663 Portland Street Development Transportation Impact Study

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01 Introduction and Existing Conditions

1.1 Introduction and Context

This study was prepared to define the anticipated impacts of a new mixed multi-unit residential development located in the north-eastern quadrant of the intersection of Portland Street and Carver Street in Dartmouth, Nova Scotia. As shown in the figure below (north is approximately toward the top of the figure), the development is located within a predominantly residential area to the north, east, west and southeast. To the southwest, there is significant commercial development along the Portland Street and Baker Drive corridors.

The proposed development is expected to include up to 86 residential units over a 7-story building (subject to approvals) with surface parking and two levels of underground parking. The development site will be accessed from a full access driveway on Carver Street and a right-in, right-out access on Portland Street.

The study was carried out using methodologies and guidelines provided in HRM's Guidelines for the Preparation of Transportation Impact Studies, guidance provided by the Institute of Transportation Engineers (ITE), and general traffic, transportation and road safety engineering principles for such studies. Specifically, the study includes:

- A summary of existing conditions (traffic, transit, active transportation and truck traffic);
- A definition of the proposed development and its associated anticipated traffic contributions to the transportation network;
- Transportation modeling and analysis of the existing and future road network conditions; and,
- Discussion and recommendations addressing key operational, geometric, and safety considerations that may be required to support the proposed development and overall development area.

1.2 Study Area

The development is situated between residential areas to the north, west and east, and a mixed-use commercial area to the south. The majority of residential development is single family homes on relatively low volume local streets. These streets connect directly to Portland Street and Woodlawn Road which in-turn meet at the major signalized intersection of Portland / Woodlawn / Baker about 600 meters east of the development. About 300 meters further east is the interchange at Portland Street and Highway 111. These various roadways provide excellent connectivity to all areas of Dartmouth.

Immediately adjacent to the development, Carver Street is a two-lane, two-way roadway, though the intersection of Carver Street with Portland Street is reduced to a southbound exiting movement through the use of a bump-out which restricts right and left turn movements from Portland Street onto Carver Street.

Carver Street does allow for right, through and left turn movements from Carver to Portland Street. The intersection of Carver and Portland is signalized with pedestrian crossings on the north, south and east sides of the street with a restriction to pedestrians crossing on the west leg of the intersection.

To the west, Settle Street is configured as a stop controlled, right-in, right-out only intersection with single lanes in each direction. Settle Street and Carver Street are connected by Elizabeth Street which runs parallel to, and approximately 100 meters north of Portland Street. Elizabeth allows for some interconnection between the two roadways that can accommodate the various turn movements to and from the development.

Both Carver Street (via Day Avenue) and Settle Street connect to Woodlawn Road just north of the development allowing traffic to distribute itself in a variety of directions to intersections with fully permitted turn movements.

1.3 Existing Roads and Intersections

Day Avenue

Day Avenue is a 325m long, two-lane local road with an urban curbed cross-section, concrete sidewalk on one side and a posted speed of 50km/h. To the west, Day Ave connects to Woodlawn Road via a stop-controlled intersection, and to the east connects to Clifford Drive via a stop-controlled intersection. Day Avenue also provides access to Walters Street and Carver Street, both similar types of local roads. Day Avenue predominantly features single-detached homes and one convenience store at the corner of Day Avenue and Woodlawn Road.

Settle Street facing Elizabeth St.

Settle Street is an approximately 250m long, two-lane local road with an urban curbed cross-section. There are no sidewalks on either side of the road. To the south, it connects to Portland Street via a stop-controlled intersection. To the north, it connects to Woodlawn Road via a light-controlled intersection with a dedicated channelized right-turning lane and a combined left/straight-through lane. Settle Street also connects to Elizabeth Street to the east via a stop-controlled intersection with free-flowing traffic on Settle Street. Settle Street is occupied mostly by single-detached homes.

Elizabeth Street at Carver Street

Elizabeth Street is a 225m long, two-lane local road with an urban curbed cross-section. There are no sidewalks on either side of the road. To the west, Elizabeth Street connects to Settle Street via a stop-controlled intersection and traffic on Settle Street free-flowing. To the east, Elizabeth Street connects to Carver Street via a stop-controlled intersection and traffic on Carver Street free-flowing. Elizabeth Street features predominantly single-detached homes.

Carver Street at Elizabeth Dr.

Carver Street is a 225m long, two-lane local road with an urban curbed cross-section with a concrete sidewalk on one side of the roadway. To the north, Carver Street connects to Day Ave via a stop-controlled intersection with traffic free-flowing on Day Avenue. To the south, Carver Street connects to Portland Street via a signal-controlled intersection with a dedicated left-turn lane and combined right/through lane. Carver Street features predominantly single-detached homes.

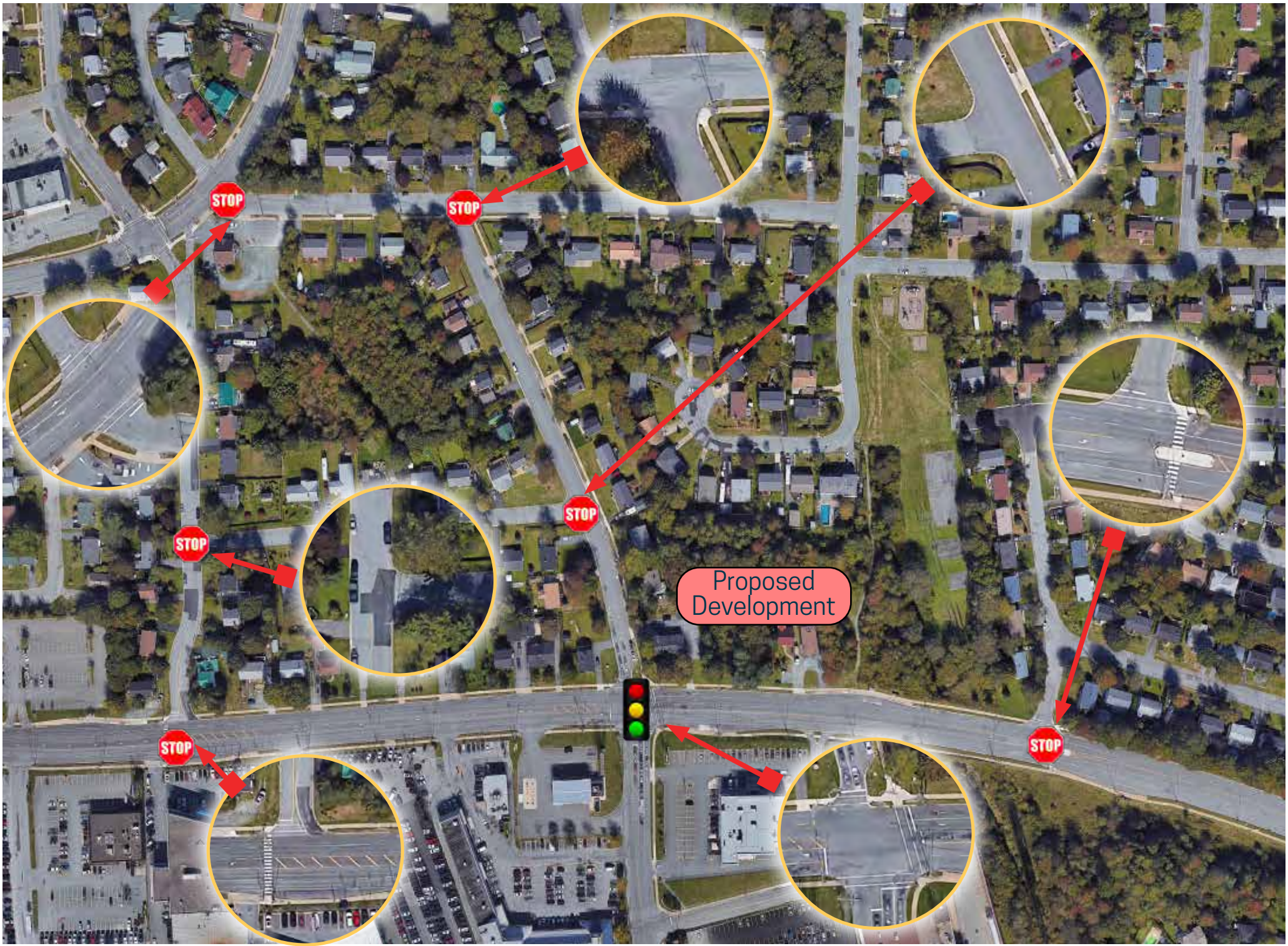
Carver Street at Portland Street

Portland Street Facing Carver Street

Carver Street connects to Portland Street via a signal-controlled intersection with a dedicated left-turning lane and a combined straight-through/right-turn lane. Beyond Portland Street, Carver Street transitions to Eisener Boulevard. Currently there is no driveway connecting to the development lands on either Portland Street and Carver Street.

Portland Street is a major arterial route that runs from downtown Dartmouth and through Woodside and beyond. It is part of Nova Scotia Route 207, which is 39km in length. In the vicinity of the development site, Portland Street has a four-lane urban curbed cross section with sidewalks on the north and south sides of Portland Street. Adjacent to the development, the intersection of Portland Street and Carver Street signalized and includes a dedicated left turn lane in the westbound direction.

photos: from Google Earth streetview


STOP
STOP
STOP
STOP
STOP
STOP
Proposed Development

1.4 Other Transportation Infrastructure

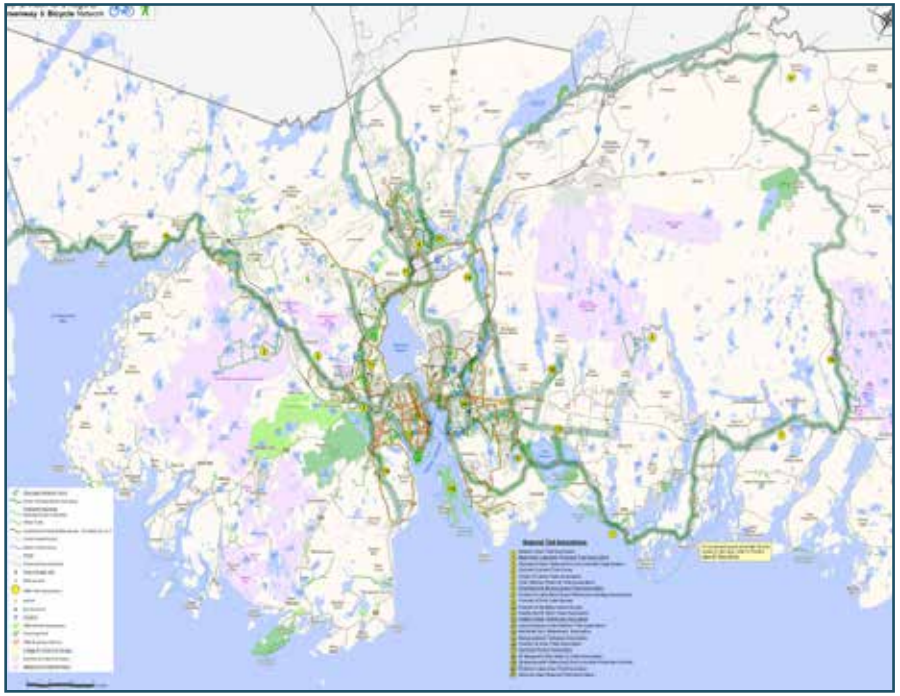
Active Transportation

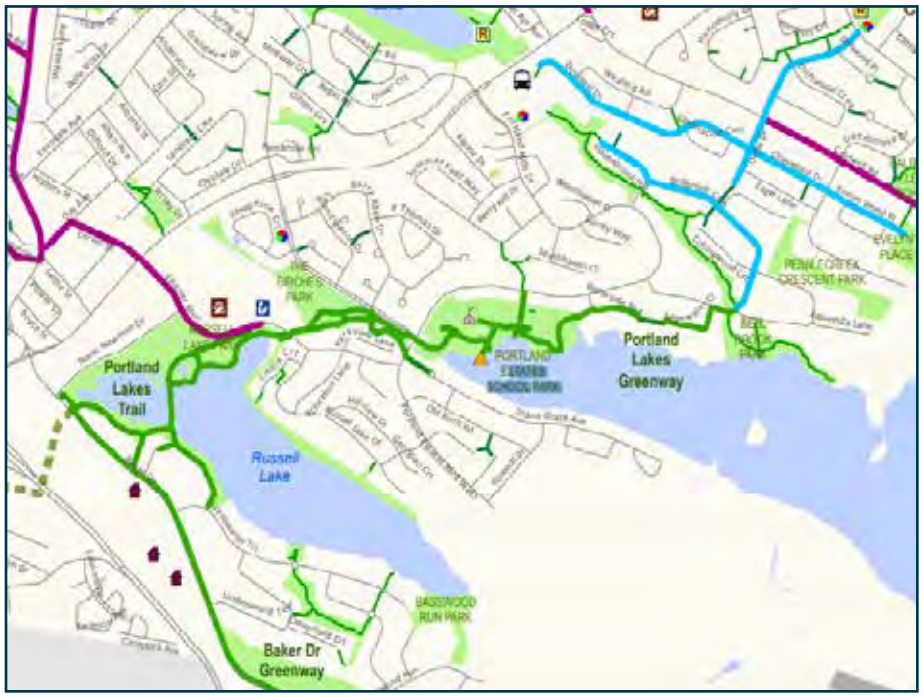
A number of walking paths exist throughout the neighbourhood immediately surrounding the development site which make connections between a number of residential streets. South of Portland Street is the Portland Lakes Trail which spans from Baker Drive to Waterside Terrace.

The Halifax Regional Municipality's Active Transportation Plan outlines a five-year plan which outlines its "approach that the municipality will take to attract more residents to walking and bicycling for the next five years and supports the objectives of Halifax's Regional Municipal Planning Strategy to increase the number of residents who travel by sustainable transportation modes." The map on the bottom-left details the HRM's vision to create a Regional Greenway and Bicycle Network.

The map on the bottom-right details the HRM's plans for the immediate region surrounding the Development Area. In green is the Portland Lakes Greenway, which is approximately 0.5 km away from the development site. Further, Carver Street directly adjacent to the development has been identified as a desired future bicycle route connecting the Portland Lakes Trail to the south to a much large interconnected bicycle network throughout Dartmouth. Further details on these connections can be found at:

https://www.halifax.ca/sites/default/files/documents/transportation/transportation-projects/Map_2B_Greenway_Network_March24.pdf





Transit

The area of the development is extremely well-served by public transportation, and is within 500m of over a dozen different transit routes. The development is within 1km of the Portland Hills Bus Terminal and Penhorn Bus Terminal, the former of which provides connections between sixteen different routes and the latter providing connections between eleven eight different routes. In combination, these routes and terminals provide access to a wide variety of transit destinations throughout HRM. Additionally, route 57 provides direct access throughout the Portland Hills area on the south side of Portland Street, and Route 58, 72 and 158 provide local service throughout the neighbourhoods immediately adjacent to the development. The Route Map below is taken from the Halifax Transit website and details the transit service in the area of the development lands.

HRM is currently preparing a larger scale strategic corridor plan entitled the Portland Street and Cole Harbour Road Functional Planning Study, which includes the portions of Portland Street directly adjacent to the proposed development. Discussions with Halifax Transit and HRM staff have suggested that Portland Street will further move toward a transit oriented corridor, though it is unclear at this time whether that will involve the conversion of an existing lane to a transit lane, or whether an additional lane would be added to Portland Street.

As part of the future upgrades, it is also anticipated that the existing transit stop located about 13 meters east of Carver Street will be relocated closer to Carver Street to take advantage of the pedestrian crossings at the Carver Street signalized intersection.

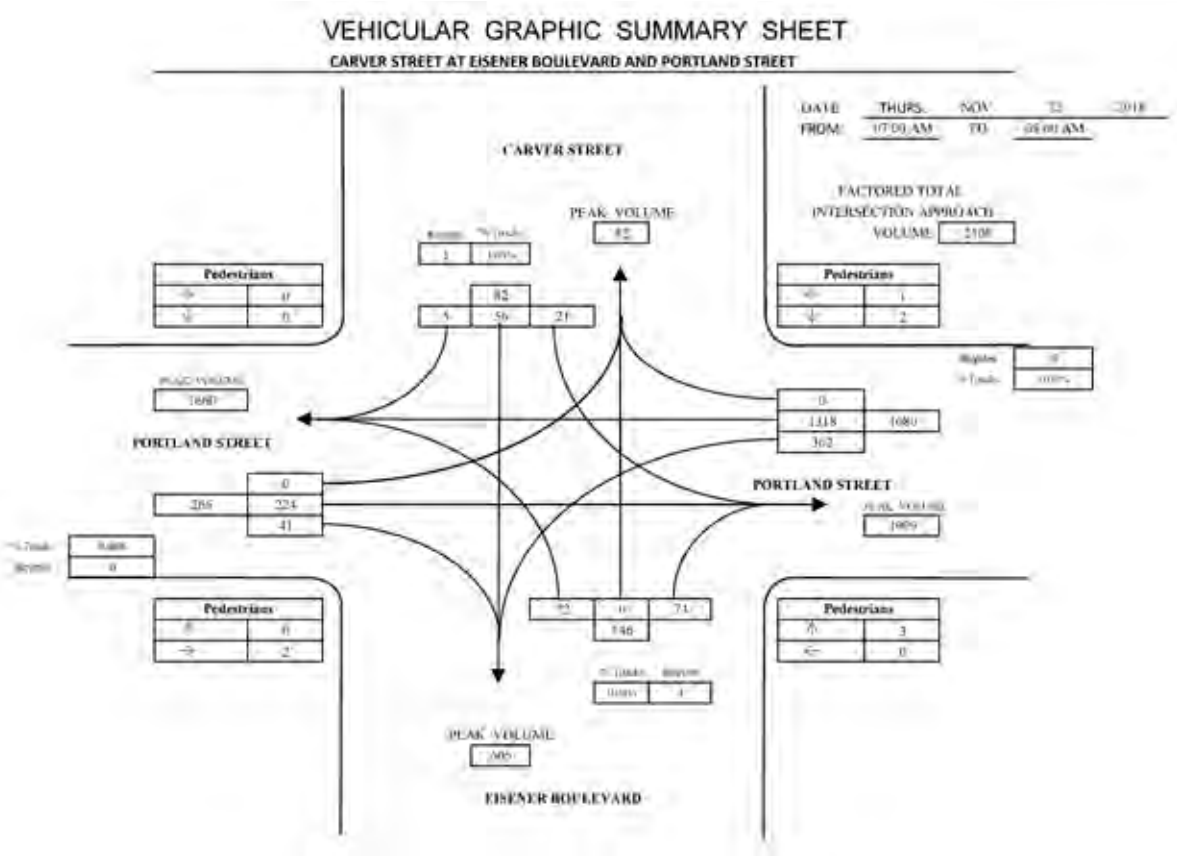
Truck Routes

Portland Street from Prince Albert Road, past the development site and beyond Cole Harbour Road is designated as a full time trucking route. The development site is well-served for truck access in and out of the development lands. The map below from Halifax Open Data details the trucking route running along Portland Street.

02 Existing and Future Traffic Conditions

2.1 Existing Traffic

Existing available traffic volumes were obtained from HRM for the intersections surrounding the proposed development. Counts ranged from 2016 to 2019 and included a combination of intersection turning movement counts, pedestrian counts and road section counts. All counts for this site were taken prior to the COVID19 restrictions that caused significant changes in traffic and travel patterns on the road network. More recent counts were not possible at this time due to the ongoing COVID19 impacts to the road network. Volumes related to the proposed development are very low and therefore are not expected to have any significant impact to the network, therefore new counts are not expected to change any recommendations contained in this report.



2.2 Project Time Horizon

For the purposes of this study, it is assumed that the development would be built-out and occupied within a 5-year time horizon. Given the very low volumes of new traffic relatively to the traffic on the adjacent streets, time horizons beyond a 2026 horizon are not relevant to this study.

2.3 Analysis Periods

The development and surrounding area are composed of a combination of residential and commercial land uses. It is recognized that the commercial uses will generate significant weekend traffic, though the combination of residential development and route connectivity suggest peak hour analysis volumes will occur during the weekday AM and PM peak hours.

2.4 Traffic Growth

Traffic growth will be subject to general overall background traffic growth resulting from development along the Portland Street corridor and points further east. More importantly, the corridor will be impacted by the results of the ongoing work on the Portland Street corridor study being undertaken by HRM, and the further development of Portland Street as an bus rapid transit and active transportation corridor. It is anticipated that these initiatives will have a significant impact on traffic volumes and travel patters. The extent of impacts are difficult to quantify in the local context of this development, suffice to say that volumes from the development are low enough that they will not cause any noticeable impact to traffic on Portland Street, and further, are located at a prime position to take advantage of future upgrades along the corridor. For the purposes of this analysis, a 1% annual growth rate has been assumed.

03 Proposed Development

PORTLAND STREET DEVELOPMENT

The proposed development consists of up to 86 residential units over a 7-story mid-rise building. The development includes about 1300 ft^2 of retail space on the ground floor, and two levels of underground parking structure containing about 38 parking stalls on each level. Access to underground parking is provided by 2 driveways at the rear of the building and connect only to Carver Street. The Carver driveway also include access to approximately 13 surface parking stalls. A second driveway is provided to Portland Street and is configured as a right-in, right-out driveway. It includes access to about 15 regular and 4 accessible parking stalls. These two driveways are separated by a emergency access only gate in order to prevent the two driveways from being used as a shortcut route between Portland Street and Carver Street.

3.1 Trip Generation

Trips Generated by the Development

The new trips generated by the development were based on guidance provided from the Institute of Transportation Engineers (ITE) Trip Generation Guide (10th Edition). The table at the bottom of the page shows the estimated trips generated by the proposed development based on an assumed 86-units of residential development.

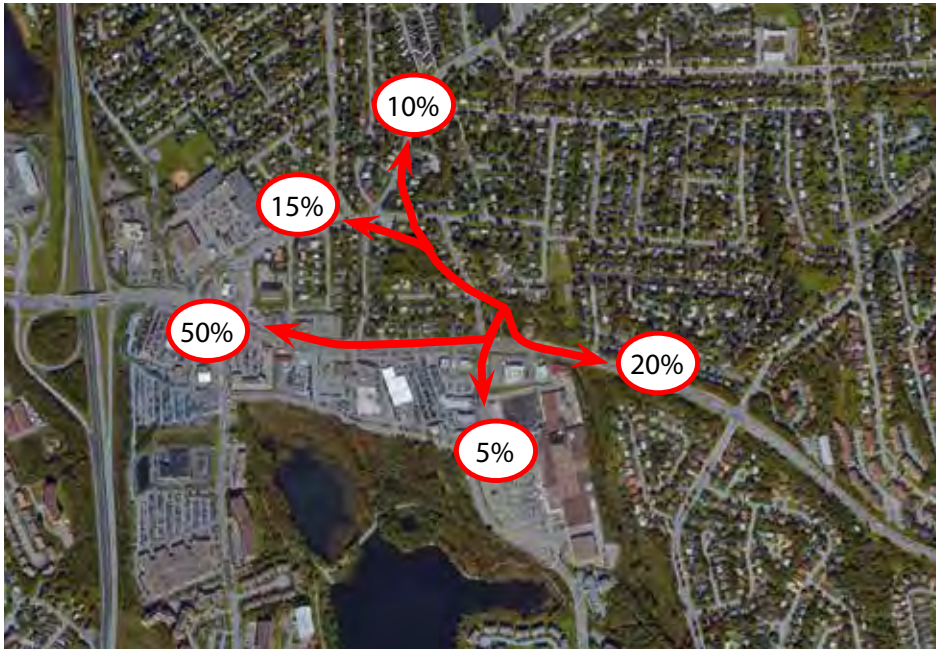
Transit, Active Transportation and Transportation Demand Management

There are a number of features that are likely to contribute to traffic volumes less than those identified in the table below. These include the close proximity of a variety of active transportation trails, the bus rapid transit corridor along Portland Street, and a wide variety commercial destinations within walking distance of the development.

Each of these items is considered a positive attribute of the development site and will most likely reduce the total trips to and from the site. Nonetheless, for the purposes of this study, no reduction in generated trips has been applied in order to keep the analysis conservative.

Land Use	Trip Code	# Units	Variable	AM Peak			PM Peak		
				Enter	Exit	TOTAL	Enter	Exit	TOTAL
Mid-Rise Residential	223	86	Units	7	19	26	22	9	31

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. Based on the roadway connectivity and urban core areas, it is expected that most traffic will be destined to and from the west of the development site. The trip distribution assumptions are shown in the figure above.

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 took into account the various existing turn restrictions surrounding the development. The traffic volume assignments used in the analysis for this study are included in Appendix C of this report.

04 Transportation Analysis

4.1 Transportation Modeling

A detailed traffic model for the Portland Street corridor 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 traffic operations and capacity utilization at the various intersections potentially impacted by the proposed development under each of the traffic loading scenarios. Results are provided for the following scenarios:

- **2021 Baseline** volumes at the development driveways and intersections immediately surrounding the development; and,
- **2026** Future conditions with **background traffic and full development** traffic added to the network.

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.

Results are shown in graphical format 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 include:

- Peak hour analysis volumes (vehicles / hour);
- Volume to capacity ratios (V/C) for 2031 conditions;
- Average Delay (sec/vehicle) for 2031 conditions; and,
- 95% Queue lengths (discussions provided in text).

Additional details are provided in the Synchro reports provided in Appendix D of this report.

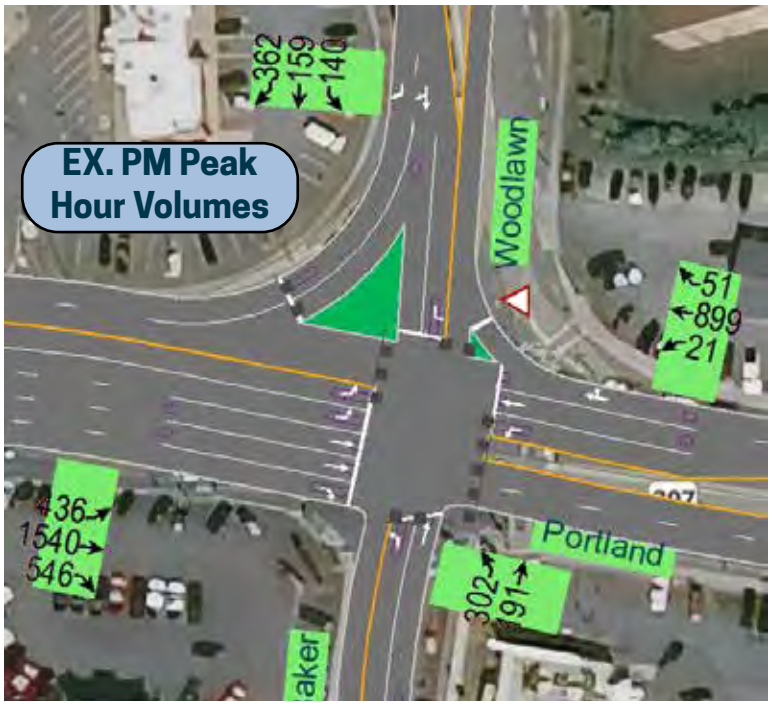
1. Portland St. / Woodlawn Rd. / Baker Dr.
2. Portland Street / Settle Street
3. Portland Street / Carver Street
4. Portland Street / Development Driveway
5. Portland Street / Portland Hills Estates / Spring Ave.

4.2 Main Street / Woodlawn Avenue / Baker Street

The Portland Street intersection with Woodlawn Road intersection is a robust and complex intersection with dual left and right turn movements, BRT transit lanes, and pedestrian accommodation. It services significant commercial development along Portland, Baker and Woodlawn immediately adjacent to the intersection, and residential areas further to the north and south of the intersection. It serves as the primary intersection interconnecting the Baker/Woodlawn north-south routes and Portland Street to Highway 111 and as such is a critical intersection for regional transportation distribution.

Overall volumes through the intersection are around 3500 vehicles during the AM peak hour and close to 4000 vehicles during the PM peak. The analysis in this study show that the proposed development contributes about 12 vehicles to this total, or about 0.3% of the total traffic through the intersection when the development traffic is added. For this reason, a detailed operational analysis of this intersection was not undertaken as the development related impacts are inconsequential.

Furthermore, there is a significant regional planning exercise underway for the Portland Street corridor that is likely to impact operations at this intersection. Suffice to say that the proposed development itself will not have any impacts on the future operations of this intersection regardless of any improvements or modifications to this intersection. For reference and context, the existing AM and PM peak hour volumes are shown in the figures to the right. Future volumes through these intersections can be found in the Synchro reports included in Appendix D of this report.



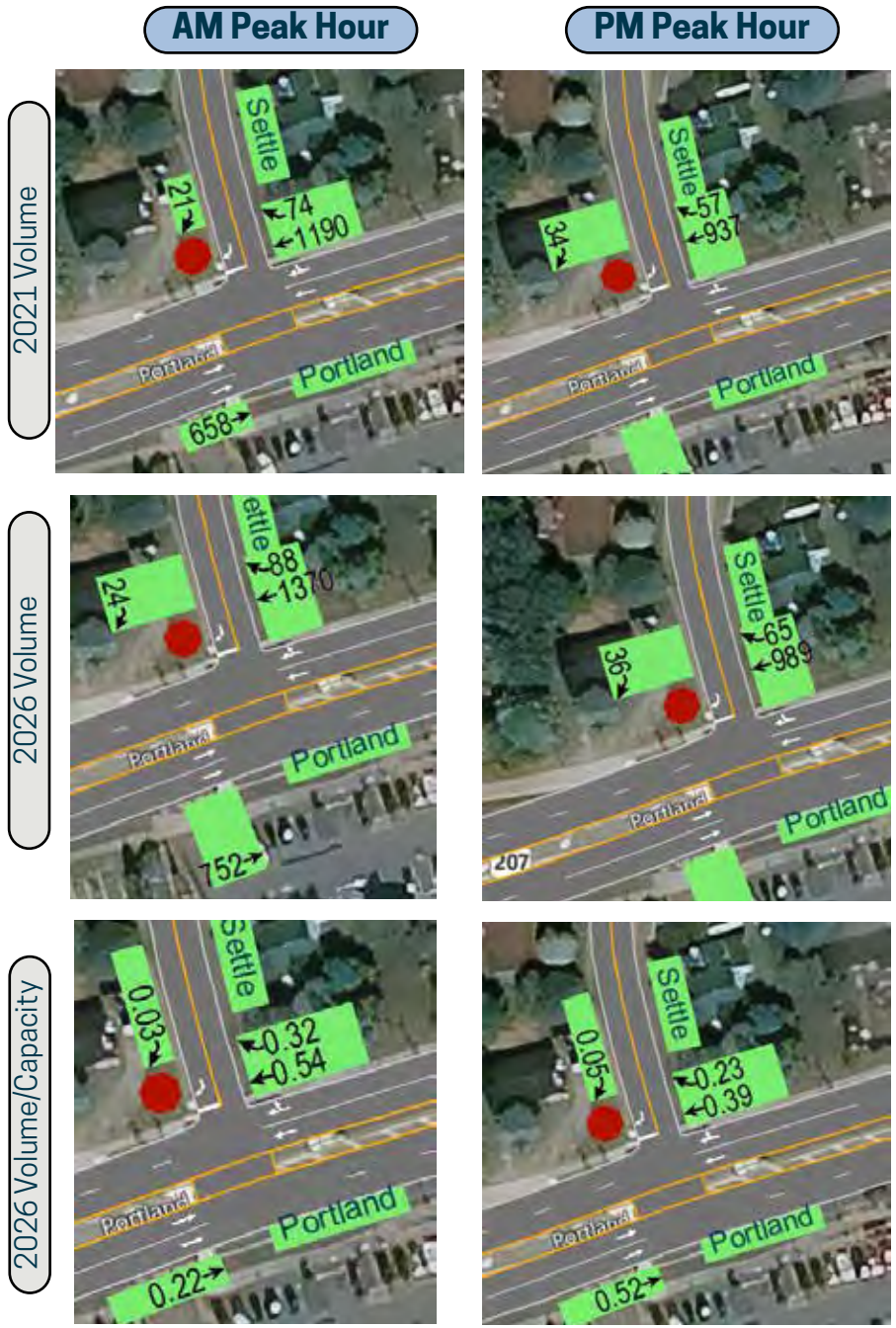
4.3 Main Street and Settle Street

The Settle Street intersection with Portland Street is a simple Tee-intersection with high through volumes on Portland Street, but very low volumes entering and exiting Settle Street. Portland Street has two through lanes in each direction with Settle configured as a basic stop controlled, right-in / right-out roadway.

As no left turn movements are permitted to and from Settle, performance parameters are very good for all movements at this intersection during both the AM and PM peak hours of traffic.

Due the availability of the right-in movement at Settle, combined with the gated restrictions within the development site, it is expected that most traffic approaching the development from the east will use the right turn onto Settle followed by right turns onto Elizabeth and then Carver to access the parkade entrances to the building. Alternatively, more direction access could be made from the Woodlawn Road side of the development.

Based on the trip generation estimates and large number of options available for trip distribution, it is expected that there will be less than 5 vehicles making these movements during the AM peak or PM peak hours.



4.4 Main Street, Carver Street and Development Driveways

Similar to the Settle intersection, the Carver Street intersection is characterized by heavy volumes in the east and westbound directions on Portland Street, with relatively low volumes on Eisener Boulevard and particularly Carver Street. With traffic signals present at this intersection, the analysis results show high levels of service for all movements. That said, the side street vehicles do get penalized to a certain degree due to the longer green times required to services the high volume of through traffic on Portland Street.

The south development driveway connecting to Portland Street is configured as a right-in / right-out access and is expected to see very low volumes during all periods of the day. Vehicles are restricted from accessing the buildings underground parking structure or northern parking spaces from this driveway.

As westbound movements at the Carver Street traffic signals operate with a reasonable volume to capacity ratio and significant green time is afforded to the westbound movement, it is expected that vehicle movements to and from this driveway will operate with little delay, queuing, or impact to traffic on Portland Street. Any impacts are further mitigated by the absence of left turn movements between Portland Street and the development.

It is noted that during the PM peak, traffic capacity utilization is nearing capacity. Such issues are anticipated to be addressed in the larger Portland Street corridor study and are not impacted by new volumes associated with the proposed development.

4.5 Portland Street, Portland Estates and Spring Avenue

The Portland Street intersection with Spring Avenue and Portland Estates Boulevard is a traditional 4-leg signalized intersection. Volumes on Portland Street are again relatively high and side street volumes are quite low. Due to the low side street volumes and the Portland Street cross section at the intersection (two through lanes and dedicated left turn lanes), the intersection operates with minimal delays and queues.

The highest volume to capacity ratios can be found in the peak hour through direction on Portland Street and hover around 80% capacity utilization during the AM peak hour with the westbound through movements operating closer to capacity during the PM peak hour.

Similar to the Woodlawn / Baker intersection with Portland Street, new volumes related to the development compose about 0.2% of the total traffic through this intersection. Given the distance from the development, it is suggested that there are no functional impacts to this intersection related to the development. The higher volume to capacity ratios for the westbound movements is expected to be addressed in greater detail in the Portland Street corridor study.

05 Conclusions and Recommendations

This Transportation Impact Study was prepared to evaluate the impacts of the proposed development at 663 Portland Street on the surrounding transportation network including roads, intersections and active transportation infrastructure. The development is expected to yield up to approximately 86-new residential units in a 7-story building and is may include a small portion of ground floor retail space.

The development is located within an existing residential area to the north, east and west of the property and is complemented by significant commercial development to the south along Portland Street, Baker Drive and Woodlawn Road. The development also has direct access to the Portland Street transit and BRT corridor providing a high level of transit opportunity as well as abundant active transportation infrastructure near the development, through Portland Hills Estates and surrounding Russel and Morris Lakes.

Area traffic is characterized by heavy peak hour volumes on Portland Street during the AM (westbound / inbound) and PM (eastbound / outbound) peak hours. The majority of driveways and side roads to Portland Street have relatively low volumes and the higher volume access points are typically signalized. The signals provide for very good levels of service at this intersection, and also create many gaps in traffic along Portland Street which permits lower volume unsignalized driveways to operate at reasonable levels of service.

The busiest intersection in the corridor is the Portland Street intersection with Baker Drive and Woodlawn Road. A number of movements at this intersection operate at or near capacity during the peak hours of traffic with queue lengths and delays varying day-by-day depending on the demand on each leg of the intersection. It was noted in the analysis that the proposed development contributes about 0.3% of the volumes at this intersection (about 12 vehicles of 3500 in the AM peak for example) and therefore, effectively has no functional impact on this intersection. This intersection should be considered in the context of the overall Portland Street planning initiatives currently underway and it is noted that this development has no impact on these planning exercises.

The development itself is expected to generate a low volume of new traffic to the road network (26 two-way trips in the AM peak and 31 in the PM peak). These volumes were used in the analysis, though could in fact be lower due to the direct access to higher order transit and active transportation infrastructure.

With respect to the development driveways, both operate at high levels of service under all analysis scenarios. The Portland Street driveway is a right-in / right-out only access and is expected to service a very low volume of traffic as it does not have direct access to the buildings underground parking structures.

The Carver Street driveway has somewhat higher volumes, but directly accesses a low volume residential street network and therefore does not create any noticeable operational changes or challenges. The volumes generated by the development are considered well within volumes guidelines suggested for residential streets and operational characteristics are expected to be consistent with residential traffic operations. Shortcutting has been recognized in the past as a potential issue in this area, and has been addressed through the various turn restrictions and intersection modifications surrounding the development. The gated restrictions in place within the development are expected to complement these traffic calming features.

Additional Portland Street Considerations

The ongoing transportation functional planning studies being completed for the Portland Street corridor suggest transit upgrades will be incorporated on Portland Street adjacent to the development. As both projects move forward, there will be a need to integrate the proposed right-in, right-out access with any planned transit facilities.

There are three fundamental considerations in this regard:

1. Portland Street Cross Section - As shown in the figure to the right, there is a significant amount of right-of-way available between the building and the existing Portland Street curbline. This space appears to be capable of accommodating either a retro-fit of the existing pavement area or the addition of a new transit lane closer to the proposed building. The proposed right-in, right-out access has adequate flexibility to shift to the north if required to accommodate a widened cross sections.
2. Transit Stop Location - A new transit stop is likely to be relocated from east of the site to a position in the general vicinity of where the proposed driveway is shown. It is our understanding through discussions with Halifax Transit that there is adequate flexibility in potential locations along Portland Street near the development to accommodate both the right-in, right-out access as well as a relocated transit stop.
3. Operations and Geometrics - Volumes to and from this right-in, right-out access are very low and will have no noticeable impact on vehicle or transit operations related to the two previous points. Geometrically, there are many locations throughout HRM where similar geometric arrangements have been successfully implemented.

We trust that this report satisfies the Halifax Regional Municipality's 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

Original Signed

Original Signed

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APPENDIX A

TRAFFIC COUNTS

HALIFAX REGIONAL MUNICIPALITY
TRANSPORTATION & PUBLIC WORKS
TRAFFIC & RIGHT OF WAY

CODE NO. 16-TM-305

MANUAL TRAFFIC COUNTS

INTERSECTION: PORTLAND STREET AT PORTLAND ESTATES BOULEVARD AND SPRING AVENUE

WEATHER: RAIN
RECORDER: TV

DAY	DATE	MONTH	YEAR
TUES.	26	JULY	2016

STREET:		PORTLAND STREET			PORTLAND STREET			SPRING AVENUE			PORTLAND ESTATES BLVD.			
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	
07:00:00 AM	07:15:00 AM	2	319	1	4	61	3	1	2	26	9	0	2	430
07:15:00 AM	07:30:00 AM	3	329	4	4	63	5	3	5	22	5	2	2	447
07:30:00 AM	07:45:00 AM	3	376	3	2	79	2	1	1	27	6	4	3	507
07:45:00 AM	08:00:00 AM	8	330	3	13	90	7	3	4	24	10	4	2	498
TOTAL		16	1354	11	23	293	17	8	12	99	30	10	9	1882
PEAK			1381			333			119			49		
15 MIN PEAK			1528			440			124			64		
PEAK HOUR FACTOR			0.9			0.76			0.96			0.77		
TWO WAY TOTALS			1691			1816			163			94		FACTOR
														1.03
														1938

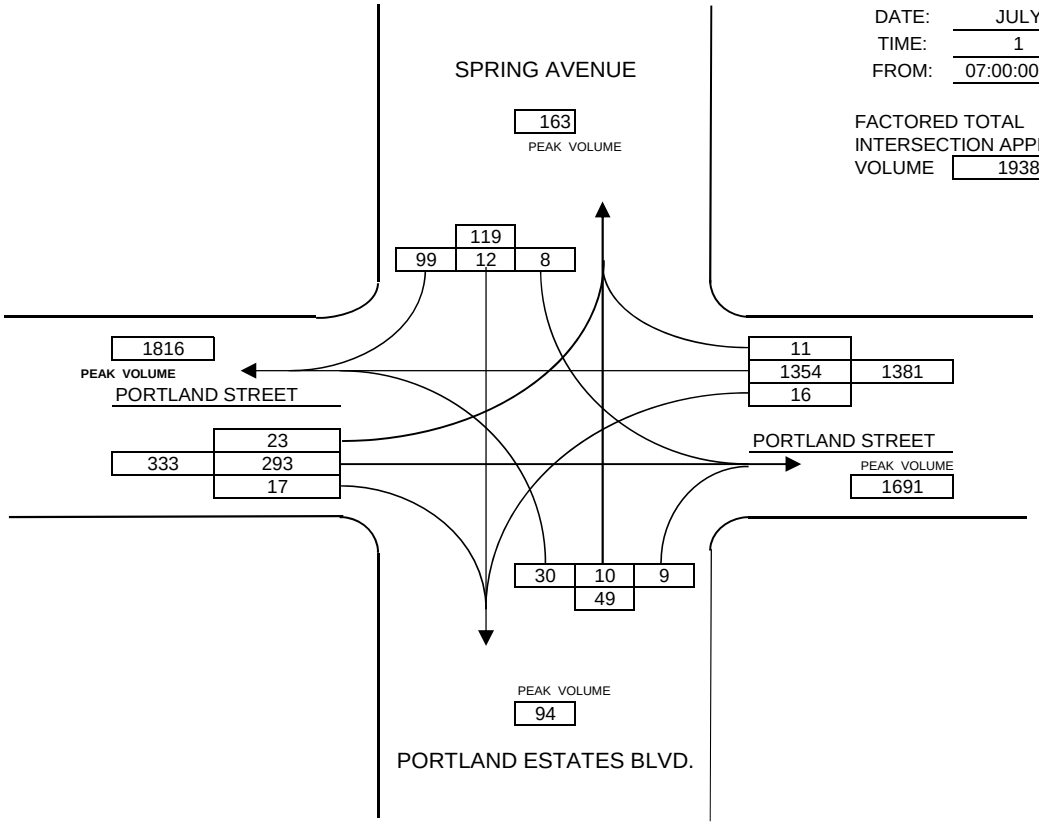
DAY	DATE	MONTH	YEAR
TUES.	26	JULY	2016

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	2	307	2	13	91	4	1	0	22	7	2	6	457
08:15:00 AM	08:30:00 AM	6	339	2	10	89	5	1	1	18	11	6	5	493
08:30:00 AM	08:45:00 AM	7	306	3	7	123	3	4	1	23	11	3	10	501
08:45:00 AM	09:00:00 AM	15	285	8	20	138	8	6	5	16	15	3	12	531
TOTAL		30	1237	15	50	441	20	12	7	79	44	14	33	1982
PEAK			1282			511			98			91		
15 MIN PEAK			1388			664			112			120		
PEAK HOUR FACTOR			0.92			0.77			0.88			0.76		
TWO WAY TOTALS			1768			1871			177			148		FACTOR
														1.03
														2041

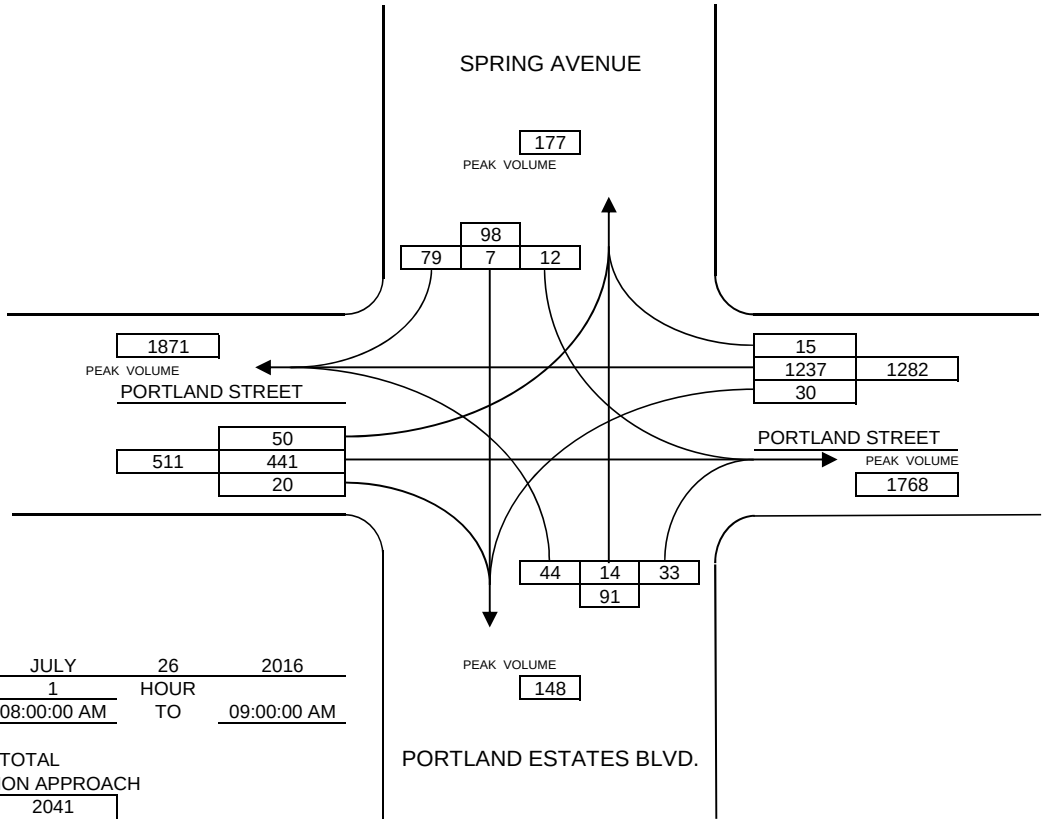
VEHICULAR GRAPHIC SUMMARY SHEET

INTERSECTION : PORTLAND STREET AT PORTLAND ESTATES BOULEVARD AND SPRING AVENUE

DATE: JULY 26 2016
TIME: 1 HOUR
FROM: 07:00:00 AM TO 08:00:00 AM



FACTORED TOTAL INTERSECTION APPROACH VOLUME 1938



DATE: JULY 26 2016
TIME: 1 HOUR
FROM: 08:00:00 AM TO 09:00:00 AM

FACTORED TOTAL INTERSECTION APPROACH VOLUME 2041

HALIFAX REGIONAL MUNICIPALITY
TRANSPORTATION & PUBLIC WORKS
TRAFFIC & RIGHT OF WAY

CODE NO. 16-TM-305

MANUAL TRAFFIC COUNTS

INTERSECTION: PORTLAND STREET AT PORTLAND ESTATES BOULEVARD AND SPRING AVENUE

WEATHER: RAIN
RECORDER: TV

DAY	DATE	MONTH	YEAR
TUES	26	JULY	2016

STREET:		PORTLAND STREET			PORTLAND STREET			SPRING AVENUE			PORTLAND ESTATES BLVD.			
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	
04:00:00 PM	04:15:00 PM	8	213	9	40	399	14	2	4	19	4	7	7	726
04:15:00 PM	04:30:00 PM	5	176	2	36	371	11	6	4	17	5	8	5	646
04:30:00 PM	04:45:00 PM	10	163	1	59	399	16	2	1	17	7	4	7	686
04:45:00 PM	05:00:00 PM	9	179	6	53	362	27	5	12	11	13	7	6	690
TOTAL		32	731	18	188	1531	68	15	21	64	29	26	25	2748
PEAK			781			1787			100			80		
15 MIN PEAK			920			1896			112			104		
PEAK HOUR FACTOR			0.85			0.94			0.89			0.77		
TWO WAY TOTALS			2352			2611			332			201		FACTOR
														1.03
														2830

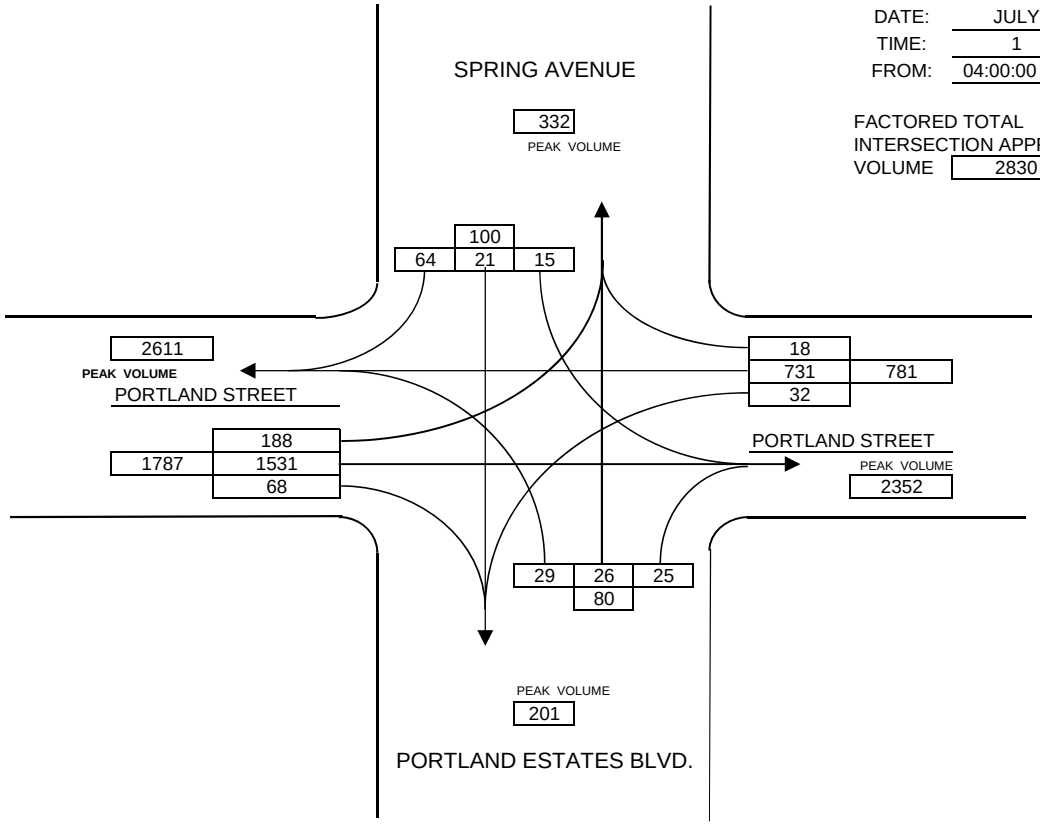
DAY	DATE	MONTH	YEAR
TUES	26	JULY	2016

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	10	154	5	105	246	28	1	11	13	8	1	4	586
05:15:00 PM	05:30:00 PM	6	150	6	87	182	21	4	5	9	5	9	6	490
05:30:00 PM	05:45:00 PM	11	180	5	100	206	32	2	10	15	8	10	4	583
05:45:00 PM	06:00:00 PM	8	147	6	109	237	26	5	13	16	9	6	1	583
TOTAL		35	631	22	401	871	107	12	39	53	30	26	15	2242
PEAK			688			1379			104			71		
15 MIN PEAK			784			1516			136			88		
PEAK HOUR FACTOR			0.88			0.91			0.76			0.81		
TWO WAY TOTALS			1586			2093			553			252		FACTOR
														1.03
														2309

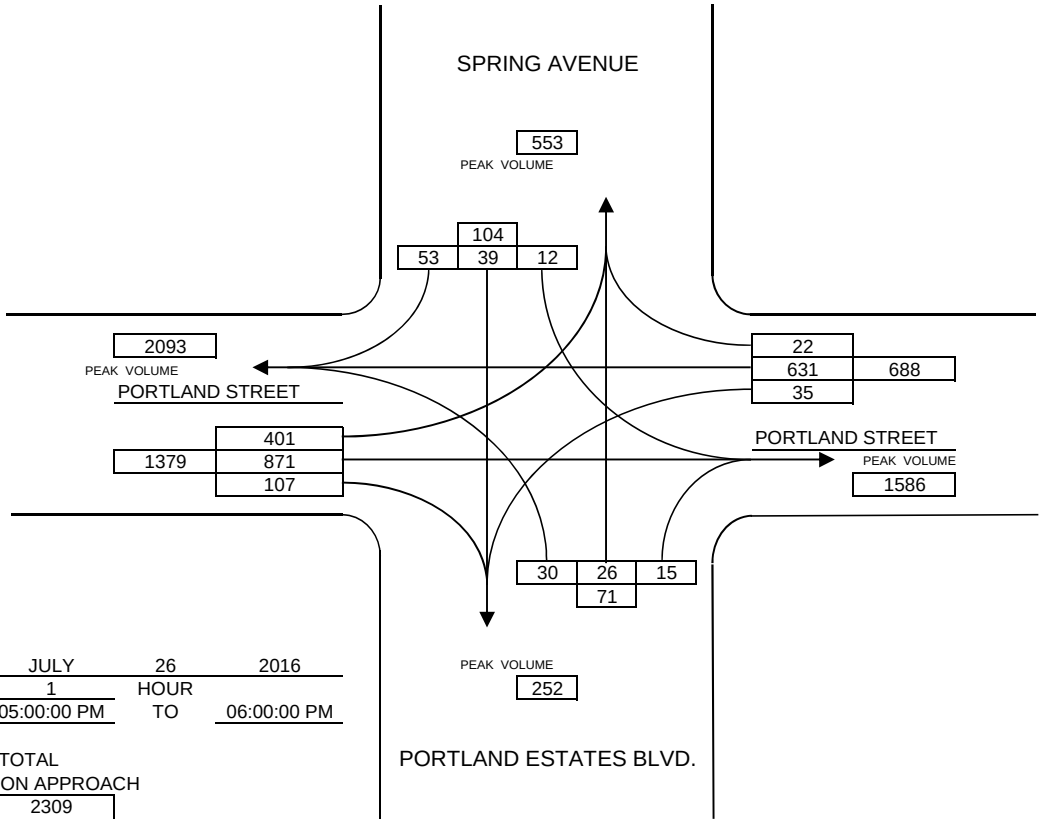
VEHICULAR GRAPHIC SUMMARY SHEET

INTERSECTION : PORTLAND STREET AT PORTLAND ESTATES BOULEVARD AND SPRING AVENUE

DATE: JULY 26 2016
TIME: 1 HOUR
FROM: 04:00:00 PM TO 05:00:00 PM



FACTORED TOTAL INTERSECTION APPROACH VOLUME 2830



DATE: JULY 26 2016
TIME: 1 HOUR
FROM: 05:00:00 PM TO 06:00:00 PM

FACTORED TOTAL INTERSECTION APPROACH VOLUME 2309

HALIFAX REGIONAL MUNICIPALITY
TRANSPORTATION & PUBLIC WORKS
TRAFFIC MANAGEMENT

CODE NO. 17-TM-400

MANUAL TRAFFIC COUNTS

INTERSECTION: SETTLE STREET AT VALLEYFIELD ROAD AT WOODLAWN ROAD

WEATHER: SUNNY & CLEAR
RECORDER: KS

DAY	DATE	MONTH	YEAR
TUES	26	SEPT	2017

STREET:		WOODLAWN ROAD			WOODLAWN ROAD			VALLEYFIELD ROAD			SETTLE STREET			
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	
07:00:00 AM	07:15:00 AM	0	231	13	1	24	0	8	0	12	5	10	2	306
07:15:00 AM	07:30:00 AM	0	220	14	2	27	0	10	0	12	5	14	3	307
07:30:00 AM	07:45:00 AM	0	207	18	1	28	0	11	0	14	3	15	3	300
07:45:00 AM	08:00:00 AM	1	257	17	5	33	0	15	1	18	4	18	6	375
TOTAL		1	915	62	9	112	0	44	1	56	17	57	14	1288
PEAK			978			121			101			88		
15 MIN PEAK			1100			152			136			112		
PEAK HOUR FACTOR			0.89			0.8			0.74			0.79		
TWO WAY TOTALS			1148			1109			229			90		FACTOR
														1
														1288

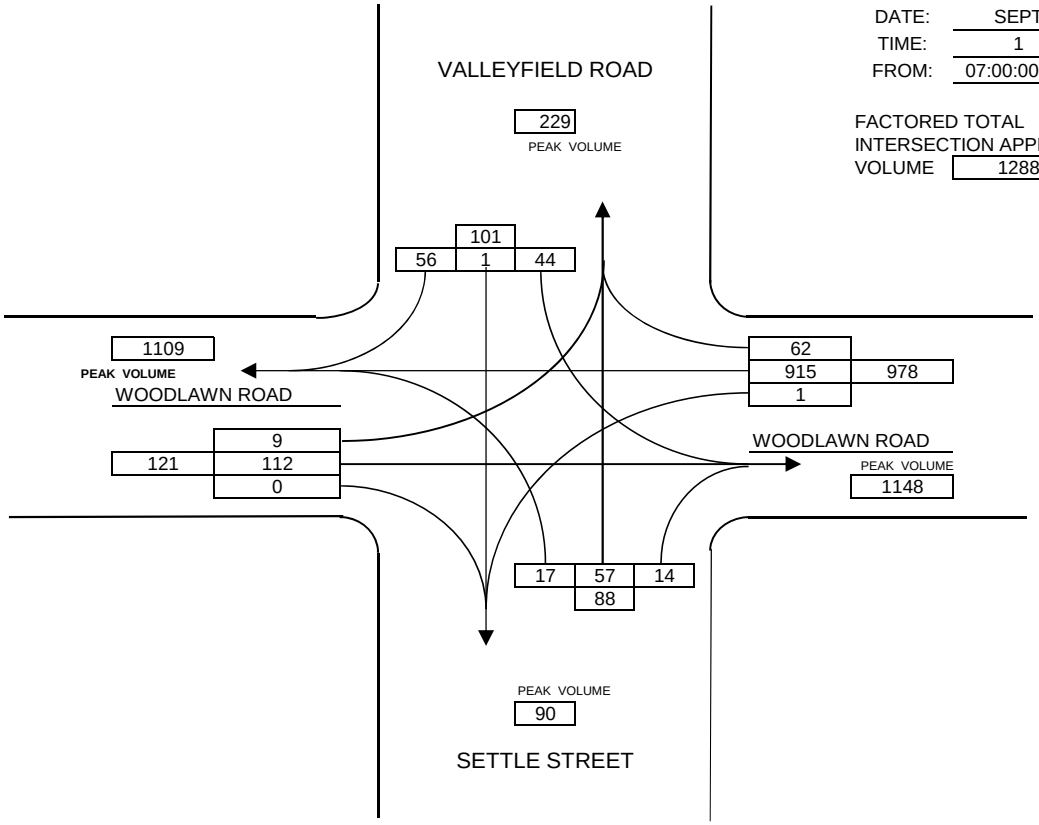
DAY	DATE	MONTH	YEAR
TUES	26	SEPT	2017

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	1	200	20	7	28	0	14	2	17	4	3	2	298
08:15:00 AM	08:30:00 AM	3	244	18	4	36	1	17	1	23	6	9	7	369
08:30:00 AM	08:45:00 AM	1	253	22	3	39	0	13	2	20	9	12	4	378
08:45:00 AM	09:00:00 AM	3	237	26	5	32	0	14	3	19	5	6	5	355
TOTAL		8	934	86	19	135	1	58	8	79	24	30	18	1400
PEAK			1028			155			145			72		
15 MIN PEAK			1104			168			164			100		
PEAK HOUR FACTOR			0.93			0.92			0.88			0.72		
TWO WAY TOTALS			1239			1192			280			89		FACTOR
														1
														1400

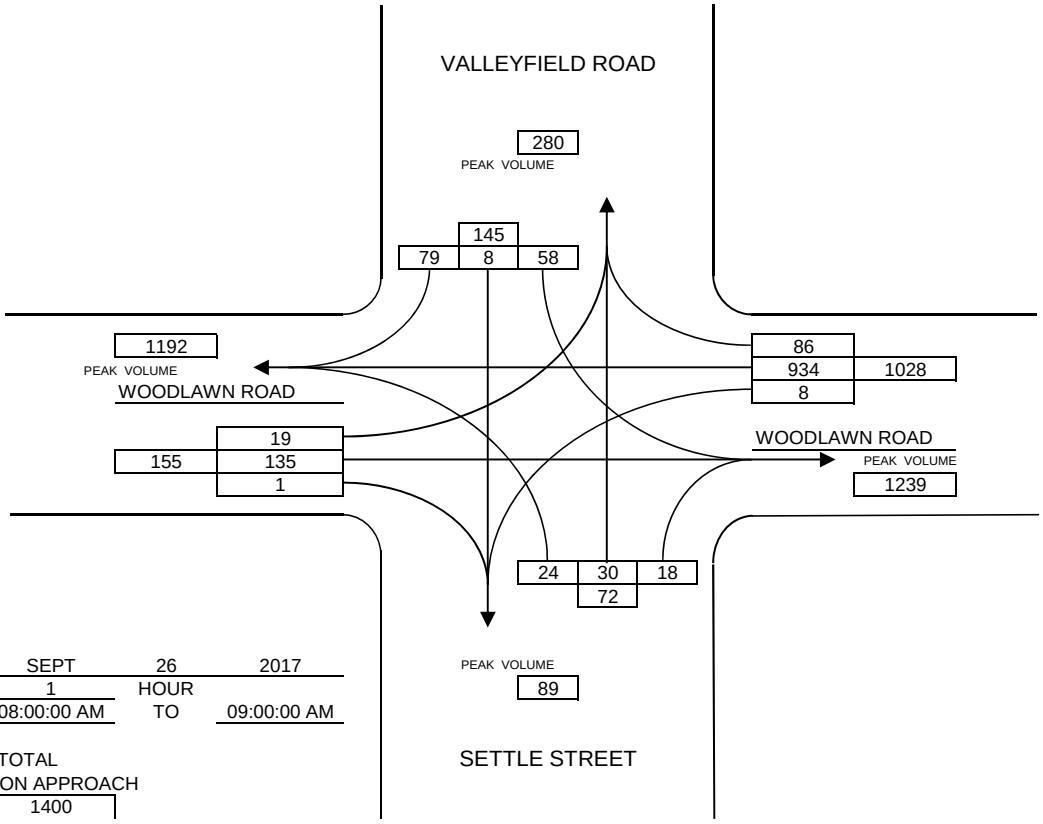
VEHICULAR GRAPHIC SUMMARY SHEET

INTERSECTION : SETTLE STREET AT VALLEYFIELD ROAD AT WOODLAWN ROAD

DATE: SEPT 26 2017
TIME: 1 HOUR
FROM: 07:00:00 AM TO 08:00:00 AM



FACTORED TOTAL
INTERSECTION APPROACH
VOLUME 1288



DATE: SEPT 26 2017
TIME: 1 HOUR
FROM: 08:00:00 AM TO 09:00:00 AM

FACTORED TOTAL
INTERSECTION APPROACH
VOLUME 1400

HALIFAX REGIONAL MUNICIPALITY
TRANSPORTATION & PUBLIC WORKS
TRAFFIC MANAGEMENT

CODE NO. 17-TM-400

MANUAL TRAFFIC COUNTS

INTERSECTION: SETTLE STREET AT VALLEYFIELD ROAD AT WOODLAWN ROAD

WEATHER: SUNNY & CLEAR
RECORDER: KS

DAY	DATE	MONTH	YEAR
TUES	26	SEPT	2017

STREET:		WOODLAWN ROAD			WOODLAWN ROAD			VALLEYFIELD ROAD			SETTLE STREET			
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	
04:00:00 PM	04:15:00 PM	0	80	17	30	124	0	5	5	7	2	6	1	277
04:15:00 PM	04:30:00 PM	3	64	19	18	155	4	5	4	7	6	4	3	292
04:30:00 PM	04:45:00 PM	2	92	22	23	181	4	6	4	15	3	7	2	361
04:45:00 PM	05:00:00 PM	0	112	14	27	173	6	10	2	12	2	5	3	366
TOTAL		5	348	72	98	633	14	26	15	41	13	22	9	1296
PEAK			425			745			82			44		
15 MIN PEAK			504			832			100			52		
PEAK HOUR FACTOR			0.84			0.9			0.82			0.85		
TWO WAY TOTALS			1093			1147			274			78		FACTOR
														1
														1296

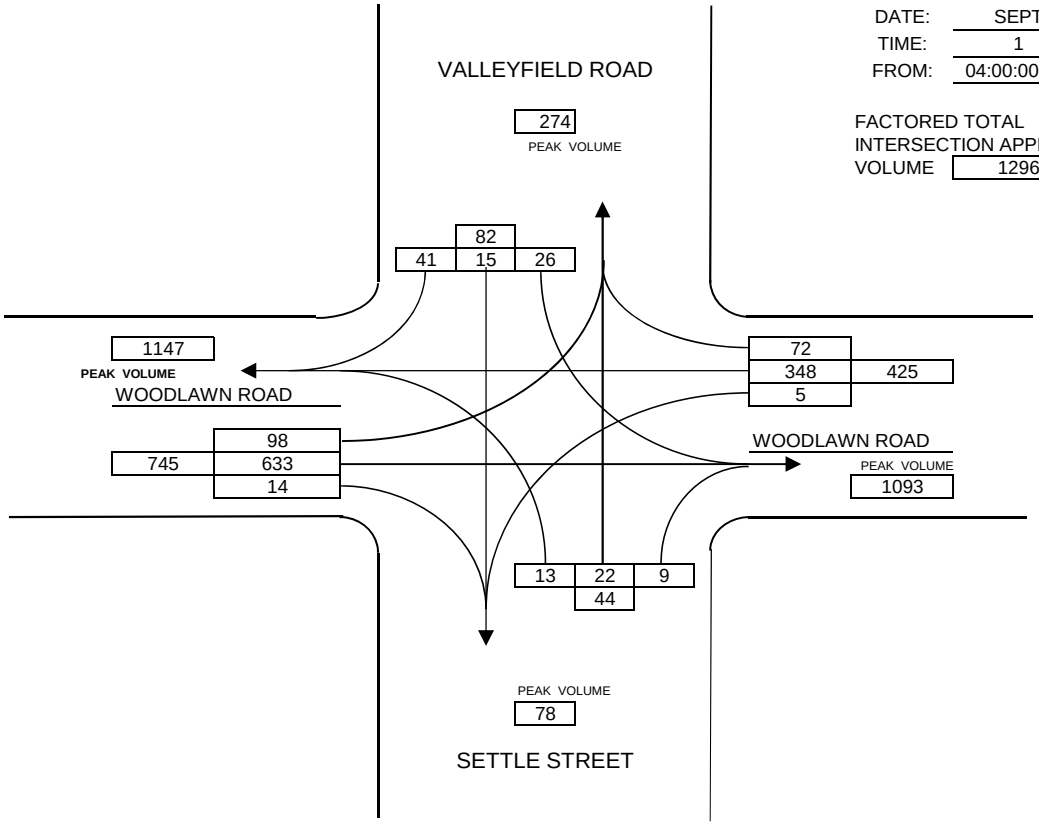
DAY	DATE	MONTH	YEAR
TUES	26	SEPT	2017

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	3	107	11	20	199	2	13	1	14	5	2	6	383
05:15:00 PM	05:30:00 PM	4	110	20	23	204	6	11	1	19	6	4	5	413
05:30:00 PM	05:45:00 PM	0	101	18	33	195	5	17	0	19	5	5	2	400
05:45:00 PM	06:00:00 PM	1	94	14	30	191	4	15	2	9	5	2	3	370
TOTAL		8	412	63	106	789	17	56	4	61	21	13	16	1566
PEAK			483			912			121			50		
15 MIN PEAK			536			932			144			60		
PEAK HOUR FACTOR			0.9			0.98			0.84			0.83		
TWO WAY TOTALS			1344			1406			303			79		FACTOR
														1
														1566

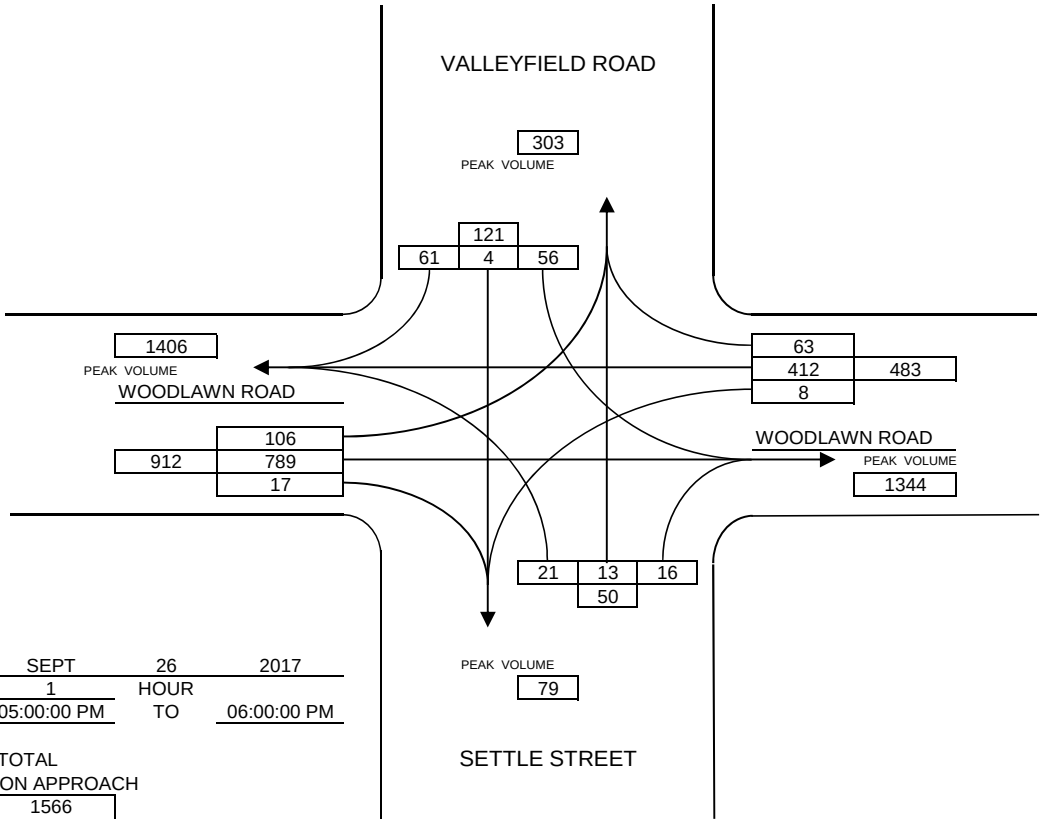
VEHICULAR GRAPHIC SUMMARY SHEET

INTERSECTION : SETTLE STREET AT VALLEYFIELD ROAD AT WOODLAWN ROAD

DATE: SEPT 26 2017
TIME: 1 HOUR
FROM: 04:00:00 PM TO 05:00:00 PM



FACTORED TOTAL INTERSECTION APPROACH VOLUME 1296



DATE: SEPT 26 2017
TIME: 1 HOUR
FROM: 05:00:00 PM TO 06:00:00 PM

FACTORED TOTAL INTERSECTION APPROACH VOLUME 1566

HALIFAX REGIONAL MUNICIPALITY
TRANSPORTATION & PUBLIC WORKS
TRAFFIC MANAGEMENT

CODE NO. 18-TM-488

MANUAL TRAFFIC COUNTS

INTERSECTION: BAKER DRIVE AT PORTLAND STREET AND WOODLAWN ROAD

WEATHER: RAIN
RECORDER: MB, JS

DAY	DATE	MONTH	YEAR
TUES.	20	NOV.	2018

STREET:		PORTLAND STREET			PORTLAND STREET			WOODLAWN ROAD			BAKER DRIVE			TOTAL
TIME:		FROM THE EAST			FROM THE WEST			FROM THE NORTH			FROM THE SOUTH			
15 MIN INTERVALS		L	S	R	L	S	R	L	S	R	L	S	R	
07:00:00 AM	07:15:00 AM	3	237	2	27	71	36	9	30	95	72	5	0	587
07:15:00 AM	07:30:00 AM	2	321	2	18	113	49	9	31	123	98	12	0	778
07:30:00 AM	07:45:00 AM	0	301	0	36	118	51	7	30	184	128	15	0	870
07:45:00 AM	08:00:00 AM	1	246	2	38	119	69	14	36	140	136	20	1	822
TOTAL		6	1105	6	119	421	205	39	127	542	434	52	1	3057
PEAK			1117			745			708			487		
4(15 MIN PEAK)			1300			904			884			628		
PEAK HOUR FACTOR			0.86			0.82			0.8			0.78		AAWT
TWO WAY TOTALS			1578			2826			885			825		FACTOR
														1.01
														3088

DAY	DATE	MONTH	YEAR
TUES.	20	NOV.	2018

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	1	296	1	37	115	67	18	29	171	124	12	1	872
08:15:00 AM	08:30:00 AM	2	264	1	56	144	72	9	37	128	106	18	3	840
08:30:00 AM	08:45:00 AM	0	245	3	48	144	63	19	57	156	87	21	2	845
08:45:00 AM	09:00:00 AM	1	260	4	51	151	70	31	47	118	118	28	2	881
TOTAL		4	1065	9	192	554	272	77	170	573	435	79	8	3438
PEAK			1078			1018			820			522		
4(15 MIN PEAK)			1192			1088			928			592		
PEAK HOUR FACTOR			0.9			0.94			0.88			0.88		AAWT
TWO WAY TOTALS			1717			3091			1100			968		FACTOR
														1.01
														3472

Intersection Peak Hour

		PORTLAND STREET			PORTLAND STREET			WOODLAWN ROAD			BAKER DRIVE			Total
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
N/A	Car	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Truck	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Bicycle	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Vehicle Total	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Approach Factor		N/A			N/A			N/A			N/A		FACTOR
														1
														#VALUE!

Peak Hour Pedestrians

		NE			NW			SW			SE			Total
		Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
N/A	Pedestrians	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Car traffic

Interval starts	PORTLAND STREET			PORTLAND STREET			WOODLAWN ROAD			BAKER DRIVE			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00	3	233	2	24	64	33	9	30	93	72	5	0	568
7:15	2	315	2	16	103	47	9	30	116	96	11	0	747
7:30	0	296	0	33	113	50	7	30	182	126	15	0	852
7:45	1	237	2	37	112	66	14	36	132	134	19	1	791
8:00	1	292	1	33	107	64	15	28	166	123	11	1	842
8:15	2	257	1	54	137	71	8	36	124	105	17	2	814
8:30	0	237	3	47	135	62	17	57	154	86	19	2	819
8:45	1	254	3	48	139	67	31	47	112	116	28	2	848
TOTAL	10	2121	14	292	910	460	110	294	1079	858	125	8	6281

Truck traffic

Interval starts	PORTLAND STREET			PORTLAND STREET			WOODLAWN ROAD			BAKER DRIVE			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00	0	4	0	3	7	3	0	0	2	0	0	0	19
7:15	0	6	0	2	10	2	0	1	7	2	1	0	31
7:30	0	5	0	3	5	1	0	0	2	2	0	0	18
7:45	0	9	0	1	7	3	0	0	8	2	1	0	31
8:00	0	4	0	4	8	3	3	1	5	1	1	0	30
8:15	0	7	0	2	7	1	1	1	4	1	1	1	26
8:30	0	8	0	1	9	1	2	0	2	1	2	0	26
8:45	0	6	1	3	12	3	0	0	6	2	0	0	33
TOTAL	0	49	1	19	65	17	6	3	36	11	6	1	214

Bicycle traffic

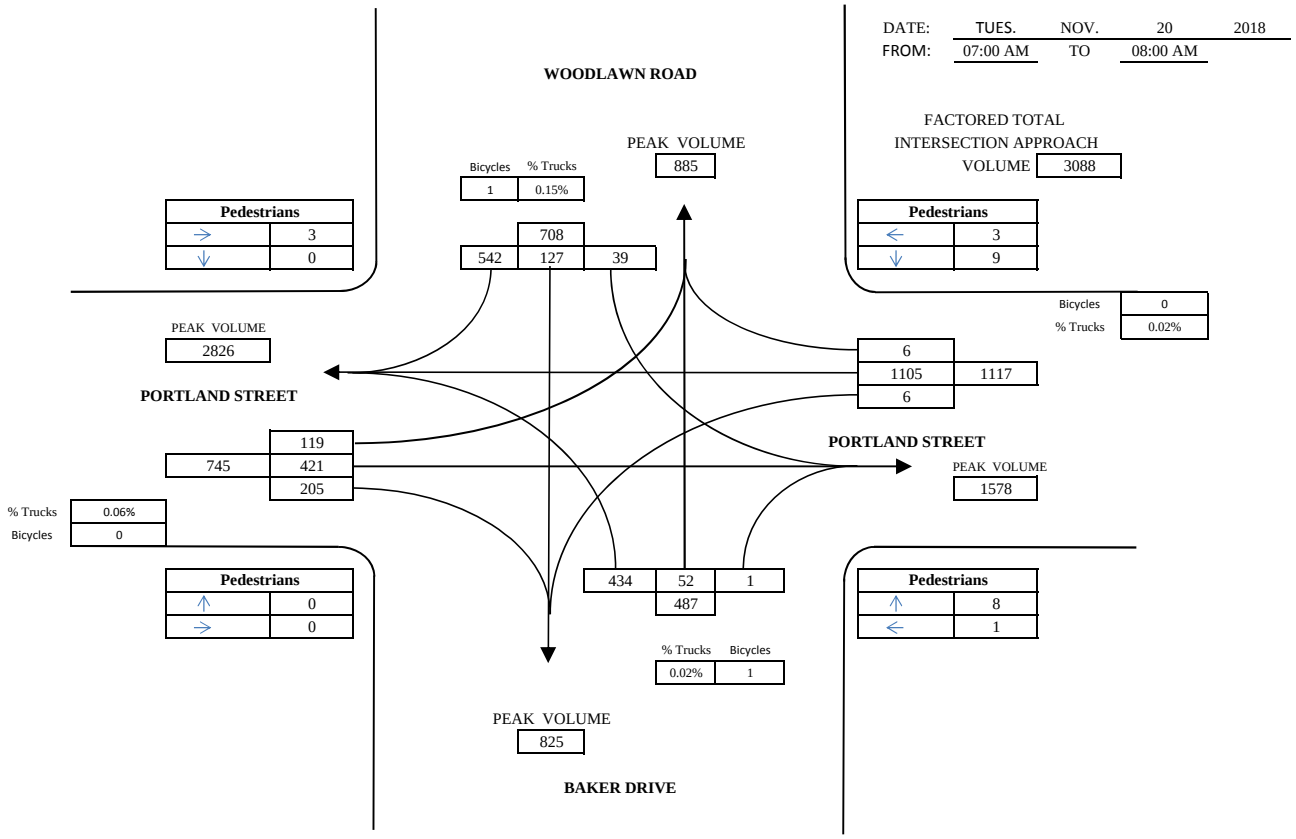
Interval starts	PORTLAND STREET			PORTLAND STREET			WOODLAWN ROAD			BAKER DRIVE			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00	0	0	0	0	0	0	0	1	0	0	0	0	1
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	1	0	0	1
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	1	0	1	0	0	2

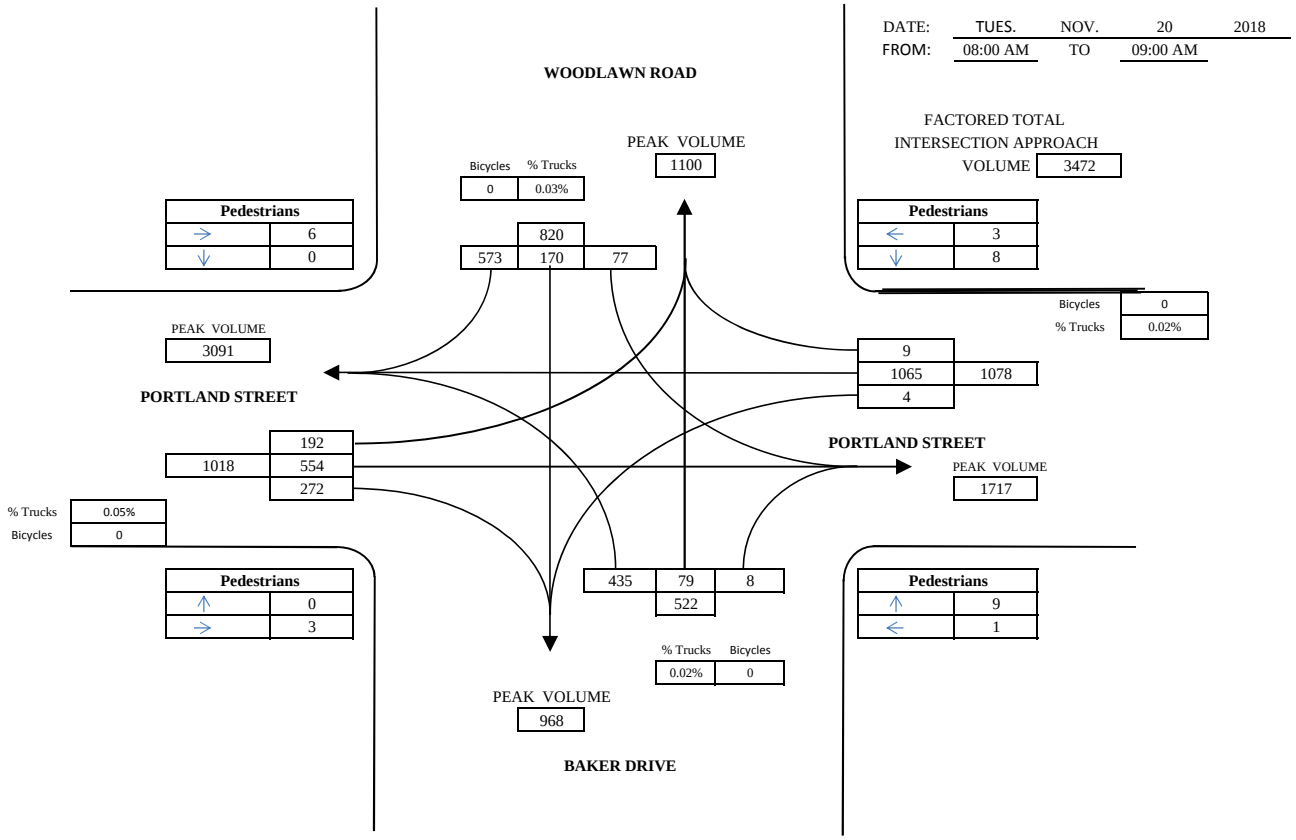
Pedestrian volumes

Interval starts	NE			NW			SW			SE			Total
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
7:00	2	0	2	0	0	0	0	0	0	1	0	1	3
7:15	3	0	3	1	0	1	0	0	0	0	3	3	7
7:30	1	0	1	0	0	0	0	0	0	0	0	0	1
7:45	3	3	6	2	0	2	0	0	0	0	5	5	13
8:00	3	1	4	1	0	1	0	0	0	0	1	1	6
8:15	2	1	3	2	0	2	0	1	1	1	3	4	10
8:30	2	0	2	3	0	3	0	2	2	0	3	3	10
8:45	1	1	2	0	0	0	0	0	0	0	2	2	4
TOTAL	17	6	23	9	0	9	0	3	3	2	17	19	54

VEHICULAR GRAPHIC SUMMARY SHEET

BAKER DRIVE AT PORTLAND STREET AND WOODLAWN ROAD





HALIFAX REGIONAL MUNICIPALITY
TRANSPORTATION & PUBLIC WORKS
TRAFFIC MANAGEMENT

CODE NO. 18-TM-488

MANUAL TRAFFIC COUNTS

INTERSECTION: BAKER DRIVE AT PORTLAND STREET AND WOODLAWN ROAD

WEATHER: RAIN
RECORDER: MB, JS

DAY	DATE	MONTH	YEAR
TUES.	20	NOV.	2018

STREET:		PORTLAND STREET			PORTLAND STREET			WOODLAWN ROAD			BAKER DRIVE			
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	
04:00:00 PM	04:15:00 PM	4	207	10	91	321	109	28	43	66	79	39	6	1003
04:15:00 PM	04:30:00 PM	2	190	10	92	330	141	42	33	87	59	51	8	1045
04:30:00 PM	04:45:00 PM	4	187	14	111	382	121	28	36	92	59	44	6	1084
04:45:00 PM	05:00:00 PM	8	219	12	95	342	116	27	30	78	73	37	4	1041
TOTAL		18	803	46	389	1375	487	125	142	323	270	171	24	4173
PEAK			867			2251			590			465		
4(15 MIN PEAK)			956			2456			648			496		
PEAK HOUR FACTOR			0.91			0.92			0.91			0.94		AAWT
TWO WAY TOTALS			2391			3647			1196			1112		FACTOR
														1.01
														4215

DAY	DATE	MONTH	YEAR
TUES.	20	NOV.	2018

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	6	163	10	99	258	95	30	23	92	75	42	5	898
05:15:00 PM	05:30:00 PM	5	212	15	109	257	106	23	19	83	58	50	6	943
05:30:00 PM	05:45:00 PM	4	214	12	79	230	96	22	40	83	71	46	5	902
05:45:00 PM	06:00:00 PM	2	192	21	110	235	114	27	31	106	57	39	6	940
TOTAL		17	781	58	397	980	411	102	113	364	261	177	22	3683
PEAK			856			1788			579			460		
4(15 MIN PEAK)			928			1888			656			488		
PEAK HOUR FACTOR			0.92			0.95			0.88			0.94		AAWT
TWO WAY TOTALS			1960			3194			1211			1001		FACTOR
														1.01
														3720

Intersection Peak Hour

		PORTLAND STREET			PORTLAND STREET			WOODLAWN ROAD			BAKER DRIVE			Total
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
N/A	Car	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Truck	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Bicycle	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Vehicle Total	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Approach Factor		N/A			N/A			N/A			N/A		FACTOR
														1
														#VALUE!

Peak Hour Pedestrians

		NE			NW			SW			SE			Total
		Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
N/A	Pedestrians	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Car traffic

Interval starts	PORTLAND STREET			PORTLAND STREET			WOODLAWN ROAD			BAKER DRIVE			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:00	4	199	10	89	317	108	28	42	63	77	39	6	982
16:15	2	183	10	88	325	136	41	32	83	57	51	8	1016
16:30	4	181	14	107	374	119	28	36	88	59	44	6	1060
16:45	8	212	12	92	338	114	27	30	76	70	37	4	1020
17:00	6	160	10	98	252	94	30	23	89	75	42	5	884
17:15	5	205	15	105	251	105	23	19	82	57	50	6	923
17:30	4	209	11	77	222	94	22	40	80	69	46	5	879
17:45	2	187	20	106	228	113	27	31	102	54	39	6	915
TOTAL	35	1536	102	762	2307	883	226	253	663	518	348	46	7679

Truck traffic

Interval starts	PORTLAND STREET			PORTLAND STREET			WOODLAWN ROAD			BAKER DRIVE			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:00	0	8	0	2	4	1	0	1	3	2	0	0	21
16:15	0	7	0	4	5	5	1	1	4	2	0	0	29
16:30	0	6	0	4	8	2	0	0	4	0	0	0	24
16:45	0	7	0	3	4	2	0	0	2	3	0	0	21
17:00	0	3	0	1	6	1	0	0	3	0	0	0	14
17:15	0	7	0	4	6	1	0	0	1	1	0	0	20
17:30	0	5	1	2	8	2	0	0	3	2	0	0	23
17:45	0	5	1	4	7	1	0	0	4	3	0	0	25
TOTAL	0	48	2	24	48	15	1	2	24	13	0	0	177

Bicycle traffic

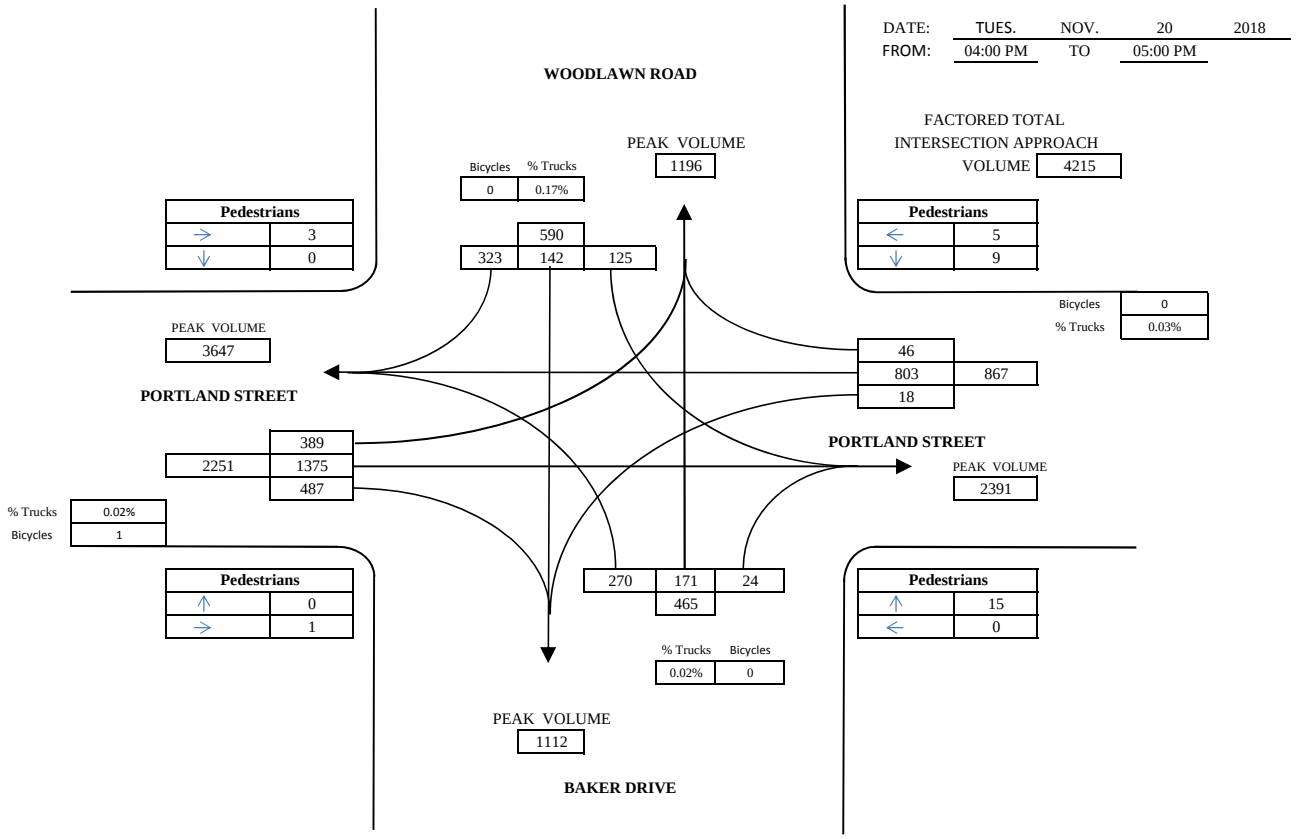
Interval starts	PORTLAND STREET			PORTLAND STREET			WOODLAWN ROAD			BAKER DRIVE			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:00	0	0	0	0	1	0	0	0	0	0	0	0	1
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	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	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	1	0	0	0	0	0	0	0	1

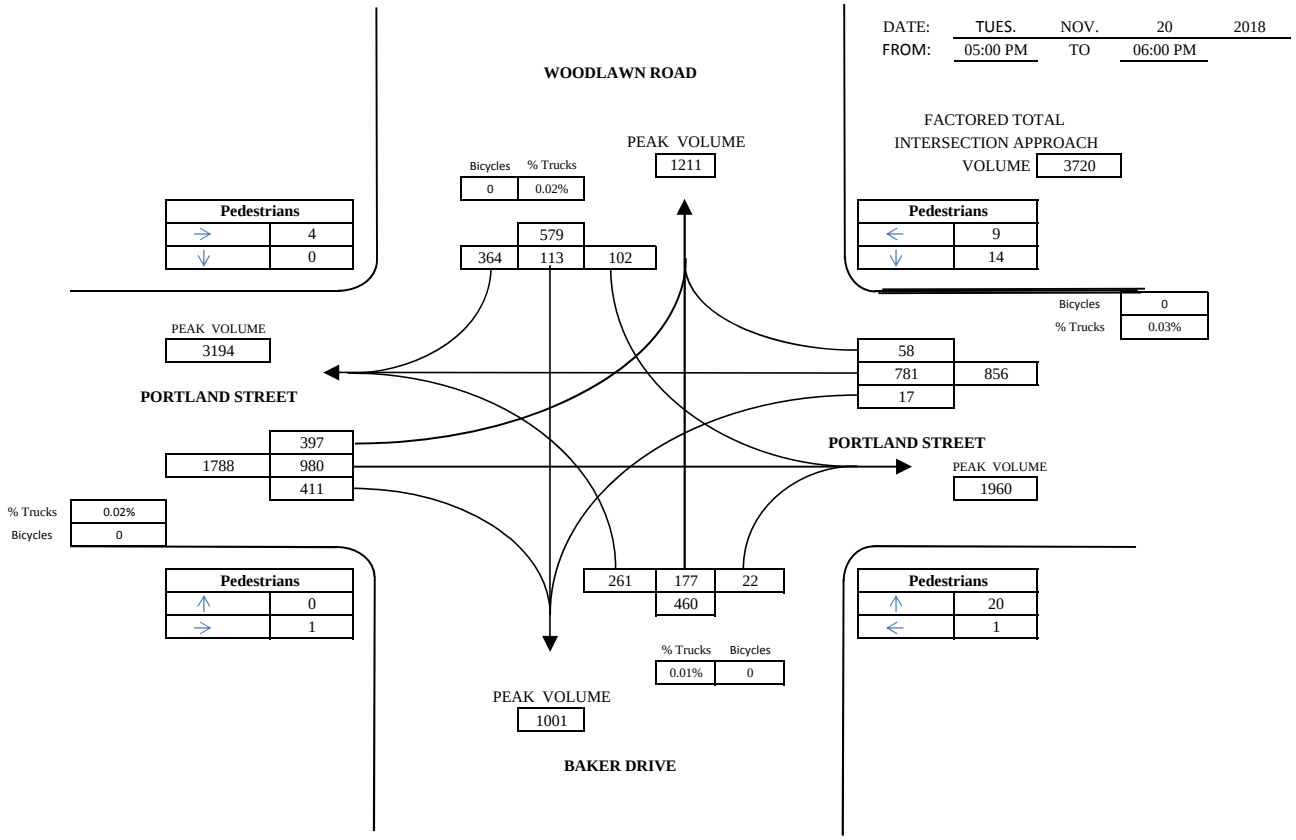
Pedestrian volumes

Interval starts	NE			NW			SW			SE			Total
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
16:00	4	1	5	2	0	2	0	0	0	0	5	5	12
16:15	2	1	3	0	0	0	0	0	0	0	3	3	6
16:30	1	3	4	1	0	1	0	1	1	0	6	6	12
16:45	2	0	2	0	0	0	0	0	0	0	1	1	3
17:00	1	2	3	1	0	1	0	0	0	1	4	5	9
17:15	5	2	7	2	0	2	0	1	1	0	5	5	15
17:30	5	1	6	1	0	1	0	0	0	0	1	1	8
17:45	3	4	7	0	0	0	0	0	0	0	10	10	17
TOTAL	23	14	37	7	0	7	0	2	2	1	35	36	82

VEHICULAR GRAPHIC SUMMARY SHEET

BAKER DRIVE AT PORTLAND STREET AND WOODLAWN ROAD





HALIFAX REGIONAL MUNICIPALITY
TRANSPORTATION & PUBLIC WORKS
TRAFFIC MANAGEMENT

CODE NO. 18-TM-492

MANUAL TRAFFIC COUNTS

INTERSECTION: CARVER STREET AT EISENER BOULEVARD AND PORTLAND STREET

WEATHER: CLOUDY
RECORDER: MB/JS

DAY	DATE	MONTH	YEAR
THURS.	22	NOV.	2018

STREET:		PORTLAND STREET			PORTLAND STREET			CARVER STREET			EISENER BOULEVARD			
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	
07:00:00 AM	07:15:00 AM	81	337	0	0	48	13	3	10	1	11	0	15	519
07:15:00 AM	07:30:00 AM	74	375	0	0	79	17	6	17	1	21	0	18	608
07:30:00 AM	07:45:00 AM	109	335	0	0	47	5	5	19	1	18	0	17	556
07:45:00 AM	08:00:00 AM	98	271	0	0	50	6	7	10	2	22	0	24	490
TOTAL		362	1318	0	0	224	41	21	56	5	72	0	74	2173
PEAK			1680			265			82			146		
4(15 MIN PEAK)			1796			384			100			184		
PEAK HOUR FACTOR			0.94			0.69			0.82			0.79		AAWT
TWO WAY TOTALS			1999			1660			82			605		FACTOR
														0.97
														2108

DAY	DATE	MONTH	YEAR
THURS.	22	NOV.	2018

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	92	267	0	0	67	6	3	11	1	43	0	34	524
08:15:00 AM	08:30:00 AM	74	281	0	0	91	10	9	12	4	36	0	30	547
08:30:00 AM	08:45:00 AM	87	330	0	0	61	17	9	19	2	22	0	30	577
08:45:00 AM	09:00:00 AM	81	284	0	0	108	11	7	20	0	40	0	34	585
TOTAL		334	1162	0	0	327	44	28	62	7	141	0	128	2233
PEAK			1496			371			97			269		
4(15 MIN PEAK)			1668			476			120			308		
PEAK HOUR FACTOR			0.9			0.78			0.81			0.87		AAWT
TWO WAY TOTALS			1979			1681			97			709		FACTOR
														0.97
														2166

Intersection Peak Hour

		PORTLAND STREET			PORTLAND STREET			CARVER STREET			EISENER BOULEVARD			Total
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
NA	Car	0	0	0	0	0	0	0	0	0	0	0	0	0
	Truck	0	0	0	0	0	0	0	0	0	0	0	0	0
	Bicycle	0	0	0	0	0	0	0	0	0	0	0	0	0
	Vehicle Total	0	0	0	0	0	0	0	0	0	0	0	0	0
	Approach Factor		0			0			0			0		FACTOR
														1
														0

Peak Hour Pedestrians

		NE			NW			SW			SE			Total
		Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
NA	Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0

Car traffic

Interval starts	PORTLAND STREET			PORTLAND STREET			CARVER STREET			EISENER BOULEVARD			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00	79	331	0	0	41	13	3	9	1	10	0	15	502
7:15	73	370	0	0	76	15	6	17	1	20	0	18	596
7:30	109	331	0	0	45	5	5	17	1	17	0	17	547
7:45	98	264	0	0	49	6	6	10	2	20	0	23	478
8:00	90	261	0	0	64	6	3	11	1	41	0	33	510
8:15	74	275	0	0	86	8	8	12	4	34	0	30	531
8:30	86	325	0	0	54	17	9	19	2	20	0	28	560
8:45	80	277	0	0	101	11	7	20	0	40	0	33	569
TOTAL	689	2434	0	0	516	81	47	115	12	202	0	197	4293

Truck traffic

Interval starts	PORTLAND STREET			PORTLAND STREET			CARVER STREET			EISENER BOULEVARD			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00	2	6	0	0	7	0	0	1	0	1	0	0	17
7:15	1	5	0	0	3	2	0	0	0	1	0	0	12
7:30	0	4	0	0	2	0	0	2	0	1	0	0	9
7:45	0	7	0	0	1	0	1	0	0	2	0	1	12
8:00	2	6	0	0	3	0	0	0	0	2	0	1	14
8:15	0	6	0	0	5	2	1	0	0	2	0	0	16
8:30	1	5	0	0	7	0	0	0	0	2	0	2	17
8:45	1	7	0	0	7	0	0	0	0	0	0	1	16
TOTAL	7	46	0	0	35	4	2	3	0	11	0	5	113

Bicycle traffic

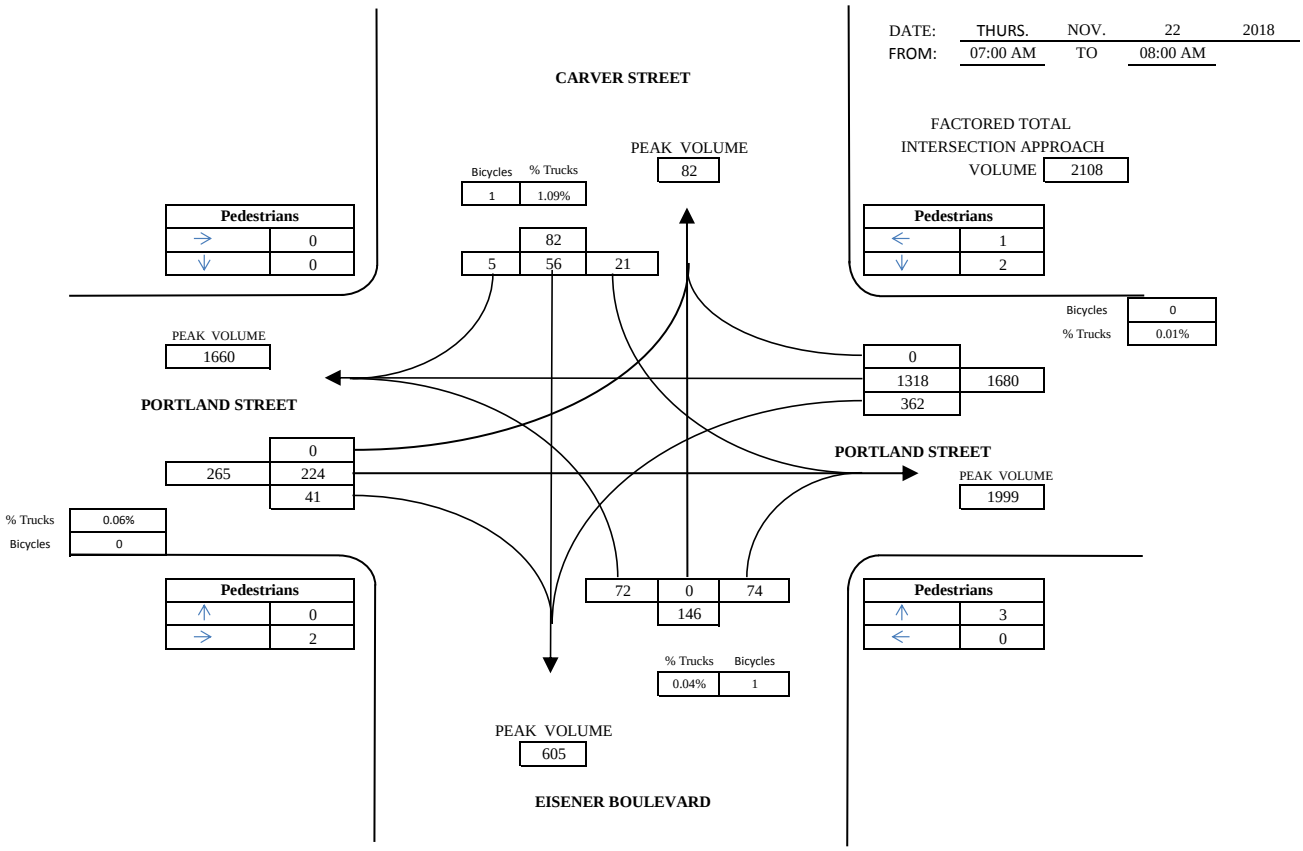
Interval starts	PORTLAND STREET			PORTLAND STREET			CARVER STREET			EISENER BOULEVARD			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	1	0	0	0	0	0	1
7:30	0	0	0	0	0	0	0	0	0	0	1	0	1
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	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	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	1	0	0	0	1	0	2

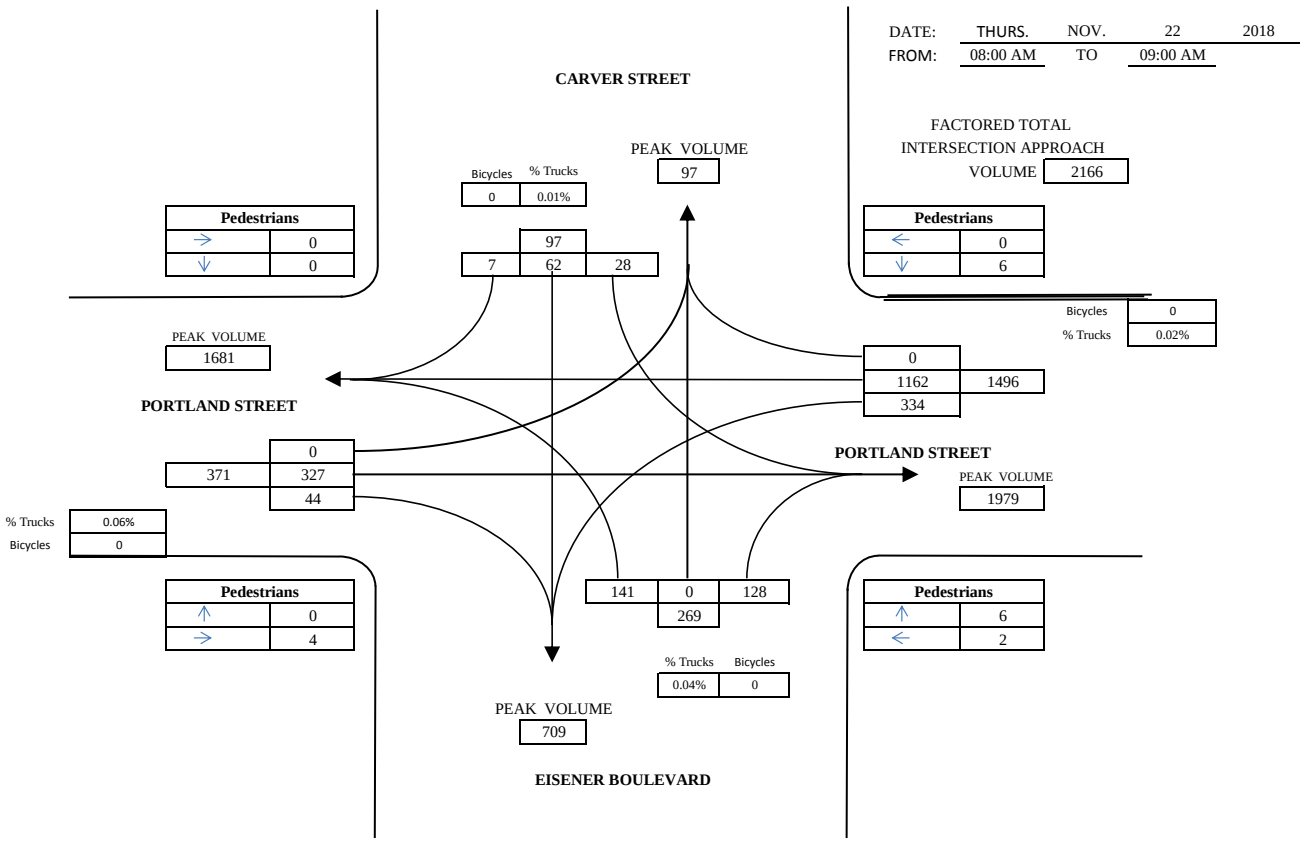
Pedestrian volumes

Interval starts	NE			NW			SW			SE			Total
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
7:00	0	1	1	0	0	0	0	0	0	0	0	0	1
7:15	1	0	1	0	0	0	0	0	0	0	1	1	2
7:30	0	0	0	0	0	0	0	2	2	0	2	2	4
7:45	1	0	1	0	0	0	0	0	0	0	0	0	1
8:00	0	0	0	0	0	0	0	2	2	0	1	1	3
8:15	2	0	2	0	0	0	0	0	0	1	4	5	7
8:30	1	0	1	0	0	0	0	2	2	0	0	0	3
8:45	3	0	3	0	0	0	0	0	0	1	1	2	5
TOTAL	8	1	9	0	0	0	0	6	6	2	9	11	26

VEHICULAR GRAPHIC SUMMARY SHEET

CARVER STREET AT EISENER BOULEVARD AND PORTLAND STREET





HALIFAX REGIONAL MUNICIPALITY
TRANSPORTATION & PUBLIC WORKS
TRAFFIC MANAGEMENT

CODE NO. 18-TM-492

MANUAL TRAFFIC COUNTS

INTERSECTION: CARVER STREET AT EISENER BOULEVARD AND PORTLAND STREET

WEATHER: CLOUDY
RECORDER: MB/JS

DAY	DATE	MONTH	YEAR
THURS.	22	NOV.	2018

STREET:		PORTLAND STREET			PORTLAND STREET			CARVER STREET			EISENER BOULEVARD			
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	
04:00:00 PM	04:15:00 PM	37	183	0	0	232	24	18	24	0	72	0	110	700
04:15:00 PM	04:30:00 PM	44	175	0	0	243	16	26	28	1	74	0	101	708
04:30:00 PM	04:45:00 PM	35	185	0	0	273	11	10	18	1	75	0	110	718
04:45:00 PM	05:00:00 PM	43	190	0	0	262	23	16	22	0	65	0	92	713
TOTAL		159	733	0	0	1010	74	70	92	2	286	0	413	2839
PEAK			892			1084			164			699		
4(15 MIN PEAK)			932			1140			220			740		
PEAK HOUR FACTOR			0.96			0.95			0.75			0.94		AAWT
TWO WAY TOTALS			2385			2105			164			1024		FACTOR
														0.97
														2754

DAY	DATE	MONTH	YEAR
THURS.	22	NOV.	2018

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	43	171	0	0	252	31	19	33	2	73	0	105	729
05:15:00 PM	05:30:00 PM	34	196	0	0	303	33	18	26	3	63	0	88	764
05:30:00 PM	05:45:00 PM	39	172	0	0	257	6	18	22	1	63	0	87	665
05:45:00 PM	06:00:00 PM	44	193	0	0	285	21	20	21	1	82	0	82	749
TOTAL		160	732	0	0	1097	91	75	102	7	281	0	362	2907
PEAK			892			1188			184			643		
4(15 MIN PEAK)			948			1344			216			712		
PEAK HOUR FACTOR			0.94			0.88			0.85			0.9		AAWT
TWO WAY TOTALS			2426			2208			184			996		FACTOR
														0.97
														2820

Intersection Peak Hour

		PORTLAND STREET			PORTLAND STREET			CARVER STREET			EISENER BOULEVARD			Total
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:30 - 17:30	Car	158	710	0	0	1082	89	75	101	7	284	0	411	2917
	Truck	1	23	0	0	15	2	0	1	0	2	0	2	46
	Bicycle	0	1	0	0	0	0	0	0	0	0	0	0	1
	Vehicle Total	159	734	0	0	1097	91	75	102	7	286	0	413	2964
	Approach Factor		0.96			0.88			0.85			0.94		FACTOR
														1
														2964

Peak Hour Pedestrians

		NE			NW			SW			SE			Total
		Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
16:30 - 17:30	Pedestrians	6	0	6	0	0	0	0	2	2	4	6	10	18

Car traffic

Interval starts	PORTLAND STREET			PORTLAND STREET			CARVER STREET			EISENER BOULEVARD			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:00	36	177	0	0	228	24	18	23	0	72	0	108	686
16:15	44	168	0	0	240	16	26	28	1	73	0	101	697
16:30	35	180	0	0	269	11	10	18	1	75	0	110	709
16:45	43	185	0	0	253	22	15	22	0	64	0	92	696
17:00	43	163	0	0	249	31	19	33	2	73	0	104	717
17:15	34	191	0	0	299	32	18	25	3	62	0	88	752
17:30	39	165	0	0	253	6	18	22	1	62	0	87	653
17:45	44	187	0	0	281	20	20	21	1	81	0	82	737
TOTAL	318	1416	0	0	2072	162	144	192	9	562	0	772	5647

Truck traffic

Interval starts	PORTLAND STREET			PORTLAND STREET			CARVER STREET			EISENER BOULEVARD			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:00	1	6	0	0	4	0	0	1	0	0	0	2	14
16:15	0	7	0	0	3	0	0	0	0	1	0	0	11
16:30	0	5	0	0	4	0	0	0	0	0	0	0	9
16:45	0	5	0	0	9	1	1	0	0	1	0	0	17
17:00	0	8	0	0	3	0	0	0	0	0	0	1	12
17:15	0	5	0	0	4	1	0	1	0	1	0	0	12
17:30	0	7	0	0	4	0	0	0	0	1	0	0	12
17:45	0	6	0	0	4	1	0	0	0	1	0	0	12
TOTAL	1	49	0	0	35	3	1	2	0	5	0	3	99

Bicycle traffic

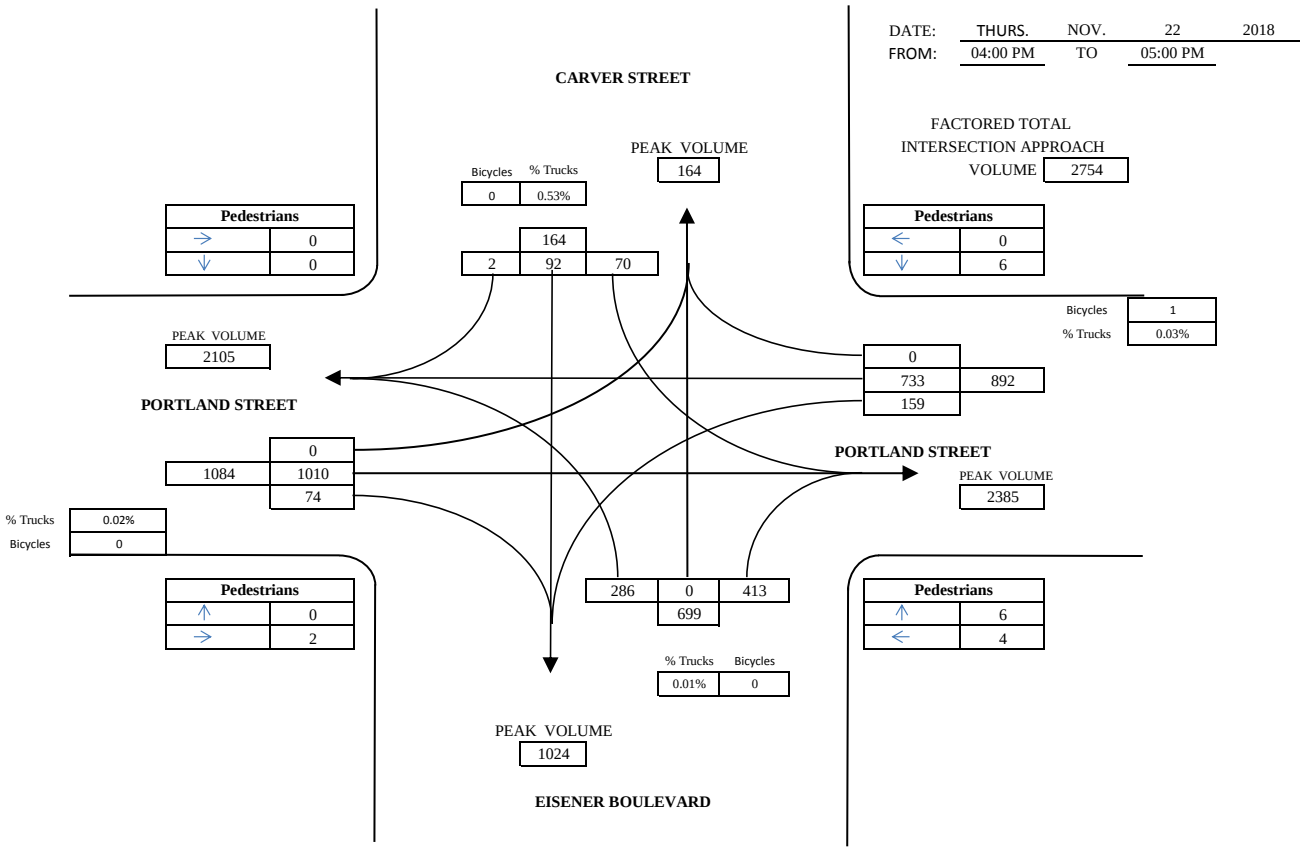
Interval starts	PORTLAND STREET			PORTLAND STREET			CARVER STREET			EISENER BOULEVARD			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	1	0	0	0	0	0	0	0	0	0	0	1
17:00	0	0	0	0	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	0	0	0	0
TOTAL	0	1	0	0	0	0	0	0	0	0	0	0	1

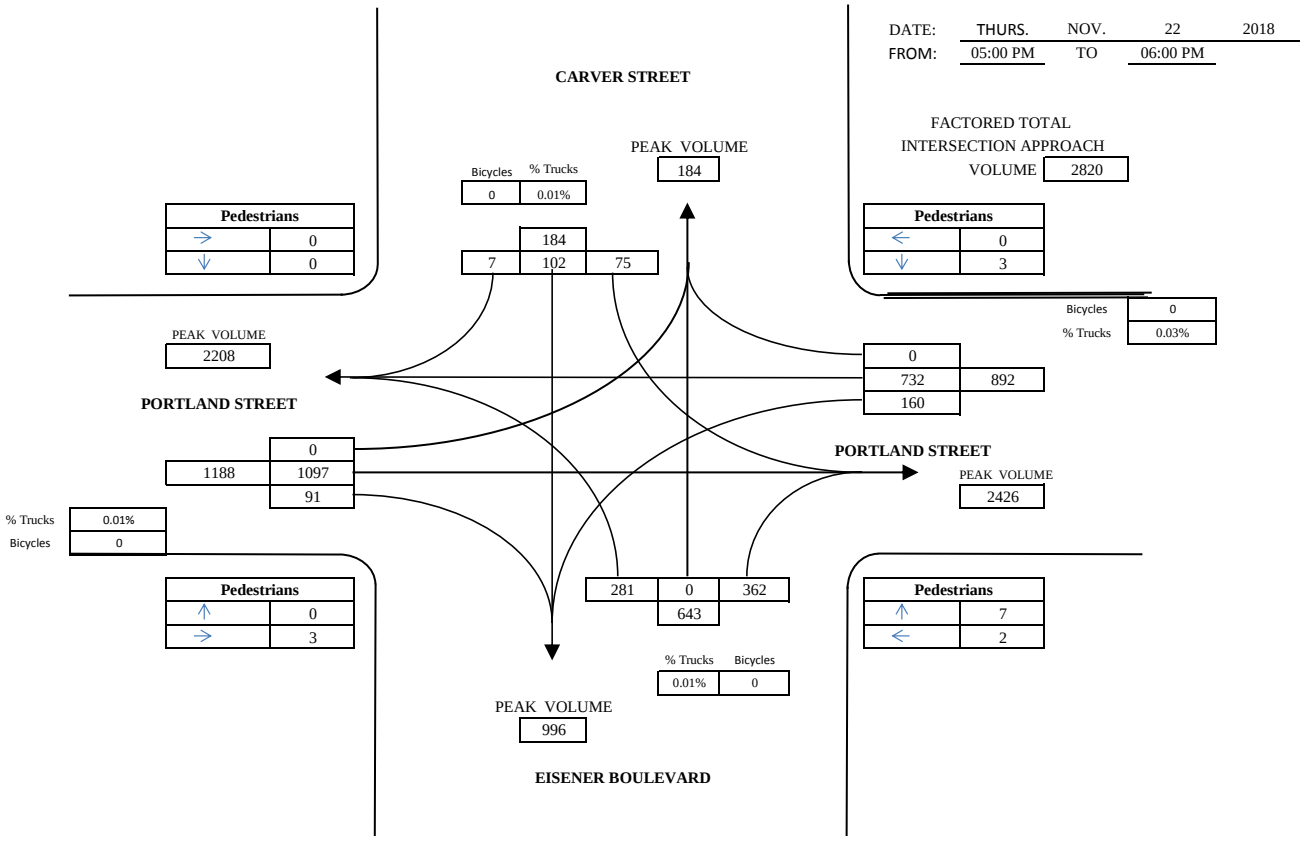
Pedestrian volumes

Interval starts	NE			NW			SW			SE			Total
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
16:00	1	0	1	0	0	0	0	0	0	1	2	3	4
16:15	1	0	1	0	0	0	0	1	1	2	0	2	4
16:30	2	0	2	0	0	0	0	0	0	1	3	4	6
16:45	2	0	2	0	0	0	0	1	1	0	1	1	4
17:00	0	0	0	0	0	0	0	0	0	0	2	2	2
17:15	2	0	2	0	0	0	0	0	0	2	3	5	7
17:30	0	0	0	0	0	0	0	3	3	0	1	1	4
17:45	1	0	1	0	0	0	0	0	0	0	1	1	2
TOTAL	9	0	9	0	0	0	0	5	5	6	13	19	33

VEHICULAR GRAPHIC SUMMARY SHEET

CARVER STREET AT EISENER BOULEVARD AND PORTLAND STREET





APPENDIX B

TRIP GENERATION

Trip Generation Summary

Alternative: Alternative 1
Phase:
Project: Portland Street Development

Open Date: 7/1/2021
Analysis Date: 7/4/2021

ITE	Land Use		Weekday Average Daily Trips *	Enter	Exit	Total	Weekday AM Peak Hour of Adjacent Street Traffic *	Enter	Exit	Total	Weekday PM Peak Hour of Adjacent Street Traffic *	Enter	Exit	Total
231	Mid-Rise Residential Development			148	148	296		7	19	26		22	9	31
	86	Dwelling Units												
Unadjusted Volume				148	148	296		7	19	26		22	9	31
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				148	148	296		7	19	26		22	9	31

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

APPENDIX C

TRIP ASSIGNMENT

Development: Portland Street Development

Driveway: 1 Carver Driveway

Origin #	Route	To		From	
		Distribution %	Trips	Distribution %	Trips
1	Carver Driveway to Portland West	35.00	2	30.00	6
3	Carver Driveway to Baker South	10.00	1	8.00	2
4	Carver Driveway to Eisener South	5.00	0	4.00	1
6	Carver Driveway to Carver North	5.00	0	8.00	2
7	Carver Driveway to Spring North	1.00	0	2.00	0
8	Carver Driveway to Portland East	15.00	1	15.00	3
9	Carver Driveway to Portland Estates South	2.00	0	2.00	0
10	Carver Driveway to Settle North	20.00	1	10.00	2

Development: Portland Street Development

Driveway: 2 Portland Driveway

Origin #	Route	To		From	
		Distribution %	Trips	Distribution %	Trips
1	Portland Driveway to Portland West	0.00	---	5.00	1
3	Portland Driveway to Baker South	0.00	---	2.00	0
4	Portland Driveway to Eisener South	0.00	---	1.00	0
6	Portland Driveway to Carver North	0.00	---	0.00	0
7	Portland Driveway to Spring North	1.00	0	1.00	0
8	Portland Driveway to Portland East	5.00	0	1.00	0
9	Portland Driveway to Portland Estates South	1.00	0	1.00	0
10	Portland Driveway to Settle North	0.00	---	10.00	2

Development: Portland Street Development

Driveway: 1 Carver Driveway

Origin #	Route	To		From	
		Distribution %	Trips	Distribution %	Trips
1	Carver Driveway to Portland West	35.00	8	30.00	3
3	Carver Driveway to Baker South	10.00	2	8.00	1
4	Carver Driveway to Eisener South	5.00	1	4.00	0
6	Carver Driveway to Carver North	5.00	1	8.00	1
7	Carver Driveway to Spring North	1.00	0	2.00	0
8	Carver Driveway to Portland East	15.00	3	15.00	1
9	Carver Driveway to Portland Estates South	2.00	0	2.00	0
10	Carver Driveway to Settle North	20.00	4	10.00	1

Development: Portland Street Development

Driveway: 2 Portland Driveway

Origin #	Route	To		From	
		Distribution %	Trips	Distribution %	Trips
1	Portland Driveway to Portland West	0.00	---	5.00	0
3	Portland Driveway to Baker South	0.00	---	2.00	0
4	Portland Driveway to Eisener South	0.00	---	1.00	0
6	Portland Driveway to Carver North	0.00	---	0.00	0
7	Portland Driveway to Spring North	1.00	0	1.00	0
8	Portland Driveway to Portland East	5.00	1	1.00	0
9	Portland Driveway to Portland Estates South	1.00	0	1.00	0
10	Portland Driveway to Settle North	0.00	---	10.00	1

APPENDIX D

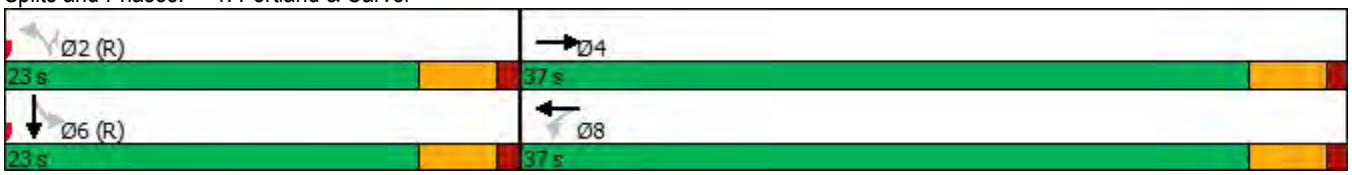
SYNCHRO REPORTS

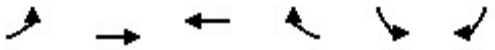
Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	337	344	1197	145	132	29	64
Future Volume (vph)	337	344	1197	145	132	29	64
Lane Group Flow (vph)	436	393	1367	165	151	33	81
Turn Type	NA	Perm	NA	Perm	Perm	Perm	NA
Protected Phases	4		8				6
Permitted Phases		8		2	2	6	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	37.0	37.0	37.0	23.0	23.0	23.0	23.0
Total Split (%)	61.7%	61.7%	61.7%	38.3%	38.3%	38.3%	38.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag							
Lead-Lag Optimize?							
v/c Ratio	0.23	0.77	0.71	0.21	0.25	0.06	0.14
Control Delay	6.9	22.8	13.6	16.2	4.5	15.1	14.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.9	22.8	13.6	16.2	4.5	15.1	14.7
Queue Length 50th (m)	10.7	45.6	82.0	6.8	0.0	2.5	5.7
Queue Length 95th (m)	17.0	m61.0	m100.7	12.8	10.3	7.5	13.9
Internal Link Dist (m)	238.6		40.6				48.2
Turn Bay Length (m)				50.0			
Base Capacity (vph)	1920	509	1938	793	598	551	577
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	0.23	0.77	0.71	0.21	0.25	0.06	0.14

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Portland & Carver





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	658	1190	74	0	21
Future Volume (Veh/h)	0	658	1190	74	0	21
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)	0	752	1360	85	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)		277	263			
pX, platoon unblocked	0.71				0.77	0.71
vC, conflicting volume	1445				1778	722
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	809				739	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 %	100				100	97
cM capacity (veh/h)	577				270	769

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	376	376	907	538	24
Volume Left	0	0	0	0	0
Volume Right	0	0	0	85	24
cSH	1700	1700	1700	1700	769
Volume to Capacity	0.22	0.22	0.53	0.32	0.03
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.7
Control Delay (s)	0.0	0.0	0.0	0.0	9.8
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.8
Approach LOS					A

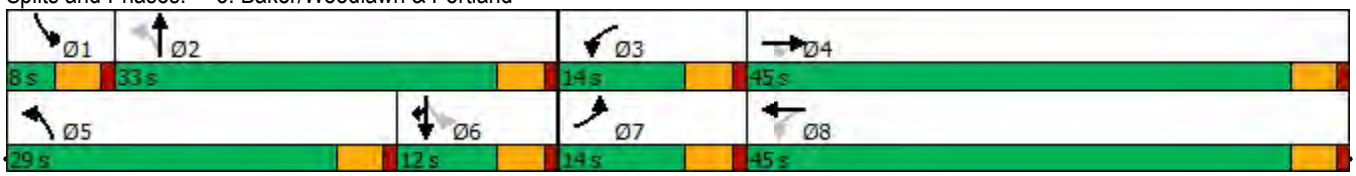
Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	198	571	280	4	1097	448	81	79	175	590
Future Volume (vph)	198	571	280	4	1097	448	81	79	175	590
Lane Group Flow (vph)	226	652	320	4	1263	512	92	90	449	425
Turn Type	Prot	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA	Prot
Protected Phases	7	4		3	8	5	2	1	6	6
Permitted Phases			4	8		2		6		
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	9.5	22.5	9.5	22.5	22.5
Total Split (s)	14.0	45.0	45.0	14.0	45.0	29.0	33.0	8.0	12.0	12.0
Total Split (%)	14.0%	45.0%	45.0%	14.0%	45.0%	29.0%	33.0%	8.0%	12.0%	12.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	Max	Max
v/c Ratio	0.77	0.39	0.35	0.01	0.97	1.10	0.13	0.33	1.45	1.06
Control Delay	67.0	20.2	3.4	14.8	53.8	102.7	24.8	29.5	252.8	88.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.0	20.2	3.4	14.8	53.8	102.7	24.8	29.5	252.8	88.6
Queue Length 50th (m)	25.0	44.3	0.0	0.4	138.9	~111.5	13.4	11.5	~131.1	~69.7
Queue Length 95th (m)	#41.9	69.7	16.5	2.3	#185.5	#175.6	24.8	21.5	#195.7	#133.3
Internal Link Dist (m)		150.3			253.1		110.2		152.8	
Turn Bay Length (m)	125.0			30.0				30.0		
Base Capacity (vph)	300	1684	922	417	1319	465	697	272	309	400
Starvation Cap Reductn	0	0	0	0	0	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	0.75	0.39	0.35	0.01	0.96	1.10	0.13	0.33	1.45	1.06

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 109.8
Natural Cycle: 130
Control Type: Actuated-Uncoordinated
~ 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: 3: Baker/Woodlawn & Portland

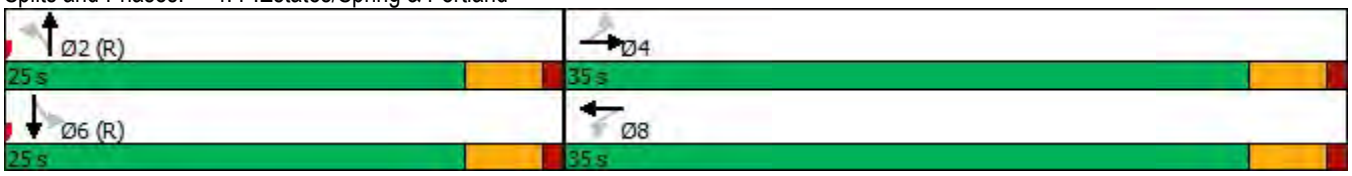


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	53	463	32	1300	46	15	13	7
Future Volume (vph)	53	463	32	1300	46	15	13	7
Lane Group Flow (vph)	61	553	37	1503	52	57	15	103
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	35.0	35.0	35.0	35.0	25.0	25.0	25.0	25.0
Total Split (%)	58.3%	58.3%	58.3%	58.3%	41.7%	41.7%	41.7%	41.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
v/c Ratio	0.49	0.31	0.09	0.83	0.12	0.09	0.03	0.18
Control Delay	30.1	11.3	8.4	17.7	14.5	7.3	13.5	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.1	11.3	8.4	17.7	14.5	7.3	13.5	12.6
Queue Length 50th (m)	5.5	22.8	1.9	67.6	3.9	1.2	1.1	6.2
Queue Length 95th (m)	#20.6	31.6	5.9	94.4	10.2	7.4	4.3	15.2
Internal Link Dist (m)		342.2		163.2		135.7		172.7
Turn Bay Length (m)	200.0		80.0				30.0	
Base Capacity (vph)	125	1811	409	1816	444	602	463	568
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.31	0.09	0.83	0.12	0.09	0.03	0.18

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

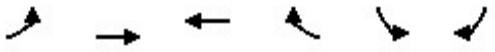
Splits and Phases: 4: P.Estates/Spring & Portland



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	100
Future Volume (Veh/h)	0	0	0	0	0	100
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	114
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			72			
pX, platoon unblocked						
vC, conflicting volume	114	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	114	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	882	1085			1623	

Direction, Lane #	WB 1	SB 1
Volume Total	0	114
Volume Left	0	0
Volume Right	0	0
cSH	1700	1623
Volume to Capacity	0.02	0.00
Queue Length 95th (m)	0.0	0.0
Control Delay (s)	0.0	0.0
Lane LOS	A	
Approach Delay (s)	0.0	0.0
Approach LOS	A	

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	8.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	498	1541	0	0	0
Future Volume (Veh/h)	0	498	1541	0	0	0
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)	0	568	1761	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)		65				
pX, platoon unblocked					0.95	
vC, conflicting volume	1761				2045	587
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1761				1998	587
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	351				50	453

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	SB 1
Volume Total	284	284	704	704	352	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.17	0.17	0.41	0.41	0.21	0.01
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						A
Approach Delay (s)	0.0		0.0			0.0
Approach LOS						A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	33.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	SER	SER2
Lane Configurations					
Traffic Volume (veh/h)	10	50	0	50	10
Future Volume (Veh/h)	10	50	0	50	10
Sign Control	Stop		Free	Free	
Grade	0%		0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	58	0	58	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)			109		
pX, platoon unblocked					
vC, conflicting volume	64	64			
vC1, stage 1 conf vol					
vC2, stage 2 conf vol					
vCu, unblocked vol	64	64			
tC, single (s)	6.4	6.2			
tC, 2 stage (s)					
tF (s)	3.5	3.3			
p0 queue free %	99	94			
cM capacity (veh/h)	942	1000			

Direction, Lane #	EB 1	NB 1	SE 1
Volume Total	70	0	70
Volume Left	12	0	0
Volume Right	58	0	12
cSH	990	1700	1700
Volume to Capacity	0.07	0.00	0.04
Queue Length 95th (m)	1.7	0.0	0.0
Control Delay (s)	8.9	0.0	0.0
Lane LOS	A		
Approach Delay (s)	8.9	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	7.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	5	5	69	5	55	16
Future Volume (Veh/h)	5	5	69	5	55	16
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	5	79	5	63	18
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	226	82			84	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	226	82			84	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	99			96	
cM capacity (veh/h)	731	978			1513	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	10	84	81
Volume Left	5	0	63
Volume Right	5	5	0
cSH	837	1700	1513
Volume to Capacity	0.01	0.05	0.04
Queue Length 95th (m)	0.3	0.0	1.0
Control Delay (s)	9.4	0.0	5.9
Lane LOS	A		A
Approach Delay (s)	9.4	0.0	5.9
Approach LOS	A		

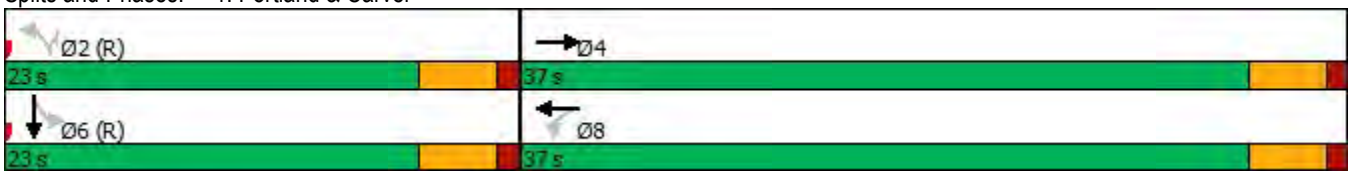
Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	20.6%	ICU Level of Service	A
Analysis Period (min)	15		

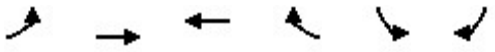
Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	337	344	1197	145	132	29	64
Future Volume (vph)	354	362	1258	152	139	30	67
Lane Group Flow (vph)	436	393	1367	165	151	33	81
Turn Type	NA	Perm	NA	Perm	Perm	Perm	NA
Protected Phases	4		8				6
Permitted Phases		8		2	2	6	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	37.0	37.0	37.0	23.0	23.0	23.0	23.0
Total Split (%)	61.7%	61.7%	61.7%	38.3%	38.3%	38.3%	38.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag							
Lead-Lag Optimize?							
v/c Ratio	0.23	0.77	0.71	0.21	0.25	0.06	0.14
Control Delay	6.9	22.8	13.6	16.2	4.5	15.1	14.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.9	22.8	13.6	16.2	4.5	15.1	14.7
Queue Length 50th (m)	10.7	45.6	82.0	6.8	0.0	2.5	5.7
Queue Length 95th (m)	17.0	m61.0	m100.7	12.8	10.3	7.5	13.9
Internal Link Dist (m)	238.6		40.6				48.2
Turn Bay Length (m)				50.0			
Base Capacity (vph)	1920	509	1938	793	598	551	577
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	0.23	0.77	0.71	0.21	0.25	0.06	0.14

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Portland & Carver





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	658	1190	74	0	21
Future Volume (Veh/h)	0	692	1251	78	0	22
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)	0	752	1360	85	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)		277	263			
pX, platoon unblocked	0.71				0.77	0.71
vC, conflicting volume	1445				1778	722
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	809				739	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 %	100				100	97
cM capacity (veh/h)	577				270	769

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	376	376	907	538	24
Volume Left	0	0	0	0	0
Volume Right	0	0	0	85	24
cSH	1700	1700	1700	1700	769
Volume to Capacity	0.22	0.22	0.53	0.32	0.03
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.7
Control Delay (s)	0.0	0.0	0.0	0.0	9.8
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.8
Approach LOS					A

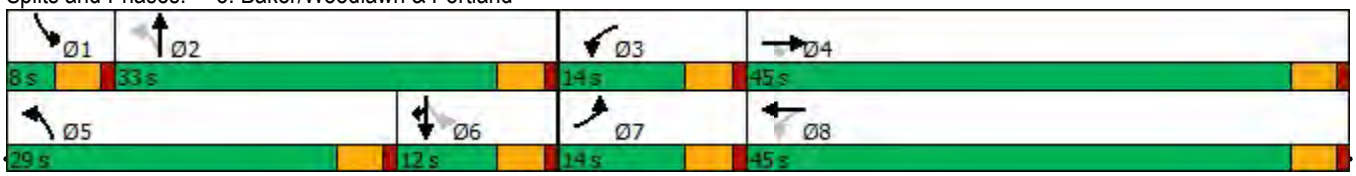
Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	198	571	280	4	1097	448	81	79	175	590
Future Volume (vph)	208	600	294	4	1153	471	85	83	184	620
Lane Group Flow (vph)	226	652	320	4	1263	512	92	90	449	425
Turn Type	Prot	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA	Prot
Protected Phases	7	4		3	8	5	2	1	6	6
Permitted Phases			4	8		2		6		
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	9.5	22.5	9.5	22.5	22.5
Total Split (s)	14.0	45.0	45.0	14.0	45.0	29.0	33.0	8.0	12.0	12.0
Total Split (%)	14.0%	45.0%	45.0%	14.0%	45.0%	29.0%	33.0%	8.0%	12.0%	12.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	Max	Max
v/c Ratio	0.77	0.39	0.35	0.01	0.97	1.10	0.13	0.33	1.45	1.06
Control Delay	67.0	20.2	3.4	14.8	53.8	102.7	24.8	29.5	252.8	88.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.0	20.2	3.4	14.8	53.8	102.7	24.8	29.5	252.8	88.6
Queue Length 50th (m)	25.0	44.3	0.0	0.4	138.9	~111.5	13.4	11.5	~131.1	~69.7
Queue Length 95th (m)	#41.9	69.7	16.5	2.3	#185.5	#175.6	24.8	21.5	#195.7	#133.3
Internal Link Dist (m)		150.3			253.1		110.2		152.8	
Turn Bay Length (m)	125.0			30.0				30.0		
Base Capacity (vph)	300	1684	922	417	1319	465	697	272	309	400
Starvation Cap Reductn	0	0	0	0	0	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	0.75	0.39	0.35	0.01	0.96	1.10	0.13	0.33	1.45	1.06

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 109.8
Natural Cycle: 130
Control Type: Actuated-Uncoordinated
~ 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: 3: Baker/Woodlawn & Portland

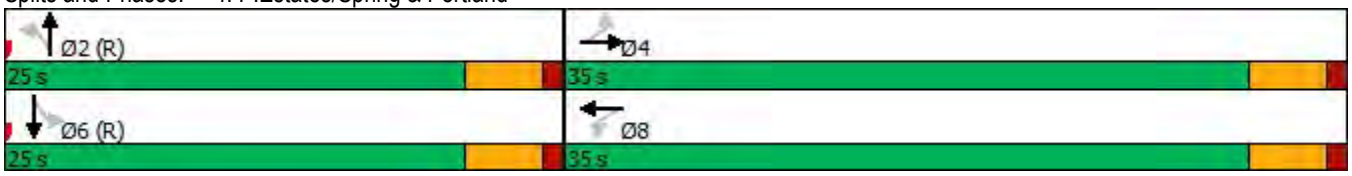


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	53	463	32	1300	46	15	13	7
Future Volume (vph)	56	487	34	1366	48	16	14	7
Lane Group Flow (vph)	61	553	37	1503	52	57	15	103
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	35.0	35.0	35.0	35.0	25.0	25.0	25.0	25.0
Total Split (%)	58.3%	58.3%	58.3%	58.3%	41.7%	41.7%	41.7%	41.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
v/c Ratio	0.49	0.31	0.09	0.83	0.12	0.09	0.03	0.18
Control Delay	30.1	11.3	8.4	17.7	14.5	7.3	13.5	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.1	11.3	8.4	17.7	14.5	7.3	13.5	12.6
Queue Length 50th (m)	5.5	22.8	1.9	67.6	3.9	1.2	1.1	6.2
Queue Length 95th (m)	#20.6	31.6	5.9	94.4	10.2	7.4	4.3	15.2
Internal Link Dist (m)		342.2		163.2		135.7		172.7
Turn Bay Length (m)	200.0		80.0				30.0	
Base Capacity (vph)	125	1811	409	1816	444	602	463	568
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.31	0.09	0.83	0.12	0.09	0.03	0.18

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

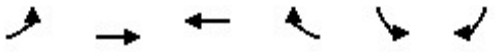
Splits and Phases: 4: P.Estates/Spring & Portland



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	100
Future Volume (Veh/h)	0	0	0	0	0	105
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	114
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			72			
pX, platoon unblocked						
vC, conflicting volume	114	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	114	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	882	1085			1623	

Direction, Lane #	WB 1	SB 1
Volume Total	0	114
Volume Left	0	0
Volume Right	0	0
cSH	1700	1623
Volume to Capacity	0.02	0.00
Queue Length 95th (m)	0.0	0.0
Control Delay (s)	0.0	0.0
Lane LOS	A	
Approach Delay (s)	0.0	0.0
Approach LOS	A	

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	8.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	498	1541	0	0	0
Future Volume (Veh/h)	0	523	1620	0	0	0
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)	0	568	1761	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)		65				
pX, platoon unblocked					0.95	
vC, conflicting volume	1761				2045	587
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1761				1998	587
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	351				50	453

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	SB 1
Volume Total	284	284	704	704	352	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.17	0.17	0.41	0.41	0.21	0.01
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						A
Approach Delay (s)	0.0		0.0			0.0
Approach LOS						A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	33.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	SER	SER2
Lane Configurations					
Traffic Volume (veh/h)	10	50	0	50	10
Future Volume (Veh/h)	11	53	0	53	11
Sign Control	Stop		Free	Free	
Grade	0%		0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	58	0	58	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)			109		
pX, platoon unblocked					
vC, conflicting volume	64	64			
vC1, stage 1 conf vol					
vC2, stage 2 conf vol					
vCu, unblocked vol	64	64			
tC, single (s)	6.4	6.2			
tC, 2 stage (s)					
tF (s)	3.5	3.3			
p0 queue free %	99	94			
cM capacity (veh/h)	942	1000			

Direction, Lane #	EB 1	NB 1	SE 1
Volume Total	70	0	70
Volume Left	12	0	0
Volume Right	58	0	12
cSH	990	1700	1700
Volume to Capacity	0.07	0.00	0.04
Queue Length 95th (m)	1.7	0.0	0.0
Control Delay (s)	8.9	0.0	0.0
Lane LOS	A		
Approach Delay (s)	8.9	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	7.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	5	5	69	5	55	16
Future Volume (Veh/h)	5	5	73	5	58	17
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	5	79	5	63	18
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	226	82			84	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	226	82			84	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	99			96	
cM capacity (veh/h)	731	978			1513	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	10	84	81
Volume Left	5	0	63
Volume Right	5	5	0
cSH	837	1700	1513
Volume to Capacity	0.01	0.05	0.04
Queue Length 95th (m)	0.3	0.0	1.0
Control Delay (s)	9.4	0.0	5.9
Lane LOS	A		A
Approach Delay (s)	9.4	0.0	5.9
Approach LOS	A		

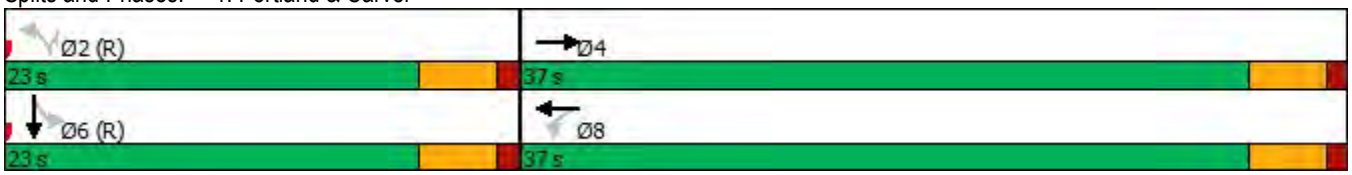
Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	20.6%	ICU Level of Service	A
Analysis Period (min)	15		

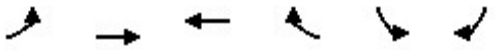
Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	337	344	1197	145	132	29	64
Future Volume (vph)	354	362	1262	152	139	34	68
Lane Group Flow (vph)	436	393	1372	165	151	37	91
Turn Type	NA	Perm	NA	Perm	Perm	Perm	NA
Protected Phases	4		8				6
Permitted Phases		8		2	2	6	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	37.0	37.0	37.0	23.0	23.0	23.0	23.0
Total Split (%)	61.7%	61.7%	61.7%	38.3%	38.3%	38.3%	38.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag							
Lead-Lag Optimize?							
v/c Ratio	0.23	0.77	0.71	0.21	0.25	0.07	0.16
Control Delay	6.9	22.8	13.7	16.2	4.5	15.1	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.9	22.8	13.7	16.2	4.5	15.1	13.7
Queue Length 50th (m)	10.7	45.5	82.3	6.8	0.0	2.8	5.8
Queue Length 95th (m)	17.0	m60.9	m101.1	12.9	10.3	8.3	14.5
Internal Link Dist (m)	238.6		40.6				48.2
Turn Bay Length (m)				50.0			
Base Capacity (vph)	1920	509	1938	786	598	551	576
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	0.23	0.77	0.71	0.21	0.25	0.07	0.16

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Portland & Carver





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	658	1190	74	0	21
Future Volume (Veh/h)	0	692	1260	81	0	22
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)	0	752	1370	88	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)		277	263			
pX, platoon unblocked	0.71				0.76	0.71
vC, conflicting volume	1458				1790	729
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	820				747	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 %	100				100	97
cM capacity (veh/h)	569				266	767

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	376	376	913	545	24
Volume Left	0	0	0	0	0
Volume Right	0	0	0	88	24
cSH	1700	1700	1700	1700	767
Volume to Capacity	0.22	0.22	0.54	0.32	0.03
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.7
Control Delay (s)	0.0	0.0	0.0	0.0	9.8
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.8
Approach LOS					A

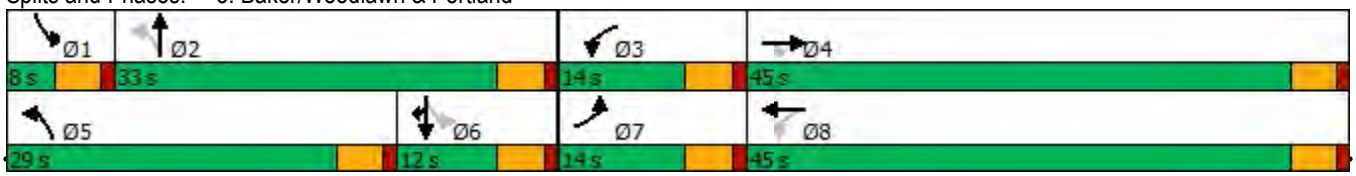
Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	198	571	280	4	1097	448	81	79	175	590
Future Volume (vph)	210	600	294	6	1160	471	86	83	184	620
Lane Group Flow (vph)	228	652	320	7	1271	512	93	90	449	425
Turn Type	Prot	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA	Prot
Protected Phases	7	4		3	8	5	2	1	6	6
Permitted Phases			4	8		2		6		
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	9.5	22.5	9.5	22.5	22.5
Total Split (s)	14.0	45.0	45.0	14.0	45.0	29.0	33.0	8.0	12.0	12.0
Total Split (%)	14.0%	45.0%	45.0%	14.0%	45.0%	29.0%	33.0%	8.0%	12.0%	12.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	Max	Max
v/c Ratio	0.77	0.39	0.35	0.02	0.98	1.10	0.13	0.33	1.46	1.06
Control Delay	67.5	20.3	3.4	14.7	54.9	103.0	24.8	29.5	253.6	88.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.5	20.3	3.4	14.7	54.9	103.0	24.8	29.5	253.6	88.7
Queue Length 50th (m)	25.2	44.3	0.0	0.7	140.1	~111.5	13.5	11.5	~131.1	~69.7
Queue Length 95th (m)	#42.6	70.0	16.5	3.1	#187.4	#175.6	25.2	21.5	#195.7	#133.3
Internal Link Dist (m)		150.3			253.1		110.2		152.8	
Turn Bay Length (m)	125.0			30.0				30.0		
Base Capacity (vph)	300	1684	922	417	1318	465	696	272	308	400
Starvation Cap Reductn	0	0	0	0	0	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	0.76	0.39	0.35	0.02	0.96	1.10	0.13	0.33	1.46	1.06

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 109.9
Natural Cycle: 140
Control Type: Actuated-Uncoordinated
~ 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: 3: Baker/Woodlawn & Portland

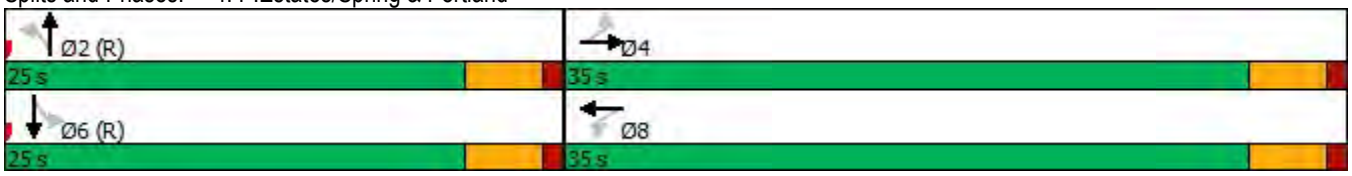


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	53	463	32	1300	46	15	13	7
Future Volume (vph)	56	490	34	1367	48	16	14	7
Lane Group Flow (vph)	61	557	37	1504	52	57	15	103
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	35.0	35.0	35.0	35.0	25.0	25.0	25.0	25.0
Total Split (%)	58.3%	58.3%	58.3%	58.3%	41.7%	41.7%	41.7%	41.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
v/c Ratio	0.49	0.31	0.09	0.83	0.12	0.09	0.03	0.18
Control Delay	30.1	11.3	8.4	17.8	14.5	7.3	13.5	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.1	11.3	8.4	17.8	14.5	7.3	13.5	12.6
Queue Length 50th (m)	5.3	22.8	1.9	67.8	3.9	1.2	1.1	6.2
Queue Length 95th (m)	#20.5	31.4	5.9	94.5	10.2	7.4	4.3	15.2
Internal Link Dist (m)		342.2		163.2		135.7		172.7
Turn Bay Length (m)	200.0		80.0				30.0	
Base Capacity (vph)	125	1813	406	1816	444	602	463	568
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.31	0.09	0.83	0.12	0.09	0.03	0.18

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

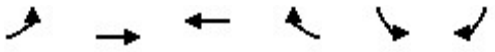
Splits and Phases: 4: P.Estates/Spring & Portland



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	100
Future Volume (Veh/h)	13	4	0	0	5	105
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	4	0	0	5	114
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			72			
pX, platoon unblocked						
vC, conflicting volume	124	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	124	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	100			100	
cM capacity (veh/h)	868	1085			1623	

Direction, Lane #	WB 1	SB 1
Volume Total	18	119
Volume Left	14	5
Volume Right	4	0
cSH	909	1623
Volume to Capacity	0.02	0.00
Queue Length 95th (m)	0.5	0.1
Control Delay (s)	9.0	0.3
Lane LOS	A	A
Approach Delay (s)	9.0	0.3
Approach LOS	A	

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	8.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	498	1541	0	0	0
Future Volume (Veh/h)	0	527	1621	0	0	3
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)	0	573	1762	0	0	3
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		65				
pX, platoon unblocked					0.95	
vC, conflicting volume	1762				2048	587
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1762				2002	587
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	99
cM capacity (veh/h)	351				50	453

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	SB 1
Volume Total	286	286	705	705	352	3
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	3
cSH	1700	1700	1700	1700	1700	453
Volume to Capacity	0.17	0.17	0.41	0.41	0.21	0.01
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.2
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	13.0
Lane LOS						B
Approach Delay (s)	0.0		0.0			13.0
Approach LOS						B

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	33.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	SER	SER2
Lane Configurations					
Traffic Volume (veh/h)	10	50	0	50	10
Future Volume (Veh/h)	11	58	2	53	11
Sign Control	Stop		Free	Free	
Grade	0%		0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	63	2	58	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)			109		
pX, platoon unblocked					
vC, conflicting volume	70	64			
vC1, stage 1 conf vol					
vC2, stage 2 conf vol					
vCu, unblocked vol	70	64			
tC, single (s)	6.4	6.2			
tC, 2 stage (s)					
tF (s)	3.5	3.3			
p0 queue free %	99	94			
cM capacity (veh/h)	933	1000			

Direction, Lane #	EB 1	NB 1	SE 1
Volume Total	75	4	70
Volume Left	12	2	0
Volume Right	63	0	12
cSH	989	1531	1700
Volume to Capacity	0.08	0.00	0.04
Queue Length 95th (m)	1.9	0.0	0.0
Control Delay (s)	8.9	3.7	0.0
Lane LOS	A	A	
Approach Delay (s)	8.9	3.7	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	7.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	5	5	69	5	55	16
Future Volume (Veh/h)	5	7	75	6	62	17
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	8	82	7	67	18
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	238	86			89	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	238	86			89	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	99			96	
cM capacity (veh/h)	717	973			1506	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	13	89	85
Volume Left	5	0	67
Volume Right	8	7	0
cSH	856	1700	1506
Volume to Capacity	0.02	0.05	0.04
Queue Length 95th (m)	0.4	0.0	1.1
Control Delay (s)	9.3	0.0	6.0
Lane LOS	A		A
Approach Delay (s)	9.3	0.0	6.0
Approach LOS	A		

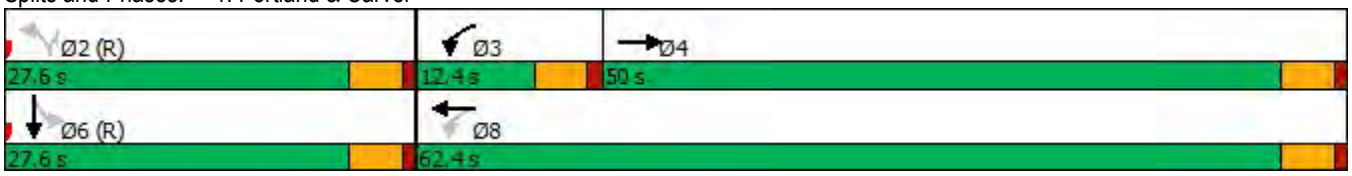
Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	20.6%	ICU Level of Service	A
Analysis Period (min)	15		

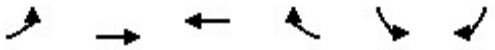
Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	1428	165	700	290	373	77	105
Future Volume (vph)	1428	165	700	290	373	77	105
Lane Group Flow (vph)	1740	188	800	332	426	88	128
Turn Type	NA	pm+pt	NA	Perm	Perm	Perm	NA
Protected Phases	4	3	8				6
Permitted Phases		8		2	2	6	
Minimum Split (s)	22.5	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	50.0	12.4	62.4	27.6	27.6	27.6	27.6
Total Split (%)	55.6%	13.8%	69.3%	30.7%	30.7%	30.7%	30.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes					
v/c Ratio	0.97	0.78	0.35	0.54	0.79	0.19	0.27
Control Delay	37.3	39.7	7.9	32.7	30.5	27.6	27.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.3	39.7	7.9	32.7	30.5	27.6	27.6
Queue Length 50th (m)	145.1	15.9	29.8	25.5	41.4	11.9	17.1
Queue Length 95th (m)	#202.4	#49.1	39.4	38.7	#87.5	23.7	31.6
Internal Link Dist (m)	238.6		40.6				48.2
Turn Bay Length (m)				50.0			
Base Capacity (vph)	1798	240	2302	616	539	459	481
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	0.97	0.78	0.35	0.54	0.79	0.19	0.27

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Portland & Carver





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1546	862	52	0	31
Future Volume (Veh/h)	0	1546	862	52	0	31
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)	0	1766	985	60	0	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)		277	263			
pX, platoon unblocked	0.90				0.61	0.90
vC, conflicting volume	1045				1898	522
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	836				472	257
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	95
cM capacity (veh/h)	717				317	670

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	883	883	657	388	36
Volume Left	0	0	0	0	0
Volume Right	0	0	0	60	36
cSH	1700	1700	1700	1700	670
Volume to Capacity	0.52	0.52	0.39	0.23	0.05
Queue Length 95th (m)	0.0	0.0	0.0	0.0	1.3
Control Delay (s)	0.0	0.0	0.0	0.0	10.7
Lane LOS					B
Approach Delay (s)	0.0		0.0		10.7
Approach LOS					B

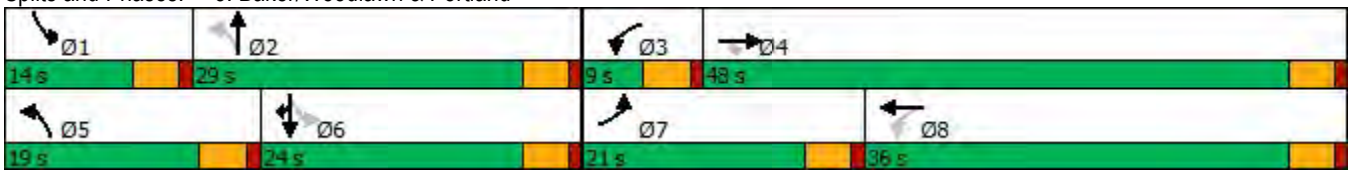
Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	401	1417	502	19	827	278	176	129	146	333
Future Volume (vph)	401	1417	502	19	827	278	176	129	146	333
Lane Group Flow (vph)	458	1618	574	22	998	317	201	148	284	262
Turn Type	Prot	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA	Prot
Protected Phases	7	4		3	8	5	2	1	6	6
Permitted Phases			4	8		2		6		
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	9.5	22.5	9.5	22.5	22.5
Total Split (s)	21.0	48.0	48.0	9.0	36.0	19.0	29.0	14.0	24.0	24.0
Total Split (%)	21.0%	48.0%	48.0%	9.0%	36.0%	19.0%	29.0%	14.0%	24.0%	24.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	Max	Max
v/c Ratio	0.82	0.94	0.57	0.15	0.90	0.91	0.42	0.37	0.80	0.51
Control Delay	53.3	37.3	6.1	15.2	44.9	55.5	34.7	24.0	51.4	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.3	37.3	6.1	15.2	44.9	55.5	34.7	24.0	51.4	8.4
Queue Length 50th (m)	44.4	136.2	9.6	2.0	95.8	45.2	33.0	18.9	49.6	0.0
Queue Length 95th (m)	#65.9	#221.0	39.4	5.5	#131.6	#93.5	53.8	32.6	#92.3	21.3
Internal Link Dist (m)		150.3			253.1		110.2		152.8	
Turn Bay Length (m)	125.0			30.0				30.0		
Base Capacity (vph)	582	1721	1015	151	1141	349	478	409	357	511
Starvation Cap Reductn	0	0	0	0	0	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	0.79	0.94	0.57	0.15	0.87	0.91	0.42	0.36	0.80	0.51

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 98.5
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Baker/Woodlawn & Portland

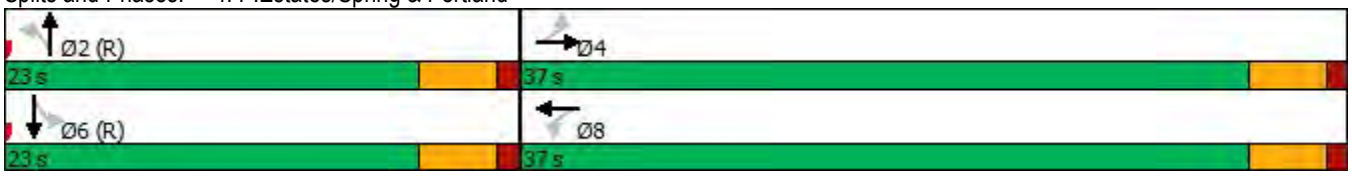


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	198	1609	34	768	30	27	16	22
Future Volume (vph)	198	1609	34	768	30	27	16	22
Lane Group Flow (vph)	226	1920	39	899	35	59	18	101
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	37.0	37.0	37.0	37.0	23.0	23.0	23.0	23.0
Total Split (%)	61.7%	61.7%	61.7%	61.7%	38.3%	38.3%	38.3%	38.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
v/c Ratio	0.84	0.99	0.31	0.47	0.09	0.11	0.04	0.18
Control Delay	42.6	34.8	15.9	9.4	15.6	13.6	15.1	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.6	34.8	15.9	9.4	15.6	13.6	15.1	7.2
Queue Length 50th (m)	18.8	98.9	2.1	28.5	2.7	3.8	1.4	1.9
Queue Length 95th (m)	#57.0	#158.3	9.0	40.5	8.1	10.6	5.1	10.6
Internal Link Dist (m)		342.2		163.2		135.7		172.7
Turn Bay Length (m)	200.0		80.0				30.0	
Base Capacity (vph)	270	1932	125	1933	401	544	417	567
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.99	0.31	0.47	0.09	0.11	0.04	0.18

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

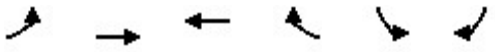
Splits and Phases: 4: P.Estates/Spring & Portland



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	189
Future Volume (Veh/h)	0	0	0	0	0	189
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	216
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			72			
pX, platoon unblocked						
vC, conflicting volume	216	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	216	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	772	1085			1623	

Direction, Lane #	WB 1	SB 1
Volume Total	0	216
Volume Left	0	0
Volume Right	0	0
cSH	1700	1623
Volume to Capacity	0.01	0.00
Queue Length 95th (m)	0.0	0.0
Control Delay (s)	0.0	0.0
Lane LOS	A	
Approach Delay (s)	0.0	0.0
Approach LOS	A	

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1878	865	0	0	0
Future Volume (Veh/h)	0	1878	865	0	0	0
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)	0	2146	988	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)		65				
pX, platoon unblocked					0.51	
vC, conflicting volume	988				2061	329
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	988				1167	329
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	695				96	666

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	SB 1
Volume Total	1073	1073	395	395	198	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.63	0.63	0.23	0.23	0.12	0.00
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						A
Approach Delay (s)	0.0		0.0			0.0
Approach LOS						A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	SER	SER2
Lane Configurations					
Traffic Volume (veh/h)	10	45	0	144	20
Future Volume (Veh/h)	10	45	0	144	20
Sign Control	Stop		Free	Free	
Grade	0%		0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	51	0	164	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)			109		
pX, platoon unblocked					
vC, conflicting volume	176	176			
vC1, stage 1 conf vol					
vC2, stage 2 conf vol					
vCu, unblocked vol	176	176			
tC, single (s)	6.4	6.2			
tC, 2 stage (s)					
tF (s)	3.5	3.3			
p0 queue free %	99	94			
cM capacity (veh/h)	814	868			

Direction, Lane #	EB 1	NB 1	SE 1
Volume Total	63	0	187
Volume Left	12	0	0
Volume Right	51	0	23
cSH	857	1700	1700
Volume to Capacity	0.07	0.00	0.11
Queue Length 95th (m)	1.8	0.0	0.0
Control Delay (s)	9.5	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.5	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	13.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	10	10	27	25	30	21
Future Volume (Veh/h)	10	10	27	25	30	21
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	12	30	28	35	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)						
pX, platoon unblocked						
vC, conflicting volume	138	44			58	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	138	44			58	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	99			98	
cM capacity (veh/h)	836	1026			1546	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	24	58	59
Volume Left	12	0	35
Volume Right	12	28	0
cSH	921	1700	1546
Volume to Capacity	0.03	0.03	0.02
Queue Length 95th (m)	0.6	0.0	0.5
Control Delay (s)	9.0	0.0	4.4
Lane LOS	A		A
Approach Delay (s)	9.0	0.0	4.4
Approach LOS	A		

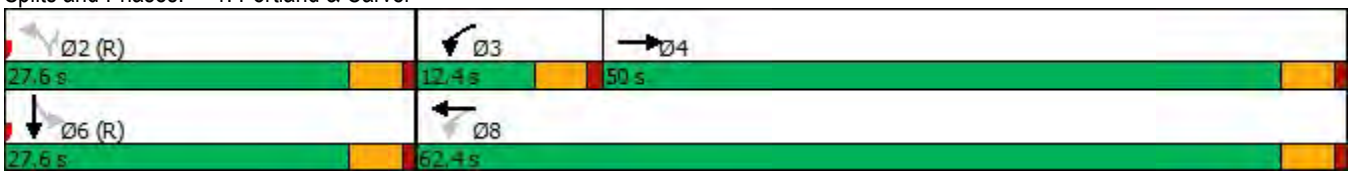
Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	19.4%	ICU Level of Service	A
Analysis Period (min)	15		

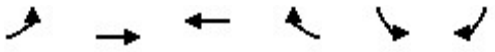
Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	1428	165	700	290	373	77	105
Future Volume (vph)	1501	173	736	305	392	81	110
Lane Group Flow (vph)	1740	188	800	332	426	88	128
Turn Type	NA	pm+pt	NA	Perm	Perm	Perm	NA
Protected Phases	4	3	8				6
Permitted Phases		8		2	2	6	
Minimum Split (s)	22.5	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	50.0	12.4	62.4	27.6	27.6	27.6	27.6
Total Split (%)	55.6%	13.8%	69.3%	30.7%	30.7%	30.7%	30.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes					
v/c Ratio	0.97	0.78	0.35	0.54	0.79	0.19	0.27
Control Delay	37.3	39.7	7.9	32.7	30.5	27.6	27.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.3	39.7	7.9	32.7	30.5	27.6	27.6
Queue Length 50th (m)	145.1	15.9	29.8	25.5	41.4	11.9	17.1
Queue Length 95th (m)	#202.4	#49.1	39.4	38.7	#87.5	23.7	31.6
Internal Link Dist (m)	238.6		40.6				48.2
Turn Bay Length (m)				50.0			
Base Capacity (vph)	1798	240	2302	616	539	459	481
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	0.97	0.78	0.35	0.54	0.79	0.19	0.27

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Portland & Carver





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1546	862	52	0	31
Future Volume (Veh/h)	0	1625	906	55	0	33
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)	0	1766	985	60	0	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)		277	263			
pX, platoon unblocked	0.90				0.61	0.90
vC, conflicting volume	1045				1898	522
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	836				472	257
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	95
cM capacity (veh/h)	717				317	670

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	883	883	657	388	36
Volume Left	0	0	0	0	0
Volume Right	0	0	0	60	36
cSH	1700	1700	1700	1700	670
Volume to Capacity	0.52	0.52	0.39	0.23	0.05
Queue Length 95th (m)	0.0	0.0	0.0	0.0	1.3
Control Delay (s)	0.0	0.0	0.0	0.0	10.7
Lane LOS					B
Approach Delay (s)	0.0		0.0		10.7
Approach LOS					B

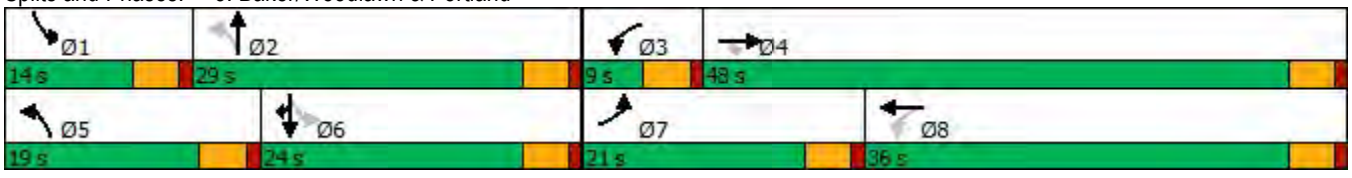
Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	401	1417	502	19	827	278	176	129	146	333
Future Volume (vph)	421	1489	528	20	869	292	185	136	153	350
Lane Group Flow (vph)	458	1618	574	22	998	317	201	148	284	262
Turn Type	Prot	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA	Prot
Protected Phases	7	4		3	8	5	2	1	6	6
Permitted Phases			4	8		2		6		
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	9.5	22.5	9.5	22.5	22.5
Total Split (s)	21.0	48.0	48.0	9.0	36.0	19.0	29.0	14.0	24.0	24.0
Total Split (%)	21.0%	48.0%	48.0%	9.0%	36.0%	19.0%	29.0%	14.0%	24.0%	24.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	Max	Max
v/c Ratio	0.82	0.94	0.57	0.15	0.90	0.91	0.42	0.37	0.80	0.51
Control Delay	53.3	37.3	6.1	15.2	44.9	55.5	34.7	24.0	51.4	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.3	37.3	6.1	15.2	44.9	55.5	34.7	24.0	51.4	8.4
Queue Length 50th (m)	44.4	136.2	9.6	2.0	95.8	45.2	33.0	18.9	49.6	0.0
Queue Length 95th (m)	#65.9	#221.0	39.4	5.5	#131.6	#93.5	53.8	32.6	#92.3	21.3
Internal Link Dist (m)		150.3			253.1		110.2		152.8	
Turn Bay Length (m)	125.0			30.0				30.0		
Base Capacity (vph)	582	1721	1015	151	1141	349	478	409	357	511
Starvation Cap Reductn	0	0	0	0	0	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	0.79	0.94	0.57	0.15	0.87	0.91	0.42	0.36	0.80	0.51

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 98.5
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Baker/Woodlawn & Portland

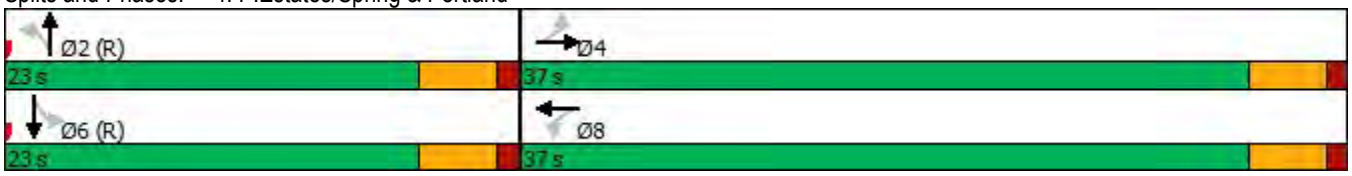


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	198	1609	34	768	30	27	16	22
Future Volume (vph)	208	1691	36	807	32	28	17	23
Lane Group Flow (vph)	226	1920	39	899	35	59	18	101
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	37.0	37.0	37.0	37.0	23.0	23.0	23.0	23.0
Total Split (%)	61.7%	61.7%	61.7%	61.7%	38.3%	38.3%	38.3%	38.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
v/c Ratio	0.84	0.99	0.31	0.47	0.09	0.11	0.04	0.18
Control Delay	42.6	34.8	15.9	9.4	15.6	13.6	15.1	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.6	34.8	15.9	9.4	15.6	13.6	15.1	7.2
Queue Length 50th (m)	18.8	98.9	2.1	28.5	2.7	3.8	1.4	1.9
Queue Length 95th (m)	#57.0	#158.3	9.0	40.5	8.1	10.6	5.1	10.6
Internal Link Dist (m)		342.2		163.2		135.7		172.7
Turn Bay Length (m)	200.0		80.0				30.0	
Base Capacity (vph)	270	1932	125	1933	401	544	417	567
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.99	0.31	0.47	0.09	0.11	0.04	0.18

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

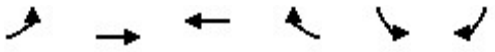
Splits and Phases: 4: P.Estates/Spring & Portland



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	189
Future Volume (Veh/h)	0	0	0	0	0	199
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	216
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			72			
pX, platoon unblocked						
vC, conflicting volume	216	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	216	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	772	1085			1623	

Direction, Lane #	WB 1	SB 1
Volume Total	0	216
Volume Left	0	0
Volume Right	0	0
cSH	1700	1623
Volume to Capacity	0.01	0.00
Queue Length 95th (m)	0.0	0.0
Control Delay (s)	0.0	0.0
Lane LOS	A	
Approach Delay (s)	0.0	0.0
Approach LOS	A	

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1878	865	0	0	0
Future Volume (Veh/h)	0	1974	909	0	0	0
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)	0	2146	988	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)		65				
pX, platoon unblocked					0.51	
vC, conflicting volume	988				2061	329
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	988				1167	329
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	695				96	666

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	SB 1
Volume Total	1073	1073	395	395	198	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.63	0.63	0.23	0.23	0.12	0.00
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						A
Approach Delay (s)	0.0		0.0			0.0
Approach LOS						A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	SER	SER2
Lane Configurations					
Traffic Volume (veh/h)	10	45	0	144	20
Future Volume (Veh/h)	11	47	0	151	21
Sign Control	Stop		Free	Free	
Grade	0%		0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	51	0	164	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)			109		
pX, platoon unblocked					
vC, conflicting volume	176	176			
vC1, stage 1 conf vol					
vC2, stage 2 conf vol					
vCu, unblocked vol	176	176			
tC, single (s)	6.4	6.2			
tC, 2 stage (s)					
tF (s)	3.5	3.3			
p0 queue free %	99	94			
cM capacity (veh/h)	814	868			

Direction, Lane #	EB 1	NB 1	SE 1
Volume Total	63	0	187
Volume Left	12	0	0
Volume Right	51	0	23
cSH	857	1700	1700
Volume to Capacity	0.07	0.00	0.11
Queue Length 95th (m)	1.8	0.0	0.0
Control Delay (s)	9.5	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.5	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	13.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	10	10	27	25	30	21
Future Volume (Veh/h)	11	11	28	26	32	22
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	12	30	28	35	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)						
pX, platoon unblocked						
vC, conflicting volume	138	44			58	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	138	44			58	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	99			98	
cM capacity (veh/h)	836	1026			1546	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	24	58	59
Volume Left	12	0	35
Volume Right	12	28	0
cSH	921	1700	1546
Volume to Capacity	0.03	0.03	0.02
Queue Length 95th (m)	0.6	0.0	0.5
Control Delay (s)	9.0	0.0	4.4
Lane LOS	A		A
Approach Delay (s)	9.0	0.0	4.4
Approach LOS	A		

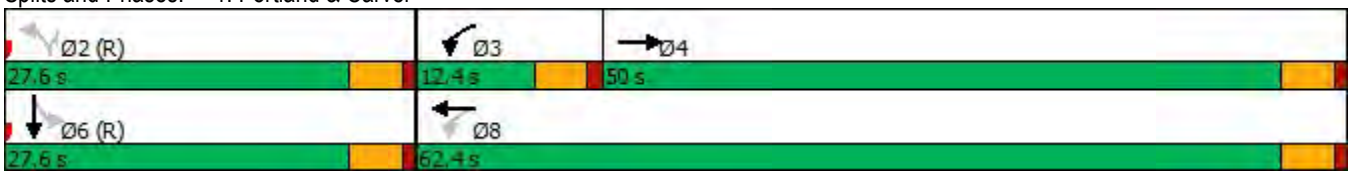
Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	19.4%	ICU Level of Service	A
Analysis Period (min)	15		

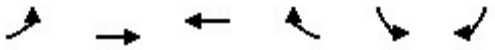
Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	1428	165	700	290	373	77	105
Future Volume (vph)	1501	173	740	306	392	82	110
Lane Group Flow (vph)	1740	188	804	333	426	89	133
Turn Type	NA	pm+pt	NA	Perm	Perm	Perm	NA
Protected Phases	4	3	8				6
Permitted Phases		8		2	2	6	
Minimum Split (s)	22.5	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	50.0	12.4	62.4	27.6	27.6	27.6	27.6
Total Split (%)	55.6%	13.8%	69.3%	30.7%	30.7%	30.7%	30.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes					
v/c Ratio	0.97	0.78	0.35	0.55	0.79	0.19	0.28
Control Delay	37.3	39.7	7.9	33.0	30.5	27.6	27.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.3	39.7	7.9	33.0	30.5	27.6	27.4
Queue Length 50th (m)	145.1	15.9	30.1	25.6	41.4	12.1	17.6
Queue Length 95th (m)	#202.4	#49.1	39.6	38.9	#87.5	23.9	32.5
Internal Link Dist (m)	238.6		40.6				48.2
Turn Bay Length (m)				50.0			
Base Capacity (vph)	1798	240	2302	607	539	459	480
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	0.97	0.78	0.35	0.55	0.79	0.19	0.28

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Portland & Carver





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1546	862	52	0	31
Future Volume (Veh/h)	0	1625	910	60	0	33
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)	0	1766	989	65	0	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)		277	263			
pX, platoon unblocked	0.90				0.61	0.90
vC, conflicting volume	1054				1904	527
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	843				475	258
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	95
cM capacity (veh/h)	712				315	668

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	883	883	659	395	36
Volume Left	0	0	0	0	0
Volume Right	0	0	0	65	36
cSH	1700	1700	1700	1700	668
Volume to Capacity	0.52	0.52	0.39	0.23	0.05
Queue Length 95th (m)	0.0	0.0	0.0	0.0	1.3
Control Delay (s)	0.0	0.0	0.0	0.0	10.7
Lane LOS					B
Approach Delay (s)	0.0		0.0		10.7
Approach LOS					B

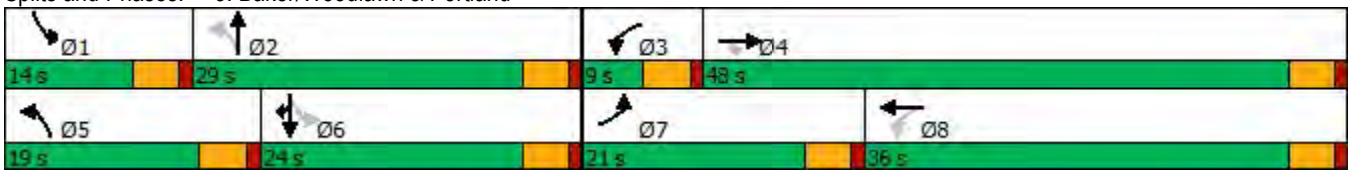
Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	401	1417	502	19	827	278	176	129	146	333
Future Volume (vph)	430	1489	528	21	872	292	187	136	153	350
Lane Group Flow (vph)	467	1618	574	23	1001	317	203	148	284	262
Turn Type	Prot	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA	Prot
Protected Phases	7	4		3	8	5	2	1	6	6
Permitted Phases			4	8		2		6		
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	9.5	22.5	9.5	22.5	22.5
Total Split (s)	21.0	48.0	48.0	9.0	36.0	19.0	29.0	14.0	24.0	24.0
Total Split (%)	21.0%	48.0%	48.0%	9.0%	36.0%	19.0%	29.0%	14.0%	24.0%	24.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	Max	Max
v/c Ratio	0.83	0.94	0.57	0.15	0.91	0.91	0.43	0.37	0.80	0.51
Control Delay	54.4	37.2	6.1	15.4	45.2	55.7	34.8	24.0	51.5	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.4	37.2	6.1	15.4	45.2	55.7	34.8	24.0	51.5	8.4
Queue Length 50th (m)	45.5	136.2	9.6	2.1	96.2	45.2	33.4	18.9	49.6	0.0
Queue Length 95th (m)	#68.0	#221.0	39.4	5.7	#132.3	#93.5	54.4	32.6	#92.3	21.3
Internal Link Dist (m)		150.3			253.1		110.2		152.8	
Turn Bay Length (m)	125.0			30.0				30.0		
Base Capacity (vph)	581	1723	1015	151	1139	348	477	407	357	511
Starvation Cap Reductn	0	0	0	0	0	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	0.80	0.94	0.57	0.15	0.88	0.91	0.43	0.36	0.80	0.51

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 98.6
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Baker/Woodlawn & Portland

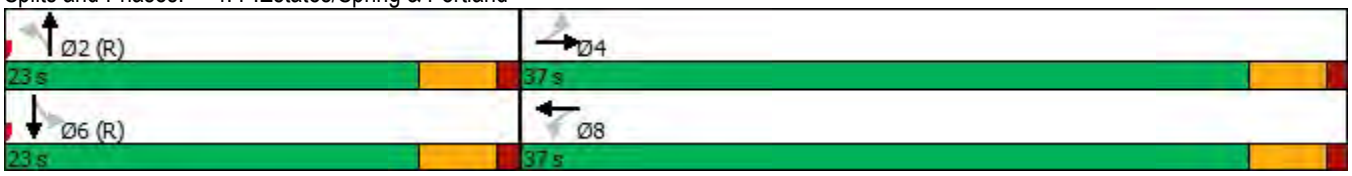


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	198	1609	34	768	30	27	16	22
Future Volume (vph)	208	1692	36	811	32	28	17	23
Lane Group Flow (vph)	226	1921	39	904	35	59	18	101
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	37.0	37.0	37.0	37.0	23.0	23.0	23.0	23.0
Total Split (%)	61.7%	61.7%	61.7%	61.7%	38.3%	38.3%	38.3%	38.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
v/c Ratio	0.84	0.99	0.31	0.47	0.09	0.11	0.04	0.18
Control Delay	43.7	34.9	15.9	9.4	15.6	13.6	15.1	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.7	34.9	15.9	9.4	15.6	13.6	15.1	7.2
Queue Length 50th (m)	18.9	99.0	2.1	28.6	2.7	3.8	1.4	1.9
Queue Length 95th (m)	#57.3	#158.4	9.0	40.6	8.1	10.6	5.1	10.6
Internal Link Dist (m)		342.2		163.2		135.7		172.7
Turn Bay Length (m)	200.0		80.0				30.0	
Base Capacity (vph)	268	1932	125	1933	401	544	417	567
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.99	0.31	0.47	0.09	0.11	0.04	0.18

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

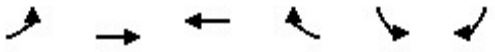
Splits and Phases: 4: P.Estates/Spring & Portland



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	189
Future Volume (Veh/h)	5	2	0	0	20	199
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	2	0	0	22	216
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			72			
pX, platoon unblocked						
vC, conflicting volume	260	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	260	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			99	
cM capacity (veh/h)	719	1085			1623	

Direction, Lane #	WB 1	SB 1
Volume Total	7	238
Volume Left	5	22
Volume Right	2	0
cSH	796	1623
Volume to Capacity	0.01	0.01
Queue Length 95th (m)	0.2	0.3
Control Delay (s)	9.6	0.8
Lane LOS	A	A
Approach Delay (s)	9.6	0.8
Approach LOS	A	

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1878	865	0	0	0
Future Volume (Veh/h)	0	1975	912	1	0	1
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)	0	2147	991	1	0	1
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		65				
pX, platoon unblocked					0.51	
vC, conflicting volume	992				2065	331
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	992				1175	331
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	693				95	665

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	SB 1
Volume Total	1074	1074	396	396	199	1
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	1	1
cSH	1700	1700	1700	1700	1700	665
Volume to Capacity	0.63	0.63	0.23	0.23	0.12	0.00
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	10.4
Lane LOS						B
Approach Delay (s)	0.0		0.0			10.4
Approach LOS						B

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	SER	SER2
Lane Configurations					
Traffic Volume (veh/h)	10	45	0	144	20
Future Volume (Veh/h)	11	66	1	152	21
Sign Control	Stop		Free	Free	
Grade	0%		0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	72	1	165	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)			109		
pX, platoon unblocked					
vC, conflicting volume	180	176			
vC1, stage 1 conf vol					
vC2, stage 2 conf vol					
vCu, unblocked vol	180	176			
tC, single (s)	6.4	6.2			
tC, 2 stage (s)					
tF (s)	3.5	3.3			
p0 queue free %	99	92			
cM capacity (veh/h)	809	867			

Direction, Lane #	EB 1	NB 1	SE 1
Volume Total	84	2	188
Volume Left	12	1	0
Volume Right	72	0	23
cSH	858	1386	1700
Volume to Capacity	0.10	0.00	0.11
Queue Length 95th (m)	2.5	0.0	0.0
Control Delay (s)	9.7	3.8	0.0
Lane LOS	A	A	
Approach Delay (s)	9.7	3.8	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	13.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	10	10	27	25	30	21
Future Volume (Veh/h)	11	12	29	30	46	22
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	13	32	33	50	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)						
pX, platoon unblocked						
vC, conflicting volume	172	48			65	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	172	48			65	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	99			97	
cM capacity (veh/h)	791	1020			1537	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	25	65	74
Volume Left	12	0	50
Volume Right	13	33	0
cSH	896	1700	1537
Volume to Capacity	0.03	0.04	0.03
Queue Length 95th (m)	0.7	0.0	0.8
Control Delay (s)	9.1	0.0	5.1
Lane LOS	A		A
Approach Delay (s)	9.1	0.0	5.1
Approach LOS	A		

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	19.4%	ICU Level of Service	A
Analysis Period (min)	15		