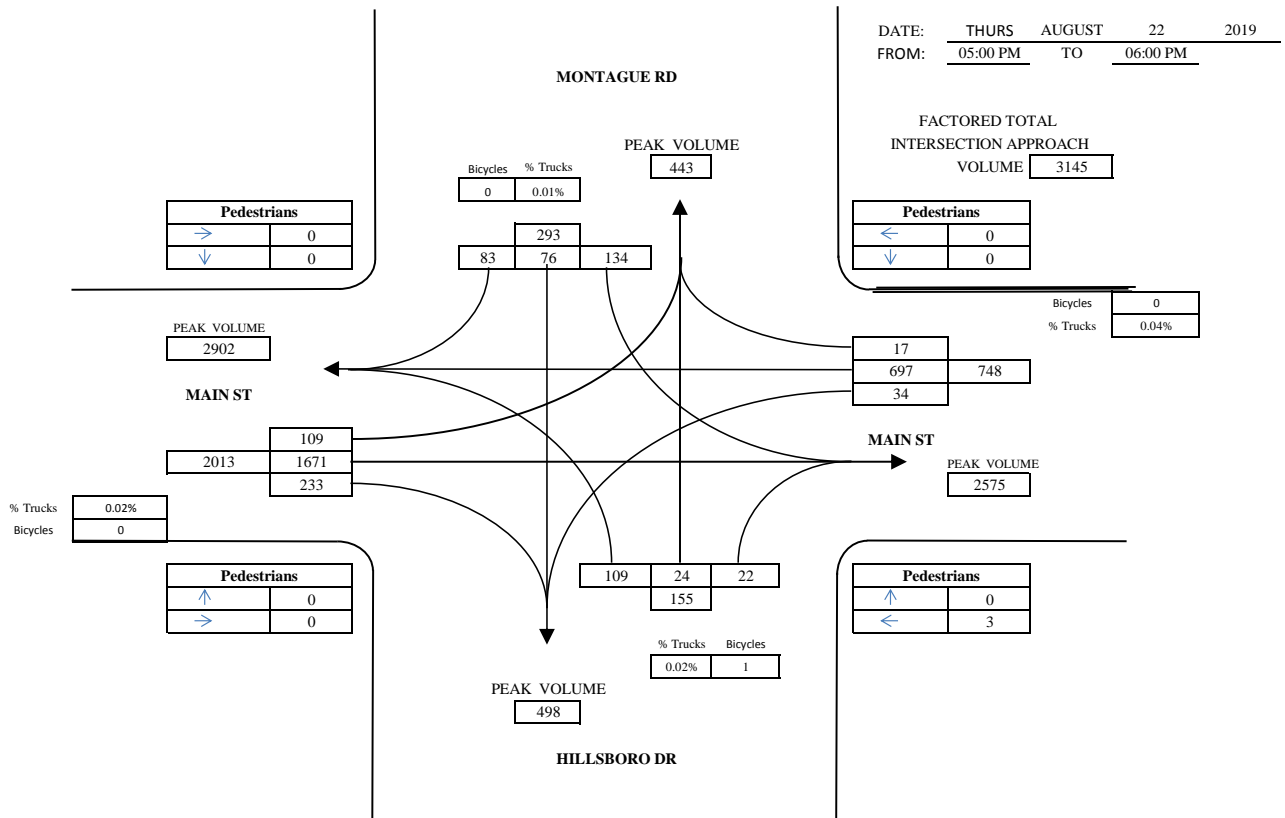
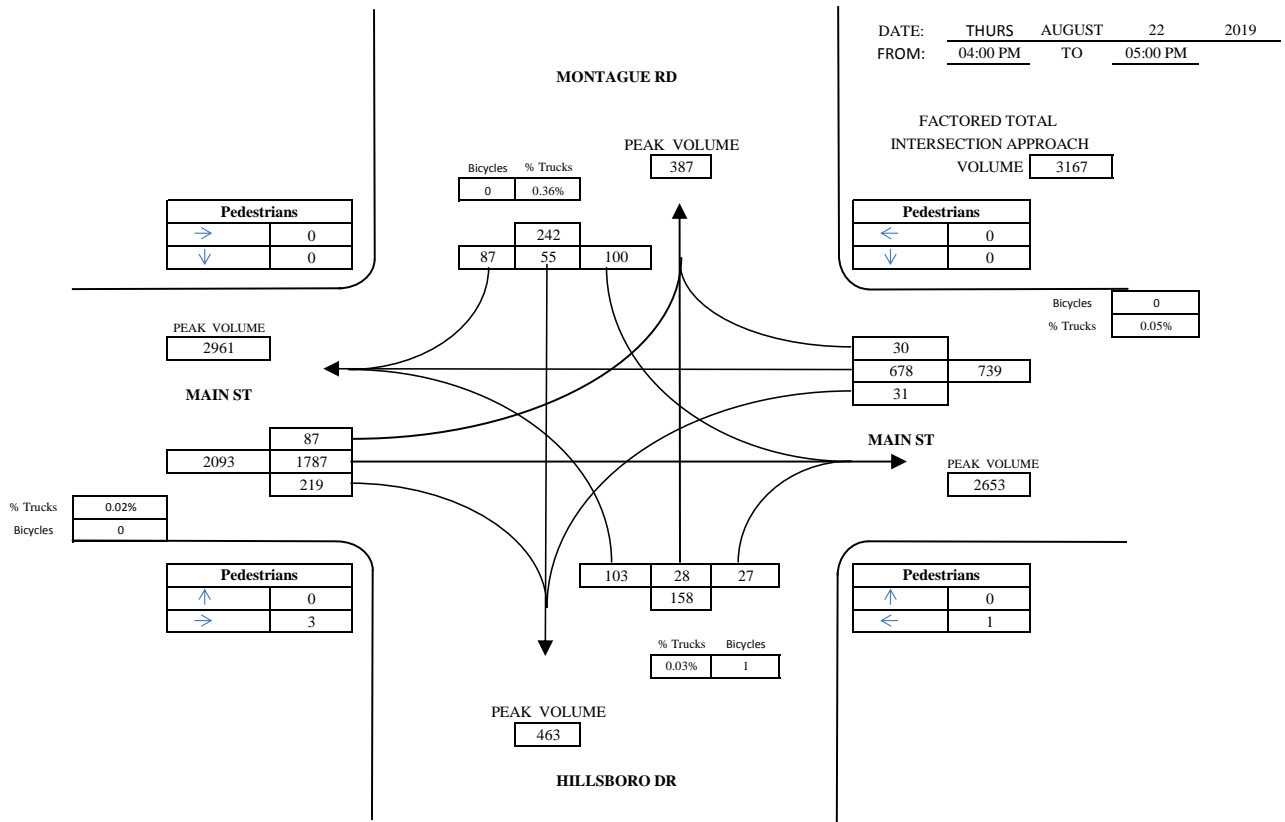
Interval starts	MAIN ST			MAIN ST			MONTAGUE RD			HILLSBORO DR			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:00	0	0	0	0	0	0	0	0	0	0	0	1	1
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	1	0	1
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	1	1	2

### Pedestrian volumes

Interval starts	NE			NW			SW			SE			Total
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
16:00	0	0	0	0	0	0	0	3	3	0	0	0	3
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	1	0	1	1
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	3	0	3	3
TOTAL	0	0	0	0	0	0	0	3	3	4	0	4	7

# VEHICULAR GRAPHIC SUMMARY SHEET

## MAIN ST AT MONTAGUE RD & HILLSBORO DR



# AM - Main and Forest Hills - TMC

Tue Apr 13, 2021

Full Length (7 AM-8:30 AM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians)

All Movements

ID: 829104, Location: 44.693874, -63.499017

Provided by: Trans4m Development Group  
59 Craighurn Drive, Dartmouth, NS, B2X 3E6, CA

Leg Direction	EB - Main Eastbound							WB - Main Westbound							NB - Forest Hills Northbound							SB - Forest Hills Southbound							
Time	L	T	R	U	App	Ped*		L	T	R	U	App	Ped*		L	T	R	U	App	Ped*		L	T	R	U	App	Ped*	Int	
2021-04-13 7:00AM	30	55	27	0	112	0		7	232	139	0	378	0		98	81	11	0	190	0		21	18	4	0	43	0	723	
7:15AM	30	73	23	0	126	0		9	239	147	0	395	0		87	90	18	0	195	0		28	25	5	0	58	0	774	
7:30AM	26	86	30	0	142	0		10	239	183	0	432	0		114	118	16	0	248	0		23	27	7	0	57	0	879	
7:45AM	28	81	35	0	144	0		9	219	105	0	333	0		92	132	22	0	246	1		48	32	13	0	93	0	816	
Hourly Total	114	295	115	0	524	0		35	929	574	0	1538	0		391	421	67	0	879	1		120	102	29	0	251	0	3192	
8:00AM	20	90	43	0	153	0		24	256	110	0	390	0		67	97	16	0	180	2		33	27	8	0	68	0	791	
8:15AM	22	111	55	0	188	0		26	202	121	0	349	0		60	97	43	0	200	0		47	34	5	0	86	0	823	
Hourly Total	42	201	98	0	341	0		50	458	231	0	739	0		127	194	59	0	380	2		80	61	13	0	154	0	1614	
Total	156	496	213	0	865	0		85	1387	805	0	2277	0		518	615	126	0	1259	3		200	163	42	0	405	0	4806	
% Approach	18.0%	57.3%	24.6%	0%	-	-		3.7%	60.9%	35.4%	0%	-	-		41.1%	48.8%	10.0%	0%	-	-		49.4%	40.2%	10.4%	0%	-	-	-	
% Total	3.2%	10.3%	4.4%	0%	18.0%	-		1.8%	28.9%	16.7%	0%	47.4%	-		10.8%	12.8%	2.6%	0%	26.2%	-		4.2%	3.4%	0.9%	0%	8.4%	-	-	
Lights	150	467	200	0	817	-		78	1354	771	0	2203	-		509	601	122	0	1232	-		172	150	38	0	360	-	4612	
% Lights	96.2%	94.2%	93.9%	0%	94.5%	-		91.8%	97.6%	95.8%	0%	96.8%	-		98.3%	97.7%	96.8%	0%	97.9%	-		86.0%	92.0%	90.5%	0%	88.9%	-	96.0%	
Articulated Trucks and Single-Unit Trucks	6	18	5	0	29	-		5	21	31	0	57	-		4	10	3	0	17	-		27	11	3	0	41	-	144	
% Articulated Trucks and Single-Unit Trucks	3.8%	3.6%	2.3%	0%	3.4%	-		5.9%	1.5%	3.9%	0%	2.5%	-		0.8%	1.6%	2.4%	0%	1.4%	-		13.5%	6.7%	7.1%	0%	10.1%	-	3.0%	
Buses	0	11	8	0	19	-		2	12	3	0	17	-		5	4	1	0	10	-		1	2	1	0	4	-	50	
% Buses	0%	2.2%	3.8%	0%	2.2%	-		2.4%	0.9%	0.4%	0%	0.7%	-		1.0%	0.7%	0.8%	0%	0.8%	-		0.5%	1.2%	2.4%	0%	1.0%	-	1.0%	
Pedestrians	-	-	-	-	-	0		-	-	-	-	-	0		-	-	-	-	-	3		-	-	-	-	-	0		
% Pedestrians	-	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-	100%		-	-	-	-	-	-		

\*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

# AM - Main and Forest Hills - TMC

Tue Apr 13, 2021

Full Length (7 AM-8:30 AM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians)

All Movements

ID: 829104, Location: 44.693874, -63.499017

Provided by: Trans4m Development Group  
59 Craighburn Drive, Dartmouth, NS, B2X 3E6, CA

## [N] SB - Forest Hills

Total: 1981

In: 405 Out: 1576

42  
163  
200

## [W] EB - Main

Total: 2812  
In: 865 Out: 1947

156  
496  
213

805  
1387  
85

Out: 822 In: 2277  
Total: 3099

## [E] WB - Main

1  
518  
615  
126  
2

Out: 461 In: 1259  
Total: 1720

## [S] NB - Forest Hills

# AM - Main and Forest Hills - TMC

Tue Apr 13, 2021

AM Peak (7:30 AM - 8:30 AM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians)

All Movements

ID: 829104, Location: 44.693874, -63.499017

Provided by: Trans4m Development Group  
59 Craighburn Drive, Dartmouth, NS, B2X 3E6, CA

Leg Direction	EB - Main Eastbound							WB - Main Westbound							NB - Forest Hills Northbound							SB - Forest Hills Southbound							
Time	L	T	R	U	App	Ped*		L	T	R	U	App	Ped*		L	T	R	U	App	Ped*		L	T	R	U	App	Ped*	Int	
2021-04-13 7:30AM	26	86	30	0	142	0		10	239	183	0	432	0		114	118	16	0	248	0		23	27	7	0	57	0		879
7:45AM	28	81	35	0	144	0		9	219	105	0	333	0		92	132	22	0	246	1		48	32	13	0	93	0		816
8:00AM	20	90	43	0	153	0		24	256	110	0	390	0		67	97	16	0	180	2		33	27	8	0	68	0		791
8:15AM	22	111	55	0	188	0		26	202	121	0	349	0		60	97	43	0	200	0		47	34	5	0	86	0		823
Total	96	368	163	0	627	0		69	916	519	0	1504	0		333	444	97	0	874	3		151	120	33	0	304	0		3309
% Approach	15.3%	58.7%	26.0%	0%	-	-		4.6%	60.9%	34.5%	0%	-	-		38.1%	50.8%	11.1%	0%	-	-		49.7%	39.5%	10.9%	0%	-	-		-
% Total	2.9%	11.1%	4.9%	0%	18.9%	-		2.1%	27.7%	15.7%	0%	45.5%	-		10.1%	13.4%	2.9%	0%	26.4%	-		4.6%	3.6%	1.0%	0%	9.2%	-		-
PHF	0.857	0.829	0.741	-	0.834	-		0.663	0.895	0.709	-	0.870	-		0.730	0.841	0.564	-	0.881	-		0.786	0.882	0.635	-	0.817	-		0.941
Lights	93	347	153	0	593	-		64	890	495	0	1449	-		325	432	95	0	852	-		134	112	30	0	276	-		3170
% Lights	96.9%	94.3%	93.9%	0%	94.6%	-		92.8%	97.2%	95.4%	0%	96.3%	-		97.6%	97.3%	97.9%	0%	97.5%	-		88.7%	93.3%	90.9%	0%	90.8%	-		95.8%
Articulated Trucks and Single-Unit Trucks	3	15	4	0	22	-		3	16	21	0	40	-		3	9	1	0	13	-		16	7	3	0	26	-		101
% Articulated Trucks and Single-Unit Trucks	3.1%	4.1%	2.5%	0%	3.5%	-		4.3%	1.7%	4.0%	0%	2.7%	-		0.9%	2.0%	1.0%	0%	1.5%	-		10.6%	5.8%	9.1%	0%	8.6%	-		3.1%
Buses	0	6	6	0	12	-		2	10	3	0	15	-		5	3	1	0	9	-		1	1	0	0	2	-		38
% Buses	0%	1.6%	3.7%	0%	1.9%	-		2.9%	1.1%	0.6%	0%	1.0%	-		1.5%	0.7%	1.0%	0%	1.0%	-		0.7%	0.8%	0%	0%	0.7%	-		1.1%
Pedestrians	-	-	-	-	-	0		-	-	-	-	-	0		-	-	-	-	-	3		-	-	-	-	-	0		
% Pedestrians	-	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-	100%		-	-	-	-	-	-		

\* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

# AM - Main and Forest Hills - TMC

Tue Apr 13, 2021

AM Peak (7:30 AM - 8:30 AM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians)

All Movements

ID: 829104, Location: 44.693874, -63.499017

Provided by: Trans4m Development Group  
59 Craighburn Drive, Dartmouth, NS, B2X 3E6, CA

## [N] SB - Forest Hills

Total: 1363

In: 304 Out: 1059

33  
120  
151

## [W] EB - Main

Total: 1909  
In: 627 Out: 1282

96  
368  
163

519

916

69

Out: 616 In: 1504  
Total: 2120

## [E] WB - Main

1

333  
444  
97

Out: 352 In: 874  
Total: 1226

## [S] NB - Forest Hills

# PM - Main and Forest Hills - TMC

Tue Apr 13, 2021

Full Length (4 PM-5:30 PM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians)

All Movements

ID: 829108, Location: 44.693874, -63.499017

Provided by: Trans4m Development Group  
59 Craighurn Drive, Dartmouth, NS, B2X 3E6, CA

Leg Direction	EB - Main Eastbound						WB - Main Westbound						NB - Forest Hills Northbound						SB - Forest Hills Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2021-04-13 4:00PM	9	248	69	0	326	0	31	129	45	0	205	0	66	55	56	0	177	0	151	81	18	0	250	0	958
4:15PM	10	306	87	0	403	0	29	117	66	0	212	0	44	50	41	0	135	1	158	86	28	0	272	2	1022
4:30PM	8	299	74	0	381	0	40	132	51	0	223	1	50	47	39	0	136	0	159	84	11	0	254	1	994
4:45PM	2	237	100	0	339	0	38	125	48	0	211	0	54	44	38	0	136	1	147	91	27	0	265	1	951
Hourly Total	29	1090	330	0	1449	0	138	503	210	0	851	1	214	196	174	0	584	2	615	342	84	0	1041	4	3925
5:00PM	7	267	74	0	348	0	26	134	37	0	197	0	31	44	35	0	110	1	141	80	14	0	235	0	890
5:15PM	11	241	82	0	334	0	33	141	51	0	225	0	45	39	38	0	122	3	174	75	21	0	270	2	951
Hourly Total	18	508	156	0	682	0	59	275	88	0	422	0	76	83	73	0	232	4	315	155	35	0	505	2	1841
<b>Total</b>	47	1598	486	0	2131	0	197	778	298	0	1273	1	290	279	247	0	816	6	930	497	119	0	1546	6	5766
<b>% Approach</b>	2.2%	75.0%	22.8%	0%	-	-	15.5%	61.1%	23.4%	0%	-	-	35.5%	34.2%	30.3%	0%	-	-	60.2%	32.1%	7.7%	0%	-	-	-
<b>% Total</b>	0.8%	27.7%	8.4%	0%	37.0%	-	3.4%	13.5%	5.2%	0%	22.1%	-	5.0%	4.8%	4.3%	0%	14.2%	-	16.1%	8.6%	2.1%	0%	26.8%	-	-
<b>Lights</b>	44	1578	484	0	2106	-	195	759	273	0	1227	-	285	263	245	0	793	-	900	491	119	0	1510	-	5636
<b>% Lights</b>	93.6%	98.7%	99.6%	0%	98.8%	-	99.0%	97.6%	91.6%	0%	96.4%	-	98.3%	94.3%	99.2%	0%	97.2%	-	96.8%	98.8%	100%	0%	97.7%	-	97.7%
<b>Articulated Trucks and Single-Unit Trucks</b>	2	11	1	0	14	-	2	12	24	0	38	-	2	14	2	0	18	-	26	4	0	0	30	-	100
<b>% Articulated Trucks and Single-Unit Trucks</b>	4.3%	0.7%	0.2%	0%	0.7%	-	1.0%	1.5%	8.1%	0%	3.0%	-	0.7%	5.0%	0.8%	0%	2.2%	-	2.8%	0.8%	0%	0%	1.9%	-	1.7%
<b>Buses</b>	1	9	1	0	11	-	0	7	1	0	8	-	3	2	0	0	5	-	4	2	0	0	6	-	30
<b>% Buses</b>	2.1%	0.6%	0.2%	0%	0.5%	-	0%	0.9%	0.3%	0%	0.6%	-	1.0%	0.7%	0%	0%	0.6%	-	0.4%	0.4%	0%	0%	0.4%	-	0.5%
<b>Pedestrians</b>	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	6	-	-	-	-	-	6	
<b>% Pedestrians</b>	-	-	-	-	-	-	-	-	-	-	-	-100%	-	-	-	-	-	-100%	-	-	-	-	-	-100%	-

\*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

# PM - Main and Forest Hills - TMC

Tue Apr 13, 2021

Full Length (4 PM-5:30 PM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians)

All Movements

ID: 829108, Location: 44.693874, -63.499017

Provided by: Trans4m Development Group  
59 Craighburn Drive, Dartmouth, NS, B2X 3E6, CA

## [N] SB - Forest Hills

Total: 2170

In: 1546 Out: 624

119  
497  
930

3

3

## [W] EB - Main

Total: 3318

In: 2131 Out: 1187

47

1598

486

6

290

279

247

Out: 1180 In: 816

Total: 1996

## [S] NB - Forest Hills

298  
778  
197

Out: 2775 In: 1273

Total: 4048

## [E] WB - Main

# PM - Main and Forest Hills - TMC

Tue Apr 13, 2021

PM Peak (4 PM - 5 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians)

All Movements

ID: 829108, Location: 44.693874, -63.499017

Provided by: Trans4m Development Group  
59 Craighburn Drive, Dartmouth, NS, B2X 3E6, CA

Leg Direction	EB - Main Eastbound						WB - Main Westbound						NB - Forest Hills Northbound						SB - Forest Hills Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2021-04-13 4:00PM	9	248	69	0	326	0	31	129	45	0	205	0	66	55	56	0	177	0	151	81	18	0	250	0	958
4:15PM	10	306	87	0	403	0	29	117	66	0	212	0	44	50	41	0	135	1	158	86	28	0	272	2	1022
4:30PM	8	299	74	0	381	0	40	132	51	0	223	1	50	47	39	0	136	0	159	84	11	0	254	1	994
4:45PM	2	237	100	0	339	0	38	125	48	0	211	0	54	44	38	0	136	1	147	91	27	0	265	1	951
<b>Total</b>	29	1090	330	0	1449	0	138	503	210	0	851	1	214	196	174	0	584	2	615	342	84	0	1041	4	3925
<b>% Approach</b>	2.0%	75.2%	22.8%	0%	-	-	16.2%	59.1%	24.7%	0%	-	-	36.6%	33.6%	29.8%	0%	-	-	59.1%	32.9%	8.1%	0%	-	-	-
<b>% Total</b>	0.7%	27.8%	8.4%	0%	36.9%	-	3.5%	12.8%	5.4%	0%	21.7%	-	5.5%	5.0%	4.4%	0%	14.9%	-	15.7%	8.7%	2.1%	0%	26.5%	-	-
<b>PHF</b>	0.725	0.891	0.825	-	0.899	-	0.863	0.953	0.795	-	0.954	-	0.811	0.891	0.777	-	0.825	-	0.967	0.940	0.750	-	0.957	-	0.960
<b>Lights</b>	27	1076	328	0	1431	-	136	490	190	0	816	-	210	184	173	0	567	-	597	338	84	0	1019	-	3833
<b>% Lights</b>	93.1%	98.7%	99.4%	0%	98.8%	-	98.6%	97.4%	90.5%	0%	95.9%	-	98.1%	93.9%	99.4%	0%	97.1%	-	97.1%	98.8%	100%	0%	97.9%	-	97.7%
<b>Articulated Trucks and Single-Unit Trucks</b>	1	6	1	0	8	-	2	9	19	0	30	-	2	10	1	0	13	-	14	2	0	0	16	-	67
<b>% Articulated Trucks and Single-Unit Trucks</b>	3.4%	0.6%	0.3%	0%	0.6%	-	1.4%	1.8%	9.0%	0%	3.5%	-	0.9%	5.1%	0.6%	0%	2.2%	-	2.3%	0.6%	0%	0%	1.5%	-	1.7%
<b>Buses</b>	1	8	1	0	10	-	0	4	1	0	5	-	2	2	0	0	4	-	4	2	0	0	6	-	25
<b>% Buses</b>	3.4%	0.7%	0.3%	0%	0.7%	-	0%	0.8%	0.5%	0%	0.6%	-	0.9%	1.0%	0%	0%	0.7%	-	0.7%	0.6%	0%	0%	0.6%	-	0.6%
<b>Pedestrians</b>	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	4	
<b>% Pedestrians</b>	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	100%

\*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

# PM - Main and Forest Hills - TMC

Tue Apr 13, 2021

PM Peak (4 PM - 5 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians)

All Movements

ID: 829108, Location: 44.693874, -63.499017

Provided by: Trans4m Development Group  
59 Craighburn Drive, Dartmouth, NS, B2X 3E6, CA

## [N] SB - Forest Hills

Total: 1476

In: 1041 Out: 435

84

342

615

3

1

## [W] EB - Main

Total: 2250

In: 1449 Out: 801

29

1090

330

2

214

196

174

Out: 810 In: 584

Total: 1394

## [S] NB - Forest Hills

210

In: 851

Total: 2730

## [E] WB - Main

Out: 1879

In: 851

Total: 2730

## [E] WB - Main

Out: 1879

In: 851

Total: 2730

## [E] WB - Main

Out: 1879

In: 851

Total: 2730

## [E] WB - Main

Out: 1879

In: 851

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## [E] WB - Main

Out: 1879

In: 851

Total: 2730

## [E] WB - Main

Out: 1879

In: 851

Total: 2730

# AM - Main and Sobeys - TMC

Wed Apr 14, 2021

Full Length (7:30 AM-8:30 AM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)

All Movements

ID: 829109, Location: 44.694848, -63.497327

Provided by: Trans4m Development Group  
59 Craighburn Drive, Dartmouth, NS, B2X 3E6, CA

Leg Direction	EB - Main Eastbound					WB - Main Westbound					NB - Panavista Northbound					SB - Sobeys Driveway Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2021-04-14 7:30AM	3	149	0	0	152	4	347	13	0	364	3	0	4	0	7	1	0	11	0	12	535
7:45AM	1	140	1	0	142	3	314	10	0	327	6	0	2	0	8	4	0	16	0	20	497
Hourly Total	4	289	1	0	294	7	661	23	0	691	9	0	6	0	15	5	0	27	0	32	1032
8:00AM	2	135	0	0	137	3	399	14	0	416	1	0	2	0	3	3	1	12	0	16	572
8:15AM	1	176	1	0	178	0	271	18	0	289	0	1	2	0	3	4	0	15	0	19	489
Hourly Total	3	311	1	0	315	3	670	32	0	705	1	1	4	0	6	7	1	27	0	35	1061
<b>Total</b>	7	600	2	0	609	10	1331	55	0	1396	10	1	10	0	21	12	1	54	0	67	2093
<b>% Approach</b>	1.1%	98.5%	0.3%	0%	-	0.7%	95.3%	3.9%	0%	-	47.6%	4.8%	47.6%	0%	-	17.9%	1.5%	80.6%	0%	-	-
<b>% Total</b>	0.3%	28.7%	0.1%	0%	29.1%	0.5%	63.6%	2.6%	0%	66.7%	0.5%	0%	0.5%	0%	1.0%	0.6%	0%	2.6%	0%	3.2%	-
<b>Lights</b>	5	570	2	0	577	9	1266	53	0	1328	10	1	9	0	20	11	1	52	0	64	1989
<b>% Lights</b>	71.4%	95.0%	100%	0%	94.7%	90.0%	95.1%	96.4%	0%	95.1%	100%	100%	90.0%	0%	95.2%	91.7%	100%	96.3%	0%	95.5%	95.0%
<b>Articulated Trucks and Single-Unit Trucks</b>	2	23	0	0	25	0	53	2	0	55	0	0	0	0	0	1	0	2	0	3	83
<b>% Articulated Trucks and Single-Unit Trucks</b>	28.6%	3.8%	0%	0%	4.1%	0%	4.0%	3.6%	0%	3.9%	0%	0%	0%	0%	0%	8.3%	0%	3.7%	0%	4.5%	4.0%
<b>Buses</b>	0	7	0	0	7	1	12	0	0	13	0	0	1	0	1	0	0	0	0	0	21
<b>% Buses</b>	0%	1.2%	0%	0%	1.1%	10.0%	0.9%	0%	0%	0.9%	0%	0%	10.0%	0%	4.8%	0%	0%	0%	0%	0%	1.0%

\* L: Left, R: Right, T: Thru, U: U-Turn

AM - Main and Sobeys - TMC  
Wed Apr 14, 2021  
Full Length (7:30 AM-8:30 AM)  
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)  
All Movements  
ID: 829109, Location: 44.694848, -63.497327

Provided by: Trans4m Development Group  
59 Craighburn Drive, Dartmouth, NS, B2X 3E6, CA

[N] SB - Sobeys Driveway

Total: 130  
In: 67    Out: 63

54  
1  
12

[W] EB - Main  
Total: 2004  
In: 609    Out: 1395

7  
600  
2

55  
1331  
10

Out: 622    In: 1396  
Total: 2018  
[E] WB - Main

Out: 13    In: 21  
Total: 34  
[S] NB - Panavista

10  
1  
10

# AM - Main and Sobeys - TMC

Wed Apr 14, 2021

Full Length (7:30 AM-8:30 AM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)

All Movements

ID: 829109, Location: 44.694848, -63.497327

Provided by: Trans4m Development Group  
59 Craighburn Drive, Dartmouth, NS, B2X 3E6, CA

Leg Direction	EB - Main Eastbound					WB - Main Westbound					NB - Panavista Northbound					SB - Sobeys Driveway Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2021-04-14 7:30AM	3	149	0	0	152	4	347	13	0	364	3	0	4	0	7	1	0	11	0	12	535
7:45AM	1	140	1	0	142	3	314	10	0	327	6	0	2	0	8	4	0	16	0	20	497
8:00AM	2	135	0	0	137	3	399	14	0	416	1	0	2	0	3	3	1	12	0	16	572
8:15AM	1	176	1	0	178	0	271	18	0	289	0	1	2	0	3	4	0	15	0	19	489
<b>Total</b>	7	600	2	0	609	10	1331	55	0	1396	10	1	10	0	21	12	1	54	0	67	2093
<b>% Approach</b>	1.1%	98.5%	0.3%	0%	-	0.7%	95.3%	3.9%	0%	-	47.6%	4.8%	47.6%	0%	-	17.9%	1.5%	80.6%	0%	-	-
<b>% Total</b>	0.3%	28.7%	0.1%	0%	29.1%	0.5%	63.6%	2.6%	0%	66.7%	0.5%	0%	0.5%	0%	1.0%	0.6%	0%	2.6%	0%	3.2%	-
<b>PHF</b>	0.583	0.852	0.500	-	0.855	0.625	0.834	0.764	-	0.839	0.417	0.250	0.625	-	0.656	0.750	0.250	0.844	-	0.838	0.915
<b>Lights</b>	5	570	2	0	577	9	1266	53	0	1328	10	1	9	0	20	11	1	52	0	64	1989
<b>% Lights</b>	71.4%	95.0%	100%	0%	94.7%	90.0%	95.1%	96.4%	0%	95.1%	100%	100%	90.0%	0%	95.2%	91.7%	100%	96.3%	0%	95.5%	95.0%
<b>Articulated Trucks and Single-Unit Trucks</b>	2	23	0	0	25	0	53	2	0	55	0	0	0	0	0	1	0	2	0	3	83
<b>% Articulated Trucks and Single-Unit Trucks</b>	28.6%	3.8%	0%	0%	4.1%	0%	4.0%	3.6%	0%	3.9%	0%	0%	0%	0%	0%	8.3%	0%	3.7%	0%	4.5%	4.0%
<b>Buses</b>	0	7	0	0	7	1	12	0	0	13	0	0	1	0	1	0	0	0	0	0	21
<b>% Buses</b>	0%	1.2%	0%	0%	1.1%	10.0%	0.9%	0%	0%	0.9%	0%	0%	10.0%	0%	4.8%	0%	0%	0%	0%	0%	1.0%

\* L: Left, R: Right, T: Thru, U: U-Turn

AM - Main and Sobeys - TMC  
Wed Apr 14, 2021  
Full Length (7:30 AM-8:30 AM)  
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)  
All Movements  
ID: 829109, Location: 44.694848, -63.497327

Provided by: Trans4m Development Group  
59 Craighburn Drive, Dartmouth, NS, B2X 3E6, CA

[N] SB - Sobeys Driveway

Total: 130  
In: 67 Out: 63

54  
1  
12

[W] EB - Main  
Total: 2004  
In: 609 Out: 1395

7  
600  
2

55  
1331  
10

Out: 622 In: 1396  
Total: 2018  
[E] WB - Main

Out: 13 In: 21  
Total: 34  
[S] NB - Panavista

10  
1  
10

# PM - Main and Sobeys Driveways - TMC

Wed Apr 14, 2021

Full Length (4 PM-5:30 PM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians)

All Movements

ID: 829111, Location: 44.694848, -63.497327

Provided by: Trans4m Development Group

59 Craighburn Drive,

Dartmouth, NS, B2X 3E6, CA

Leg Direction	EB - Main Eastbound						WB - Main Westbound						NB - Panavista Northbound						SB - Sobeys Driveway Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2021-04-14 4:00PM	6	477	5	0	488	0	8	248	15	0	271	0	7	1	25	0	33	0	8	1	9	0	18	2	810
4:15PM	6	476	6	0	488	0	16	202	2	0	220	0	5	1	11	0	17	0	7	0	4	0	11	0	736
4:30PM	6	444	3	0	453	0	8	247	9	0	264	1	15	1	32	0	48	0	10	1	4	0	15	0	780
4:45PM	6	411	1	0	418	0	9	199	8	0	216	0	6	0	24	0	30	0	8	0	8	0	16	0	680
Hourly Total	24	1808	15	0	1847	0	41	896	34	0	971	1	33	3	92	0	128	0	33	2	25	0	60	2	3006
5:00PM	8	470	1	0	479	0	7	214	18	0	239	0	9	0	18	0	27	0	12	1	8	0	21	0	766
5:15PM	10	420	4	0	434	0	9	190	9	0	208	0	6	3	8	0	17	0	4	3	11	0	18	0	677
Hourly Total	18	890	5	0	913	0	16	404	27	0	447	0	15	3	26	0	44	0	16	4	19	0	39	0	1443
<b>Total</b>	42	2698	20	0	2760	0	57	1300	61	0	1418	1	48	6	118	0	172	0	49	6	44	0	99	2	4449
<b>% Approach</b>	1.5%	97.8%	0.7%	0%	-	-	4.0%	91.7%	4.3%	0%	-	-	27.9%	3.5%	68.6%	0%	-	-	49.5%	6.1%	44.4%	0%	-	-	-
<b>% Total</b>	0.9%	60.6%	0.4%	0%	62.0%	-	1.3%	29.2%	1.4%	0%	31.9%	-	1.1%	0.1%	2.7%	0%	3.9%	-	1.1%	0.1%	1.0%	0%	2.2%	-	-
<b>Lights</b>	42	2618	19	0	2679	-	57	1264	60	0	1381	-	46	6	118	0	170	-	47	6	43	0	96	-	4326
<b>% Lights</b>	100%	97.0%	95.0%	0%	97.1%	-	100%	97.2%	98.4%	0%	97.4%	-	95.8%	100%	100%	0%	98.8%	-	95.9%	100%	97.7%	0%	97.0%	-	97.2%
<b>Articulated Trucks and Single-Unit Trucks</b>	0	71	1	0	72	-	0	32	1	0	33	-	2	0	0	0	2	-	2	0	1	0	3	-	110
<b>% Articulated Trucks and Single-Unit Trucks</b>	0%	2.6%	5.0%	0%	2.6%	-	0%	2.5%	1.6%	0%	2.3%	-	4.2%	0%	0%	0%	1.2%	-	4.1%	0%	2.3%	0%	3.0%	-	2.5%
<b>Buses</b>	0	9	0	0	9	-	0	4	0	0	4	-	0	0	0	0	0	-	0	0	0	0	0	-	13
<b>% Buses</b>	0%	0.3%	0%	0%	0.3%	-	0%	0.3%	0%	0%	0.3%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.3%
<b>Pedestrians</b>	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	2	-
<b>% Pedestrians</b>	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	100%	-

\* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

PM - Main and Sobeys Driveways - TMC

Wed Apr 14, 2021

Full Length (4 PM-5:30 PM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians)

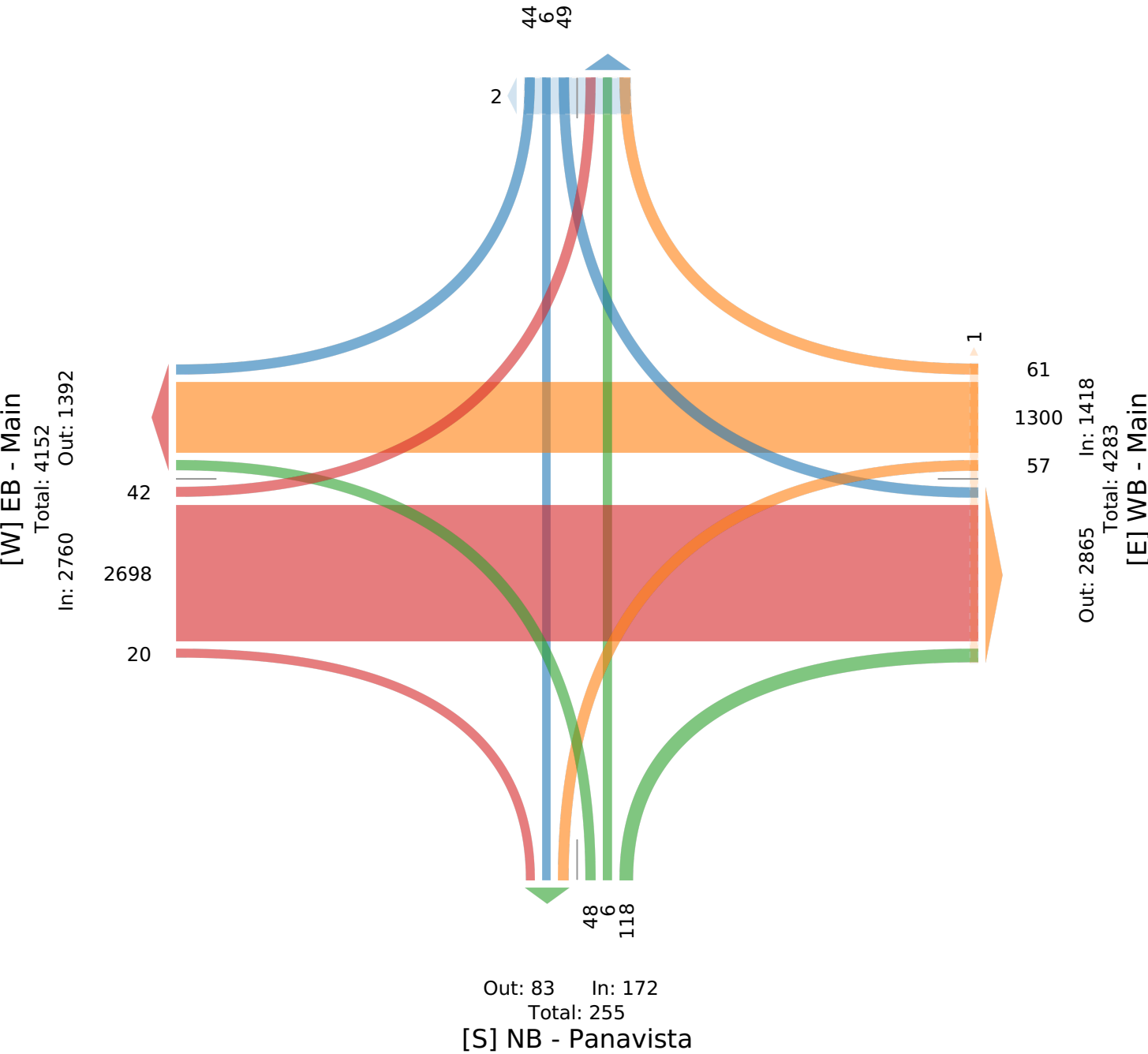
All Movements

ID: 829111, Location: 44.694848, -63.497327

Provided by: Trans4m Development Group  
59 Craighburn Drive, Dartmouth, NS, B2X 3E6, CA

[N] SB - Sobeys Driveway

Total: 208  
In: 99 Out: 109



# PM - Main and Sobeys Driveways - TMC

Wed Apr 14, 2021

PM Peak (4 PM - 5 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians)

All Movements

ID: 829111, Location: 44.694848, -63.497327

Provided by: Trans4m Development Group

59 Craighburn Drive,

Dartmouth, NS, B2X 3E6, CA

Leg Direction	EB - Main Eastbound						WB - Main Westbound						NB - Panavista Northbound						SB - Sobeys Driveway Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2021-04-14 4:00PM	6	477	5	0	488	0	8	248	15	0	271	0	7	1	25	0	33	0	8	1	9	0	18	2	810
4:15PM	6	476	6	0	488	0	16	202	2	0	220	0	5	1	11	0	17	0	7	0	4	0	11	0	736
4:30PM	6	444	3	0	453	0	8	247	9	0	264	1	15	1	32	0	48	0	10	1	4	0	15	0	780
4:45PM	6	411	1	0	418	0	9	199	8	0	216	0	6	0	24	0	30	0	8	0	8	0	16	0	680
<b>Total</b>	24	1808	15	0	1847	0	41	896	34	0	971	1	33	3	92	0	128	0	33	2	25	0	60	2	3006
<b>% Approach</b>	1.3%	97.9%	0.8%	0%	-	-	4.2%	92.3%	3.5%	0%	-	-	25.8%	2.3%	71.9%	0%	-	-	55.0%	3.3%	41.7%	0%	-	-	-
<b>% Total</b>	0.8%	60.1%	0.5%	0%	61.4%	-	1.4%	29.8%	1.1%	0%	32.3%	-	1.1%	0.1%	3.1%	0%	4.3%	-	1.1%	0.1%	0.8%	0%	2.0%	-	-
<b>PHF</b>	1.000	0.948	0.625	-	0.946	-	0.641	0.903	0.567	-	0.896	-	0.550	0.750	0.719	-	0.667	-	0.825	0.500	0.694	-	0.833	-	0.928
<b>Lights</b>	24	1757	14	0	1795	-	41	864	33	0	938	-	31	3	92	0	126	-	32	2	24	0	58	-	2917
<b>% Lights</b>	100%	97.2%	93.3%	0%	97.2%	-	100%	96.4%	97.1%	0%	96.6%	-	93.9%	100%	100%	0%	98.4%	-	97.0%	100%	96.0%	0%	96.7%	-	97.0%
<b>Articulated Trucks and Single-Unit Trucks</b>	0	44	1	0	45	-	0	28	1	0	29	-	2	0	0	0	2	-	1	0	1	0	2	-	78
<b>% Articulated Trucks and Single-Unit Trucks</b>	0%	2.4%	6.7%	0%	2.4%	-	0%	3.1%	2.9%	0%	3.0%	-	6.1%	0%	0%	0%	1.6%	-	3.0%	0%	4.0%	0%	3.3%	-	2.6%
<b>Buses</b>	0	7	0	0	7	-	0	4	0	0	4	-	0	0	0	0	0	-	0	0	0	0	0	-	11
<b>% Buses</b>	0%	0.4%	0%	0%	0.4%	-	0%	0.4%	0%	0%	0.4%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.4%
<b>Pedestrians</b>	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	2	
<b>% Pedestrians</b>	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	100%	-

\*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

# PM - Main and Sobeys Driveways - TMC

Wed Apr 14, 2021

PM Peak (4 PM - 5 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians)

All Movements

ID: 829111, Location: 44.694848, -63.497327

Provided by: Trans4m Development Group  
59 Craighburn Drive, Dartmouth, NS, B2X 3E6, CA

## [N] SB - Sobeys Driveway

Total: 121

In: 60 Out: 61

2 3 3

2

## [W] EB - Main

Total: 2801

Out: 954

In: 1847

24  
1808  
15

34  
896  
41

Out: 1933

In: 971

Total: 2904

## [E] WB - Main

Out: 58 In: 128

Total: 186

## [S] NB - Panavista

# APPENDIX B

## TRIP GENERATION

## Trip Generation Summary

Alternative: Alternative 1

Phase:

Open Date: 7/22/2021

Project: Lake Loon Development

Analysis Date: 7/22/2021

ITE	Land Use	Weekday Average Daily Trips				Weekday AM Peak Hour of Adjacent Street Traffic				Weekday PM Peak Hour of Adjacent Street Traffic			
		*	Enter	Exit	Total	*	Enter	Exit	Total	*	Enter	Exit	Total
252	Seniors Adult Housing		591	590	1181		21	39	60		41	33	74
	300 Dwelling Units												
253	Congregate Care Facility		303	303	606		10	7	17		25	22	47
	300 Dwelling Units												
Unadjusted Volume			894	893	1787		31	46	77		66	55	121
Internal Capture Trips			0	0	0		0	0	0		0	0	0
Pass-By Trips			0	0	0		0	0	0		0	0	0
Volume Added to Adjacent Streets			894	893	1787		31	46	77		66	55	121

Total Weekday Average Daily Trips Internal Capture = 0 Percent

Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

\* - Custom rate used for selected time period.

Source: Institute of Transportation Engineers, Trip Generation Manual 10th Edition

**TRIP GENERATION 10, TRAFFICWARE, LLC**

P. 1

# APPENDIX C

## **TRIP ASSIGNMENT**

**Development: Seniors Complex****Driveway: 1      New Driveway**

Origin #	Route	To		From	
		Distribution %	Trips	Distribution %	Trips
1	New Driveway to Forest Hills South	0.00	---	7.50	1
2	New Driveway to Main West	0.00	---	17.50	2
3	New Driveway to Forest Hills North	0.00	---	12.50	1
4	Hillsboro South to New Driveway	2.50	0	0.00	---
5	Main East to New Driveway	7.50	1	0.00	---
6	Montague North to New Driveway	2.50	0	0.00	---

**Development: Seniors Complex****Driveway: 2      Loon View Lane**

Origin #	Route	To		From	
		Distribution %	Trips	Distribution %	Trips
1	Loon View Lane to Forest Hills South	15.00	2	7.50	1
2	Loon View Lane to Main West	35.00	5	17.50	2
3	Loon View Lane to Forest Hills North	25.00	3	12.50	1
4	Loon View Lane to Hillsboro South	2.50	0	5.00	0
5	Loon View Lane to Main East	7.50	1	15.00	1
6	Loon View Lane to Montague North	2.50	0	5.00	0

**Development: Residential Development****Driveway: 1      New Driveway**

Origin #	Route	To		From	
		Distribution %	Trips	Distribution %	Trips
1	New Driveway to Forest Hills South	0.00	---	7.50	5
2	New Driveway to Main West	0.00	---	17.50	11
3	New Driveway to Forest Hills North	0.00	---	12.50	8
4	Hillsboro South to New Driveway	2.50	1	0.00	---
5	Main East to New Driveway	7.50	2	0.00	---
6	Montague North to New Driveway	2.50	1	0.00	---

**Development: Residential Development****Driveway: 2      Loon View Drive**

Origin #	Route	To		From	
		Distribution %	Trips	Distribution %	Trips
1	Loon View Drive to Forest Hills South	15.00	4	7.50	5
2	Loon View Drive to Main West	35.00	9	17.50	11
3	Loon View Drive to Forest Hills North	25.00	6	12.50	8
4	Loon View Drive to Hillsboro South	2.50	1	5.00	3
5	Loon View Drive to Main East	7.50	2	15.00	10
6	Loon View Drive to Montague North	2.50	1	5.00	3

**Development: Seniors Development****Driveway: 1      New Driveway**

Origin #	Route	To		From	
		Distribution %	Trips	Distribution %	Trips
1	New Driveway to Forest Hills South	0.00	---	7.50	2
2	New Driveway to Main West	0.00	---	17.50	5
3	New Driveway to Forest Hills North	0.00	---	12.50	4
4	Hillsboro South to New Driveway	2.50	1	0.00	---
5	Main East to New Driveway	7.50	2	0.00	---
6	Montague North to New Driveway	2.50	1	0.00	---

**Development: Seniors Development****Driveway: 2      Loon View Drive**

Origin #	Route	To		From	
		Distribution %	Trips	Distribution %	Trips
1	Loon View Drive to Forest Hills South	15.00	5	7.50	2
2	Loon View Drive to Main West	35.00	11	17.50	5
3	Loon View Drive to Forest Hills North	25.00	8	12.50	4
4	Loon View Drive to Hillsboro South	2.50	1	5.00	1
5	Loon View Drive to Main East	7.50	2	15.00	4
6	Loon View Drive to Montague North	2.50	1	5.00	1

**Development: Residential Development****Driveway: 1      New Driveway**

Origin #	Route	To		From	
		Distribution %	Trips	Distribution %	Trips
1	New Driveway to Forest Hills South	0.00	---	7.50	2
2	New Driveway to Main West	0.00	---	17.50	6
3	New Driveway to Forest Hills North	0.00	---	12.50	4
4	Hillsboro South to New Driveway	2.50	2	0.00	---
5	Main East to New Driveway	7.50	6	0.00	---
6	Montague North to New Driveway	2.50	2	0.00	---

**Development: Residential Development****Driveway: 2      Loon View Lane**
























Origin #	Route	To		From	
		Distribution %	Trips	Distribution %	Trips
1	Loon View Lane to Forest Hills South	15.00	11	7.50	2
2	Loon View Lane to Main West	35.00	27	17.50	6
3	Loon View Lane to Forest Hills North	25.00	19	12.50	4
4	Loon View Lane to Hillsboro South	2.50	2	5.00	2
5	Loon View Lane to Main East	7.50	6	15.00	5
6	Loon View Lane to Montague North	2.50	2	5.00	2

# APPENDIX D

## **SYNCHRO REPORTS**

Lake Loon Development  
1: Forest Hills & Main

2021 - Baseline  
Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	360	170	65	920	510	340	540	95	175	140	35
Future Volume (vph)	130	360	170	65	920	510	340	540	95	175	140	35
Satd. Flow (prot)	1770	3539	1794	1770	3922	0	3539	1946	1583	3586	1887	0
Flt Permitted	0.099			0.488			0.950			0.950		
Satd. Flow (perm)	184	3539	1794	909	3922	0	3539	1946	1583	3586	1887	0
Satd. Flow (RTOR)			170		130				131		10	
Lane Group Flow (vph)	130	360	170	65	1430	0	340	540	95	175	175	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases	2		2	6					3			
Total Split (s)	7.0	43.0	43.0	9.0	45.0		36.0	36.0	36.0	22.0	22.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	6.5	4.0	4.0	
Act Effect Green (s)	45.3	42.1	42.1	46.8	41.0		32.0	32.0	29.5	16.0	16.0	
Actuated g/C Ratio	0.41	0.38	0.38	0.43	0.37		0.29	0.29	0.27	0.15	0.15	
v/c Ratio	0.88	0.27	0.21	0.15	0.93		0.33	0.95	0.18	0.34	0.62	
Control Delay	79.4	25.0	4.4	18.8	41.5		31.7	67.2	3.0	43.5	51.1	
Queue Delay	0.0	0.0	0.0	0.0	34.9		0.0	0.0	0.0	0.0	0.0	
Total Delay	79.4	25.0	4.4	18.8	76.4		31.7	67.2	3.0	43.5	51.1	
LOS	E	C	A	B	E		C	E	A	D	D	
Approach Delay		30.4			73.9			48.6			47.3	
Approach LOS		C			E			D			D	
Queue Length 50th (m)	~18.5	30.4	0.0	8.3	141.8		30.1	119.6	0.0	18.2	34.9	
Queue Length 95th (m)	#55.2	42.7	14.4	17.0	#187.2		42.6	#188.5	6.3	28.6	57.6	
Internal Link Dist (m)		419.1			79.4			266.2			423.4	
Turn Bay Length (m)	45.0		115.0	45.0			100.0		80.0	200.0		
Base Capacity (vph)	147	1355	792	432	1543		1029	566	520	586	317	
Starvation Cap Reductn	0	0	0	0	213		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.88	0.27	0.21	0.15	1.08		0.33	0.95	0.18	0.30	0.55	

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 3:NBTL, Start of Green, Master Intersection

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 55.9

Intersection LOS: E

Intersection Capacity Utilization 94.5%

ICU Level of Service F

Analysis Period (min) 15

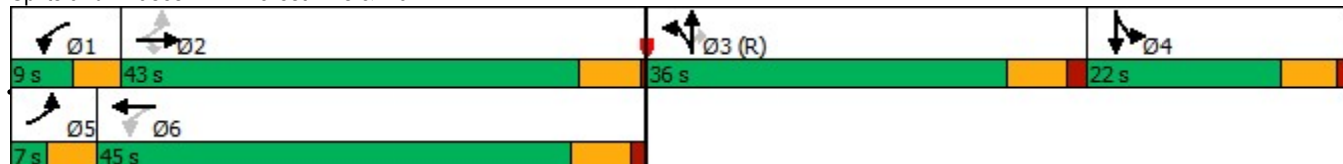
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.













Splits and Phases: 1: Forest Hills & Main



Lake Loon Development  
2: Main & New Driveway

2021 - Baseline Volumes




















Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑				↗			↗
Traffic Volume (veh/h)	0	620	10	0	1495	0	0	0	10	0	0	0
Future Volume (Veh/h)	0	620	10	0	1495	0	0	0	10	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	674	11	0	1625	0	0	0	11	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)	103			62								
pX, platoon unblocked	0.63			0.93			0.67	0.67	0.93	0.67	0.67	0.63
vC, conflicting volume	1625			685			1486	2299	337	1973	2310	812
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	827			523			283	1504	151	1015	1521	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	99	100	100	100
cM capacity (veh/h)	506			972			430	80	812	126	78	686
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1					
Volume Total	337	337	11	1083	542	11	0					
Volume Left	0	0	0	0	0	0	0					
Volume Right	0	0	11	0	0	11	0					
cSH	1700	1700	1700	1700	1700	812	1700					
Volume to Capacity	0.20	0.20	0.01	0.64	0.32	0.01	0.04					
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.3	0.0					
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	9.5	0.0					
Lane LOS												
Approach Delay (s)	0.0			0.0		9.5	0.0					
Approach LOS												
Intersection Summary												
Average Delay	0.0											
Intersection Capacity Utilization	44.7%			ICU Level of Service						A		
Analysis Period (min)	15											

# Lake Loon Development

## 3: Panavista & Main

2021 - Baseline  
Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	600	15	25	1415	60	20	5	10	15	5	60
Future Volume (vph)	15	600	15	25	1415	60	20	5	10	15	5	60
Satd. Flow (prot)	1770	3525	0	1770	3518	0	1770	1671	0	0	1660	0
Flt Permitted	0.170			0.950			0.763				0.962	
Satd. Flow (perm)	317	3525	0	1770	3518	0	1421	1671	0	0	1611	0
Satd. Flow (RTOR)		4			9			11			23	
Lane Group Flow (vph)	15	615	0	25	1475	0	21	16	0	0	84	0
Turn Type	Perm	NA		custom	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			1			8			4		
Total Split (s)	27.5	27.5		11.5	39.0		31.0	31.0		31.0	31.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Act Effect Green (s)	23.5	23.5		7.5	35.0		27.0	27.0			27.0	
Actuated g/C Ratio	0.34	0.34		0.11	0.50		0.39	0.39			0.39	
v/c Ratio	0.14	0.52		0.13	0.84		0.04	0.02			0.13	
Control Delay	20.4	20.5		30.2	20.6		13.8	9.0			11.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	20.4	20.5		30.2	20.6		13.8	9.0			11.5	
LOS	C	C		C	C		B	A			B	
Approach Delay		20.5			20.7			11.7			11.5	
Approach LOS		C			C			B			B	
Queue Length 50th (m)	1.4	35.0		3.2	85.6		1.8	0.4			5.2	
Queue Length 95th (m)	6.0	50.1		10.0	115.6		5.9	3.9			13.6	
Internal Link Dist (m)		38.2			81.3			53.7			39.2	
Turn Bay Length (m)	70.0			40.0								
Base Capacity (vph)	106	1186		189	1763		548	651			635	
Starvation Cap Reductn	0	0		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.14	0.52		0.13	0.84		0.04	0.02			0.13	

### Intersection Summary

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 0 (0%), Referenced to phase 6:WBT, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 20.2

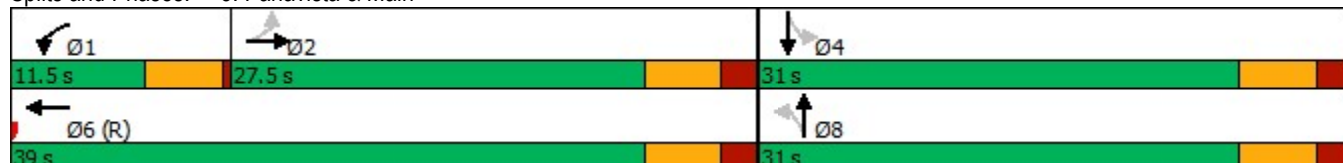
Intersection LOS: C

Intersection Capacity Utilization 59.1%

ICU Level of Service B

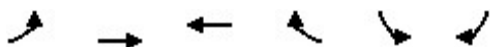
Analysis Period (min) 15

Splits and Phases: 3: Panavista & Main



Lake Loon Development  
4: Main & Loon View Lane




















2021 - Baseline Volumes  
Timing Plan: AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	620	1580	5	5	10
Future Volume (Veh/h)	5	620	1580	5	5	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	674	1717	5	5	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)		105	399			
pX, platoon unblocked	0.63				0.69	0.63
vC, conflicting volume	1722				2066	861
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	959				781	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				98	98
cM capacity (veh/h)	446				227	679
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	5	337	337	1145	577	16
Volume Left	5	0	0	0	0	5
Volume Right	0	0	0	0	5	11
cSH	446	1700	1700	1700	1700	419
Volume to Capacity	0.01	0.20	0.20	0.67	0.34	0.04
Queue Length 95th (m)	0.3	0.0	0.0	0.0	0.0	1.0
Control Delay (s)	13.2	0.0	0.0	0.0	0.0	13.9
Lane LOS	B					B
Approach Delay (s)	0.1			0.0		13.9
Approach LOS						B
<b>Intersection Summary</b>						
Average Delay			0.1			
Intersection Capacity Utilization			53.8%		ICU Level of Service	A
Analysis Period (min)			15			

Lake Loon Development  
5: Hillsboro/Montague & Main

2021 - Baseline  
Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	520	50	30	1315	120	125	50	15	10	15	60
Future Volume (vph)	55	520	50	30	1315	120	125	50	15	10	15	60
Satd. Flow (prot)	1770	3539	1583	1770	3493	0	0	1783	0	0	1676	0
Flt Permitted	0.087			0.422				0.770			0.954	
Satd. Flow (perm)	162	3539	1583	786	3493	0	0	1419	0	0	1608	0
Satd. Flow (RTOR)			91		15			5			67	
Lane Group Flow (vph)	58	547	53	32	1510	0	0	212	0	0	95	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2		2	6			4			8		
Total Split (s)	11.0	49.2	49.2	11.0	49.2		29.8	29.8		29.8	29.8	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0			6.5			6.5	
Act Effect Green (s)	53.8	49.6	49.6	53.0	47.4			23.3			23.3	
Actuated g/C Ratio	0.60	0.55	0.55	0.59	0.53			0.26			0.26	
v/c Ratio	0.26	0.28	0.06	0.06	0.82			0.57			0.20	
Control Delay	9.7	12.0	1.0	6.9	23.0			35.4			11.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay	9.7	12.0	1.0	6.9	23.0			35.4			11.7	
LOS	A	B	A	A	C			D			B	
Approach Delay		11.0			22.7			35.4			11.7	
Approach LOS		B			C			D			B	
Queue Length 50th (m)	3.7	29.3	0.0	2.0	119.4			32.8			3.8	
Queue Length 95th (m)	8.2	40.3	2.2	5.3	152.8			56.3			15.8	
Internal Link Dist (m)		374.6			257.8			222.8			185.1	
Turn Bay Length (m)	56.0		67.0	78.0								
Base Capacity (vph)	222	1950	913	539	1846			371			465	
Starvation Cap Reductn	0	0	0	0	0			0			0	
Spillback Cap Reductn	0	0	0	0	0			0			0	
Storage Cap Reductn	0	0	0	0	0			0			0	
Reduced v/c Ratio	0.26	0.28	0.06	0.06	0.82			0.57			0.20	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 6:WBTL, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 20.3

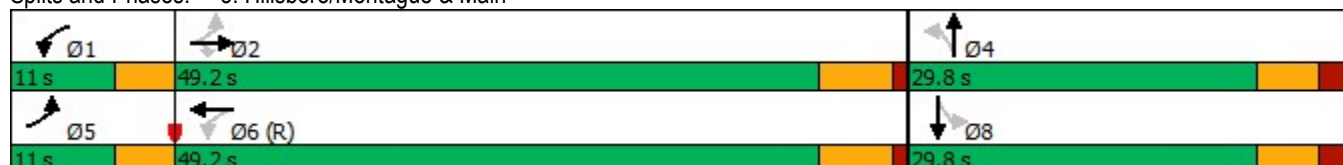
Intersection LOS: C

Intersection Capacity Utilization 71.6%

ICU Level of Service C
























Analysis Period (min) 15

Splits and Phases: 5: Hillsboro/Montague & Main



Lake Loon Development  
1: Forest Hills & Main

2031 - Development Only  
Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	360	170	65	920	510	340	540	95	175	140	35
Future Volume (vph)	130	371	170	73	936	522	340	540	100	183	140	35
Satd. Flow (prot)	1770	3539	1794	1770	3922	0	3539	1946	1583	3586	1887	0
Flt Permitted	0.099			0.478			0.950			0.950		
Satd. Flow (perm)	184	3539	1794	890	3922	0	3539	1946	1583	3586	1887	0
Satd. Flow (RTOR)			170		132				131		10	
Lane Group Flow (vph)	130	371	170	73	1458	0	340	540	100	183	175	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases	2		2	6					3			
Total Split (s)	7.0	43.0	43.0	9.0	45.0		36.0	36.0	36.0	22.0	22.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	6.5	4.0	4.0	
Act Effct Green (s)	45.2	42.1	42.1	46.9	41.0		32.0	32.0	29.5	16.0	16.0	
Actuated g/C Ratio	0.41	0.38	0.38	0.43	0.37		0.29	0.29	0.27	0.15	0.15	
v/c Ratio	0.88	0.27	0.21	0.17	0.94		0.33	0.95	0.19	0.35	0.62	
Control Delay	79.7	25.1	4.4	19.0	43.8		31.7	67.2	3.4	43.7	51.1	
Queue Delay	0.0	0.0	0.0	0.0	41.5		0.0	0.0	0.0	0.0	0.0	
Total Delay	79.7	25.1	4.4	19.0	85.4		31.7	67.2	3.4	43.7	51.1	
LOS	E	C	A	B	F		C	E	A	D	D	
Approach Delay		30.5			82.2			48.4			47.3	
Approach LOS		C			F			D			D	
Queue Length 50th (m)	~18.5	31.5	0.0	9.4	146.4		30.1	119.6	0.0	19.1	34.9	
Queue Length 95th (m)	#55.2	43.8	14.4	18.6	#193.6		42.6	#188.5	7.5	29.7	57.6	
Internal Link Dist (m)		419.1			79.4			266.2			423.4	
Turn Bay Length (m)	45.0		115.0	45.0			100.0		80.0	200.0		
Base Capacity (vph)	147	1354	791	427	1544		1029	566	520	586	317	
Starvation Cap Reductn	0	0	0	0	211		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.88	0.27	0.21	0.17	1.09		0.33	0.95	0.19	0.31	0.55	

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 3:NBTL, Start of Green, Master Intersection

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 59.5

Intersection LOS: E

Intersection Capacity Utilization 94.5%

ICU Level of Service F

Analysis Period (min) 15

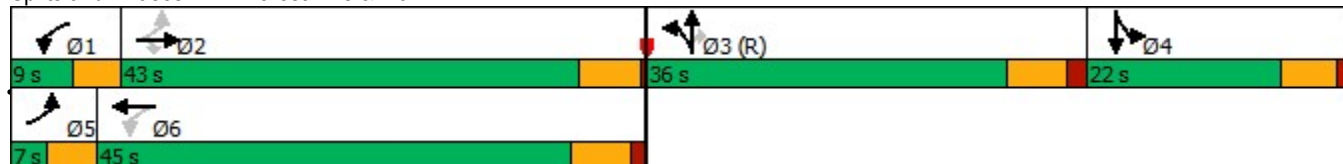
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.












Queue shown is maximum after two cycles.

Splits and Phases: 1: Forest Hills & Main






















Lake Loon Development  
2: Main & New Driveway

2026 - Development Traffic Only  
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑				↑			↑
Traffic Volume (veh/h)	0	620	10	0	1495	0	0	0	10	0	0	0
Future Volume (Veh/h)	0	644	10	0	1513	5	0	0	10	0	0	18
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	700	11	0	1645	5	0	0	11	0	0	20
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (m)		103			62							
pX, platoon unblocked	0.62			0.93			0.66	0.66	0.93	0.66	0.66	0.62
vC, conflicting volume	1650			711			1542	2350	350	2008	2358	825
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	831			544			314	1544	157	1024	1557	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	99	100	100	97
cM capacity (veh/h)	496			952			392	75	802	123	73	675
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1					
Volume Total	350	350	11	1097	553	11	20					
Volume Left	0	0	0	0	0	0	0					
Volume Right	0	0	11	0	5	11	20					
cSH	1700	1700	1700	1700	1700	802	675					
Volume to Capacity	0.21	0.21	0.01	0.65	0.33	0.01	0.03					
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.3	0.7					
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	9.5	10.5					
Lane LOS						A	B					
Approach Delay (s)	0.0			0.0		9.5	10.5					
Approach LOS						A	B					
Intersection Summary												
Average Delay			0.1									
Intersection Capacity Utilization			44.7%			ICU Level of Service			A			
Analysis Period (min)			15									

Lake Loon Development  
3: Panavista & Main

2031 - Development Only  
Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	600	15	25	1415	60	20	5	10	15	5	60
Future Volume (vph)	15	624	15	25	1438	60	20	5	10	15	5	60
Satd. Flow (prot)	1770	3525	0	1770	3518	0	1770	1671	0	0	1660	0
Flt Permitted	0.170			0.950			0.763				0.962	
Satd. Flow (perm)	317	3525	0	1770	3518	0	1421	1671	0	0	1611	0
Satd. Flow (RTOR)		4			8			11			22	
Lane Group Flow (vph)	15	639	0	25	1498	0	21	16	0	0	84	0
Turn Type	Perm	NA		custom	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			1			8			4		
Total Split (s)	27.5	27.5		11.5	39.0		31.0	31.0		31.0	31.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Act Effect Green (s)	23.5	23.5		7.5	35.0		27.0	27.0			27.0	
Actuated g/C Ratio	0.34	0.34		0.11	0.50		0.39	0.39			0.39	
v/c Ratio	0.14	0.54		0.13	0.85		0.04	0.02			0.13	
Control Delay	20.4	20.8		30.2	21.3		13.8	9.0			11.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	20.4	20.8		30.2	21.3		13.8	9.0			11.6	
LOS	C	C		C	C		B	A			B	
Approach Delay		20.8			21.4			11.7			11.6	
Approach LOS		C			C			B			B	
Queue Length 50th (m)	1.4	36.7		3.2	88.0		1.8	0.4			5.3	
Queue Length 95th (m)	6.0	52.2		10.0	118.7		5.9	3.9			13.7	
Internal Link Dist (m)		38.2			81.3			53.7			39.2	
Turn Bay Length (m)	70.0			40.0								
Base Capacity (vph)	106	1186		189	1763		548	651			634	
Starvation Cap Reductn	0	0		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.14	0.54		0.13	0.85		0.04	0.02			0.13	

Intersection Summary

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 0 (0%), Referenced to phase 6:WBT, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 20.7

Intersection LOS: C

Intersection Capacity Utilization 59.1%

ICU Level of Service B

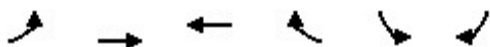
Analysis Period (min) 15

Splits and Phases: 3: Panavista & Main



Lake Loon Development  
4: Main & Loon View Lane




















2026 - Development Traffic Only  
Timing Plan: AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	620	1580	5	5	10
Future Volume (Veh/h)	29	620	1585	10	16	28
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	32	674	1723	11	17	30
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)		105	399			
pX, platoon unblocked	0.62				0.69	0.62
vC, conflicting volume	1734				2130	867
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	968				843	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	93				91	96
cM capacity (veh/h)	441				194	675
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	32	337	337	1149	585	47
Volume Left	32	0	0	0	0	17
Volume Right	0	0	0	0	11	30
cSH	441	1700	1700	1700	1700	356
Volume to Capacity	0.07	0.20	0.20	0.68	0.34	0.13
Queue Length 95th (m)	1.9	0.0	0.0	0.0	0.0	3.6
Control Delay (s)	13.8	0.0	0.0	0.0	0.0	16.6
Lane LOS	B					C
Approach Delay (s)	0.6			0.0		16.6
Approach LOS						C
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			53.8%		ICU Level of Service	A
Analysis Period (min)			15			

Lake Loon Development  
5: Hillsboro/Montague & Main

2031 - Development Only  
Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	520	50	30	1315	120	125	50	15	10	15	60
Future Volume (vph)	57	527	52	30	1321	120	127	50	15	10	15	62
Satd. Flow (prot)	1770	3539	1583	1770	3497	0	0	1783	0	0	1674	0
Flt Permitted	0.087			0.417				0.770			0.955	
Satd. Flow (perm)	162	3539	1583	777	3497	0	0	1419	0	0	1608	0
Satd. Flow (RTOR)			91		15			5			69	
Lane Group Flow (vph)	60	555	55	32	1517	0	0	214	0	0	97	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2		2	6			4			8		
Total Split (s)	11.0	49.2	49.2	11.0	49.2		29.8	29.8		29.8	29.8	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0			6.5			6.5	
Act Effect Green (s)	53.8	49.6	49.6	53.0	47.4			23.3			23.3	
Actuated g/C Ratio	0.60	0.55	0.55	0.59	0.53			0.26			0.26	
v/c Ratio	0.27	0.28	0.06	0.06	0.82			0.58			0.21	
Control Delay	9.9	12.1	1.1	6.9	23.2			35.6			11.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay	9.9	12.1	1.1	6.9	23.2			35.6			11.6	
LOS	A	B	A	A	C			D			B	
Approach Delay		11.0			22.8			35.6			11.6	
Approach LOS		B			C			D			B	
Queue Length 50th (m)	3.9	29.8	0.0	2.0	120.1			33.1			3.9	
Queue Length 95th (m)	8.5	41.0	2.5	5.3	153.8			56.9			15.9	
Internal Link Dist (m)		374.6			257.8			222.8			185.1	
Turn Bay Length (m)	56.0		67.0	78.0								
Base Capacity (vph)	222	1950	913	534	1848			371			467	
Starvation Cap Reductn	0	0	0	0	0			0			0	
Spillback Cap Reductn	0	0	0	0	0			0			0	
Storage Cap Reductn	0	0	0	0	0			0			0	
Reduced v/c Ratio	0.27	0.28	0.06	0.06	0.82			0.58			0.21	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 6:WBTL, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 20.3

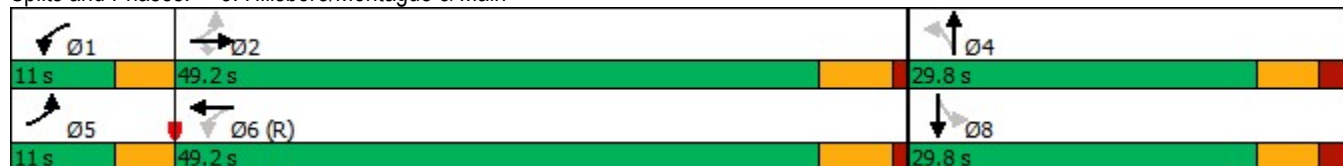
Intersection LOS: C

Intersection Capacity Utilization 71.6%

ICU Level of Service C
























Analysis Period (min) 15

Splits and Phases: 5: Hillsboro/Montague & Main



Lake Loon Development  
1: Forest Hills & Main

2031 - Background Only  
Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	360	170	65	920	510	340	540	95	175	140	35
Future Volume (vph)	137	378	179	68	967	536	357	568	100	184	147	37
Satd. Flow (prot)	1770	3539	1794	1770	3922	0	3539	1946	1583	3586	1887	0
Flt Permitted	0.099			0.471			0.950			0.950		
Satd. Flow (perm)	184	3539	1794	877	3922	0	3539	1946	1583	3586	1887	0
Satd. Flow (RTOR)			179		129				131		10	
Lane Group Flow (vph)	137	378	179	68	1503	0	357	568	100	184	184	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases	2		2	6					3			
Total Split (s)	7.0	43.0	43.0	9.0	45.0		36.0	36.0	36.0	22.0	22.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	6.5	4.0	4.0	
Act Effct Green (s)	44.9	42.0	42.0	46.8	41.0		32.0	32.0	29.5	16.3	16.3	
Actuated g/C Ratio	0.41	0.38	0.38	0.43	0.37		0.29	0.29	0.27	0.15	0.15	
v/c Ratio	0.96	0.28	0.23	0.16	0.97		0.35	1.00	0.19	0.35	0.64	
Control Delay	98.5	25.2	4.4	19.0	49.2		31.9	78.5	3.4	43.5	52.0	
Queue Delay	0.0	0.0	0.0	0.0	41.1		0.0	0.0	0.0	0.0	0.0	
Total Delay	98.5	25.2	4.4	19.0	90.3		31.9	78.5	3.4	43.5	52.0	
LOS	F	C	A	B	F		C	E	A	D	D	
Approach Delay		34.3			87.2			54.9			47.7	
Approach LOS		C			F			D			D	
Queue Length 50th (m)	~23.3	32.1	0.0	8.8	154.5		31.7	~129.0	0.0	19.1	36.8	
Queue Length 95th (m)	#59.0	44.7	14.7	17.6	#205.1		44.6	#202.7	7.5	30.0	60.7	
Internal Link Dist (m)		419.1			79.4			266.2			423.4	
Turn Bay Length (m)	45.0		115.0	45.0			100.0		80.0	200.0		
Base Capacity (vph)	142	1350	795	419	1542		1029	566	520	586	317	
Starvation Cap Reductn	0	0	0	0	207		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.96	0.28	0.23	0.16	1.13		0.35	1.00	0.19	0.31	0.58	

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 3:NBTL, Start of Green, Master Intersection

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay: 64.2

Intersection LOS: E

Intersection Capacity Utilization 94.5%

ICU Level of Service F

Analysis Period (min) 15

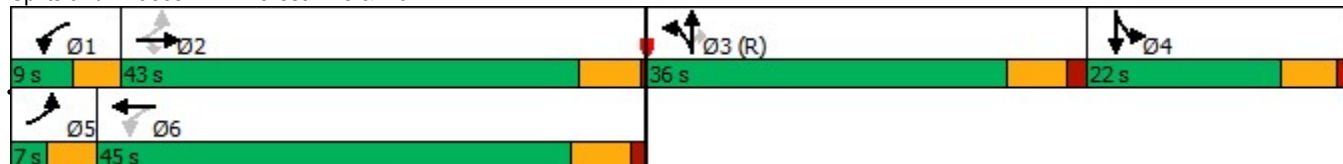
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.












Queue shown is maximum after two cycles.

Splits and Phases: 1: Forest Hills & Main



Lake Loon Development  
2: Main & New Driveway




















2031 - Background Traffic Only  
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑				↑			↑
Traffic Volume (veh/h)	0	620	10	0	1495	0	0	0	10	0	0	0
Future Volume (Veh/h)	0	652	11	0	1571	0	0	0	11	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	709	12	0	1708	0	0	0	12	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)	103			62								
pX, platoon unblocked	0.60			0.93			0.63	0.63	0.93	0.63	0.63	0.60
vC, conflicting volume	1708			721			1563	2417	354	2074	2429	854
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	840			551			235	1584	157	1043	1603	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	99	100	100	100
cM capacity (veh/h)	473			945			443	68	801	114	66	649
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1					
Volume Total	354	354	12	1139	569	12	0					
Volume Left	0	0	0	0	0	0	0					
Volume Right	0	0	12	0	0	12	0					
cSH	1700	1700	1700	1700	1700	801	1700					
Volume to Capacity	0.21	0.21	0.01	0.67	0.33	0.01	0.05					
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.4	0.0					
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	9.6	0.0					
Lane LOS	A A											
Approach Delay (s)	0.0			0.0		9.6	0.0					
Approach LOS	A A											
Intersection Summary												
Average Delay	0.0											
Intersection Capacity Utilization	44.7%			ICU Level of Service					A			
Analysis Period (min)	15											

# Lake Loon Development

## 3: Panavista & Main

2031 - Background Only  
Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	600	15	25	1415	60	20	5	10	15	5	60
Future Volume (vph)	16	631	16	26	1487	63	21	5	11	16	5	63
Satd. Flow (prot)	1770	3525	0	1770	3518	0	1770	1665	0	0	1658	0
Flt Permitted	0.170			0.950			0.757				0.961	
Satd. Flow (perm)	317	3525	0	1770	3518	0	1410	1665	0	0	1609	0
Satd. Flow (RTOR)		4			9			12			19	
Lane Group Flow (vph)	16	647	0	26	1550	0	22	17	0	0	88	0
Turn Type	Perm	NA		custom	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			1			8			4		
Total Split (s)	27.5	27.5		11.5	39.0		31.0	31.0		31.0	31.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Act Effect Green (s)	23.5	23.5		7.5	35.0		27.0	27.0			27.0	
Actuated g/C Ratio	0.34	0.34		0.11	0.50		0.39	0.39			0.39	
v/c Ratio	0.15	0.55		0.14	0.88		0.04	0.03			0.14	
Control Delay	20.7	20.9		30.3	23.1		13.8	8.8			12.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	20.7	20.9		30.3	23.1		13.8	8.8			12.2	
LOS	C	C		C	C		B	A			B	
Approach Delay		20.9			23.2			11.6			12.2	
Approach LOS		C			C			B			B	
Queue Length 50th (m)	1.5	37.2		3.3	93.4		1.8	0.4			5.9	
Queue Length 95th (m)	6.3	52.9		10.1	#134.8		6.0	4.0			14.6	
Internal Link Dist (m)		38.2			81.3			53.7			39.2	
Turn Bay Length (m)	70.0			40.0								
Base Capacity (vph)	106	1186		189	1763		543	649			632	
Starvation Cap Reductn	0	0		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.15	0.55		0.14	0.88		0.04	0.03			0.14	

### Intersection Summary

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 0 (0%), Referenced to phase 6:WBT, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 22.0

Intersection LOS: C

Intersection Capacity Utilization 59.1%

ICU Level of Service B

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

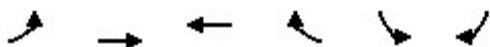
Queue shown is maximum after two cycles.

### Splits and Phases: 3: Panavista & Main



Lake Loon Development  
4: Main & Loon View Lane




















2031 - Background Traffic Only  
Timing Plan: AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	620	1580	5	5	10
Future Volume (Veh/h)	5	652	1661	5	5	11
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	709	1805	5	5	12
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)		105	399			
pX, platoon unblocked	0.58				0.66	0.58
vC, conflicting volume	1810				2172	905
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	966				754	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				98	98
cM capacity (veh/h)	415				224	634
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	5	354	354	1203	607	17
Volume Left	5	0	0	0	0	5
Volume Right	0	0	0	0	5	12
cSH	415	1700	1700	1700	1700	412
Volume to Capacity	0.01	0.21	0.21	0.71	0.36	0.04
Queue Length 95th (m)	0.3	0.0	0.0	0.0	0.0	1.0
Control Delay (s)	13.8	0.0	0.0	0.0	0.0	14.1
Lane LOS	B					B
Approach Delay (s)	0.1			0.0		14.1
Approach LOS						B
<b>Intersection Summary</b>						
Average Delay			0.1			
Intersection Capacity Utilization			53.8%		ICU Level of Service	A
Analysis Period (min)			15			

Lake Loon Development  
5: Hillsboro/Montague & Main

2031 - Background Only  
Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	520	50	30	1315	120	125	50	15	10	15	60
Future Volume (vph)	58	547	53	32	1382	126	131	53	16	11	16	63
Satd. Flow (prot)	1770	3539	1583	1770	3493	0	0	1783	0	0	1676	0
Flt Permitted	0.087			0.405				0.772			0.950	
Satd. Flow (perm)	162	3539	1583	754	3493	0	0	1422	0	0	1601	0
Satd. Flow (RTOR)			91		15			5			70	
Lane Group Flow (vph)	61	576	56	34	1588	0	0	223	0	0	100	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2		2	6			4			8		
Total Split (s)	11.0	49.2	49.2	11.0	49.2		29.8	29.8		29.8	29.8	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0			6.5			6.5	
Act Effct Green (s)	53.8	49.6	49.6	53.0	47.4			23.3			23.3	
Actuated g/C Ratio	0.60	0.55	0.55	0.59	0.53			0.26			0.26	
v/c Ratio	0.27	0.30	0.06	0.07	0.86			0.60			0.21	
Control Delay	10.0	12.2	1.2	6.9	25.3			36.5			11.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay	10.0	12.2	1.2	6.9	25.3			36.5			11.7	
LOS	A	B	A	A	C			D			B	
Approach Delay		11.1			24.9			36.5			11.7	
Approach LOS		B			C			D			B	
Queue Length 50th (m)	3.9	31.2	0.0	2.2	130.7			34.8			4.1	
Queue Length 95th (m)	8.5	42.7	2.6	5.6	#185.0			59.3			16.6	
Internal Link Dist (m)		374.6			257.8			222.8			185.1	
Turn Bay Length (m)	56.0		67.0	78.0								
Base Capacity (vph)	222	1950	913	523	1846			371			466	
Starvation Cap Reductn	0	0	0	0	0			0			0	
Spillback Cap Reductn	0	0	0	0	0			0			0	
Storage Cap Reductn	0	0	0	0	0			0			0	
Reduced v/c Ratio	0.27	0.30	0.06	0.07	0.86			0.60			0.21	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 6:WBTL, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 21.8

Intersection LOS: C

Intersection Capacity Utilization 71.6%

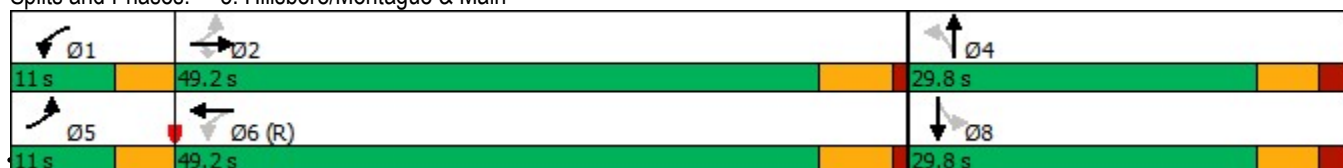
ICU Level of Service C

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.
























Splits and Phases: 5: Hillsboro/Montague & Main



Lake Loon Development  
1: Forest Hills & Main

2031 - Background and Development Traffic

Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	360	170	65	920	510	340	540	95	175	140	35
Future Volume (vph)	137	390	179	77	984	549	357	568	105	192	147	37
Satd. Flow (prot)	1770	3539	1794	1770	3922	0	3539	1946	1583	3586	1887	0
Flt Permitted	0.099			0.461			0.950			0.950		
Satd. Flow (perm)	184	3539	1794	859	3922	0	3539	1946	1583	3586	1887	0
Satd. Flow (RTOR)			179		131				131		10	
Lane Group Flow (vph)	137	390	179	77	1533	0	357	568	105	192	184	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases	2		2	6					3			
Total Split (s)	7.0	43.0	43.0	9.0	45.0		36.0	36.0	36.0	22.0	22.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	6.5	4.0	4.0	
Act Effect Green (s)	44.9	42.0	42.0	46.8	41.0		32.0	32.0	29.5	16.3	16.3	
Actuated g/C Ratio	0.41	0.38	0.38	0.43	0.37		0.29	0.29	0.27	0.15	0.15	
v/c Ratio	0.96	0.29	0.23	0.19	0.99		0.35	1.00	0.20	0.36	0.64	
Control Delay	98.5	25.4	4.4	19.3	53.2		31.9	78.5	4.0	43.7	52.0	
Queue Delay	0.0	0.0	0.0	0.0	38.1		0.0	0.0	0.0	0.0	0.0	
Total Delay	98.5	25.4	4.4	19.3	91.3		31.9	78.5	4.0	43.7	52.0	
LOS	F	C	A	B	F		C	E	A	D	D	
Approach Delay		34.2			87.8			54.8			47.8	
Approach LOS		C			F			D			D	
Queue Length 50th (m)	~23.3	33.3	0.0	10.0	159.7		31.7	~129.0	0.0	20.0	36.8	
Queue Length 95th (m)	#59.0	46.1	14.7	19.5	#212.0		44.6	#202.7	8.6	31.0	60.7	
Internal Link Dist (m)		419.1			79.4			266.2			423.4	
Turn Bay Length (m)	45.0		115.0	45.0			100.0		80.0	200.0		
Base Capacity (vph)	142	1349	794	413	1544		1029	566	520	586	317	
Starvation Cap Reductn	0	0	0	0	204		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.96	0.29	0.23	0.19	1.14		0.35	1.00	0.20	0.33	0.58	

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 3:NBTL, Start of Green, Master Intersection

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay: 64.5

Intersection LOS: E

Intersection Capacity Utilization 94.5%

ICU Level of Service F

Analysis Period (min) 15

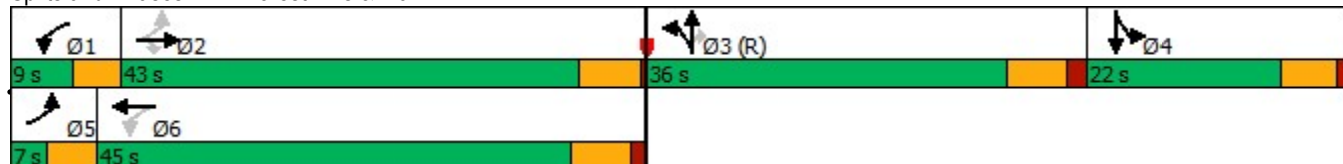
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.













Splits and Phases: 1: Forest Hills & Main



Lake Loon Development  
2: Main & New Driveway

2031 - Background and Development Traffic

Timing Plan: AM Peak Hour




















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑				↑			↑
Traffic Volume (veh/h)	0	620	10	0	1495	0	0	0	10	0	0	0
Future Volume (Veh/h)	0	677	11	0	1590	5	0	0	11	0	0	19
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	736	12	0	1728	5	0	0	12	0	0	21
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage veh												
Upstream signal (m)	103				62							
pX, platoon unblocked	0.59			0.93			0.62	0.62	0.93	0.62	0.62	0.59
vC, conflicting volume	1733			748			1621	2469	368	2110	2478	866
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	837			572			259	1623	163	1046	1638	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	98	100	100	97
cM capacity (veh/h)	464			924			405	63	792	112	62	635
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1					
Volume Total	368	368	12	1152	581	12	21					
Volume Left	0	0	0	0	0	0	0					
Volume Right	0	0	12	0	5	12	21					
cSH	1700	1700	1700	1700	1700	792	635					
Volume to Capacity	0.22	0.22	0.01	0.68	0.34	0.02	0.03					
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.4	0.8					
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	9.6	10.9					
Lane LOS						A	B					
Approach Delay (s)	0.0			0.0		9.6	10.9					
Approach LOS						A	B					
Intersection Summary												
Average Delay			0.1									
Intersection Capacity Utilization			44.7%	ICU Level of Service					A			
Analysis Period (min)			15									

# Lake Loon Development

## 3: Panavista & Main

# 2031 - Background and Development Traffic

Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	600	15	25	1415	60	20	5	10	15	5	60
Future Volume (vph)	16	656	16	26	1512	63	21	5	11	16	5	63
Satd. Flow (prot)	1770	3525	0	1770	3518	0	1770	1665	0	0	1658	0
Flt Permitted	0.170			0.950			0.757				0.961	
Satd. Flow (perm)	317	3525	0	1770	3518	0	1410	1665	0	0	1609	0
Satd. Flow (RTOR)		4			8			12			18	
Lane Group Flow (vph)	16	672	0	26	1575	0	22	17	0	0	88	0
Turn Type	Perm	NA		custom	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			1			8			4		
Total Split (s)	27.5	27.5		11.5	39.0		31.0	31.0		31.0	31.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Act Effect Green (s)	23.5	23.5		7.5	35.0		27.0	27.0			27.0	
Actuated g/C Ratio	0.34	0.34		0.11	0.50		0.39	0.39			0.39	
v/c Ratio	0.15	0.57		0.14	0.89		0.04	0.03			0.14	
Control Delay	20.7	21.2		30.3	24.2		13.8	8.8			12.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	20.7	21.2		30.3	24.2		13.8	8.8			12.3	
LOS	C	C		C	C		B	A			B	
Approach Delay		21.2			24.3			11.6			12.3	
Approach LOS		C			C			B			B	
Queue Length 50th (m)	1.5	39.0		3.3	96.3		1.8	0.4			6.0	
Queue Length 95th (m)	6.3	55.3		10.1	#147.9		6.0	4.0			14.7	
Internal Link Dist (m)		38.2			81.3			53.7			39.2	
Turn Bay Length (m)	70.0			40.0								
Base Capacity (vph)	106	1186		189	1763		543	649			631	
Starvation Cap Reductn	0	0		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.15	0.57		0.14	0.89		0.04	0.03			0.14	

### Intersection Summary

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 0 (0%), Referenced to phase 6:WBT, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 22.8

Intersection LOS: C

Intersection Capacity Utilization 59.1%

ICU Level of Service B

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

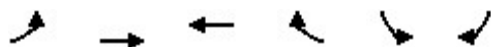
### Splits and Phases: 3: Panavista & Main



Synchro 11 Report

Lake Loon Development  
4: Main & Loon View Lane

2031 - Background and Development Traffic  
Timing Plan: AM Peak Hour






















Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	620	1580	5	5	10
Future Volume (Veh/h)	30	652	1666	11	17	29
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	709	1811	12	18	32
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		105	399			
pX, platoon unblocked	0.58				0.65	0.58
vC, conflicting volume	1823				2238	912
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	974				819	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	92				90	95
cM capacity (veh/h)	409				189	630
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	33	354	354	1207	616	50
Volume Left	33	0	0	0	0	18
Volume Right	0	0	0	0	12	32
cSH	409	1700	1700	1700	1700	342
Volume to Capacity	0.08	0.21	0.21	0.71	0.36	0.15
Queue Length 95th (m)	2.1	0.0	0.0	0.0	0.0	4.1
Control Delay (s)	14.6	0.0	0.0	0.0	0.0	17.3
Lane LOS	B					C
Approach Delay (s)	0.6			0.0		17.3
Approach LOS						C
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			53.8%		ICU Level of Service	A
Analysis Period (min)			15			

Lake Loon Development  
5: Hillsboro/Montague & Main

2031 - Background and Development Traffic

Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	520	50	30	1315	120	125	50	15	10	15	60
Future Volume (vph)	60	554	55	32	1389	126	133	53	16	11	16	65
Satd. Flow (prot)	1770	3539	1583	1770	3493	0	0	1783	0	0	1676	0
Flt Permitted	0.087			0.401				0.771			0.951	
Satd. Flow (perm)	162	3539	1583	747	3493	0	0	1420	0	0	1603	0
Satd. Flow (RTOR)			91		15			5			72	
Lane Group Flow (vph)	63	583	58	34	1595	0	0	225	0	0	102	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2		2	6			4			8		
Total Split (s)	11.0	49.2	49.2	11.0	49.2		29.8	29.8		29.8	29.8	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0			6.5			6.5	
Act Effect Green (s)	53.8	49.6	49.6	53.0	47.4			23.3			23.3	
Actuated g/C Ratio	0.60	0.55	0.55	0.59	0.53			0.26			0.26	
v/c Ratio	0.28	0.30	0.06	0.07	0.86			0.61			0.22	
Control Delay	10.1	12.2	1.3	6.9	25.5			36.7			11.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay	10.1	12.2	1.3	6.9	25.5			36.7			11.6	
LOS	B	B	A	A	C			D			B	
Approach Delay		11.1			25.2			36.7			11.6	
Approach LOS		B			C			D			B	
Queue Length 50th (m)	4.1	31.6	0.0	2.2	131.7			35.2			4.1	
Queue Length 95th (m)	8.8	43.2	2.8	5.6	#186.4			60.0			16.6	
Internal Link Dist (m)		374.6			257.8			222.8			185.1	
Turn Bay Length (m)	56.0		67.0	78.0								
Base Capacity (vph)	222	1950	913	519	1846			371			468	
Starvation Cap Reductn	0	0	0	0	0			0			0	
Spillback Cap Reductn	0	0	0	0	0			0			0	
Storage Cap Reductn	0	0	0	0	0			0			0	
Reduced v/c Ratio	0.28	0.30	0.06	0.07	0.86			0.61			0.22	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 6:WBTL, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 21.9

Intersection LOS: C

Intersection Capacity Utilization 71.6%

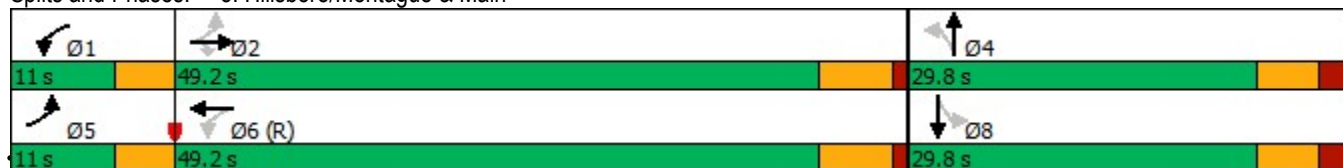
ICU Level of Service C

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Hillsboro/Montague & Main


























Synchro 11 Report

# Lake Loon Development

## 1: Forest Hills & Main

2021 Baseline Traffic  
Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	1080	350	200	550	210	215	240	200	700	390	85
Future Volume (vph)	35	1080	350	200	550	210	215	240	200	700	390	85
Satd. Flow (prot)	1770	3725	1794	1770	3573	0	3614	1946	1583	3774	1893	0
Flt Permitted	0.278			0.107			0.950			0.950		
Satd. Flow (perm)	518	3725	1794	199	3573	0	3614	1946	1583	3774	1893	0
Satd. Flow (RTOR)			350		57				171		10	
Lane Group Flow (vph)	35	1080	350	200	760	0	215	240	200	700	475	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases	2		2	6					3			
Total Split (s)	9.0	39.0	39.0	14.0	44.0		23.0	23.0	23.0	34.0	34.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	6.5	4.0	4.0	
Act Effect Green (s)	40.8	35.6	35.6	49.8	44.4		18.3	18.3	15.8	29.9	29.9	
Actuated g/C Ratio	0.37	0.32	0.32	0.45	0.40		0.17	0.17	0.14	0.27	0.27	
v/c Ratio	0.14	0.90	0.43	0.85	0.51		0.36	0.74	0.54	0.68	0.91	
Control Delay	19.0	46.6	4.7	49.2	22.2		42.3	58.2	15.4	39.8	61.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.4	56.4	0.0	
Total Delay	19.0	46.6	4.7	49.2	22.2		42.3	58.2	15.8	96.2	61.5	
LOS	B	D	A	D	C		D	E	B	F	E	
Approach Delay		36.0			27.8			40.0			82.2	
Approach LOS		D			C			D			F	
Queue Length 50th (m)	4.4	122.8	0.0	29.6	69.9		22.2	51.8	5.8	72.8	101.9	
Queue Length 95th (m)	10.5	#163.1	20.3	#70.5	90.1		33.9	#84.3	28.2	93.5	#164.1	
Internal Link Dist (m)		419.1			79.4			266.2			423.4	
Turn Bay Length (m)	45.0		115.0	45.0			100.0		80.0	200.0		
Base Capacity (vph)	251	1205	817	235	1476		624	336	382	1029	523	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	29	658	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.14	0.90	0.43	0.85	0.51		0.34	0.71	0.57	1.89	0.91	

### Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green, Master Intersection

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 47.5

Intersection LOS: D

Intersection Capacity Utilization 84.4%

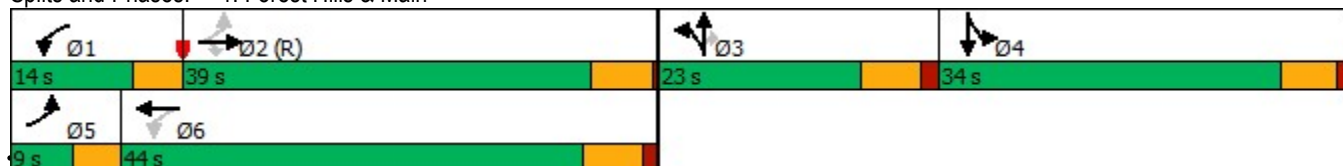
ICU Level of Service E

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.





















Queue shown is maximum after two cycles.

Splits and Phases: 1: Forest Hills & Main



Lake Loon Development  
2: Sobeys RIRO/New Driveway & Main




















2021 - Baseline Traffic  
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (veh/h)	0	1910	70	0	960	0	0	0	70	0	0	0
Future Volume (Veh/h)	0	1910	70	0	960	0	0	0	70	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	2076	76	0	1043	0	0	0	76	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (m)		103			62							
pX, platoon unblocked	0.90			0.72			0.77	0.77	0.72	0.77	0.77	0.90
vC, conflicting volume	1043			2152			2598	3119	1038	2157	3195	522
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	816			1823			1873	2548	278	1303	2647	234
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	85	100	100	100
cM capacity (veh/h)	724			239			34	20	519	78	18	688
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1	SB 1				
Volume Total	0	1038	1038	76	695	348	76	0				
Volume Left	0	0	0	0	0	0	0	0				
Volume Right	0	0	0	76	0	0	76	0				
cSH	1700	1700	1700	1700	1700	1700	519	1700				
Volume to Capacity	0.00	0.61	0.61	0.04	0.41	0.20	0.15	0.04				
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	4.1	0.0				
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	13.1	0.0				
Lane LOS							B	A				
Approach Delay (s)	0.0				0.0		13.1	0.0				
Approach LOS							B	A				
Intersection Summary												
Average Delay			0.3									
Intersection Capacity Utilization			63.8%		ICU Level of Service					B		
Analysis Period (min)			15									

# Lake Loon Development

## 3: Panavista & Main

2021 Baseline Traffic  
Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	1880	40	55	900	45	35	5	95	85	5	25
Future Volume (vph)	60	1880	40	55	900	45	35	5	95	85	5	25
Satd. Flow (prot)	1770	3910	0	1770	3894	0	1770	1596	0	0	1744	0
Flt Permitted	0.317			0.950			0.696				0.721	
Satd. Flow (perm)	590	3910	0	1770	3894	0	1296	1596	0	0	1304	0
Satd. Flow (RTOR)		3			11			100			12	
Lane Group Flow (vph)	60	1920	0	55	945	0	37	105	0	0	120	0
Turn Type	Perm	NA		custom	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			1			8			4		
Total Split (s)	67.4	67.4		11.6	79.0		31.0	31.0		31.0	31.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Act Effect Green (s)	63.4	63.4		7.6	75.0		27.0	27.0			27.0	
Actuated g/C Ratio	0.58	0.58		0.07	0.68		0.25	0.25			0.25	
v/c Ratio	0.18	0.85		0.45	0.36		0.12	0.22			0.36	
Control Delay	15.1	25.1		61.5	7.7		33.6	8.7			34.6	
Queue Delay	0.0	47.1		0.0	0.0		0.0	0.0			0.0	
Total Delay	15.1	72.1		61.5	7.7		33.6	8.7			34.6	
LOS	B	E		E	A		C	A			C	
Approach Delay		70.4			10.6			15.1			34.6	
Approach LOS		E			B			B			C	
Queue Length 50th (m)	5.4	174.7		12.2	39.6		6.5	0.9			20.2	
Queue Length 95th (m)	m8.2	199.6		25.9	49.5		15.6	14.6			38.1	
Internal Link Dist (m)		38.2			81.3			53.7			39.2	
Turn Bay Length (m)	70.0			40.0								
Base Capacity (vph)	340	2254		122	2658		318	467			329	
Starvation Cap Reductn	0	630		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.18	1.18		0.45	0.36		0.12	0.22			0.36	

### Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 70 (64%), Referenced to phase 2:EBTL, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 48.2

Intersection LOS: D

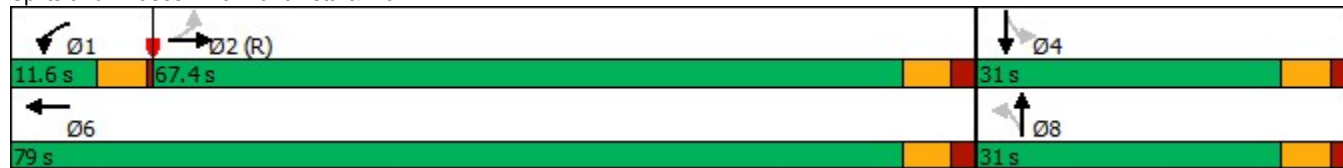
Intersection Capacity Utilization 70.4%

ICU Level of Service C

Analysis Period (min) 15

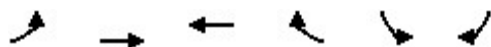
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Panavista & Main



Lake Loon Development  
4: Main & Loonview Lane




















2021 - Baseline Traffic  
Timing Plan: PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	2045	990	10	5	10
Future Volume (Veh/h)	15	2045	990	10	5	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.92	0.92
Hourly flow rate (vph)	16	2153	1042	11	5	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)		105	399			
pX, platoon unblocked	0.87				0.62	0.87
vC, conflicting volume	1053				2156	526
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	752				672	144
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				98	99
cM capacity (veh/h)	739				237	760
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	16	1076	1076	695	358	16
Volume Left	16	0	0	0	0	5
Volume Right	0	0	0	0	11	11
cSH	739	1700	1700	1700	1700	450
Volume to Capacity	0.02	0.63	0.63	0.41	0.21	0.04
Queue Length 95th (m)	0.5	0.0	0.0	0.0	0.0	0.9
Control Delay (s)	10.0	0.0	0.0	0.0	0.0	13.3
Lane LOS	A					B
Approach Delay (s)	0.1			0.0		13.3
Approach LOS						B
<b>Intersection Summary</b>						
Average Delay			0.1			
Intersection Capacity Utilization			66.5%		ICU Level of Service	C
Analysis Period (min)			15			

Lake Loon Development  
5: Hillsboro/Montague & Main

2021 Baseline Traffic  
Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	1680	260	40	790	20	120	30	30	140	80	90
Future Volume (vph)	110	1680	260	40	790	20	120	30	30	140	80	90
Satd. Flow (prot)	1770	3539	1583	1770	3525	0	0	1762	0	0	1751	0
Flt Permitted	0.247			0.089				0.589			0.782	
Satd. Flow (perm)	460	3539	1583	166	3525	0	0	1072	0	0	1400	0
Satd. Flow (RTOR)			223		4			11			23	
Lane Group Flow (vph)	116	1768	274	42	853	0	0	190	0	0	326	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2		2	6			4			8		
Total Split (s)	11.0	49.5	49.5	11.0	49.5		29.5	29.5		29.5	29.5	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	
Act Effect Green (s)	54.1	49.9	49.9	53.3	47.7			25.5			25.5	
Actuated g/C Ratio	0.60	0.55	0.55	0.59	0.53			0.28			0.28	
v/c Ratio	0.31	0.90	0.28	0.19	0.46			0.61			0.79	
Control Delay	9.0	27.4	3.8	8.5	14.6			36.0			43.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay	9.0	27.4	3.8	8.5	14.6			36.0			43.3	
LOS	A	C	A	A	B			D			D	
Approach Delay		23.4			14.3			36.0			43.3	
Approach LOS		C			B			D			D	
Queue Length 50th (m)	7.6	159.3	4.5	2.6	50.4			28.1			50.9	
Queue Length 95th (m)	14.2	#219.4	17.2	6.4	66.2			52.0			#95.2	
Internal Link Dist (m)		374.6			257.8			222.8			185.1	
Turn Bay Length (m)	56.0		67.0	78.0								
Base Capacity (vph)	378	1962	976	222	1870			311			413	
Starvation Cap Reductn	0	0	0	0	0			0			0	
Spillback Cap Reductn	0	0	0	0	0			0			0	
Storage Cap Reductn	0	0	0	0	0			0			0	
Reduced v/c Ratio	0.31	0.90	0.28	0.19	0.46			0.61			0.79	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 6:WBTL, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 23.6

Intersection LOS: C

Intersection Capacity Utilization 80.7%

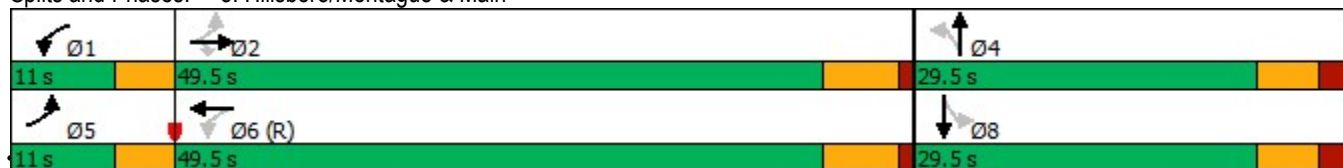
ICU Level of Service D

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.
























Queue shown is maximum after two cycles.

Splits and Phases: 5: Hillsboro/Montague & Main



Lake Loon Development  
1: Forest Hills & Main

2026 Development Traffic Only  
Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	1080	350	200	550	210	215	240	200	700	390	85
Future Volume (vph)	35	1103	350	208	570	224	215	240	210	716	390	85
Satd. Flow (prot)	1770	3725	1794	1770	3569	0	3614	1946	1583	3774	1893	0
Flt Permitted	0.259			0.108			0.950			0.950		
Satd. Flow (perm)	482	3725	1794	201	3569	0	3614	1946	1583	3774	1893	0
Satd. Flow (RTOR)			350		59				171		10	
Lane Group Flow (vph)	35	1103	350	208	794	0	215	240	210	716	475	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases	2		2	6					3			
Total Split (s)	9.0	39.0	39.0	14.0	44.0		23.0	23.0	23.0	34.0	34.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	6.5	4.0	4.0	
Act Effct Green (s)	40.6	35.4	35.4	49.8	44.4		18.3	18.3	15.8	29.9	29.9	
Actuated g/C Ratio	0.37	0.32	0.32	0.45	0.40		0.17	0.17	0.14	0.27	0.27	
v/c Ratio	0.15	0.92	0.43	0.87	0.54		0.36	0.74	0.56	0.70	0.91	
Control Delay	19.2	49.4	4.7	51.9	22.6		42.3	58.2	17.0	40.3	61.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.5	57.3	0.0	
Total Delay	19.2	49.4	4.7	51.9	22.6		42.3	58.2	17.5	97.5	61.5	
LOS	B	D	A	D	C		D	E	B	F	E	
Approach Delay		38.2			28.7			40.2			83.2	
Approach LOS		D			C			D			F	
Queue Length 50th (m)	4.4	126.4	0.0	30.8	73.9		22.2	51.8	7.8	74.9	101.9	
Queue Length 95th (m)	10.5	#169.0	20.3	#74.4	94.9		33.9	#84.3	31.1	96.0	#164.1	
Internal Link Dist (m)		419.1			79.4			266.2			423.4	
Turn Bay Length (m)	45.0		115.0	45.0			100.0		80.0	200.0		
Base Capacity (vph)	238	1198	814	239	1475		624	336	382	1029	523	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	30	689	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.15	0.92	0.43	0.87	0.54		0.34	0.71	0.60	2.11	0.91	

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green, Master Intersection

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 48.6

Intersection LOS: D

Intersection Capacity Utilization 84.4%

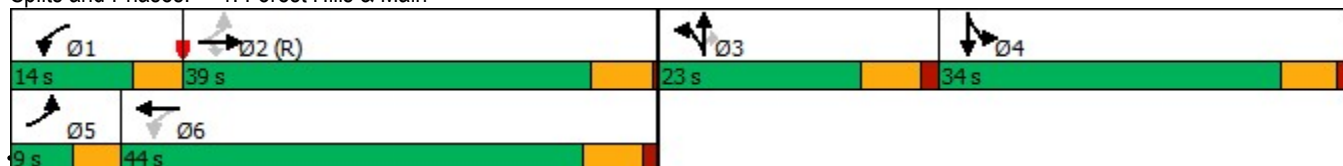
ICU Level of Service E

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.





















Queue shown is maximum after two cycles.

Splits and Phases: 1: Forest Hills & Main



Lake Loon Development  
2: Sobeys RIRO/New Driveway & Main




















2026 - Development Traffic  
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (veh/h)	0	1910	70	0	960	0	0	0	70	0	0	0
Future Volume (Veh/h)	0	1959	70	0	981	9	0	0	70	0	0	21
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	2129	76	0	1066	10	0	0	76	0	0	23
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (m)		103			62							
pX, platoon unblocked	0.89			0.71			0.77	0.77	0.71	0.77	0.77	0.89
vC, conflicting volume	1076			2205			2685	3205	1064	2212	3276	538
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	842			1882			1950	2629	279	1332	2722	238
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	85	100	100	97
cM capacity (veh/h)	704			224			29	18	511	73	16	680
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1	SB 1				
Volume Total	0	1064	1064	76	711	365	76	23				
Volume Left	0	0	0	0	0	0	0	0				
Volume Right	0	0	0	76	0	10	76	23				
cSH	1700	1700	1700	1700	1700	1700	511	680				
Volume to Capacity	0.00	0.63	0.63	0.04	0.42	0.21	0.15	0.03				
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	4.2	0.8				
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	13.3	10.5				
Lane LOS							B	B				
Approach Delay (s)	0.0				0.0		13.3	10.5				
Approach LOS							B	B				
Intersection Summary												
Average Delay			0.4									
Intersection Capacity Utilization			63.8%		ICU Level of Service			B				
Analysis Period (min)			15									

# Lake Loon Development

## 3: Panavista & Main

2026 Development Traffic Only  
Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	1880	40	55	900	45	35	5	95	85	5	25
Future Volume (vph)	60	1929	40	55	930	45	35	5	95	85	5	25
Satd. Flow (prot)	1770	3910	0	1770	3894	0	1770	1596	0	0	1744	0
Flt Permitted	0.308			0.950			0.696				0.721	
Satd. Flow (perm)	574	3910	0	1770	3894	0	1296	1596	0	0	1304	0
Satd. Flow (RTOR)		3			10			100			12	
Lane Group Flow (vph)	60	1969	0	55	975	0	37	105	0	0	120	0
Turn Type	Perm	NA		custom	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			1			8			4		
Total Split (s)	67.4	67.4		11.6	79.0		31.0	31.0		31.0	31.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Act Effect Green (s)	63.4	63.4		7.6	75.0		27.0	27.0			27.0	
Actuated g/C Ratio	0.58	0.58		0.07	0.68		0.25	0.25			0.25	
v/c Ratio	0.18	0.87		0.45	0.37		0.12	0.22			0.36	
Control Delay	15.2	26.4		61.5	7.8		33.6	8.7			34.6	
Queue Delay	0.0	46.8		0.0	0.0		0.0	0.0			0.0	
Total Delay	15.2	73.1		61.5	7.8		33.6	8.7			34.6	
LOS	B	E		E	A		C	A			C	
Approach Delay		71.4			10.7			15.1			34.6	
Approach LOS		E			B			B			C	
Queue Length 50th (m)	5.6	181.0		12.2	41.3		6.5	0.9			20.2	
Queue Length 95th (m)	m8.0	m204.5		25.9	51.4		15.6	14.6			38.1	
Internal Link Dist (m)		38.2			81.3			53.7			39.2	
Turn Bay Length (m)	70.0			40.0								
Base Capacity (vph)	330	2254		122	2658		318	467			329	
Starvation Cap Reductn	0	628		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.18	1.21		0.45	0.37		0.12	0.22			0.36	

### Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 70 (64%), Referenced to phase 2:EBTL, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 48.9

Intersection LOS: D

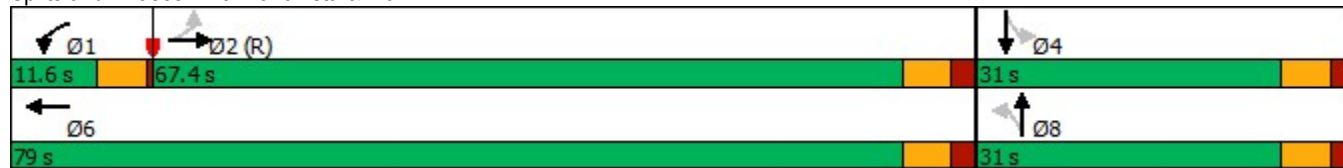
Intersection Capacity Utilization 70.4%

ICU Level of Service C

Analysis Period (min) 15

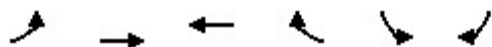
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Panavista & Main



Lake Loon Development  
4: Main & Loonview Lane




















2026 - Development Traffic  
Timing Plan: PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	2045	990	10	5	10
Future Volume (Veh/h)	64	2045	999	19	19	31
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.92	0.92
Hourly flow rate (vph)	67	2153	1052	20	21	34
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)		105	399			
pX, platoon unblocked	0.86				0.61	0.86
vC, conflicting volume	1072				2272	536
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	750				736	124
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	91				89	96
cM capacity (veh/h)	733				195	774
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	67	1076	1076	701	371	55
Volume Left	67	0	0	0	0	21
Volume Right	0	0	0	0	20	34
cSH	733	1700	1700	1700	1700	363
Volume to Capacity	0.09	0.63	0.63	0.41	0.22	0.15
Queue Length 95th (m)	2.4	0.0	0.0	0.0	0.0	4.2
Control Delay (s)	10.4	0.0	0.0	0.0	0.0	16.7
Lane LOS	B					C
Approach Delay (s)	0.3			0.0		16.7
Approach LOS						C
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			66.5%		ICU Level of Service	C
Analysis Period (min)			15			

Lake Loon Development  
5: Hillsboro/Montague & Main

2026 Development Traffic Only  
Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	1680	260	40	790	20	120	30	30	140	80	90
Future Volume (vph)	113	1688	263	40	800	20	124	30	30	140	80	94
Satd. Flow (prot)	1770	3539	1583	1770	3525	0	0	1763	0	0	1747	0
Flt Permitted	0.230			0.092				0.582			0.784	
Satd. Flow (perm)	428	3539	1583	171	3525	0	0	1060	0	0	1401	0
Satd. Flow (RTOR)			225		4			11			24	
Lane Group Flow (vph)	119	1777	277	42	863	0	0	195	0	0	330	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2		2	6			4			8		
Total Split (s)	11.0	49.5	49.5	11.0	49.5		29.5	29.5		29.5	29.5	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	
Act Effect Green (s)	54.1	49.9	49.9	52.5	45.5			25.5			25.5	
Actuated g/C Ratio	0.60	0.55	0.55	0.58	0.51			0.28			0.28	
v/c Ratio	0.33	0.91	0.28	0.19	0.48			0.63			0.80	
Control Delay	9.4	27.8	3.8	8.5	15.6			37.2			43.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay	9.4	27.8	3.8	8.5	15.6			37.2			43.8	
LOS	A	C	A	A	B			D			D	
Approach Delay		23.7			15.3			37.2			43.8	
Approach LOS		C			B			D			D	
Queue Length 50th (m)	7.8	160.7	4.6	2.6	51.2			29.2			51.7	
Queue Length 95th (m)	14.5	#221.3	17.4	6.4	67.3			53.8			#96.4	
Internal Link Dist (m)		374.6			257.8			222.8			185.1	
Turn Bay Length (m)	56.0		67.0	78.0								
Base Capacity (vph)	362	1962	977	224	1784			308			414	
Starvation Cap Reductn	0	0	0	0	0			0			0	
Spillback Cap Reductn	0	0	0	0	0			0			0	
Storage Cap Reductn	0	0	0	0	0			0			0	
Reduced v/c Ratio	0.33	0.91	0.28	0.19	0.48			0.63			0.80	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 6:WBTL, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 24.2

Intersection LOS: C

Intersection Capacity Utilization 80.7%

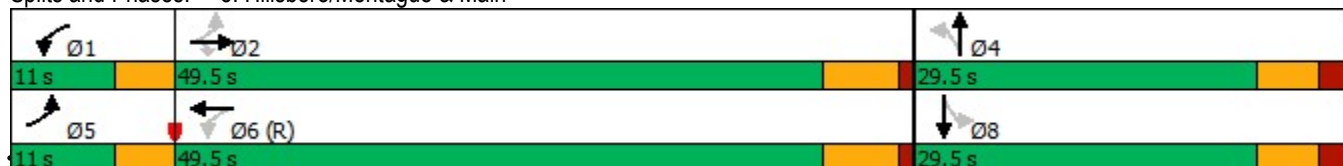
ICU Level of Service D

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.
























Queue shown is maximum after two cycles.

Splits and Phases: 5: Hillsboro/Montague & Main



Lake Loon Development  
1: Forest Hills & Main

2031 Background Traffic Only  
Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	1080	350	200	550	210	215	240	200	700	390	85
Future Volume (vph)	37	1135	368	210	578	221	226	252	210	736	410	89
Satd. Flow (prot)	1770	3725	1794	1770	3573	0	3614	1946	1583	3774	1893	0
Flt Permitted	0.248			0.109			0.950			0.950		
Satd. Flow (perm)	462	3725	1794	203	3573	0	3614	1946	1583	3774	1893	0
Satd. Flow (RTOR)			368		57				171		10	
Lane Group Flow (vph)	37	1135	368	210	799	0	226	252	210	736	499	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases	2		2	6					3			
Total Split (s)	9.0	39.0	39.0	14.0	44.0		23.0	23.0	23.0	34.0	34.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	6.5	4.0	4.0	
Act Effect Green (s)	40.0	35.0	35.0	49.0	43.6		18.5	18.5	16.0	30.5	30.5	
Actuated g/C Ratio	0.36	0.32	0.32	0.45	0.40		0.17	0.17	0.15	0.28	0.28	
v/c Ratio	0.16	0.96	0.45	0.91	0.55		0.37	0.77	0.56	0.70	0.94	
Control Delay	19.5	55.1	4.8	58.4	23.1		42.4	60.4	16.9	40.1	65.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.6	57.7	0.0	
Total Delay	19.5	55.1	4.8	58.4	23.1		42.4	60.4	17.5	97.8	65.5	
LOS	B	E	A	E	C		D	E	B	F	E	
Approach Delay		42.2			30.5			41.4			84.7	
Approach LOS		D			C			D			F	
Queue Length 50th (m)	4.6	131.7	0.0	31.3	74.7		23.4	54.7	7.8	77.5	109.1	
Queue Length 95th (m)	10.9	#177.2	20.8	#74.8	96.1		35.3	#90.9	31.1	98.9	#176.6	
Internal Link Dist (m)		419.1			79.4			266.2			423.4	
Turn Bay Length (m)	45.0		115.0	45.0			100.0		80.0	200.0		
Base Capacity (vph)	227	1185	821	232	1450		624	336	382	1047	532	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	32	720	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.16	0.96	0.45	0.91	0.55		0.36	0.75	0.60	2.25	0.94	

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green, Master Intersection

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 51.2

Intersection LOS: D

Intersection Capacity Utilization 84.4%

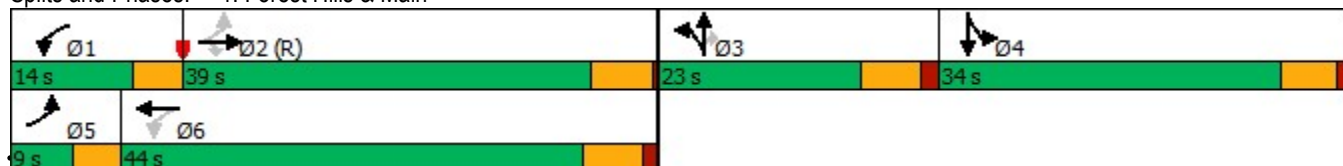
ICU Level of Service E

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.



















Queue shown is maximum after two cycles.

Splits and Phases: 1: Forest Hills & Main



Lake Loon Development  
2: Sobeys RIRO/New Driveway & Main




















2031 Background Traffic Only  
Timing Plan: PM Peak Hour

																		
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR						
Lane Configurations																		
Traffic Volume (veh/h)	0	1910	70	0	960	0	0	0	70	0	0	0						
Future Volume (Veh/h)	0	2008	74	0	1009	0	0	0	74	0	0	0						
Sign Control	Free			Free			Stop			Stop								
Grade	0%			0%			0%			0%								
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92						
Hourly flow rate (vph)	0	2183	80	0	1097	0	0	0	80	0	0	0						
Pedestrians																		
Lane Width (m)																		
Walking Speed (m/s)																		
Percent Blockage																		
Right turn flare (veh)																		
Median type	None			None														
Median storage veh																		
Upstream signal (m)	103			62														
pX, platoon unblocked	0.89			0.70			0.75	0.75	0.70	0.75	0.75	0.89						
vC, conflicting volume	1097			2263			2732	3280	1092	2268	3360	548						
vC1, stage 1 conf vol																		
vC2, stage 2 conf vol																		
vCu, unblocked vol	859			1943			1978	2707	263	1363	2813	241						
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9						
tC, 2 stage (s)																		
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3						
p0 queue free %	100			100			100	100	84	100	100	100						
cM capacity (veh/h)	691			208			28	16	513	68	13	675						
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1	SB 1										
Volume Total	0	1092	1092	80	731	366	80	0										
Volume Left	0	0	0	0	0	0	0	0										
Volume Right	0	0	0	80	0	0	80	0										
cSH	1700	1700	1700	1700	1700	1700	513	1700										
Volume to Capacity	0.00	0.64	0.64	0.05	0.43	0.22	0.16	0.00										
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	4.4	0.0										
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	13.3	0.0										
Lane LOS							B	A										
Approach Delay (s)	0.0				0.0				13.3	0.0								
Approach LOS							B	A										
Intersection Summary																		
Average Delay				0.3														
Intersection Capacity Utilization				63.8%	ICU Level of Service			B										
Analysis Period (min)				15														

# Lake Loon Development

## 3: Panavista & Main

2031 Background Traffic Only  
Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	1880	40	55	900	45	35	5	95	85	5	25
Future Volume (vph)	63	1976	42	58	946	47	37	5	100	89	5	26
Satd. Flow (prot)	1770	3910	0	1770	3894	0	1770	1596	0	0	1744	0
Flt Permitted	0.303			0.950			0.695				0.700	
Satd. Flow (perm)	564	3910	0	1770	3894	0	1295	1596	0	0	1266	0
Satd. Flow (RTOR)		3			11			105			12	
Lane Group Flow (vph)	63	2018	0	58	993	0	39	110	0	0	126	0
Turn Type	Perm	NA		custom	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			1			8			4		
Total Split (s)	67.4	67.4		11.6	79.0		31.0	31.0		31.0	31.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Act Effect Green (s)	63.4	63.4		7.6	75.0		27.0	27.0			27.0	
Actuated g/C Ratio	0.58	0.58		0.07	0.68		0.25	0.25			0.25	
v/c Ratio	0.19	0.90		0.48	0.37		0.12	0.23			0.39	
Control Delay	15.4	27.9		62.7	7.9		33.7	8.5			35.6	
Queue Delay	0.0	46.4		0.0	0.0		0.0	0.0			0.0	
Total Delay	15.4	74.4		62.7	7.9		33.7	8.5			35.6	
LOS	B	E		E	A		C	A			D	
Approach Delay		72.6			10.9			15.1			35.6	
Approach LOS		E			B			B			D	
Queue Length 50th (m)	5.9	187.6		12.9	42.4		6.9	0.9			21.5	
Queue Length 95th (m)	m8.3	m205.4		26.8	52.8		16.2	15.0			40.2	
Internal Link Dist (m)		38.2			81.3			53.7			39.2	
Turn Bay Length (m)	70.0			40.0								
Base Capacity (vph)	325	2254		122	2658		317	470			319	
Starvation Cap Reductn	0	627		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.19	1.24		0.48	0.37		0.12	0.23			0.39	

### Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 70 (64%), Referenced to phase 2:EBTL, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 49.7

Intersection LOS: D

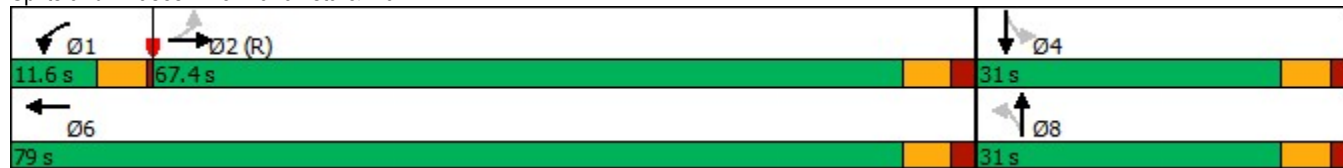
Intersection Capacity Utilization 70.4%

ICU Level of Service C

Analysis Period (min) 15

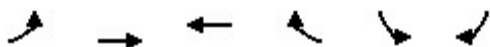
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Panavista & Main



Lake Loon Development  
4: Main & Loonview Lane




















2031 Background Traffic Only  
Timing Plan: PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	2045	990	10	5	10
Future Volume (Veh/h)	16	2150	1041	11	5	11
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.92	0.92
Hourly flow rate (vph)	17	2263	1096	12	5	12
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)		105	399			
pX, platoon unblocked	0.85				0.57	0.85
vC, conflicting volume	1108				2268	554
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	764				482	109
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				98	98
cM capacity (veh/h)	715				283	781
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	17	1132	1132	731	377	17
Volume Left	17	0	0	0	0	5
Volume Right	0	0	0	0	12	12
cSH	715	1700	1700	1700	1700	515
Volume to Capacity	0.02	0.67	0.67	0.43	0.22	0.03
Queue Length 95th (m)	0.6	0.0	0.0	0.0	0.0	0.8
Control Delay (s)	10.2	0.0	0.0	0.0	0.0	12.2
Lane LOS	B					B
Approach Delay (s)	0.1			0.0		12.2
Approach LOS						B
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			66.5%		ICU Level of Service	C
Analysis Period (min)			15			

Lake Loon Development  
5: Hillsboro/Montague & Main

2031 Background Traffic Only  
Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	1680	260	40	790	20	120	30	30	140	80	90
Future Volume (vph)	116	1766	273	42	830	21	126	32	32	147	84	95
Satd. Flow (prot)	1770	3539	1583	1770	3525	0	0	1762	0	0	1751	0
Flt Permitted	0.217			0.092				0.584			0.778	
Satd. Flow (perm)	404	3539	1583	171	3525	0	0	1063	0	0	1393	0
Satd. Flow (RTOR)			223		4			11			23	
Lane Group Flow (vph)	122	1859	287	44	896	0	0	201	0	0	343	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2		2	6			4			8		
Total Split (s)	11.0	49.5	49.5	11.0	49.5		29.5	29.5		29.5	29.5	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	
Act Effect Green (s)	54.1	49.9	49.9	52.5	45.5			25.5			25.5	
Actuated g/C Ratio	0.60	0.55	0.55	0.58	0.51			0.28			0.28	
v/c Ratio	0.35	0.95	0.29	0.20	0.50			0.65			0.83	
Control Delay	9.7	32.6	4.1	8.6	15.9			38.2			47.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay	9.7	32.6	4.1	8.6	15.9			38.2			47.6	
LOS	A	C	A	A	B			D			D	
Approach Delay		27.8			15.6			38.2			47.6	
Approach LOS		C			B			D			D	
Queue Length 50th (m)	8.0	~194.1	5.7	2.8	53.8			30.3			54.8	
Queue Length 95th (m)	14.8	#238.0	19.0	6.6	70.4			#57.2			#103.0	
Internal Link Dist (m)		374.6			257.8			222.8			185.1	
Turn Bay Length (m)	56.0		67.0	78.0								
Base Capacity (vph)	348	1962	976	224	1784			309			411	
Starvation Cap Reductn	0	0	0	0	0			0			0	
Spillback Cap Reductn	0	0	0	0	0			0			0	
Storage Cap Reductn	0	0	0	0	0			0			0	
Reduced v/c Ratio	0.35	0.95	0.29	0.20	0.50			0.65			0.83	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 6:WBTL, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 27.1

Intersection LOS: C

Intersection Capacity Utilization 80.7%

ICU Level of Service D

Analysis Period (min) 15

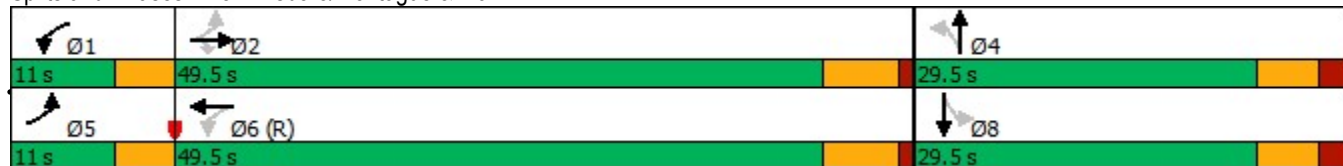
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.
























Splits and Phases: 5: Hillsboro/Montague & Main



Lake Loon Development  
1: Forest Hills & Main

2031 Background and Development Traffic

Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	1080	350	200	550	210	215	240	200	700	390	85
Future Volume (vph)	37	1159	368	219	599	235	226	252	221	753	410	89
Satd. Flow (prot)	1770	3725	1794	1770	3569	0	3614	1946	1583	3774	1893	0
Flt Permitted	0.228			0.109			0.950			0.950		
Satd. Flow (perm)	425	3725	1794	203	3569	0	3614	1946	1583	3774	1893	0
Satd. Flow (RTOR)			368		59				171		10	
Lane Group Flow (vph)	37	1159	368	219	834	0	226	252	221	753	499	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases	2		2	6					3			
Total Split (s)	9.0	39.0	39.0	14.0	44.0		23.0	23.0	23.0	34.0	34.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	6.5	4.0	4.0	
Act Effct Green (s)	40.0	35.0	35.0	49.0	43.6		18.5	18.5	16.0	30.5	30.5	
Actuated g/C Ratio	0.36	0.32	0.32	0.45	0.40		0.17	0.17	0.15	0.28	0.28	
v/c Ratio	0.17	0.98	0.45	0.94	0.58		0.37	0.77	0.59	0.72	0.94	
Control Delay	19.6	59.0	4.8	66.4	23.5		42.4	60.4	18.8	40.6	65.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.7	58.9	0.0	
Total Delay	19.6	59.0	4.8	66.4	23.5		42.4	60.4	19.5	99.5	65.5	
LOS	B	E	A	E	C		D	E	B	F	E	
Approach Delay		45.3			32.4			41.6			86.0	
Approach LOS		D			C			D			F	
Queue Length 50th (m)	4.6	135.7	0.0	32.7	78.9		23.4	54.7	10.1	79.7	109.1	
Queue Length 95th (m)	10.9	#183.1	20.8	#80.7	101.0		35.3	#90.9	34.9	101.7	#176.6	
Internal Link Dist (m)		419.1			79.4			266.2			423.4	
Turn Bay Length (m)	45.0		115.0	45.0			100.0		80.0	200.0		
Base Capacity (vph)	215	1185	821	232	1450		624	336	382	1047	532	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	33	755	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.17	0.98	0.45	0.94	0.58		0.36	0.75	0.63	2.58	0.94	

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green, Master Intersection

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 52.9

Intersection LOS: D

Intersection Capacity Utilization 84.4%

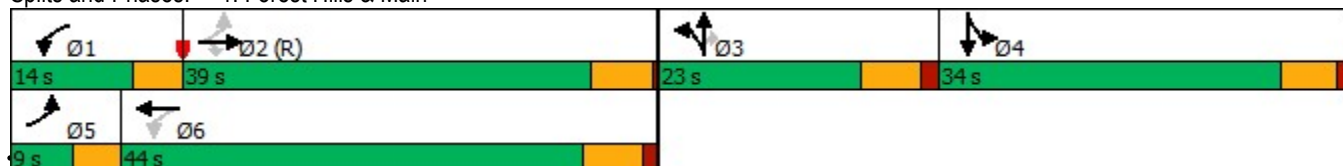
ICU Level of Service E

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Forest Hills & Main























Synchro 11 Report

Lake Loon Development  
2: Sobeys RIRO/New Driveway & Main

2031 - Background and Development Traffic

Timing Plan: PM Peak Hour




















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (veh/h)	0	1910	70	0	960	0	0	0	70	0	0	0
Future Volume (Veh/h)	0	2059	74	0	1031	9	0	0	74	0	0	22
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	2238	80	0	1121	10	0	0	80	0	0	24
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (m)		103			62							
pX, platoon unblocked	0.88			0.69			0.75	0.75	0.69	0.75	0.75	0.88
vC, conflicting volume	1131			2318			2822	3369	1119	2325	3444	566
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	885			2015			2066	2794	284	1403	2894	245
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	84	100	100	96
cM capacity (veh/h)	672			193			23	14	494	63	12	668
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1	SB 1				
Volume Total	0	1119	1119	80	747	384	80	24				
Volume Left	0	0	0	0	0	0	0	0				
Volume Right	0	0	0	80	0	10	80	24				
cSH	1700	1700	1700	1700	1700	1700	494	668				
Volume to Capacity	0.00	0.66	0.66	0.05	0.44	0.23	0.16	0.04				
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	4.6	0.9				
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	13.7	10.6				
Lane LOS							B	B				
Approach Delay (s)	0.0				0.0		13.7	10.6				
Approach LOS							B	B				
Intersection Summary												
Average Delay			0.4									
Intersection Capacity Utilization			63.8%			ICU Level of Service			B			
Analysis Period (min)			15									

# Lake Loon Development

## 3: Panavista & Main

# 2031 Background and Development Traffic

Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	1880	40	55	900	45	35	5	95	85	5	25
Future Volume (vph)	63	2028	42	58	978	47	37	5	100	89	5	26
Satd. Flow (prot)	1770	3910	0	1770	3894	0	1770	1596	0	0	1744	0
Flt Permitted	0.294			0.950			0.695				0.700	
Satd. Flow (perm)	548	3910	0	1770	3894	0	1295	1596	0	0	1266	0
Satd. Flow (RTOR)		3			10			105			12	
Lane Group Flow (vph)	63	2070	0	58	1025	0	39	110	0	0	126	0
Turn Type	Perm	NA		custom	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			1			8			4		
Total Split (s)	67.4	67.4		11.6	79.0		31.0	31.0		31.0	31.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Act Effect Green (s)	63.4	63.4		7.6	75.0		27.0	27.0			27.0	
Actuated g/C Ratio	0.58	0.58		0.07	0.68		0.25	0.25			0.25	
v/c Ratio	0.20	0.92		0.48	0.39		0.12	0.23			0.39	
Control Delay	15.6	29.5		62.7	8.0		33.7	8.5			35.6	
Queue Delay	0.0	45.9		0.0	0.0		0.0	0.0			0.0	
Total Delay	15.6	75.4		62.7	8.0		33.7	8.5			35.6	
LOS	B	E		E	A		C	A			D	
Approach Delay		73.6			10.9			15.1			35.6	
Approach LOS		E			B			B			D	
Queue Length 50th (m)	6.0	194.3		12.9	44.3		6.9	0.9			21.5	
Queue Length 95th (m)	m8.2	m208.8		26.8	54.9		16.2	15.0			40.2	
Internal Link Dist (m)		38.2			81.3			53.7			39.2	
Turn Bay Length (m)	70.0			40.0								
Base Capacity (vph)	315	2254		122	2658		317	470			319	
Starvation Cap Reductn	0	625		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.20	1.27		0.48	0.39		0.12	0.23			0.39	

## Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 70 (64%), Referenced to phase 2:EBTL, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 50.3

Intersection LOS: D

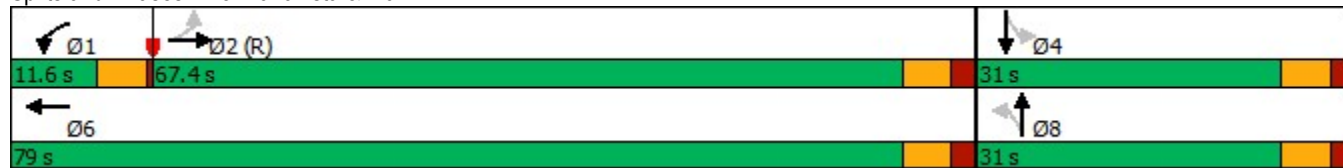
Intersection Capacity Utilization 70.4%

ICU Level of Service C

Analysis Period (min) 15

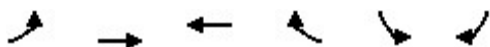
m Volume for 95th percentile queue is metered by upstream signal.

## Splits and Phases: 3: Panavista & Main



Lake Loon Development  
4: Main & Loonview Lane

2031 - Background and Development Traffic  
Timing Plan: PM Peak Hour






















Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	2045	990	10	5	10
Future Volume (Veh/h)	67	2150	1050	20	20	33
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.92	0.92
Hourly flow rate (vph)	71	2263	1105	21	22	36
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)		105	399			
pX, platoon unblocked	0.84				0.54	0.84
vC, conflicting volume	1126				2389	563
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	776				564	107
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	90				90	95
cM capacity (veh/h)	704				222	780
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	71	1132	1132	737	389	58
Volume Left	71	0	0	0	0	22
Volume Right	0	0	0	0	21	36
cSH	704	1700	1700	1700	1700	399
Volume to Capacity	0.10	0.67	0.67	0.43	0.23	0.15
Queue Length 95th (m)	2.7	0.0	0.0	0.0	0.0	4.0
Control Delay (s)	10.7	0.0	0.0	0.0	0.0	15.5
Lane LOS	B					C
Approach Delay (s)	0.3			0.0		15.5
Approach LOS						C
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			66.5%		ICU Level of Service	C
Analysis Period (min)			15			

Lake Loon Development  
5: Hillsboro/Montague & Main

2031 Background and Development Traffic

Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	1680	260	40	790	20	120	30	30	140	80	90
Future Volume (vph)	119	1774	276	42	841	21	130	32	32	147	84	99
Satd. Flow (prot)	1770	3539	1583	1770	3525	0	0	1763	0	0	1749	0
Flt Permitted	0.213			0.092				0.578			0.780	
Satd. Flow (perm)	397	3539	1583	171	3525	0	0	1053	0	0	1395	0
Satd. Flow (RTOR)			225		4			11			24	
Lane Group Flow (vph)	125	1867	291	44	907	0	0	205	0	0	347	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2		2	6			4			8		
Total Split (s)	11.0	49.5	49.5	11.0	49.5		29.5	29.5		29.5	29.5	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0			4.0			4.0	
Act Effect Green (s)	54.1	49.9	49.9	52.5	45.5			25.5			25.5	
Actuated g/C Ratio	0.60	0.55	0.55	0.58	0.51			0.28			0.28	
v/c Ratio	0.36	0.95	0.30	0.20	0.51			0.67			0.84	
Control Delay	9.9	33.2	4.2	8.6	16.0			39.5			48.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay	9.9	33.2	4.2	8.6	16.0			39.5			48.3	
LOS	A	C	A	A	B			D			D	
Approach Delay		28.2			15.7			39.5			48.3	
Approach LOS		C			B			D			D	
Queue Length 50th (m)	8.2	~195.7	5.9	2.8	54.6			31.2			55.5	
Queue Length 95th (m)	15.1	#239.6	19.2	6.6	71.5			#62.0			#104.6	
Internal Link Dist (m)		374.6			257.8			222.8			185.1	
Turn Bay Length (m)	56.0		67.0	78.0								
Base Capacity (vph)	345	1962	977	224	1784			306			412	
Starvation Cap Reductn	0	0	0	0	0			0			0	
Spillback Cap Reductn	0	0	0	0	0			0			0	
Storage Cap Reductn	0	0	0	0	0			0			0	
Reduced v/c Ratio	0.36	0.95	0.30	0.20	0.51			0.67			0.84	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 6:WBTL, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 27.5

Intersection LOS: C

Intersection Capacity Utilization 80.7%

ICU Level of Service D

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Hillsboro/Montague & Main

