TOWN OF LUNENBURG

TRAFFIC AND PARKING STUDY

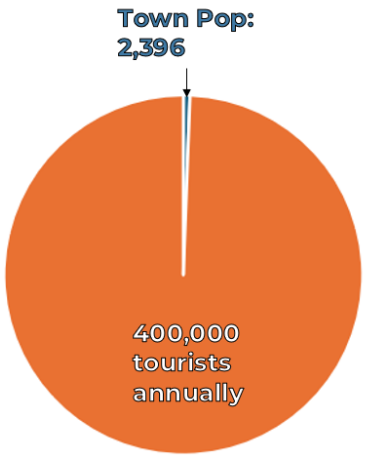
Project No. CA0029624.8132
January 2024

APPENDICES

1 INTRODUCTION & BACKGROUND

1.1 BACKGROUND

The Town of Lunenburg was formally established in 1753 as the first British Colonial settlement in Nova Scotia outside of Halifax. "Old Town" Lunenburg has retained its original layout and appearance, featuring a grid-like pattern, and preserved 18th century wooden houses. The unchanged layout of the town, along with steep slopes and narrow streets have created traffic and parking problems, notably with heavy tourist volumes during summer months.



With a population of 2,396 (2021 census) and tourism estimated to be 400,000 annually, the Town of Lunenburg is seeking to provide traffic and parking solutions that accommodate peak season traffic and parking without overbuilding the network.

This Traffic & Parking Study to enhance traffic flow and parking, address seasonal challenges, preserve the historic atmosphere, and improve active transportation connectivity within the Town of Lunenburg; building upon the existing Lunenburg Traffic and Parking Study (June 2009, WSP).

The Municipality of the District of Lunenburg (MODL) is working towards building a connected and cohesive active transportation network through their 2010 Active Transportation Plan that will provide mobility options and encourage physical activity and healthy lifestyles. These Municipal links are expected to connect to the Town of Lunenburg and should be considered in future planning by the Town.

This project seeks to continue and enhance Lunenburg as a Town and seasonal tourist destination.

1.2 PROJECT COMPONENTS

The project comprises of the following five main components:

- Establish existing conditions of the project study area;
- Collect traffic and speed data at several key locations;
- Develop conceptual design options for key components (unreliable intersections, parking);
- Conduct public and stakeholder engagement;
- Prepare a final report and council presentation outlining recommended options.

1.3 KEY ISSUES AND STUDY OBJECTIVES

The following challenges were expressed by the Town as considerations on the project:

- Lunenburg is a World Heritage Site and this historic character must be maintained;
- The project requires developing options that accommodate peak season traffic and parking without overbuilding the network;
- Parking;
- Accessibility and signage; and,
- Steep grades, narrows streets, and vehicle types.

2 TRAFFIC AND PARKING DATA COLLECTION

At the outset of the project, WSP completed a traffic data collection program to better understand the traffic volumes, travel speeds, and parking utilization throughout the Town. Data collection locations were identified and reviewed with Town staff and data were collected during the spring and summer to consider seasonal impacts. The study area and data collection locations are shown in Figure 1. The data collected is compiled and included in Appendix A of this report.

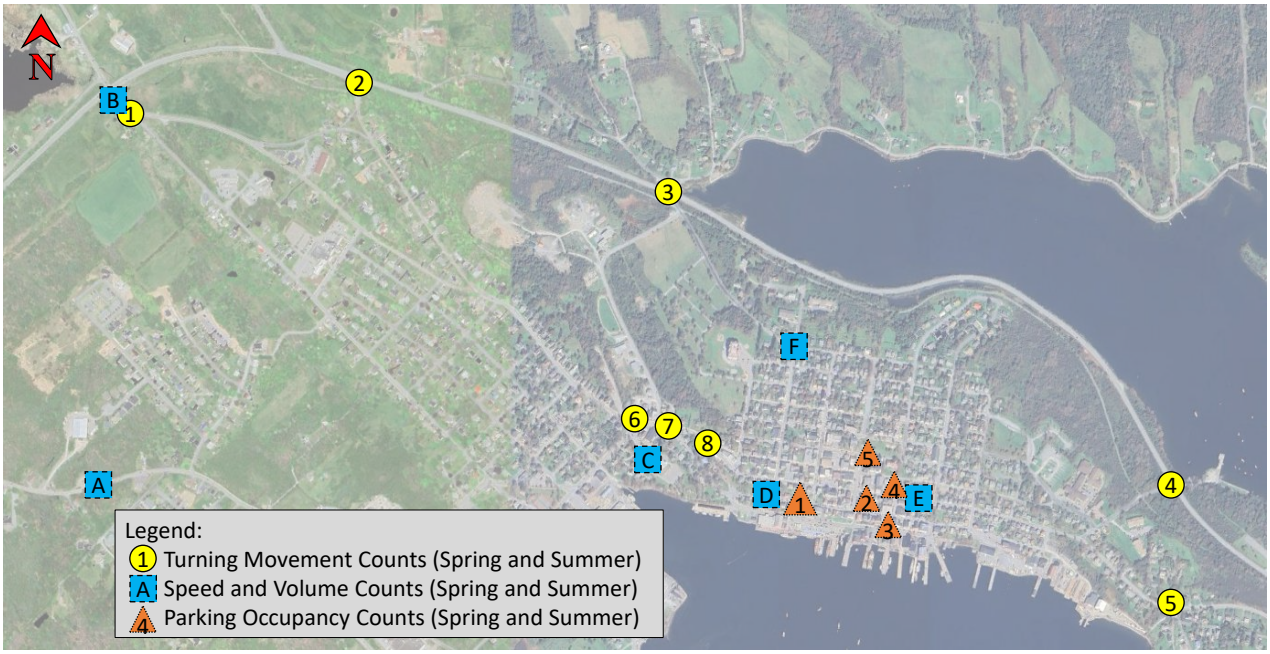


Figure 1: Study Area and Data Collection

2.1 INTERSECTION TURNING MOVEMENT COUNTS

Morning (7-9 AM) and afternoon (4-6 PM) turning movement counts were collected during the Spring and Summer seasons at eight intersections that were selected by Town staff for consideration in this project. Data included the collection of pedestrian and cycling movements. The eight intersections are shown in Figure 1 and identified below.

1. Dufferin Street at Green Street
2. Highway 332 at Maple Avenue
3. Highway 332 at Kissing Bridge Road
4. Highway 332 at Sawpit Road
5. Pelham Street at Blue Roack Road
6. Falkland Street / Dufferin Street / Lincoln Street
7. Lincoln Street and Linden Avenue
8. Lincoln Street at Pelham Street

Additionally, at the request of Town staff, morning (7-9 AM) and afternoon (4-6 PM) turning movement counts were also collected in July at the Highway 332 at Trunk 3 intersection.

2.2 SPEED AND VOLUME DATA

Traffic Speed and Volume Data were collected at six locations throughout the Town. A Houston Armadillo radar unit was temporarily installed during the spring (from June 5th to June 7th) and during the summer (from July 15th to July 16th) at each of the speed and volume locations shown in Figure 1 and identified below.

1. Trunk 3 near Civic #11176
2. Dufferin Street near Green Street
3. Falkland Street near Station Lane
4. Near east end of Montague Street
5. Pelham Street near Prince Street
6. Creighton Street near Cornwallis Street

2.3 PARKING UTILIZATION DATA

Five (5) locations required 11-hour parking occupancy counts between 9 AM and 4 PM. Time-lapse camera units were temporarily installed during the spring (from Monday, May 6th to Wednesday, May 8th and Tuesday, May 21st to Thursday, May 23rd) and during the summer (from Wednesday, July 17th to Friday, July 19th) at each of the parking occupancy locations shown in Figure 1 and identified below.

1. Near Montague Street at Cornwallis Street
2. Near Montague Street at King Street
3. Near Bluenose Drive at Rum Row
4. Near Pelham Street at Prince Street
5. Near Cumberland Street at King Street

3 TRAFFIC VOLUME AND SPEED DATA

Intersection data collection in the spring and summer to evaluate the increase of tourist volumes between the two seasons. Data collection consisted of vehicle speed and volume data, as well as active transportation (AT).

3.1 STUDY INTERSECTIONS

Dufferin Street at Green Street is an unsignalized 'Y' intersection. The intersection is STOP controlled at the northbound approach on Green Street with free flow along Dufferin Street. The posted speed limit is 50 km/h on both streets, and there are no existing sidewalks, marked crosswalks, or bicycle lanes.

Highway 332 at Maple Avenue is a three-legged unsignalized intersection. The intersection is STOP controlled at Maple Avenue with free flow along NS Highway 332. The westbound approach (Maple Ave) includes a right turn channelized lane, as does the northbound approach. The posted speed limit is 80 km/h along Highway 332 and 50km/h along Maple Avenue and there are no existing sidewalks, marked crosswalks, or bicycle lanes.

Highway 332 at Kissing Bridge Road is a four-legged unsignalized intersection. The intersection is STOP controlled at the Kissing Bridge Road approaches with free flow along Highway 332. There are no existing sidewalks, marked crosswalks, or bicycle lanes at the intersection. There is a marked crosswalk crossing Kissing Bridge for the Bay to Bay Trail about 30m south of the intersection.

Highway 332 at Sawpit Road / Back Harbour Road is a four-legged unsignalized intersection. The intersection is STOP controlled on Sawpit Road and Back Harbour Road with free flow along Highway 332. There are no existing sidewalks, marked crosswalks, or bicycle lanes at this intersection.

Pelham Street at Blue Rocks Road is an unsignalized intersection. The intersection is uncontrolled with a posted speed limit of 50 km/h, and an asphalt walkway running along the water side of Pelham Street.

Falkland Street / Dufferin Street / Lincoln Street is complicated intersection with free flow for traffic traveling between Falkland Street and Lincoln Street and STOP control on Dufferin Street and Station Lane. The intersection configuration is shown in Figure 2.

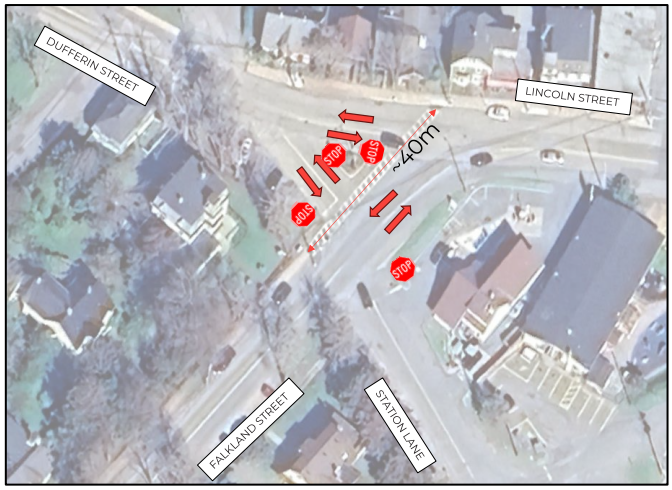


Figure 2: Falkland Street / Dufferin Street / Lincoln Street Configuration

Lincoln Street at Linden Avenue is a three-legged unsignalized intersection. The intersection is uncontrolled with a posted speed limit of 50 km/h and features a westbound one-way street (Linden Ave). There is currently a crosswalk crossing Linden Avenue and sidewalks running along both sides of Lincoln Street.

Lincoln Street at Pelham Street is a three-legged unsignalized intersection. The intersection is STOP controlled at the Pelham Street approach with Pelham Street running one-way (westbound) and Lincoln Street running one-way (eastbound) east of the intersection. There is a sidewalk running along the north side of Lincoln Street in this area.

3.1.1 INTERSECTION OPERATIONAL ANALYSIS

Intersection capacity analysis was completed to estimate how intersections may be expected to operate. This section of the report addresses how left-turn lane warrants were conducted and how each intersection was evaluated.

Left-turn movements on a two-lane street may cause both operational and safety problems. Operational problems result as a vehicle stopped waiting for an opportunity to turn across 'heavy' opposing traffic causes a queue of stopped vehicles to form. Safety problems result from rear end collisions when a stopped left-turning vehicle is struck by an advancing vehicle, or from head-on or right-angle collisions when a left-turning vehicle is struck by an opposing vehicle.

The *MTO Design Supplement for TAC GDG for Canadian Roads* manual contains a nomograph for left-turn lane analysis for two lane undivided streets at unsignalized intersections. The analysis method, which is normally used by WSP Atlantic to evaluate the warrant for left-turn lanes along two lane roadways, uses a nomograph that considers advancing volume and opposing volume. A point, based on 'advancing' and 'opposing' volumes, plotted to the right of the 'warrant line' indicates that a left-turn lane is warranted for the conditions used in the analysis. Similarly, a point that is plotted to the left of the warrant line indicates that a left-turn lane is not warranted.

Evaluation of left turn lane warrants were completed for the intersection of Dufferin/Lincoln/Falkland as well as the Highway 332 intersections with Sawpit Road, Maple Avenue, and Kissing Bridge Road. Warrant results indicate:

- A left turn lane is warranted on Falkland Street, and,
- Left turn lanes are not warranted on Highway 332 at the project intersections.

The level or quality of performance of an intersection in terms of traffic movement is determined by a level of service (LOS) analysis. LOS for intersections is defined in terms of delay, which is a measure of driver discomfort and frustration, fuel consumption, and increased travel time.

LOS criteria, as shown in Table 1, are stated in terms of average control delay per vehicle which includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

Table 1: Level of Service Criteria

LOS	LOS Description	Roundabouts and Two-Way Stop Controlled (TWSC) Intersections Control Delay (Seconds per Vehicle)
A	Very low delay; most vehicles do not stop **(Excellent)**	Less then 10.0
B	Higher delay; most vehicles stop **(Very Good)**	Between 10.0 and 15.0
C	Higher level of congestions; number of vehicles stopping is significant, although many still pass through intersection without stopping **(Good)**	Between 15.0 and 25.0
D	Congestion becomes noticeable; vehicles must sometimes wait through more than one red light; many vehicles stop **(Satisfactory)**	Between 25.0 and 35.0
E	Vehicles must often wait through more than one red light; considered by many agencies to be the limit of acceptable delay **(Acceptable)**	Between 35.0 and 50.0
F	This level is considered to be unacceptable to most drivers; occurs when arrival flow rates exceed the capacity of the intersection **(Unacceptable)**	Greater than 50.0

A ***volume to capacity (v/c) ratio*** is a measure of the peak hour volume on an approach to an intersection compared to the capacity of that intersection approach. While the capacity of an intersection approach at a signalized intersection depends on the number of lanes and the amount of green time, the capacity of a roundabout approach is determined by the number of lanes and the circulating volume passing that approach. Approaches with volumes less than 50% of capacity (v/c ratios less than 0.50) usually have low or no congestion, and a v/c ratio up to 0.75 is usually associated with moderate congestion, while a v/c ratio of 0.85 suggests that the approach has 15% residual capacity available, it is also an indication that mitigative measures must be considered if higher volumes are to be accommodated in future years.

The ***95th% queue*** is the estimated length in meters of a line of vehicles stopped on an intersection approach that is only exceeded 5% of the time. Since a stopped vehicle occupies about six meters of queue length, a 95th% queue of 12 meters indicates that there are two vehicles queued on the approach less than 5 times out of 100.

Synchro 11 software has been used for performance evaluation of the Study Intersections. Detailed results of the analyses are included in Appendix B.

Each of the eight primary project intersections were analyzed and indicate a LOS of A or B when evaluated using AM Peak and PM Peak hour volumes during both the spring and summer seasons.

3.2 TRAFFIC SPEED RESULTS

Collected traffic speed data indicates that traffic is generally obeying posted speed limits, particularly within Old Town Lunenburg. Observed travel speeds are shown below in Figure 3 for the spring and summer periods as 85th percentile speeds (the speed at which 85 percent of the drivers travel below). Speeds are higher on the outskirts (Dufferin at Green, Trunk 3) where speed limits are higher but are manageable within Old Town Lunenburg based on the collected data.

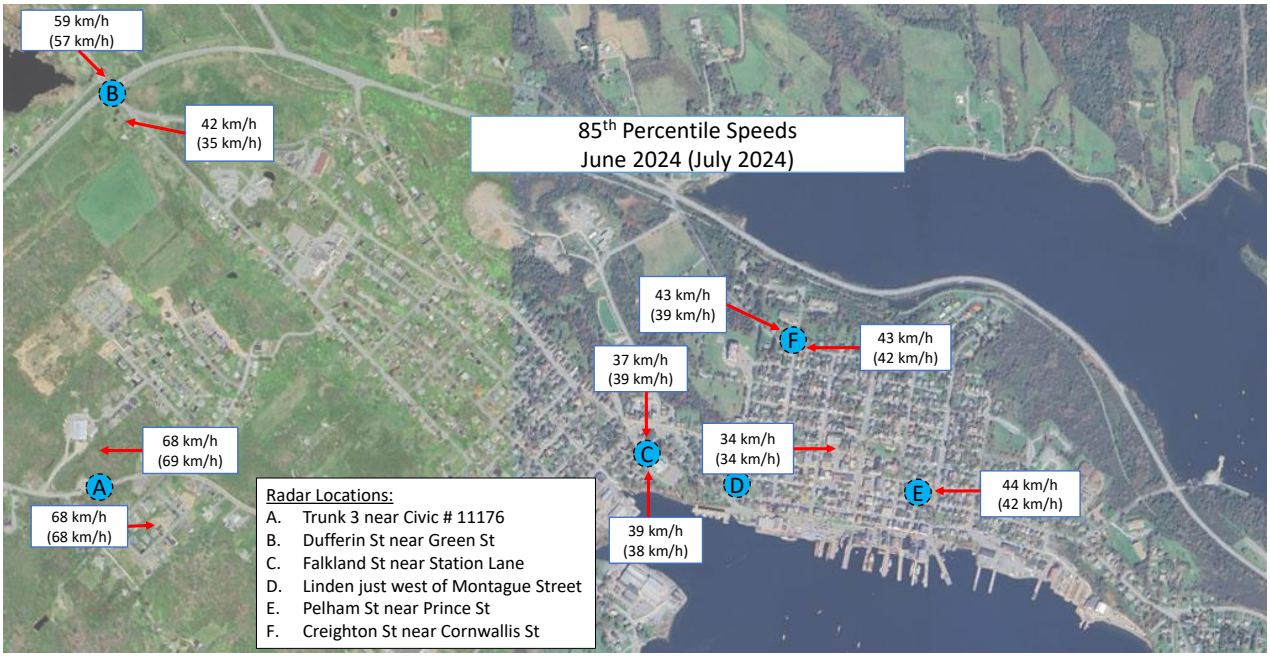


Figure 3: Speed Data Collection and Results

3.3 KEY FINDINGS AND SUMMARY OF TRAFFIC DATA

- Counted pedestrian volumes increased from 115 in the Spring to 362 in the Summer. (Over 200%)
- Radar AADT increased from 17,157 in the spring to 20,184 in the summer across all study areas.
- Speeds generally below speed limit in all areas, particularly in Old Town.

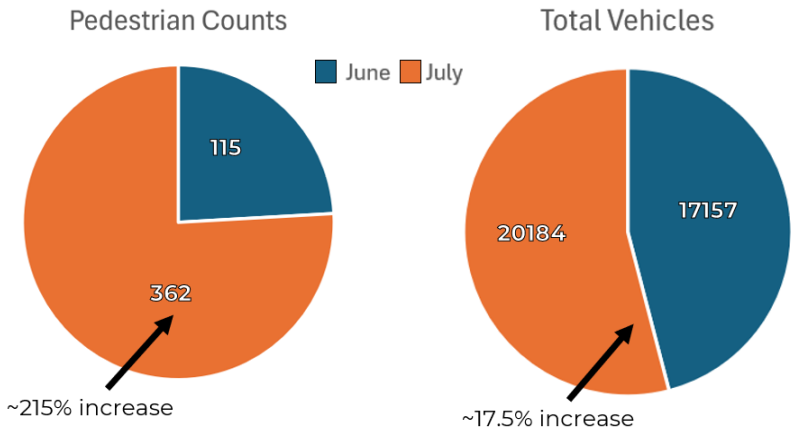


Figure 4: Data Collection Key Findings

4 PARKING

4.1 PARKING SUPPLY AND DEMAND

Municipal parking supply was inventoried for the downtown area and shown in Figure 5. Parking spaces within the street blocks indicated on this diagram are marked with painted lines on the street. This corresponds to the area with highest parking demand. Parking may be permitted on other street blocks outside of this area, but individual spaces are not marked. The total number of parking spaces for each category of control within this area is summarized in Table 2.

Table 2: Number of Parking Spaces

Parking Control Category	Number of Spaces
Uncontrolled	207
Unmetered, two-hour time limit	19
Metered, two-hour time limit	113
Metered, four-hour time limit	120
Accessible	20
TOTAL	**479**

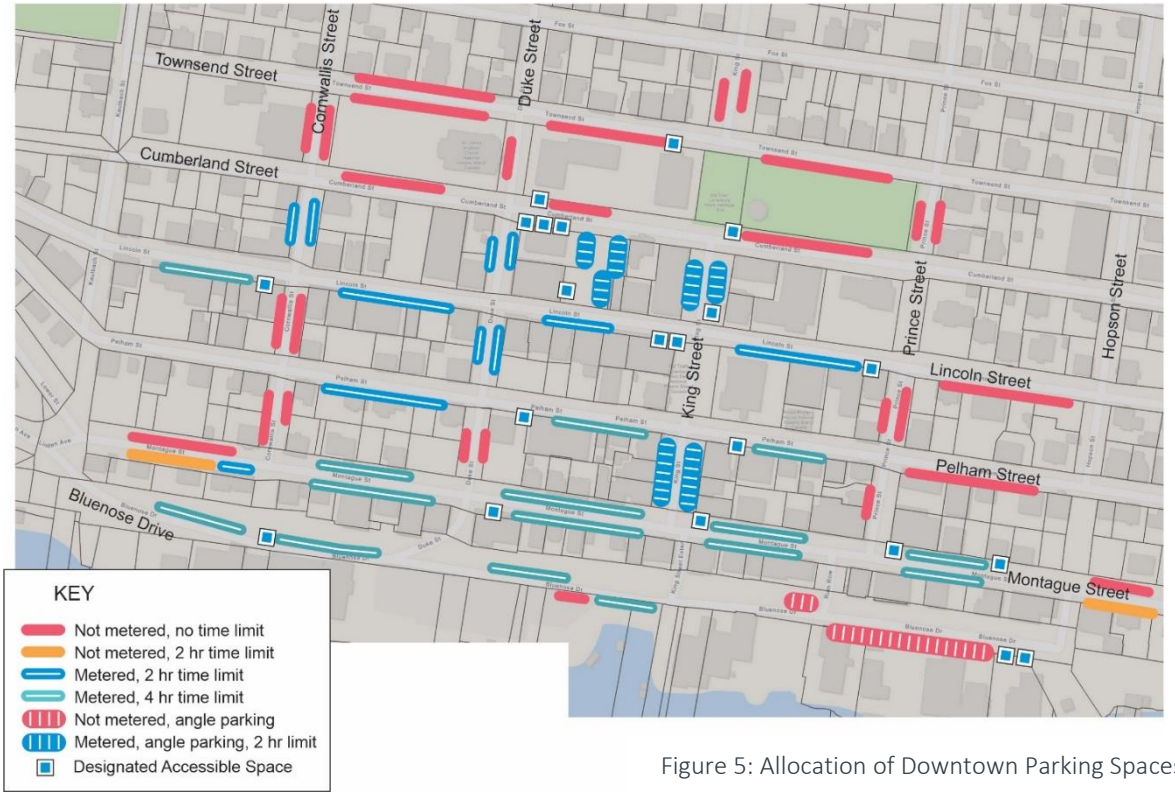


Figure 5: Allocation of Downtown Parking Spaces

Time-lapse cameras were used to conduct spot counts of on-street parking utilization in the downtown area. In total, 32 spaces spread out through the downtown were monitored from 9am to 5pm for three weekdays in May or June and three weekdays in July. The peak occupancy of parking spaces in these sampling locations is shown in Figure 6. The fluctuation of overall parking occupancy over the period of a weekday and segregated by sample month is shown in Figure 7. When considering parking occupancies, an 85% occupancy is generally considered to be approaching full "effective capacity". While there are still vacant spaces at that level, the spaces can be difficult to locate for drivers circulating the area to locate. Overall the spaces were found to approach or exceed this 85% level (See Figure 7) with many of the individual areas exceeding this level through the day (See Figure 6).

Figure 6: Peak Weekday Parking Occupancy

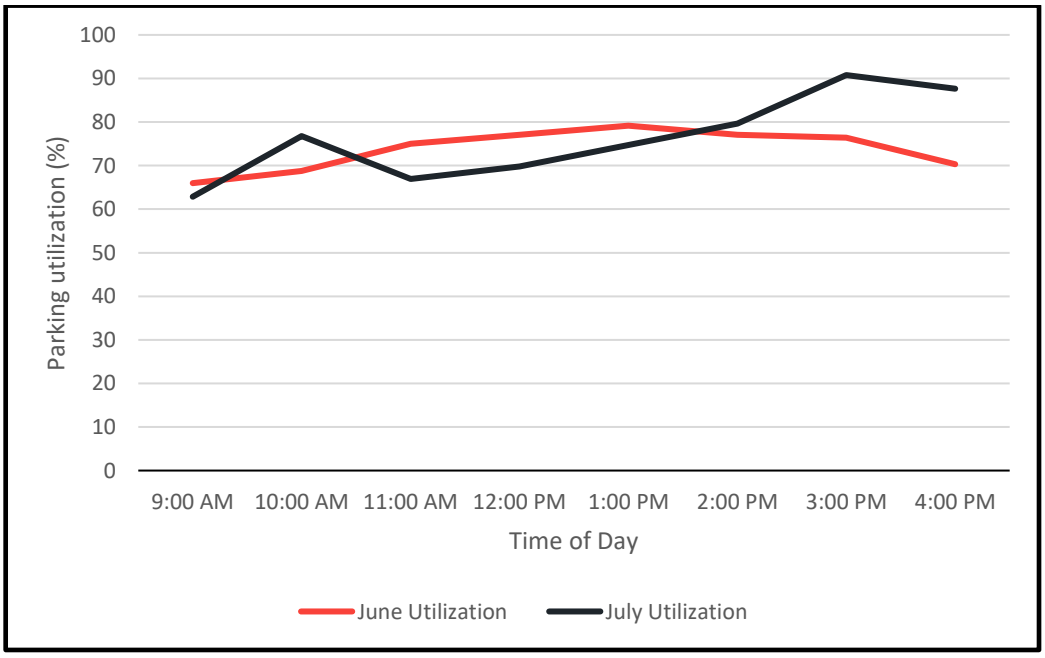


Figure 7: Weekday Parking Utilization

In addition to the collection of parking data, WSP staff completed numerous observations of parking utilization and availability throughout the project area and it was observed that parking is generally well utilized throughout Old Town Lunenburg.

4.2 OBSERVATIONS AND ISSUES

In our review of existing conditions, we noted some key characteristics of downtown parking:

- Parking in the downtown area is highly utilized and finding a metered space can be difficult
- As many as 30% of the metered and time-limited spaces are occupied continually for a period exceeding five hours (as observed by our camera spot-counts)
- Areas with two-hour limits are not easily distinguishable from areas with four-hour limits and do not follow an evident pattern nor match the parking map found on the Town website. Some instances were found where a double-headed parking meter where one side of the meter had a two-hour time limit and the other had a four-hour time limit.
- Instances were found where onstreet parking was signed as being reserved for a specific business use.
- The lack of loading space was found to lead to delivery vehicles stopping illegally.

It is critical for the success of businesses in the downtown to ensure that there is adequate availability of parking spaces and that these spaces are used by short-term parkers, typically tourists and visitors. Those who require all-day parking, normally employees and residents, must be accommodated in private off-street parking or encouraged to park outside of the high-demand Old Town area.

4.3 EXISTING APPROACHES

A summary of urban areas (see Table 3) in Nova Scotia shows a range of approaches to the management of downtown parking. There is a clear split on whether or not to charge for downtown on-street parking. Some municipalities provide a lot of off-street downtown parking, while others

do not. Technologies for parking payment also varies with individual parking meters still be prevalent but being replaced by multi-space meters.

Table 3: Existing Downtown Parking Approaches

		DOWNTOWN PARKING CHARACTERISTICS		
	POPULATION (thousands)	PAYMENT METHOD FOR ON-STREET PARKING	MUNICIPALLY OWNED OFF- STREET PARKING	HOTSPOT APP USED?
Halifax	492	paystations	629	yes
Truro	14	none	778	no
New Glasgow	10	meters	211	yes
Bridgewater	9	meters	130	yes
Antigonish	5	paystations/meters	456	yes
Wolfville	5	none	391	yes
Lunenburg	3	meters	~159	no

For municipally owned public parking, a number in the cell indicates the number of spaces available. Lunenburg off-street parking includes Community Centre parking lot.

4.4 METERING TECHNOLOGY

At one time, virtually all on-street and some off-street parking payments were handled by coin-operated parking meters. Today, fewer and fewer people carry cash and there is demand for more flexibility in payment options. There are a number of devices available that provide more versatility in payment options for the customer and better functionality and security for the parking agency.

Figure 8: Smart Meter in Moncton

The single-space coin-operated parking meter has evolved into a meter that can collect payments from credit or debit card tap and is referred to as a “smart meter” (Figure 8). On the negative side, card reading technology is expensive and providing it for every single parking space is much less efficient than providing it for a “cluster” of parking spaces. On the plus side, they provide the proximity convenience of a single-space meter with the benefit of multiple payment options. Also, cites like Moncton who have implemented this technology can provide geographic real time information to consumers on parking availability.

Multi-space pay-stations have been common in off-street parking lots and are now becoming more popular for on-street parking as well. A multi-space pay station is located in proximity to a cluster of parking spaces and signed to indicate to parking clients that they go to the station to make their

payment. There are three approaches to managing parking with multi-space pay-stations. With a pay-by-plate approach, the customer enters the licence plate of their vehicle and the amount of time they wish to park. With a pay-by-space approach, the customer notes the number of the parking space that they are parked at and enters that into the pay-station along with the amount of time. With pay-and-display, the customer enters the amount of time they wish to pay for and the pay-station issues them a ticket that they then place on the dashboard of their vehicle. Table 4 provides a summary of what features and benefits are provided by each parking payment technique.

Figure 9: Parking Pay Station in Halifax

The trend in managing on-street parking through pay-stations is to use the pay-by-plate technique. A recently completed strategy for the City of Fredericton recommends a conversion to pay-by-plate:

Pay By Plate is becoming the standard application for parking management, is more user-friendly since customers typically remember their license plate more easily than their space number and reduces the need for space numbering paint and/or signage that can add undesirable clutter in an urban setting.[1]

Table 4: Features of Parking Payment Options

	Single Space Meters		Multi-Space Paystations		
	Coin only	Card-Accepting	Pay-by-Plate	Pay-by-Space	Pay-and-Display
Convenience – no need to find pay station	●	●			
Convenience – no need to return to vehicle following payment	●	●	●	●	
Multiple payment options		●	●	●	●
Payment by phone option	●	●	●	●	●
Usable by motorcycles	●	●	●	●	
Reduces street clutter			●		●
Not susceptible to "meter feeding"			●		
Can be extended to residential parking management			●		

[1] City of Fredericton Parking Master Plan; Stantec Consulting Limited; 2019

From the perspective of parking management, pay-stations are superior to single-space meters in a number of ways. Because there are fewer units, the cost of maintaining, servicing and monitoring them is greatly reduced. A greater level of security features and payment technology can also be employed. Having well-located pay-stations reduces street clutter compared to a row of parking meters and posts.

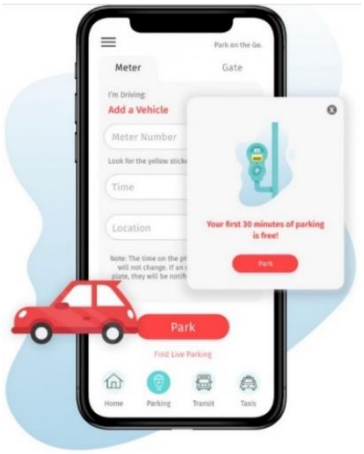


Figure 10: Image of HotSpot Parking Payment App

Source: HotSpot website (htsp.ca)

Payment for parking has been greatly enhanced through the use of mobile phone apps. The most recognized such app in Atlantic Canada is HotSpot which has gained nearly exclusive usage throughout the region (refer to Figure 10). The app allows the customer to park, then use the app to indicate the space or zone within which they are parked and how much time they wish to park for. There is no need to seek a pay-station. Another key benefit of these apps is that they allow the customer to add parking time remotely (provided they do not exceed the allotted maximum time limit) if they are delayed and find they need additional time. HotSpot requires its users to pay for an annual subscription fee or to pay a small surcharge per transaction. Some parking agencies will pay this transaction fee on behalf of the customer to encourage use of the app.

Figure 11: Lunenburg Parking Meter

As discussed, not only are individual space parking meters in Lunenburg no longer meeting the needs of parkers, they are generally showing signs of nearing end-of-life (see Figure 11). A switch to multi-space parking meters would provide better service to parkers, better control for the Town, a reduction of sidewalk clutter, along with a refresh of aging infrastructure.

4.5 IMPLEMENTING PARKING ZONES IN DOWNTOWN LUNENBURG

Developing a strata of parking zones will help to identify areas of highest demands and provide for an ability to tailor controls to make sure that precious parking space is used optimally. A proposed parking zone map is provided in Figure 12 along with parking controls recommended in each zone (Table 5).

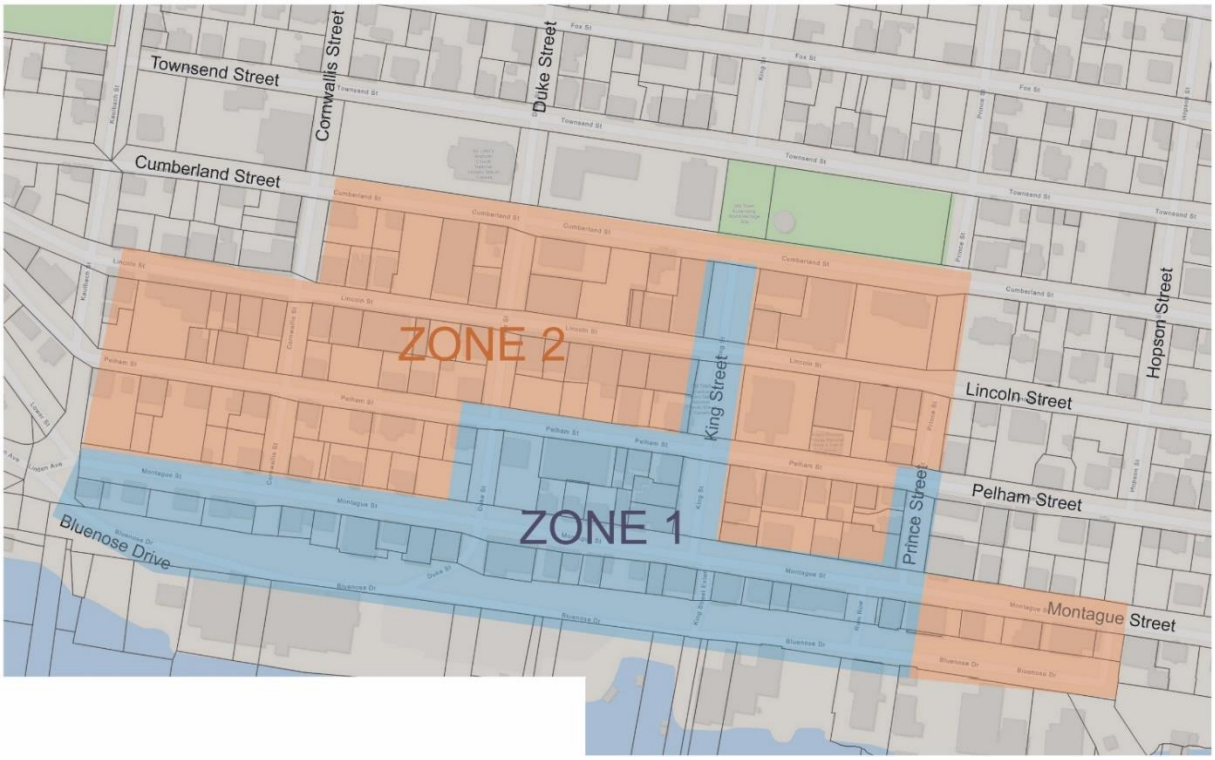


Figure 12: Proposed Parking Zone Map

Table 5: Characteristics of Each Proposed Parking Zone

	ZONE 1	ZONE 2
Parking Pay Stations	Yes	Yes
Parking Time Limit	Two hours	Three hours
Hourly Charge for Parking	$2.00	$2.00
Residents Exempted with Parking Pass?	No	Yes

Zone 1 is an area with more commercial uses and higher parking demand from visitors. Zone 2 also has some commercial uses along it, but more importantly is within close walking distance of the commercial core. Zone 2 also includes residential properties, many of which do not have their own off-street parking. Residents who live within zones 1 or 2 would be allowed to purchase an annual parking exemption. This exemption would allow them to park a registered vehicle with zone 2 without having to pay for parking or be bound by parking time limits. To purchase an exemption, the resident would have to register the license plate of one vehicle and demonstrate that vehicle being registered to a civic address within one of the two zones. An annual fee should be charged for these exemptions (in the range of $30 per year) both to cover municipal administrative costs and to help ensure those who acquire the exemptions truly have a need for them.

Areas outside of these zones would not have paid parking nor parking time limits and would provide parking supply for all-day parking. If high parking demand proved to be too great and residential streets became saturated with all-day parking, a third zone just outside of zone two could be

established. Within this zone signs would be posted saying “Parking by Permit Only”. Permits would be made available to residents (for the annual fee suggested above) and a limited number of monthly permits would be available to anyone seeking one through the Town Office for a market rate cost (in the range of $30 per month).

4.5.1 LOADING ZONES

Like many downtown commercial areas, Old Town Lunenburg has a demand for loading zones. Through discussions with Town staff and stakeholders, it is understood that much of the loading within the commercial districts occurs during the mornings and loading spaces should be considered in the final design of the parking configuration. When designing the locations of parking pay stations, and the configuration of on-street parking, accommodation of loading space between 7-10AM should be considered.

4.5.2 ACCESSIBLE PARKING SPACES

In Nova Scotia, approximately 144,000 people aged 15 or older identify as having a disability, which makes it the largest percentage of any Canadian province. Nova Scotia also has the largest percentage of seniors over the age of 65 at 20 percent, which is expected to increase to approximately 25 percent of the population by the year 2030. Since the disability rates are higher in older adults, the number of disabilities will rise even higher as the population ages.

There is no current provincial standard or guidelines on how many on-street accessible parking spaces should be provided for an area, however, the Halifax Regional Municipality (HRM) has developed its Accessible Parking Guidelines in 2021[2]. Table 6 is extracted from that document and shows the accessible parking ratios for on-street parking that could be applied in Old Town Lunenburg, particularly the “Business Districts” section.

Table 6: Suggested Accessible Parking Ratio
(Extracted from HRM Accessible Parking Guidelines, 2021)

Total Number of Parking Spaces	Total Number of Required Accessible Parking Spaces by Destination		
	Mixed-Use Residential Commercial Buildings (HR) Religious Institutions (CEN, COR, D) Parks and Community Facility (PCF)	Business Districts (CEN, COR, D) Post-Secondary Educational Institutions (IE) Government Services (CEN, COR, D)	Hospital Institutions (IE) Medical Centres (CEN, COR, D) Rehabilitation Centres (CEN, COR, D, IE)
1-25	1	1-2	1-4
26-50	1-2	2-4	3-8
51-75	2-3	4-6	6-12
76-100	3-4	5-8	8-15
>100	1 extra accessible space for every 50 on-street parking spaces	1 extra accessible space for every 50 on-street parking spaces	1 extra accessible space for every 50 on-street parking spaces

[2] https://cdn.halifax.ca/sites/default/files/documents/transportation/parking/hrm-accessible-parking-guidelines-2021.pdf

5 CONCEPT DESIGNS & RECOMMENDATIONS

5.1 KEY CONSIDERATIONS

As part of this study, a session of stakeholder and public engagement was conducted. As highlighted in the What We Heard Report (See Appendix D), key themes for consideration emerged:

- Safety concerns: Address safety concerns raised by residents, stakeholders, and Town Staff.
- Active Transportation: Explore potential for trail connections and bike lanes.
- Parking solutions: Consider smart parking solutions.
- Cultural atmosphere: Aim to preserve historic feel.

The recommended concept designs are outlined in the below sections and are available in a larger scale in Appendix C.

5.2 ONE-WAY STREET MAP

One deliverable for this project was to provide the Town of Lunenburg with a one-way street map. This map would be a good tool to inventory the Town's one-way street network, display it visually, and a good tool for visitors and newcomers to orient themselves within the Town. The map is shown below in Figure 13.

Figure 13: One-Way Street Map

5.3 STREET CLASSIFICATION MAP

Another deliverable for this project was to provide the Town of Lunenburg with a street classification map. Streets are classified to improve transportation planning, road design, and maintenance, and to protect neighborhoods from the negative effects of motorized traffic. Grouping roads according to the type of service they provide assists in establishing road design features, land use policy, and safety and access requirements. The map is shown below in Figure 14.

Figure 14: Street Classification Map

5.4 DUFFERIN / LINCOLN / FALKLAND

The Dufferin / Lincoln / Falkland intersection is one of the main entry points into the Town of Lunenburg and its roads are considered as major collectors. The existing intersection has an unconventional configuration that is confusing for drivers, particularly tourists unfamiliar with the intersection. It contains a long 40-metre pedestrian crossing and has parking available within the intersection. The centre island also contains a fountain statue with historic significance – it is where horses once stopped for a drink. This intersection has seen many concepts over the years, and the Town of Lunenburg has been eager to see a concept design that mitigates safety concerns without being too imposing.

OPTION 1: ROUNDABOUT

Initially, WSP considered a roundabout configuration, shown in Figure 15. This option was quickly ruled out because of surrounding property impacts, parking impacts, and because of the fast paths for some of the movements (Falkland to Lincoln, Lincoln to Dufferin), where vehicle deflections are not significant enough to reduce speeds of vehicles of these movements.

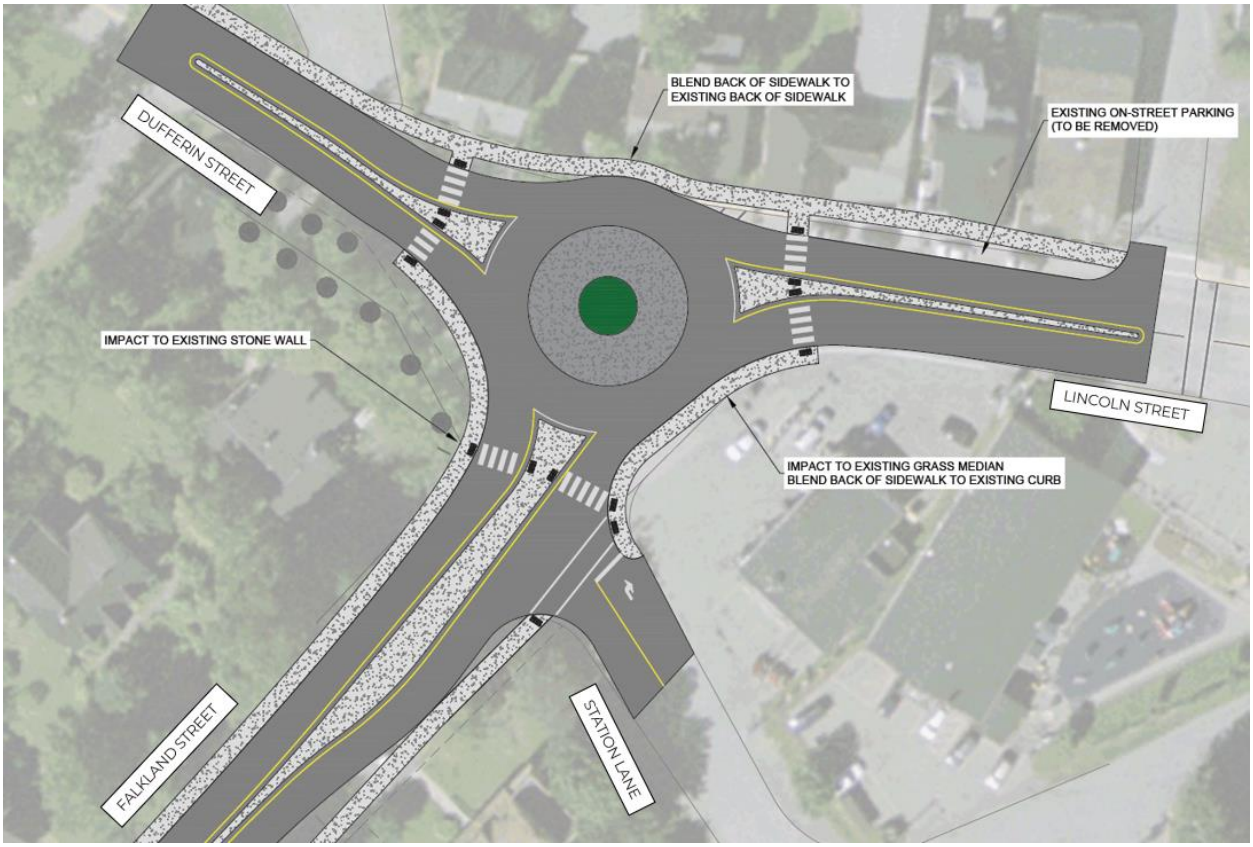


Figure 15: Dufferin/Lincoln/Falkland - Roundabout Concept

OPTION 2: TWO-WAY STOP

WSP considered a standard Two-way STOP configuration, as shown in Figure 16. This option has the benefit of reconfiguring to a more familiar intersection configuration while keeping free flow of vehicles between Falkland Street and Lincoln Street.

One downside of this option is that it reduces left-turn visibility from Dufferin Street to Lincoln Street since it pushes the movement further west past the curve. Also, the addition of two left turn lanes requires the removal of several parking spaces along Falkland Street and Dufferin Street. This option does not do much to improve pedestrian connectivity across Falkland Street.

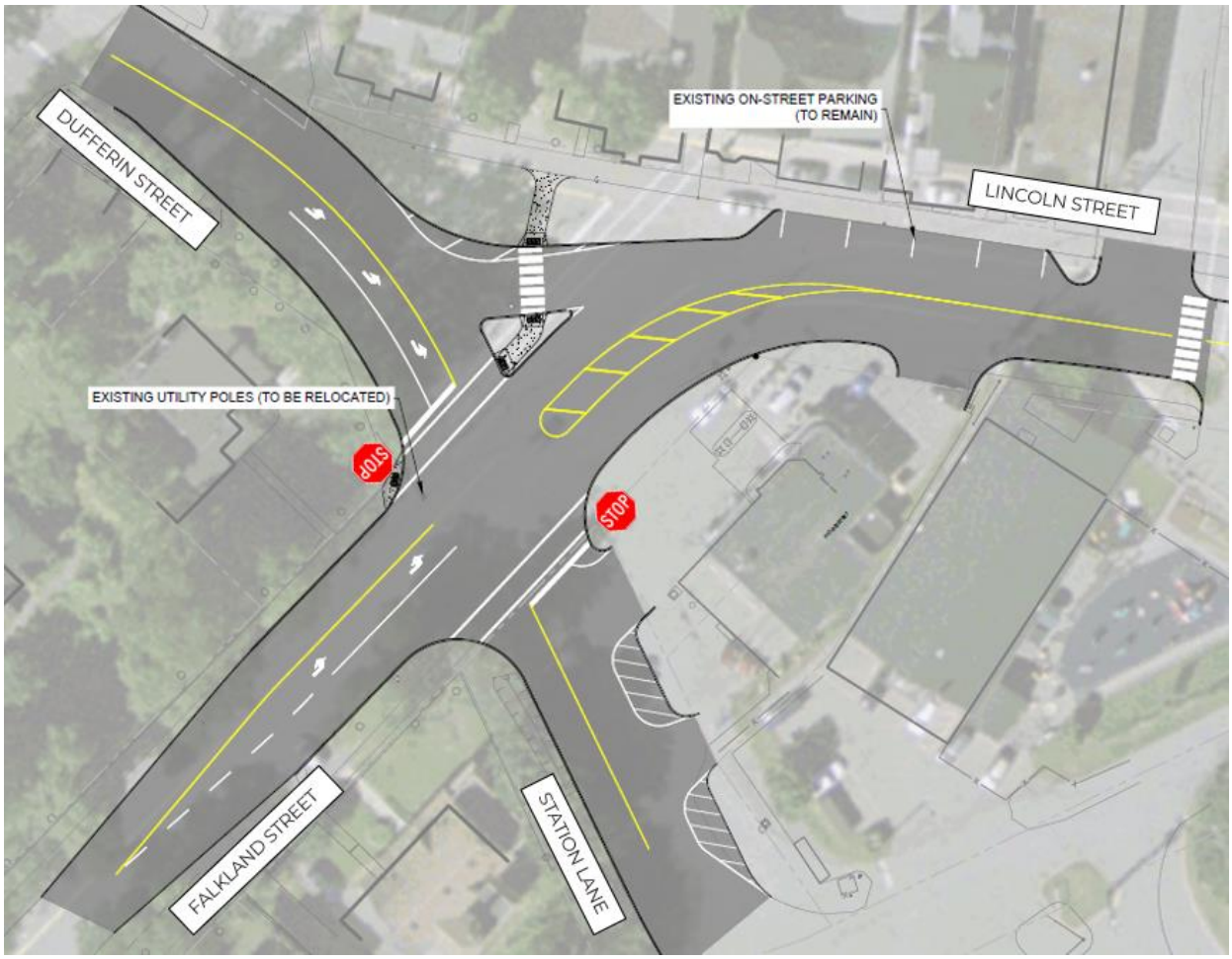


Figure 16: Dufferin/Lincoln/Falkland - Two-Way Stop Concept

OPTION 3: ALL-WAY STOP

After listening to some concerns from stakeholders and residents at the public engagement session regarding sight distance, parking loss, and pedestrian connectivity of the two-way stop configuration concept; WSP opted to look at an all-way stop configuration which could mitigate some of these issues. The all-way stop concept is shown in Figure 17.

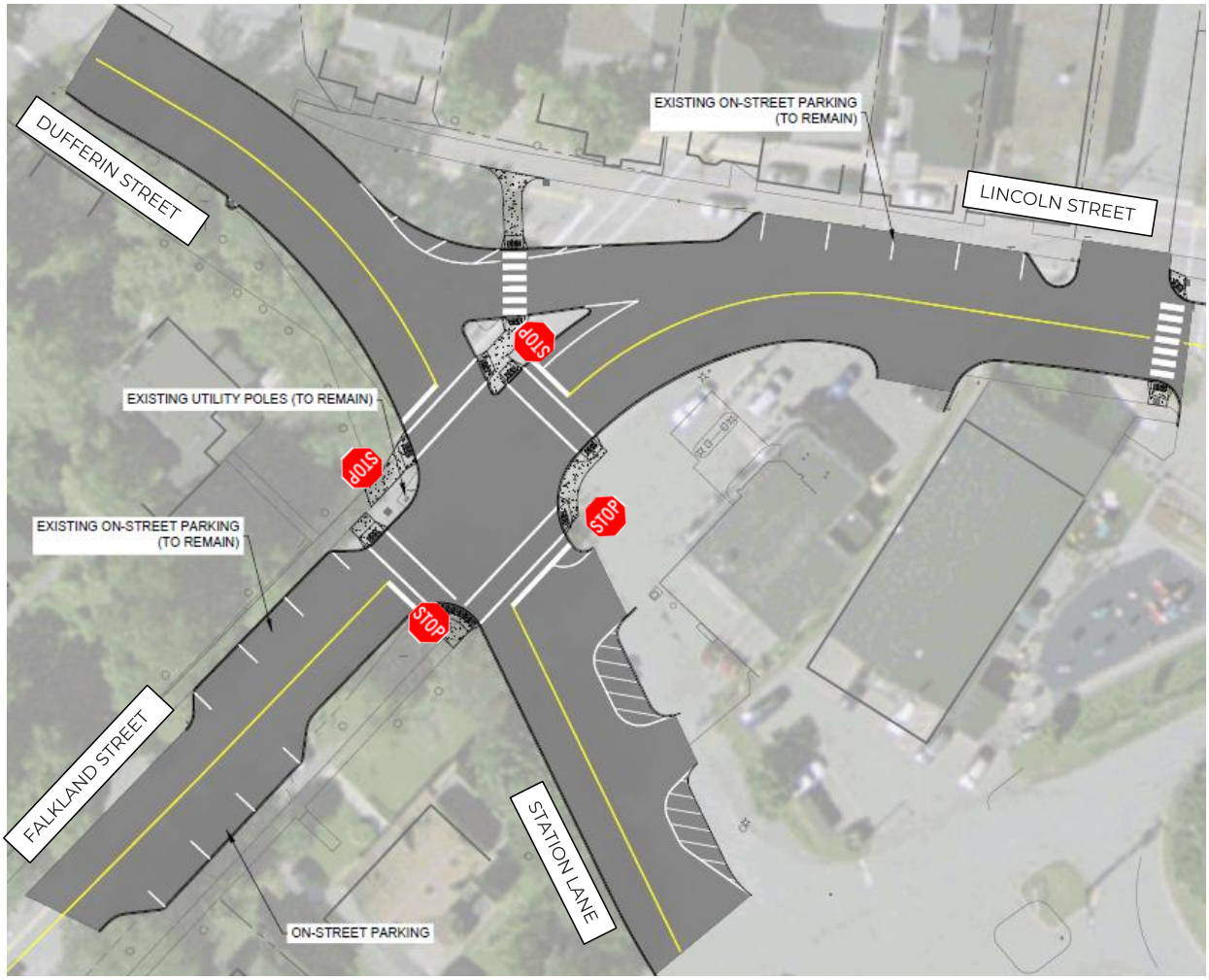


Figure 17: Dufferin/Lincoln/Falkland - All-Way Stop Concept

This configuration provides speed and safety improvements while keeping most of the available on-street parking near the intersection. The All-Way Stop configuration also greatly improves safety, connectivity, and comfortability for pedestrians at the intersection. Volume data indicates a good balance between the approaches. For these reasons, this configuration is recommended as the preferred concept option for the Dufferin / Lincoln / Falkland intersection.

5.5 TRUNK 3 / ROUTE 332

It was noted by the Town of Lunenburg and several of the residents and stakeholders through the engagement sessions that there is collision history at this intersection. Through the first round of public engagement, it was noted that improvements at this intersection are a priority for residents.

It is understood that this intersection is under Provincial jurisdiction; however, since safety concerns were identified at this intersection, WSP provided high-level concept recommendations to facilitate the conversation between the Town and the Province.

There are sight distance concerns looking left from both Route 332 approaches due to horizontal and vertical curvature at the intersection. The minimum intersection sight distance (ISD) along a major road is provided by the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads which indicates a minimum ISD of 130m should be provided from the stop for vehicles looking left to turn right. This distance should be available for drivers looking left from each Route 332 approach at Trunk 3. The available sight distance for vehicles looking left from each Route 332 approach are shown in Photos 1 and 2.

Photo 1: Route 332 Southbound Looking East

Photo 2: Route 332 Northbound Looking West

Modifying the approach grades to the intersection would improve the sight distance and thus increase the safety of the intersection, however, regrading would require significant cost. WSP reviewed alternate solutions.

OPTION 1: ALL-WAY STOP (AWS)

An All-way STOP mitigates sight distance challenges and eliminates the need for regrading at this intersection. Volume data (See Appendix A) indicates a good balance between the volume at the approaches. The adjacent intersection along Route 332 to the north (at Dufferin Street / Northwest Road) is already All-way STOP controlled. The All-way STOP concept is shown in Figure 18.

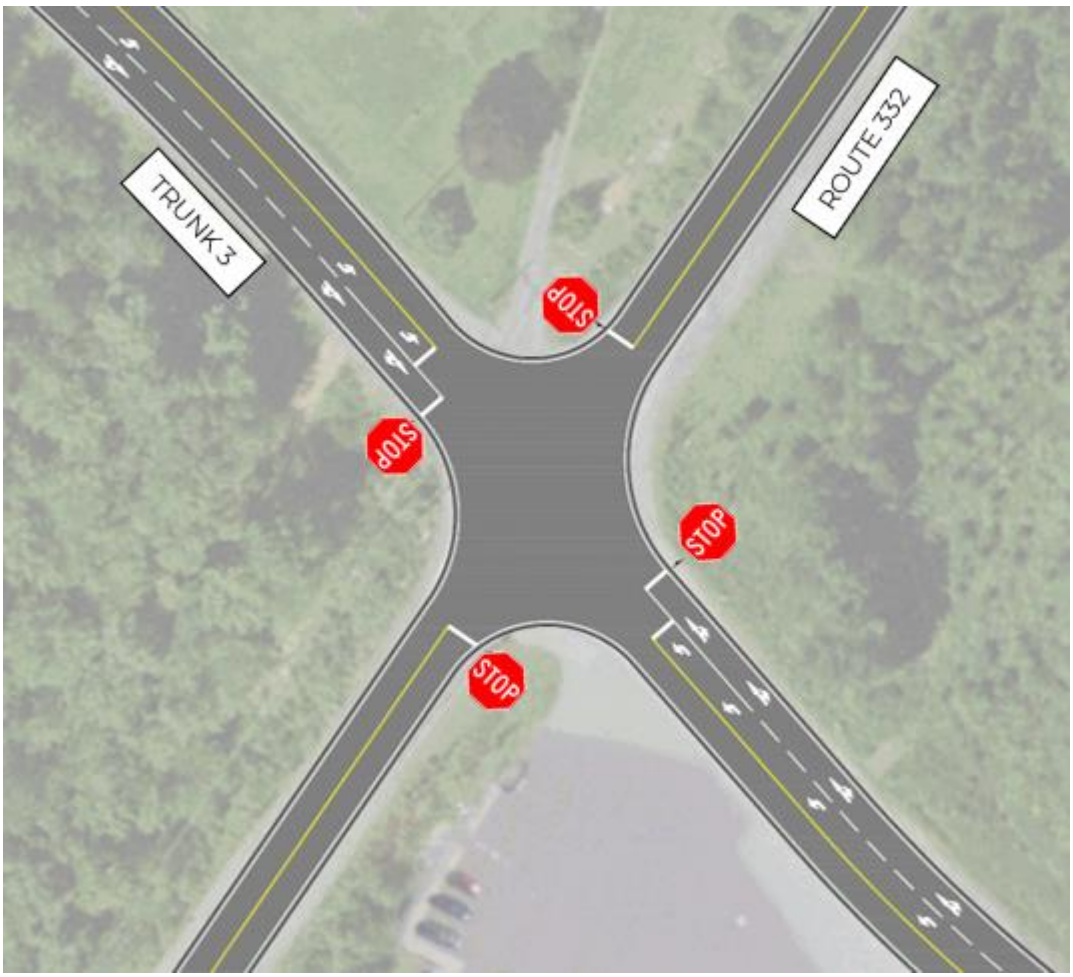


Figure 18: Trunk 3 at Route 332 - AWS Concept

OPTION 2: ROUNDABOUT

It was noted by several participants at the public engagement session that this intersection may be a good candidate for a roundabout. This concept was not prepared as it is expected to require significant property acquisition as well as construction cost and impacts, and further intersection design and analysis would be required should the Province of Nova Scotia wish to consider a roundabout at this intersection.

5.6 COMMUNITY CENTRE PARKING LOT

WSP reviewed the configuration of the Community Centre parking lot to increase parking capacity and improve circulation. The current configuration has diagonal spaces. By modifying the lot to a perpendicular space design, the lot is expected to gain about 40 parking spaces. Additionally, concrete sidewalk is suggested along the frontage of the Community Centre, improving safety and walkability for pedestrians. Concrete islands are also shown to direct drivers to the driving aisles to reduce speeding through the parking lot during periods of lower parking demand. The addition of additional accessible spaces near the front of each building will improve comfort for people with a mobility disability.

Figure 19: Community Centre Parking Lot

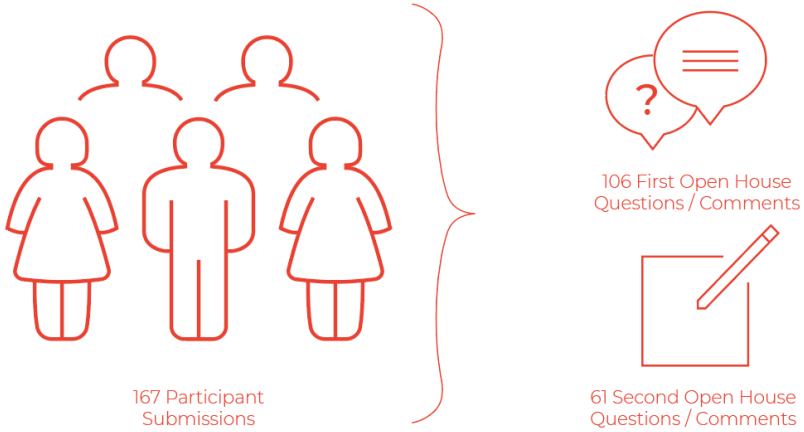
6 STAKEHOLDER & PUBLIC ENGAGEMENT

The Lunenburg Traffic and Parking Plan included both stakeholder and public engagement, which were held in the Spring/Summer of 2024. A "What We Heard" Report was prepared to present engagement results and can be found in Appendix D, with some key findings highlighted in the below section.

6.1 STAKEHOLDER AND PUBLIC ENGAGEMENT SESSIONS

As part of the development of Lunenburg Traffic & Parking Study, stakeholder and public engagement took place on June 19, 2024 to introduce the project and again on September 12, 2024 to present recommendations. The engagement activities conducted were meant to inform the upcoming Plan on current concept designs and to understand the current usage and types of upgrades needed. Consultation activities included:

- Stakeholders Meeting (2), 2:00-4:00pm.
- Public Open House (2), 5:00-7:00pm.



A number of Public Open House Display Boards were available at the open house sessions and attendees were encouraged to leave comments. A total of 167 comments were collected and can be found in the 'What We Heard' Report.

Though the feedback received was wide ranging, certain key themes emerged:

- **Prioritize Pedestrian and Cyclist Accessibility**
- **Revitalize Infrastructure for Safety**
- **Optimize Parking Systems**
- **Maintain Historic Culture**
- **Enhance Traffic Flow Management**

The stakeholders and public also had comments specific to the concept options, which were helpful in deciding final recommended concepts and modifications. Generally, the concepts were well-received by the community with minor tweaks/additions suggested.

7 EVALUATION

Evaluation was completed to help determine the preferred concept option for different intersection options. The following tables show the comparison of these options. Each of the five criteria were scored from 1 to 5 and totalled for a score out of 25. A score of three is indicative of no change from existing conditions, with one being worse than existing and five being improved from existing.

DUFFERIN / LINCOLN / FALKLAND OPTIONS

Scoring Totals			
Criteria	**All-Way Stop**	**Two-Way Stop**	**Roundabout**
Pedestrian Realm & Accessibility	5	3	2
Cyclist Safety & Comfort	4	3	3
Traffic & Truck Operations	4	5	4
Safety Considerations	5	4	3
Property Implications	3	3	1
OVERALL SCORE / 25	**21 / 25**	**18 / 25**	**13 / 25**

TRUNK 3 / ROUTE 332 OPTIONS

Scoring Totals		
Criteria	**All-Way Stop**	**Roundabout**
Pedestrian Realm & Accessibility	4	3
Cyclist Safety & Comfort	4	3
Traffic & Truck Operations	4	4
Safety Considerations	4	5
Property Implications	5	2
OVERALL SCORE / 25	**21 / 25**	**17 / 25**

7.1 CONSTRUCTION COST ESTIMATES

Class 'D' cost estimates have been prepared for the developed project concepts. These high level cost estimates are prepared at the concept stage to consider high level estimates early in the design process. Table 7 highlights the total cost of each option while the full cost breakdown can be found in Appendix E. The cost estimates do not include:

- property acquisition;
- relocation of utility poles and guy wires;
- earthworks;
- storm sewer relocations/upgrades;
- lighting; and,
- engineering, construction administration or inspection.

Table 7: Construction Cost Estimates (including contingency)

PROJECT	*CLASS 'D' COST ESTIMATE*
Dufferin / Lincoln / Falkland *Two-Way Stop*	*$525,000*
Dufferin / Lincoln / Falkland *All-Way Stop*	*$695,000*
Community Centre Parking Lot	*$292,000*
Parking Stations *Capital Implementation*	*$230,000*

8 SUMMARY & NEXT STEPS

8.1 SUMMARY

WSP Canada Inc. completed this Traffic & Parking Study to enhance traffic flow and parking, address seasonal challenges, preserve the historic atmosphere within the Town of Lunenburg. WSP collected data at several key locations and produced various design recommendations for the Town to consider and implement, taking stakeholder and residents' feedback into account.

8.2 RECOMMENDATIONS

Completing this Traffic & Parking Study has led WSP to several recommendations:

- Metering with a pay-by-plate system to facilitate use for tourists and by-law enforcement officers.
- Creating a resident parking pass for those with vehicles that live on streets without driveways.
- Reconfigure and increase parking capacity at the Community Centre parking lot.
- Install an all-way stop configuration at the Dufferin / Lincoln / Falkland intersection.
- Discuss All-Way STOP configuration at the intersection of Trunk 3 / Route 332 with NSPW.

8.3 NEXT STEPS

The Town of Lunenburg should advance the preferred intersection and parking modifications to detailed design to confirm property acquisition is not required at the intersections and better understand construction costs prior to construction.

In addition to the recommendations for this project, the WSP team recommends that the Town of Lunenburg investigate the following ideas that were noticed around the Town during meetings and through site visitations:

- More, consistent signage for streets, particularly the one-way street network;
- Maintain pavement markings throughout the year and consider additional directional pavement markings (this will better indicate one-way streets);
- Study the desire and feasibility for a Park & Ride facility; and,
- Update the Active Transportation Plan with attainable goals to improve pedestrian and cycling while reducing the parking demand for residents and providing recreational opportunities for residents and visitors.

APPENDIX A
TRAFFIC AND PARKING DATA

WSP
1 SPECTACLE LAKE DRIVE
DARTMOUTH, NS
CANADA B3B 1X7

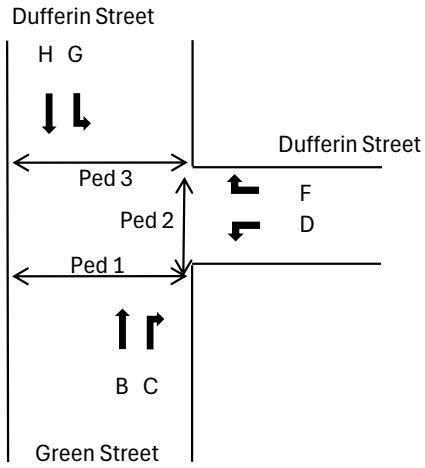
T: +1 902-835-9955
WSP.COM

Table A-1

Dufferin Street @ Green Street

Lunenburg, NS

June 6, 2024



AM Peak Period Volume Data

Time		Green Street Northbound Approach		Dufferin Street Westbound Approach		Dufferin Street Southbound Approach		Total Vehicles
		B	C	D	F	G	H	
07:00	07:15	11	0	0	9	8	20	48
07:15	07:30	9	0	0	6	6	27	48
07:30	07:45	12	0	0	10	8	32	62
07:45	08:00	15	0	0	8	17	39	79
08:00	08:15	18	0	0	10	22	59	109
08:15	08:30	26	0	0	6	11	47	90
08:30	08:45	23	2	0	7	11	40	83
08:45	09:00	21	0	0	7	14	32	74
AM Peak Hour		**82**	**2**	**0**	**31**	**61**	**185**	**361**
07:00	**08:00**	**47**	**0**	**0**	**33**	**39**	**118**	**237**
08:00	**09:00**	**88**	**2**	**0**	**30**	**58**	**178**	**356**
		Ped 1		**Ped 2**		**Ped 3**		**Total Peds**
07:00	**08:00**	**0**		**0**		**0**		**0**
08:00	**09:00**	**0**		**0**		**0**		**0**

PM Peak Period Volume Data

Time		Green Street Northbound Approach		Dufferin Street Westbound Approach		Dufferin Street Southbound Approach		Total Vehicles
		B	C	D	F	G	H	
16:00	16:15	37	0	0	18	15	21	91
16:15	16:30	31	0	0	17	11	17	76
16:30	16:45	42	0	0	11	16	23	92
16:45	17:00	24	0	0	12	13	26	75
17:00	17:15	20	0	0	27	11	14	72
17:15	17:30	20	0	0	12	13	20	65
17:30	17:45	14	0	0	7	13	15	49
17:45	18:00	17	0	0	9	13	17	56
PM Peak Hour		**134**	**0**	**0**	**58**	**55**	**87**	**334**
16:00	**17:00**	**134**	**0**	**0**	**58**	**55**	**87**	**334**
17:00	**18:00**	**71**	**0**	**0**	**55**	**50**	**66**	**242**
		Ped 1		**Ped 2**		**Ped 3**		**Total Peds**
16:00	**17:00**	**0**		**0**		**0**		**0**
17:00	**18:00**	**0**		**0**		**0**		**0**

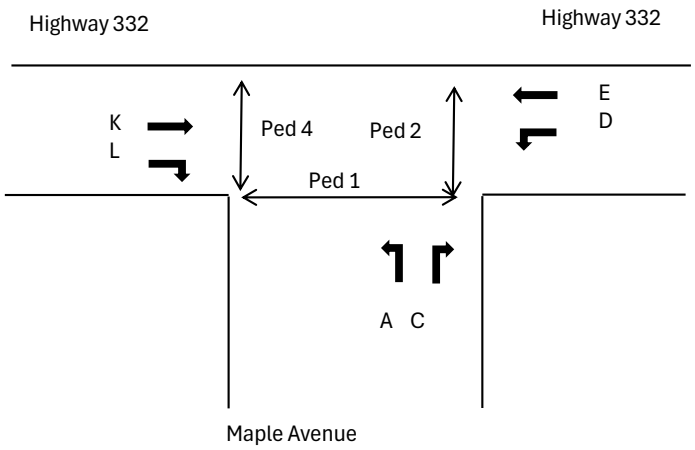
* Count completed by WSP

Table A-2

Highway 332
@
Maple Avenue

Lunenburg, NS

June 6, 2024



AM Peak Period Volume Data

Time		Maple Avenue Northbound Approach		Highway 332 Westbound Approach		Highway 332 Eastbound Approach		Total Vehicles
		A	C	D	E	K	L	
07:00	07:15	2	2	0	19	16	6	45
07:15	07:30	6	0	0	18	31	9	64
07:30	07:45	2	0	0	19	36	15	72
07:45	08:00	4	1	0	19	31	15	70
08:00	08:15	4	0	0	20	29	13	66
08:15	08:30	9	0	0	32	29	11	81
08:30	08:45	8	1	1	27	36	10	83
08:45	09:00	3	0	0	20	27	12	62
AM Peak Hour		**25**	**2**	**1**	**98**	**125**	**49**	**300**
07:00	**08:00**	**14**	**3**	**0**	**75**	**114**	**45**	**251**
08:00	**09:00**	**24**	**1**	**1**	**99**	**121**	**46**	**292**
		Ped 1		**Ped 2**		**Ped 4**		**Total Peds**
07:00	**08:00**	**1**		**0**		**0**		**1**
08:00	**09:00**	**0**		**0**		**0**		**0**

PM Peak Period Volume Data

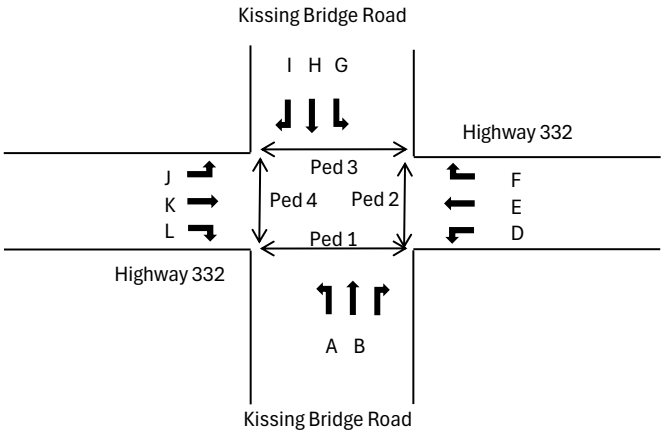
Time		Maple Avenue Northbound Approach		Highway 332 Westbound Approach		Highway 332 Eastbound Approach		Total Vehicles
		A	C	D	E	K	L	
16:00	16:15	9	2	0	51	33	15	110
16:15	16:30	23	2	0	47	27	10	109
16:30	16:45	21	2	0	57	35	14	129
16:45	17:00	17	2	2	27	18	6	72
17:00	17:15	12	0	2	44	19	13	90
17:15	17:30	10	1	0	34	24	15	84
17:30	17:45	10	0	1	29	20	13	73
17:45	18:00	11	0	1	23	16	13	64
PM Peak Hour		**70**	**8**	**2**	**182**	**113**	**45**	**420**
16:00	**17:00**	**70**	**8**	**2**	**182**	**113**	**45**	**420**
17:00	**18:00**	**43**	**1**	**4**	**130**	**79**	**54**	**311**
		Ped 1		**Ped 2**		**Ped 4**		**Total Peds**
16:00	**17:00**	**0**		**0**		**0**		**0**
17:00	**18:00**	**0**		**0**		**0**		**0**

* Count completed by WSP

Table A-3

Highway 332
@
Kissing Bridge Road

Lunenburg, NS
June 6, 2024



AM Peak Period Volume Data

Time		Kissing Bridge Road Northbound Approach			Highway 332 Westbound Approach			Kissing Bridge Road Southbound Approach			Highway 332 Eastbound Approach			Total Vehicles
		A	B	C	D	E	F	G	H	I	J	K	L	
07:00	07:15	6	0	1	1	11	0	0	2	1	0	17	2	41
07:15	07:30	5	0	0	4	10	0	0	2	2	2	21	2	48
07:30	07:45	7	1	3	2	12	0	0	3	1	1	21	11	62
07:45	08:00	6	3	0	5	11	0	0	4	1	2	23	11	66
08:00	08:15	5	5	5	2	11	0	1	6	0	0	14	16	65
08:15	08:30	14	4	4	3	17	1	0	4	3	2	16	10	78
08:30	08:45	12	2	0	0	13	1	0	4	0	4	20	12	68
08:45	09:00	8	6	3	5	9	1	0	5	2	2	14	18	73
AM Peak Hour		**37**	**14**	**9**	**10**	**52**	**2**	**1**	**18**	**4**	**8**	**73**	**49**	**277**
07:00	**08:00**	**24**	**4**	**4**	**12**	**44**	**0**	**0**	**11**	**5**	**5**	**82**	**26**	**217**
08:00	**09:00**	**39**	**17**	**12**	**10**	**50**	**3**	**1**	**19**	**5**	**8**	**64**	**56**	**284**
		Ped 1			**Ped 2**			**Ped 3**			**Ped 4**			**Total Peds**
07:00	**08:00**	**1**			**0**			**2**			**0**			**3**
08:00	**09:00**	**2**			**0**			**3**			**0**			**5**

PM Peak Period Volume Data

Time		Kissing Bridge Road Northbound Approach			Highway 332 Westbound Approach			Kissing Bridge Road Southbound Approach			Highway 332 Eastbound Approach			Total Vehicles
		A	B	C	D	E	F	G	H	I	J	K	L	
16:00	16:15	13	1	7	7	35	1	0	0	1	0	19	15	99
16:15	16:30	18	1	5	3	28	0	0	5	2	4	19	10	95
16:30	16:45	18	7	5	4	35	1	0	2	0	3	18	15	108
16:45	17:00	13	3	4	8	12	1	0	1	3	3	8	5	61
17:00	17:15	15	7	1	4	30	2	0	3	6	1	14	9	92
17:15	17:30	12	6	1	0	12	0	0	0	2	1	8	9	51
17:30	17:45	12	1	1	0	12	1	0	1	3	2	17	6	56
17:45	18:00	10	2	1	1	9	0	0	2	5	0	8	3	41
PM Peak Hour		**62**	**12**	**21**	**22**	**110**	**3**	**0**	**8**	**6**	**10**	**64**	**45**	**363**
16:00	**17:00**	**62**	**12**	**21**	**22**	**110**	**3**	**0**	**8**	**6**	**10**	**64**	**45**	**363**
17:00	**18:00**	**49**	**16**	**4**	**5**	**63**	**3**	**0**	**6**	**16**	**4**	**47**	**27**	**240**
		Ped 1			**Ped 2**			**Ped 3**			**Ped 4**			**Total Peds**
16:00	**17:00**	**6**			**0**			**2**			**0**			**8**
17:00	**18:00**	**2**			**1**			**0**			**0**			**3**

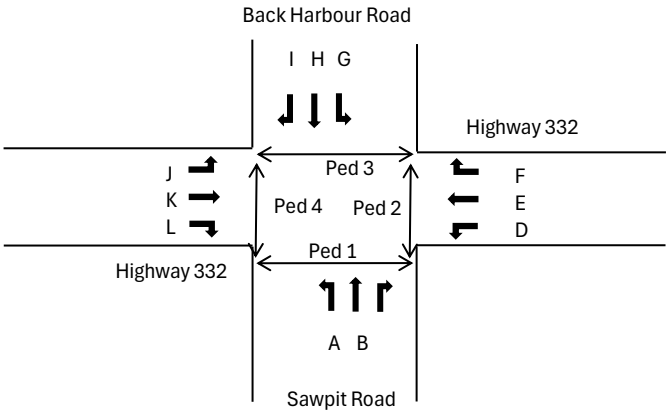
* Count completed by WSP

Table A-4

Highway 332
@
Sawpit Road

Lunenburg, NS

June 6, 2024



AM Peak Period Volume Data

Time		Sawpit Road Northbound Approach			Highway 332 Westbound Approach			Back Harbour Road Southbound Approach			Highway 332 Eastbound Approach			Total Vehicles
		A	B	C	D	E	F	G	H	I	J	K	L	
07:00	07:15	1	0	0	0	12	0	0	1	0	0	12	4	30
07:15	07:30	3	0	0	0	12	0	0	0	0	2	13	7	37
07:30	07:45	4	0	0	0	10	0	1	0	0	1	13	7	36
07:45	08:00	4	0	0	0	12	0	0	1	0	1	22	5	45
08:00	08:15	4	0	0	1	8	0	0	1	0	0	14	5	33
08:15	08:30	3	0	0	1	18	0	0	0	0	2	10	7	41
08:30	08:45	5	0	0	1	11	1	0	0	0	0	13	7	38
08:45	09:00	5	0	1	0	8	0	0	0	1	1	16	1	33
AM Peak Hour		**16**	**0**	**0**	**3**	**49**	**1**	**0**	**2**	**0**	**3**	**59**	**24**	**157**
07:00	**08:00**	**12**	**0**	**0**	**0**	**46**	**0**	**1**	**2**	**0**	**4**	**60**	**23**	**148**
08:00	**09:00**	**17**	**0**	**1**	**3**	**45**	**1**	**0**	**1**	**1**	**3**	**53**	**20**	**145**
		Ped 1			**Ped 2**			**Ped 3**			**Ped 4**			**Total Peds**
07:00	**08:00**	**0**			**0**			**0**			**0**			**0**
08:00	**09:00**	**0**			**0**			**0**			**0**			**0**

PM Peak Period Volume Data

Time		Sawpit Road Northbound Approach			Highway 332 Westbound Approach			Back Harbour Road Southbound Approach			Highway 332 Eastbound Approach			Total Vehicles
		A	B	C	D	E	F	G	H	I	J	K	L	
16:00	16:15	10	1	0	2	31	1	0	1	1	3	16	6	72
16:15	16:30	9	0	0	1	21	0	3	2	2	0	21	7	66
16:30	16:45	7	0	1	0	35	0	0	0	1	0	14	6	64
16:45	17:00	5	1	1	1	14	0	0	0	0	0	11	4	37
17:00	17:15	9	1	0	0	20	1	0	0	1	0	10	4	46
17:15	17:30	4	4	1	0	12	0	1	0	1	0	8	4	35
17:30	17:45	5	2	1	1	9	0	2	1	1	1	15	3	41
17:45	18:00	2	0	0	0	10	0	0	1	0	0	3	4	20
PM Peak Hour		**31**	**2**	**2**	**4**	**101**	**1**	**3**	**3**	**4**	**3**	**62**	**23**	**239**
16:00	**17:00**	**31**	**2**	**2**	**4**	**101**	**1**	**3**	**3**	**4**	**3**	**62**	**23**	**239**
17:00	**18:00**	**20**	**7**	**2**	**1**	**51**	**1**	**3**	**2**	**3**	**1**	**36**	**15**	**142**
		Ped 1			**Ped 2**			**Ped 3**			**Ped 4**			**Total Peds**
16:00	**17:00**	**0**			**0**			**0**			**1**			**1**
17:00	**18:00**	**0**			**0**			**0**			**0**			**0**

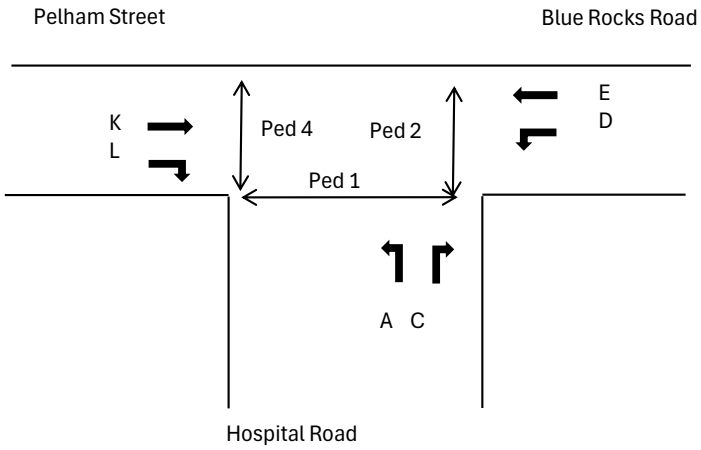
* Count completed by WSP

Table A-5

Pelham Street @ Blue Rocks Road

Lunenburg, NS

May 16, 2024



AM Peak Period Volume Data

Time		Hospital Road Northbound Approach		Blue Rocks Road Westbound Approach		Pelham Street Eastbound Approach		Total Vehicles
		A	C	D	E	K	L	
07:00	07:15	2	0	0	3	4	1	10
07:15	07:30	2	0	0	8	3	1	14
07:30	07:45	2	0	0	17	13	0	32
07:45	08:00	2	0	0	9	3	3	17
08:00	08:15	6	0	0	31	4	0	41
08:15	08:30	5	0	0	20	11	3	39
08:30	08:45	1	0	0	12	7	3	23
08:45	09:00	0	0	0	11	6	1	18
AM Peak Hour		**15**	**0**	**0**	**77**	**31**	**6**	**129**
07:00	**08:00**	**8**	**0**	**0**	**37**	**23**	**5**	**73**
08:00	**09:00**	**12**	**0**	**0**	**74**	**28**	**7**	**121**
		Ped 1		**Ped 2**		**Ped 4**		**Total Peds**
07:00	**08:00**	**0**		**0**		**0**		**0**
08:00	**09:00**	**0**		**1**		**6**		**7**

PM Peak Period Volume Data

Time		Hospital Road Northbound Approach		Blue Rocks Road Westbound Approach		Pelham Street Eastbound Approach		Total Vehicles
		A	C	D	E	K	L	
16:00	16:15	2	0	0	19	19	2	42
16:15	16:30	1	0	0	11	15	2	29
16:30	16:45	6	0	0	18	23	4	51
16:45	17:00	3	0	0	11	17	5	36
17:00	17:15	1	0	0	10	8	3	22
17:15	17:30	3	1	0	7	9	1	21
17:30	17:45	1	0	0	4	13	3	21
17:45	18:00	2	0	0	6	10	3	21
PM Peak Hour		**12**	**0**	**0**	**59**	**74**	**13**	**158**
16:00	**17:00**	**12**	**0**	**0**	**59**	**74**	**13**	**158**
17:00	**18:00**	**7**	**1**	**0**	**27**	**40**	**10**	**85**
		Ped 1		**Ped 2**		**Ped 4**		**Total Peds**
16:00	**17:00**	**0**		**2**		**0**		**2**
17:00	**18:00**	**0**		**0**		**6**		**6**

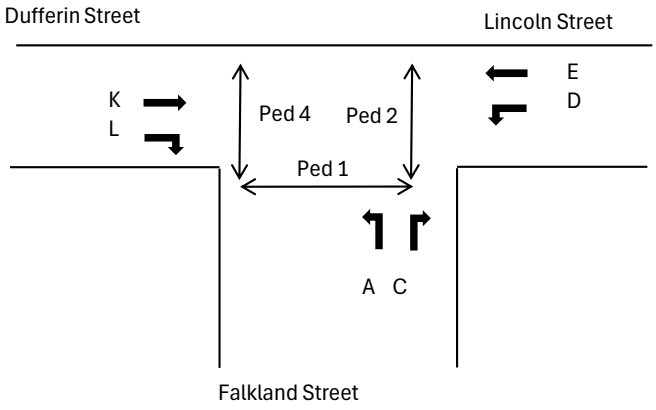
* Count completed by WSP

Table A-6

Dufferin Street @ Falkland Street

Lunenburg, NS

May 16, 2024



AM Peak Period Volume Data

Time		Falkland Street Northbound Approach		Lincoln Street Westbound Approach		Dufferin Street Eastbound Approach		Total Vehicles
		A	C	D	E	K	L	
07:00	07:15	2	20	16	6	6	2	72
07:15	07:30	2	38	21	7	13	3	120
07:30	07:45	7	33	41	15	9	8	141
07:45	08:00	3	46	48	6	13	7	165
08:00	08:15	4	58	78	9	16	17	227
08:15	08:30	10	80	63	14	17	11	269
08:30	08:45	12	79	49	12	21	8	256
08:45	09:00	10	81	44	13	23	13	260
AM Peak Hour		**36**	**298**	**234**	**48**	**77**	**49**	**742**
07:00	**08:00**	**14**	**137**	**126**	**34**	**41**	**20**	**372**
08:00	**09:00**	**36**	**298**	**234**	**48**	**77**	**49**	**742**
		Ped 1		**Ped 2**		**Ped 4**		**Total Peds**
07:00	**08:00**	**6**		**0**		**0**		**6**
08:00	**09:00**	**21**		**0**		**0**		**21**

PM Peak Period Volume Data

Time		Falkland Street Northbound Approach		Lincoln Street Westbound Approach		Dufferin Street Eastbound Approach		Total Vehicles
		A	C	D	E	K	L	
16:00	16:15	8	60	89	42	19	5	223
16:15	16:30	5	56	77	31	13	5	187
16:30	16:45	12	67	88	26	20	6	219
16:45	17:00	5	55	55	26	26	7	174
17:00	17:15	5	46	74	21	23	7	176
17:15	17:30	8	51	40	22	20	4	145
17:30	17:45	3	48	43	23	8	11	136
17:45	18:00	7	44	40	10	12	8	121
PM Peak Hour		**30**	**238**	**309**	**125**	**78**	**23**	**803**
16:00	**17:00**	**30**	**238**	**309**	**125**	**78**	**23**	**803**
17:00	**18:00**	**23**	**189**	**197**	**76**	**63**	**30**	**578**
		Ped 1		**Ped 2**		**Ped 4**		**Total Peds**
16:00	**17:00**	**22**		**0**		**2**		**24**
17:00	**18:00**	**10**		**0**		**2**		**12**

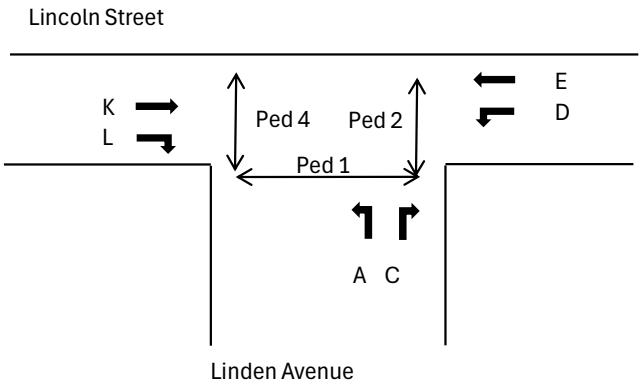
* Count completed by WSP

Table A-7

Lincoln Street @ Linden Avenue

Lunenburg, NS

May 16, 2024



AM Peak Period Volume Data

Time		Linden Avenue Northbound Approach		Lincoln Street Westbound Approach		Lincoln Street Eastbound Approach		Total Vehicles
		A	C	D	E	K	L	
07:00	07:15	0	0	0	20	14	10	44
07:15	07:30	0	0	1	25	12	31	69
07:30	07:45	0	0	0	43	16	17	76
07:45	08:00	0	0	0	42	16	25	83
08:00	08:15	0	0	2	82	16	32	132
08:15	08:30	0	0	3	59	39	29	130
08:30	08:45	0	0	3	50	37	46	136
08:45	09:00	0	0	3	48	44	41	136
AM Peak Hour		**0**	**0**	**11**	**239**	**136**	**148**	**534**
07:00	**08:00**	**0**	**0**	**1**	**130**	**58**	**83**	**272**
08:00	**09:00**	**0**	**0**	**11**	**239**	**136**	**148**	**534**
		Ped 1		**Ped 2**		**Ped 4**		**Total Peds**
07:00	**08:00**	**0**		**0**		**0**		**0**
08:00	**09:00**	**3**		**0**		**0**		**3**

PM Peak Period Volume Data

Time		Linden Avenue Northbound Approach		Lincoln Street Westbound Approach		Lincoln Street Eastbound Approach		Total Vehicles
		A	C	D	E	K	L	
16:00	16:15	0	0	0	128	60	15	203
16:15	16:30	0	1	0	105	52	14	172
16:30	16:45	0	1	1	111	72	17	202
16:45	17:00	0	0	1	78	64	20	163
17:00	17:15	0	0	0	93	35	21	149
17:15	17:30	1	0	0	61	54	18	134
17:30	17:45	0	0	0	62	41	12	115
17:45	18:00	0	0	2	57	36	21	116
PM Peak Hour		**0**	**2**	**2**	**422**	**248**	**66**	**740**
16:00	**17:00**	**0**	**2**	**2**	**422**	**248**	**66**	**740**
17:00	**18:00**	**1**	**0**	**2**	**273**	**166**	**72**	**514**
		Ped 1		**Ped 2**		**Ped 4**		**Total Peds**
16:00	**17:00**	**4**		**0**		**1**		**5**
17:00	**18:00**	**1**		**0**		**1**		**2**

* Count completed by WSP

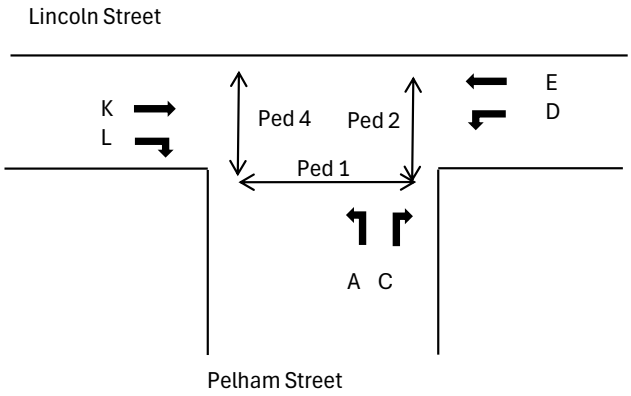
Table A-8

Lincoln Street @ Pelham St

Lunenburg, NS

PM Peak: May 16, 2024

AM Peak: June 6, 2024



AM Peak Period Volume Data

Time		Pelham St Northbound Approach		Lincoln Street Westbound Approach		Lincoln Street Eastbound Approach		Total Vehicles
		A	C	D	E	K	L	
07:00	07:15	23	1	0	0	14	0	38
07:15	07:30	21	0	0	0	24	0	45
07:30	07:45	38	0	0	0	15	0	53
07:45	08:00	38	0	0	0	35	0	73
08:00	08:15	69	0	0	0	41	0	110
08:15	08:30	71	1	0	0	66	0	138
08:30	08:45	56	1	0	0	63	0	120
08:45	09:00	46	1	0	0	64	0	111
AM Peak Hour		**242**	**3**	**0**	**0**	**234**	**0**	**479**
07:00	**08:00**	**120**	**1**	**0**	**0**	**88**	**0**	**209**
08:00	**09:00**	**242**	**3**	**0**	**0**	**234**	**0**	**479**
		Ped 1		**Ped 2**		**Ped 4**		**Total Peds**
07:00	**08:00**	**1**		**0**		**0**		**1**
08:00	**09:00**	**0**		**0**		**2**		**2**

PM Peak Period Volume Data

Time		Pelham St Northbound Approach		Lincoln Street Westbound Approach		Lincoln Street Eastbound Approach		Total Vehicles
		A	C	D	E	K	L	
16:00	16:15	99	0	0	0	57	0	156
16:15	16:30	89	0	0	0	49	0	138
16:30	16:45	95	1	0	0	67	0	163
16:45	17:00	58	4	0	0	58	0	120
17:00	17:15	81	0	0	0	35	0	116
17:15	17:30	48	1	0	0	50	0	99
17:30	17:45	44	0	0	0	42	0	86
17:45	18:00	49	2	0	0	34	0	85
PM Peak Hour		**341**	**5**	**0**	**0**	**231**	**0**	**577**
16:00	**17:00**	**341**	**5**	**0**	**0**	**231**	**0**	**577**
17:00	**18:00**	**222**	**3**	**0**	**0**	**161**	**0**	**386**
		Ped 1		**Ped 2**		**Ped 4**		**Total Peds**
16:00	**17:00**	**0**		**0**		**0**		**0**
17:00	**18:00**	**1**		**1**		**1**		**3**

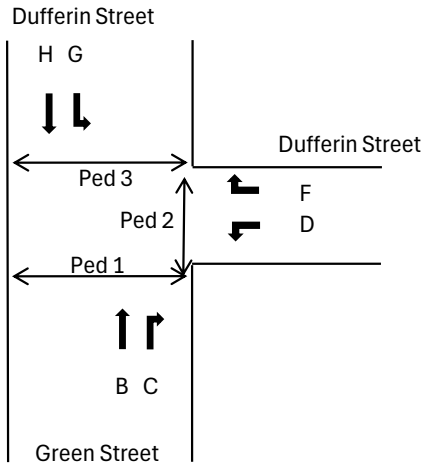
* Count completed by WSP

Table A-9

Dufferin Street @ Green Street

Lunenburg, NS

July 11, 2024



AM Peak Period Volume Data

Time		Green Street Northbound Approach		Dufferin Street Westbound Approach		Dufferin Street Southbound Approach		Total Vehicles
		B	C	D	F	G	H	
07:00	07:15	11	0	0	3	4	27	45
07:15	07:30	12	0	0	4	6	28	50
07:30	07:45	8	0	0	8	12	31	59
07:45	08:00	12	0	0	7	19	48	86
08:00	08:15	20	0	0	4	9	42	75
08:15	08:30	7	1	0	13	18	37	76
08:30	08:45	17	0	0	8	20	34	79
08:45	09:00	18	0	1	12	16	44	91
AM Peak Hour		**62**	**1**	**1**	**37**	**63**	**157**	**321**
07:00	**08:00**	**43**	**0**	**0**	**22**	**41**	**134**	**240**
08:00	**09:00**	**62**	**1**	**1**	**37**	**63**	**157**	**321**
		Ped 1		**Ped 2**		**Ped 3**		**Total Peds**
07:00	**08:00**	**0**		**0**		**0**		**0**
08:00	**09:00**	**0**		**0**		**0**		**0**

PM Peak Period Volume Data

Time		Green Street Northbound Approach		Dufferin Street Westbound Approach		Dufferin Street Southbound Approach		Total Vehicles
		B	C	D	F	G	H	
16:00	16:15	54	0	1	20	27	21	123
16:15	16:30	19	0	0	24	24	28	95
16:30	16:45	44	0	0	17	19	27	107
16:45	17:00	21	0	0	22	16	18	77
17:00	17:15	23	0	0	14	25	14	76
17:15	17:30	31	0	0	22	14	17	84
17:30	17:45	15	0	0	15	19	12	61
17:45	18:00	12	0	0	8	12	9	41
PM Peak Hour		**138**	**0**	**1**	**83**	**86**	**94**	**402**
16:00	**17:00**	**138**	**0**	**1**	**83**	**86**	**94**	**402**
17:00	**18:00**	**81**	**0**	**0**	**59**	**70**	**52**	**262**
		Ped 1		**Ped 2**		**Ped 3**		**Total Peds**
16:00	**17:00**	**0**		**0**		**0**		**0**
17:00	**18:00**	**0**		**0**		**1**		**1**

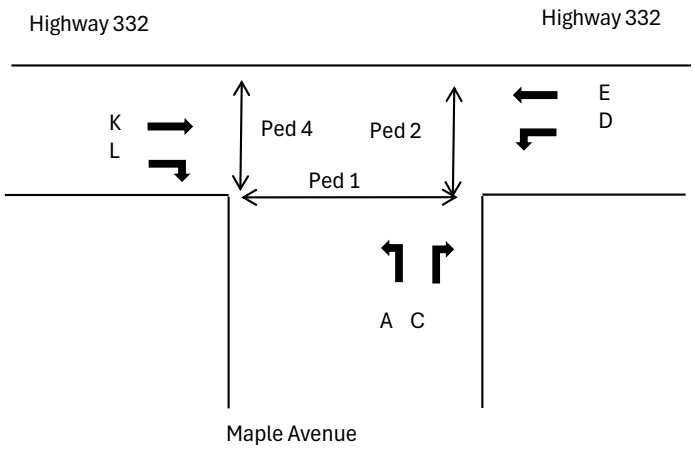
* Count completed by WSP

Table A-10

Highway 332 @ Maple Avenue

Lunenburg, NS

July 11, 2024



AM Peak Period Volume Data

Time		Maple Avenue Northbound Approach		Highway 332 Westbound Approach		Highway 332 Eastbound Approach		Total Vehicles
		A	C	D	E	K	L	
07:00	07:15	1	1	0	14	23	1	40
07:15	07:30	1	0	0	11	21	6	39
07:30	07:45	4	1	0	14	24	14	57
07:45	08:00	3	0	0	18	33	13	67
08:00	08:15	7	1	0	18	28	11	66
08:15	08:30	8	1	2	25	37	13	86
08:30	08:45	13	0	1	18	13	13	58
08:45	09:00	13	0	1	35	38	15	102
AM Peak Hour		**41**	**2**	**4**	**96**	**116**	**52**	**311**
07:00	**08:00**	**9**	**2**	**0**	**57**	**101**	**34**	**203**
08:00	**09:00**	**41**	**2**	**4**	**96**	**116**	**52**	**311**
		Ped 1		**Ped 2**		**Ped 4**		**Total Peds**
07:00	**08:00**	**1**		**0**		**0**		**1**
08:00	**09:00**	**0**		**0**		**0**		**0**

PM Peak Period Volume Data

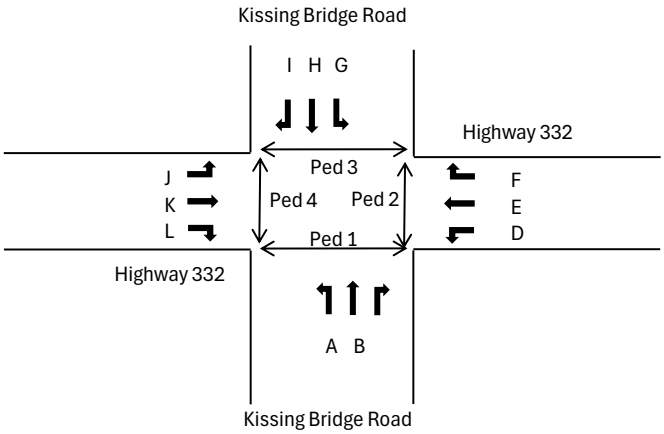
Time		Maple Avenue Northbound Approach		Highway 332 Westbound Approach		Highway 332 Eastbound Approach		Total Vehicles
		A	C	D	E	K	L	
16:00	16:15	23	3	0	42	39	19	126
16:15	16:30	21	2	0	56	37	18	134
16:30	16:45	17	1	3	48	28	12	109
16:45	17:00	14	1	1	33	26	21	96
17:00	17:15	8	0	0	45	31	6	90
17:15	17:30	17	2	0	31	27	10	87
17:30	17:45	20	2	1	38	22	12	95
17:45	18:00	15	0	1	29	15	9	69
PM Peak Hour		**75**	**7**	**4**	**179**	**130**	**70**	**465**
16:00	**17:00**	**75**	**7**	**4**	**179**	**130**	**70**	**465**
17:00	**18:00**	**60**	**4**	**2**	**143**	**95**	**37**	**341**
		Ped 1		**Ped 2**		**Ped 4**		**Total Peds**
16:00	**17:00**	**0**		**0**		**0**		**0**
17:00	**18:00**	**1**		**1**		**0**		**2**

* Count completed by WSP

Table A-11

Highway 332
@
Kissing Bridge Road

Lunenburg, NS
July 11, 2024



AM Peak Period Volume Data

Time		Kissing Bridge Road Northbound Approach			Highway 332 Westbound Approach			Kissing Bridge Road Southbound Approach			Highway 332 Eastbound Approach			Total Vehicles
		A	B	C	D	E	F	G	H	I	J	K	L	
07:00	07:15	0	0	2	0	13	1	0	1	1	1	20	1	40
07:15	07:30	6	0	0	8	6	0	0	1	0	0	15	5	41
07:30	07:45	5	0	0	2	9	0	0	4	1	1	21	5	48
07:45	08:00	9	0	1	2	9	0	0	10	0	0	26	7	64
08:00	08:15	3	1	8	2	13	0	0	0	1	0	19	9	56
08:15	08:30	9	4	3	9	16	0	0	4	0	1	23	12	81
08:30	08:45	9	2	6	7	9	4	0	2	1	1	6	9	56
08:45	09:00	15	3	0	4	21	2	0	1	2	1	12	19	80
AM Peak Hour		**36**	**10**	**17**	**22**	**59**	**6**	**0**	**7**	**4**	**3**	**60**	**49**	**273**
07:00	**08:00**	**20**	**0**	**3**	**12**	**37**	**1**	**0**	**16**	**2**	**2**	**82**	**18**	**193**
08:00	**09:00**	**36**	**10**	**17**	**22**	**59**	**6**	**0**	**7**	**4**	**3**	**60**	**49**	**273**
		Ped 1			**Ped 2**			**Ped 3**			**Ped 4**			**Total Peds**
07:00	**08:00**	**1**			**0**			**1**			**0**			**2**
08:00	**09:00**	**3**			**0**			**0**			**0**			**3**

PM Peak Period Volume Data

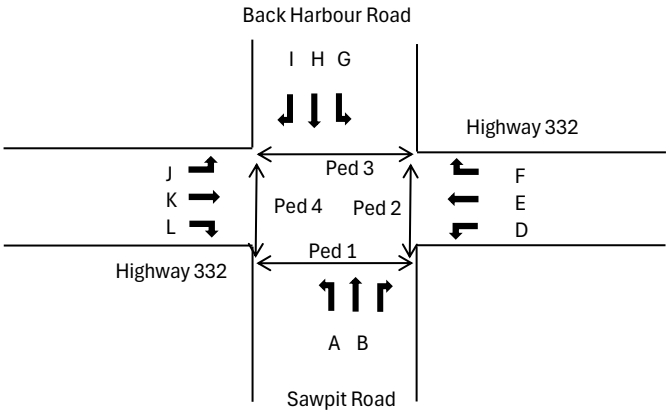
Time		Kissing Bridge Road Northbound Approach			Highway 332 Westbound Approach			Kissing Bridge Road Southbound Approach			Highway 332 Eastbound Approach			Total Vehicles
		A	B	C	D	E	F	G	H	I	J	K	L	
16:00	16:15	17	4	4	5	27	1	0	1	1	1	22	14	97
16:15	16:30	24	0	5	2	28	0	1	4	4	4	20	15	107
16:30	16:45	23	5	4	3	28	0	0	2	1	4	16	7	93
16:45	17:00	13	6	2	3	22	0	1	1	0	4	20	6	78
17:00	17:15	18	2	6	0	22	0	1	5	2	3	20	9	88
17:15	17:30	14	4	6	8	13	2	3	3	3	2	17	8	83
17:30	17:45	15	4	2	5	20	1	0	1	1	1	14	12	76
17:45	18:00	17	3	7	2	13	1	0	4	1	2	8	2	60
PM Peak Hour		**77**	**15**	**15**	**13**	**105**	**1**	**2**	**8**	**6**	**13**	**78**	**42**	**375**
16:00	**17:00**	**77**	**15**	**15**	**13**	**105**	**1**	**2**	**8**	**6**	**13**	**78**	**42**	**375**
17:00	**18:00**	**64**	**13**	**21**	**15**	**68**	**4**	**4**	**13**	**7**	**8**	**59**	**31**	**307**
		Ped 1			**Ped 2**			**Ped 3**			**Ped 4**			**Total Peds**
16:00	**17:00**	**0**			**0**			**0**			**0**			**0**
17:00	**18:00**	**5**			**1**			**0**			**3**			**9**

* Count completed by WSP

Table A-12

Highway 332
@
Sawpit Road

Lunenburg, NS
July 11, 2024



AM Peak Period Volume Data

Time		Sawpit Road Northbound Approach			Highway 332 Westbound Approach			Back Harbour Road Southbound Approach			Highway 332 Eastbound Approach			Total Vehicles
		A	B	C	D	E	F	G	H	I	J	K	L	
07:00	07:15	5	0	1	1	9	0	0	0	0	0	16	9	41
07:15	07:30	2	0	0	0	14	0	0	0	0	0	7	7	30
07:30	07:45	5	0	0	0	6	0	0	0	0	0	12	10	33
07:45	08:00	1	0	0	0	11	0	0	0	0	1	21	4	38
08:00	08:15	2	1	0	0	10	0	0	0	3	1	21	4	42
08:15	08:30	6	0	0	0	18	0	0	0	0	0	19	7	50
08:30	08:45	5	0	0	0	14	1	0	0	1	0	10	2	33
08:45	09:00	10	0	1	0	14	0	0	0	0	0	8	3	36
AM Peak Hour		**19**	**1**	**0**	**0**	**59**	**1**	**0**	**0**	**4**	**2**	**83**	**27**	**196**
07:00	**08:00**	**13**	**0**	**1**	**1**	**40**	**0**	**0**	**0**	**0**	**1**	**56**	**30**	**142**
08:00	**09:00**	**23**	**1**	**1**	**0**	**56**	**1**	**0**	**0**	**4**	**1**	**58**	**16**	**161**
		Ped 1			**Ped 2**			**Ped 3**			**Ped 4**			**Total Peds**
07:00	**08:00**	**0**			**0**			**0**			**0**			**0**
08:00	**09:00**	**0**			**1**			**0**			**0**			**1**

PM Peak Period Volume Data

Time		Sawpit Road Northbound Approach			Highway 332 Westbound Approach			Back Harbour Road Southbound Approach			Highway 332 Eastbound Approach			Total Vehicles
		A	B	C	D	E	F	G	H	I	J	K	L	
16:00	16:15	8	1	2	0	32	0	1	1	0	2	18	4	69
16:15	16:30	11	0	0	0	18	0	2	0	1	1	13	9	55
16:30	16:45	6	1	1	3	23	0	0	1	2	0	18	3	58
16:45	17:00	3	0	0	0	21	0	0	0	0	0	17	6	47
17:00	17:15	5	0	2	0	18	0	0	0	0	0	17	5	47
17:15	17:30	3	0	1	1	14	0	0	1	1	0	20	5	46
17:30	17:45	4	0	0	0	18	0	0	0	0	0	11	4	37
17:45	18:00	2	2	0	0	16	0	0	0	0	1	7	2	30
PM Peak Hour		**28**	**2**	**3**	**3**	**94**	**0**	**3**	**2**	**3**	**3**	**66**	**22**	**229**
16:00	**17:00**	**28**	**2**	**3**	**3**	**94**	**0**	**3**	**2**	**3**	**3**	**66**	**22**	**229**
17:00	**18:00**	**14**	**2**	**3**	**1**	**66**	**0**	**0**	**1**	**1**	**1**	**55**	**16**	**160**
		Ped 1			**Ped 2**			**Ped 3**			**Ped 4**			**Total Peds**
16:00	**17:00**	**0**			**3**			**1**			**1**			**5**
17:00	**18:00**	**0**			**0**			**0**			**0**			**0**

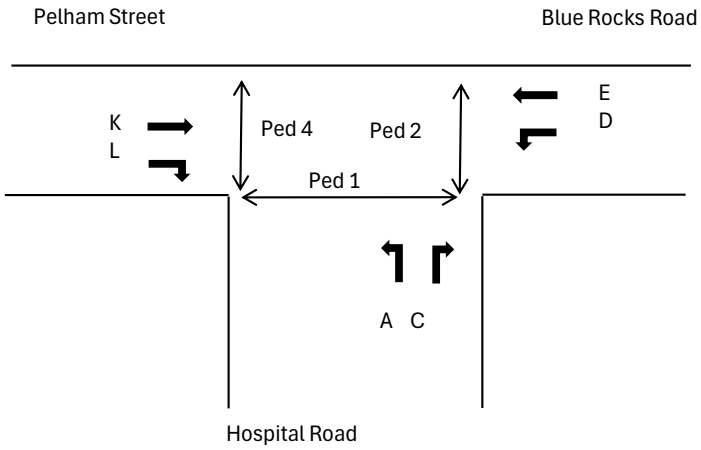
* Count completed by WSP

Table A-13

Pelham Street @ Blue Rocks Road

Lunenburg, NS

July 11, 2024



AM Peak Period Volume Data

Time		Hospital Road Northbound Approach		Blue Rocks Road Westbound Approach		Pelham Street Eastbound Approach		Total Vehicles
		A	C	D	E	K	L	
07:00	07:15	2	0	0	9	2	1	14
07:15	07:30	2	0	0	8	5	1	16
07:30	07:45	1	0	0	18	9	1	29
07:45	08:00	0	1	0	11	11	1	24
08:00	08:15	2	0	0	11	10	3	26
08:15	08:30	6	0	0	6	8	2	39
08:30	08:45	1	0	0	11	10	2	23
08:45	09:00	4	0	0	19	4	1	18
AM Peak Hour		**9**	**1**	**0**	**46**	**38**	**7**	**101**
07:00	**08:00**	**5**	**1**	**0**	**46**	**27**	**4**	**83**
08:00	**09:00**	**13**	**0**	**0**	**47**	**32**	**8**	**100**
		Ped 1		**Ped 2**		**Ped 4**		**Total Peds**
07:00	**08:00**	**0**		**0**		**4**		**4**
08:00	**09:00**	**0**		**5**		**2**		**7**

PM Peak Period Volume Data

Time		Hospital Road Northbound Approach		Blue Rocks Road Westbound Approach		Pelham Street Eastbound Approach		Total Vehicles
		A	C	D	E	K	L	
16:00	16:15	2	0	0	16	16	3	37
16:15	16:30	3	0	1	16	15	1	36
16:30	16:45	2	0	0	14	12	7	35
16:45	17:00	1	0	0	14	17	3	35
17:00	17:15	2	0	0	14	15	4	35
17:15	17:30	1	0	0	12	9	1	23
17:30	17:45	2	0	0	12	17	3	34
17:45	18:00	0	0	0	8	16	1	25
PM Peak Hour		**8**	**0**	**1**	**60**	**60**	**14**	**143**
16:00	**17:00**	**8**	**0**	**1**	**60**	**60**	**14**	**143**
17:00	**18:00**	**5**	**0**	**0**	**46**	**57**	**9**	**117**
		Ped 1		**Ped 2**		**Ped 4**		**Total Peds**
16:00	**17:00**	**1**		**3**		**0**		**4**
17:00	**18:00**	**0**		**13**		**0**		**13**

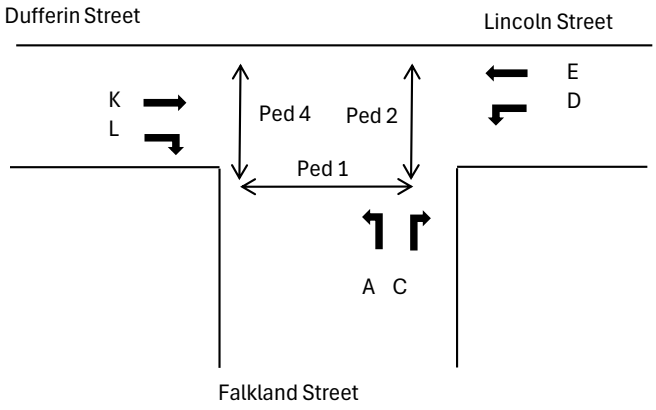
* Count completed by WSP

Table A-14

Dufferin Street @ Falkland Street

Lunenburg, NS

July 11,2024



AM Peak Period Volume Data

Time		Falkland Street Northbound Approach		Lincoln Street Westbound Approach		Dufferin Street Eastbound Approach		Total Vehicles
		A	C	D	E	K	L	
07:00	07:15	0	28	16	6	7	4	61
07:15	07:30	4	32	26	5	8	5	80
07:30	07:45	5	33	44	12	16	5	115
07:45	08:00	3	45	55	11	21	10	145
08:00	08:15	4	54	37	10	22	10	137
08:15	08:30	5	78	47	12	20	3	165
08:30	08:45	6	84	45	10	15	8	168
08:45	09:00	9	85	59	15	27	7	202
AM Peak Hour		**24**	**301**	**188**	**47**	**84**	**28**	**672**
07:00	**08:00**	**12**	**138**	**141**	**34**	**52**	**24**	**401**
08:00	**09:00**	**24**	**301**	**188**	**47**	**84**	**28**	**672**
		Ped 1		**Ped 2**		**Ped 4**		**Total Peds**
07:00	**08:00**	**2**		**10**		**1**		**13**
08:00	**09:00**	**13**		**15**		**1**		**29**

PM Peak Period Volume Data

Time		Falkland Street Northbound Approach		Lincoln Street Westbound Approach		Dufferin Street Eastbound Approach		Total Vehicles
		A	C	D	E	K	L	
16:00	16:15	10	70	95	33	20	7	235
16:15	16:30	6	76	70	33	25	9	219
16:30	16:45	5	81	90	40	28	2	246
16:45	17:00	8	73	64	31	26	5	207
17:00	17:15	7	66	79	41	17	6	216
17:15	17:30	3	54	49	20	13	7	146
17:30	17:45	5	59	47	24	17	2	154
17:45	18:00	3	45	52	25	19	6	150
PM Peak Hour		**29**	**300**	**319**	**137**	**99**	**23**	**907**
16:00	**17:00**	**29**	**300**	**319**	**137**	**99**	**23**	**907**
17:00	**18:00**	**18**	**224**	**227**	**110**	**66**	**21**	**666**
		Ped 1		**Ped 2**		**Ped 4**		**Total Peds**
16:00	**17:00**	**18**		**10**		**6**		**34**
17:00	**18:00**	**29**		**16**		**8**		**53**

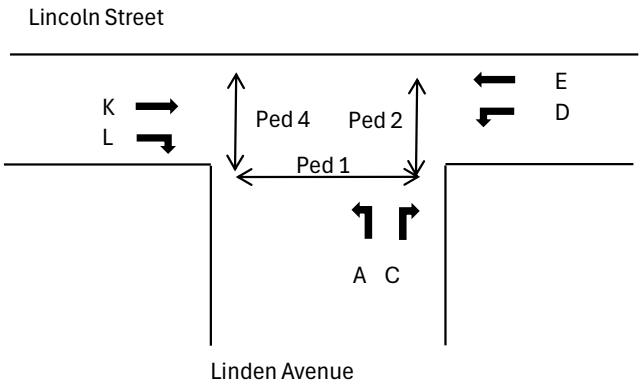
* Count completed by WSP

Table A-15

Lincoln Street @ Linden Avenue

Lunenburg, NS

July 11, 2024



AM Peak Period Volume Data

Time		Linden Avenue Northbound Approach		Lincoln Street Westbound Approach		Lincoln Street Eastbound Approach		Total Vehicles
		A	C	D	E	K	L	
07:00	07:15	0	0	0	23	18	13	54
07:15	07:30	0	0	0	37	23	11	71
07:30	07:45	0	0	0	41	29	14	84
07:45	08:00	0	0	1	48	44	27	120
08:00	08:15	1	0	1	47	46	12	107
08:15	08:30	0	0	4	59	50	18	131
08:30	08:45	0	0	0	37	43	27	107
08:45	09:00	1	0	1	58	86	30	176
AM Peak Hour		**2**	**0**	**6**	**201**	**225**	**87**	**521**
07:00	**08:00**	**0**	**0**	**1**	**149**	**114**	**65**	**329**
08:00	**09:00**	**2**	**0**	**6**	**201**	**225**	**87**	**521**
		Ped 1		**Ped 2**		**Ped 4**		**Total Peds**
07:00	**08:00**	**13**		**1**		**1**		**15**
08:00	**09:00**	**27**		**1**		**1**		**29**

PM Peak Period Volume Data

Time		Linden Avenue Northbound Approach		Lincoln Street Westbound Approach		Lincoln Street Eastbound Approach		Total Vehicles
		A	C	D	E	K	L	
16:00	16:15	0	1	3	132	67	24	227
16:15	16:30	0	0	1	120	56	25	202
16:30	16:45	0	0	2	105	68	18	193
16:45	17:00	0	0	3	72	59	24	158
17:00	17:15	0	0	2	99	56	18	175
17:15	17:30	1	0	4	77	50	23	155
17:30	17:45	0	0	1	68	45	17	131
17:45	18:00	0	0	0	61	51	17	129
PM Peak Hour		**0**	**1**	**9**	**429**	**250**	**91**	**780**
16:00	**17:00**	**0**	**1**	**9**	**429**	**250**	**91**	**780**
17:00	**18:00**	**1**	**0**	**7**	**305**	**202**	**75**	**590**
		Ped 1		**Ped 2**		**Ped 4**		**Total Peds**
16:00	**17:00**	**37**		**1**		**0**		**38**
17:00	**18:00**	**27**		**1**		**0**		**28**

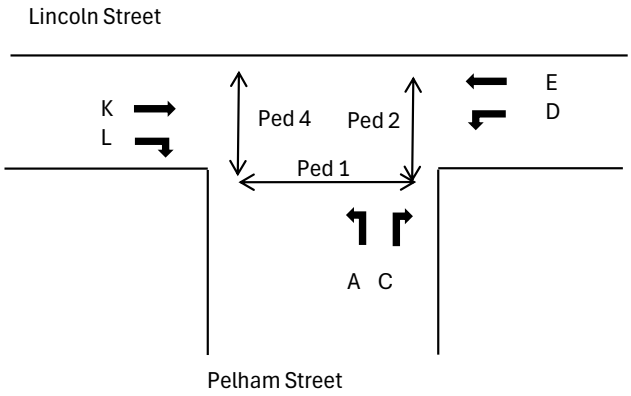
* Count completed by WSP

Table A-16

Lincoln Street @ Pelham St

Lunenburg, NS

July 11, 2024



AM Peak Period Volume Data

Time		Pelham St Northbound Approach		Lincoln Street Westbound Approach		Lincoln Street Eastbound Approach		Total Vehicles
		A	C	D	E	K	L	
07:00	07:15	21	0	0	0	18	0	39
07:15	07:30	30	0	0	0	21	0	51
07:30	07:45	36	0	0	0	23	0	59
07:45	08:00	38	0	0	0	38	0	76
08:00	08:15	44	0	0	0	42	0	86
08:15	08:30	48	0	0	0	40	0	88
08:30	08:45	34	0	0	0	40	0	74
08:45	09:00	48	2	0	0	83	0	133
AM Peak Hour		**174**	**2**	**0**	**0**	**205**	**0**	**381**
07:00	**08:00**	**125**	**0**	**0**	**0**	**100**	**0**	**225**
08:00	**09:00**	**174**	**2**	**0**	**0**	**205**	**0**	**381**
		Ped 1		**Ped 2**		**Ped 4**		**Total Peds**
07:00	**08:00**	**9**		**1**		**2**		**12**
08:00	**09:00**	**17**		**4**		**1**		**22**

PM Peak Period Volume Data

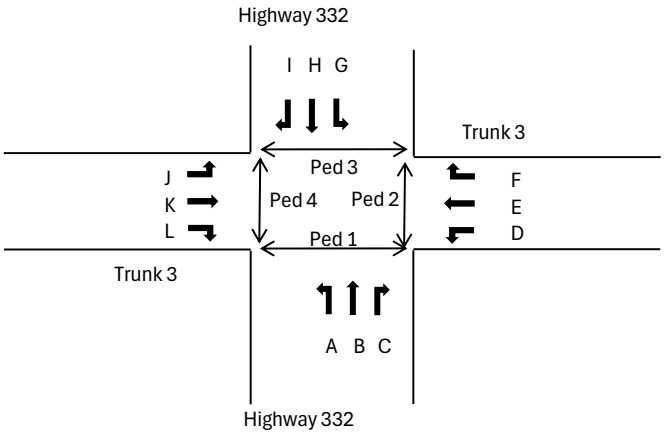
Time		Pelham St Northbound Approach		Lincoln Street Westbound Approach		Lincoln Street Eastbound Approach		Total Vehicles
		A	C	D	E	K	L	
16:00	16:15	100	0	0	0	66	0	166
16:15	16:30	75	0	0	0	54	0	129
16:30	16:45	86	2	0	0	63	0	151
16:45	17:00	58	0	0	0	51	0	109
17:00	17:15	78	0	0	0	49	0	127
17:15	17:30	28	0	0	0	30	0	58
17:30	17:45	47	1	0	0	45	0	93
17:45	18:00	49	2	0	0	34	0	85
PM Peak Hour		**319**	**2**	**0**	**0**	**234**	**0**	**555**
16:00	**17:00**	**319**	**2**	**0**	**0**	**234**	**0**	**555**
17:00	**18:00**	**202**	**3**	**0**	**0**	**158**	**0**	**363**
		Ped 1		**Ped 2**		**Ped 4**		**Total Peds**
16:00	**17:00**	**13**		**3**		**4**		**20**
17:00	**18:00**	**14**		**3**		**0**		**17**

* Count completed by WSP

Table A-17

Highway 332
@
Trunk 3

Lunenburg, NS
July 18, 2024



AM Peak Period Volume Data

Time		Highway 332 Northbound Approach			Trunk 3 Westbound Approach			Highway 332 Southbound Approach			Trunk 3 Eastbound Approach			Total Vehicles
		A	B	C	D	E	F	G	H	I	J	K	L	
07:00	07:15	0	9	9	13	8	2	1	4	8	8	15	1	78
07:15	07:30	0	13	30	7	8	10	5	5	15	14	33	1	141
07:30	07:45	0	14	22	7	13	8	3	6	20	12	18	0	123
07:45	08:00	0	10	39	4	19	7	5	7	7	17	45	0	160
08:00	08:15	5	20	36	5	18	3	6	10	9	13	32	1	158
08:15	08:30	0	11	39	19	25	12	6	7	10	13	22	1	165
08:30	08:45	2	9	33	16	15	9	7	4	11	18	32	2	158
08:45	09:00	0	15	35	21	25	16	5	6	12	12	33	3	183
AM Peak Hour		**7**	**55**	**143**	**61**	**83**	**40**	**24**	**27**	**42**	**56**	**119**	**7**	**664**
07:00	**08:00**	**0**	**46**	**100**	**31**	**48**	**27**	**14**	**22**	**50**	**51**	**111**	**2**	**502**
08:00	**09:00**	**7**	**55**	**143**	**61**	**83**	**40**	**24**	**27**	**42**	**56**	**119**	**7**	**664**
		Ped 1			**Ped 2**			**Ped 3**			**Ped 4**			**Total Peds**
07:00	**08:00**	**0**			**0**			**0**			**0**			**0**
08:00	**09:00**	**0**			**0**			**0**			**0**			**0**

PM Peak Period Volume Data

Time		Highway 332 Northbound Approach			Trunk 3 Westbound Approach			Highway 332 Southbound Approach			Trunk 3 Eastbound Approach			Total Vehicles
		A	B	C	D	E	F	G	H	I	J	K	L	
16:00	16:15	2	15	17	27	35	10	7	11	27	19	25	1	196
16:15	16:30	1	25	20	37	56	11	4	15	22	16	33	0	240
16:30	16:45	2	12	26	32	35	20	14	21	15	10	22	0	209
16:45	17:00	0	15	18	27	39	13	8	18	17	20	34	1	210
17:00	17:15	1	10	16	27	51	16	8	13	18	14	31	0	205
17:15	17:30	2	15	16	26	43	17	5	19	25	18	18	1	205
17:30	17:45	3	4	15	12	38	8	8	16	14	15	21	1	155
17:45	18:00	2	15	17	17	26	7	7	18	13	7	23	0	152
PM Peak Hour		**4**	**62**	**80**	**123**	**181**	**60**	**34**	**67**	**72**	**60**	**120**	**1**	**864**
16:00	**17:00**	**5**	**67**	**81**	**123**	**165**	**54**	**33**	**65**	**81**	**65**	**114**	**2**	**855**
17:00	**18:00**	**8**	**44**	**64**	**82**	**158**	**48**	**28**	**66**	**70**	**54**	**93**	**2**	**717**
		Ped 1			**Ped 2**			**Ped 3**			**Ped 4**			**Total Peds**
16:00	**17:00**	**0**			**0**			**0**			**0**			**0**
17:00	**18:00**	**0**			**0**			**0**			**0**			**0**

* Count completed by WSP

Speeds

Location	Trunk 3 Near Civic # 11176					
Start Time	05-Jun-24		06-Jun-24		07-Jun-24	
	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
	85th (km/h)	85th (km/h)	85th (km/h)	85th (km/h)	85th (km/h)	85th (km/h)
12:00 AM			67.0	67.0	66.0	77.0
1:00			78.0	67.0	60.0	67.0
2:00			60.0	78.0	*	58.0
3:00			*	68.0	53.0	70.0
4:00			*	62.0	60.0	76.0
5:00			72.0	64.0	76.0	74.0
6:00			67.0	79.0	68.0	71.0
7:00			69.0	74.0	70.0	72.0
8:00			68.0	70.0	68.0	70.0
9:00			66.0	68.0	66.0	68.0
10:00			66.0	67.0	69.0	68.0
11:00			66.0	65.0	66.0	67.0
12:00			67.0	67.0	68.0	67.0
1:00			67.0	67.0	67.0	67.0
2:00			69.0	68.0	64.0	65.0
3:00	56.0	65	67.0	67.0		
4:00	68.0	68	67.0	68.0		
5:00	67.0	68	68.0	69.0		
6:00	69.0	69	68.0	71.0		
7:00	68.0	68	68.0	69.0		
8:00	69.0	69	67.0	69.0		
9:00	67.0	68	67.0	68.0		
10:00	68.0	70	66.0	67.0		
11:00	65.0	71	71.0	70.0		

Volumes

Location	Trunk 3 Near Civic # 11176					
Start Time	05-Jun-24		06-Jun-24		07-Jun-24	
	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
	Volumes (vph)	Volumes (vph)	Volumes (vph)	Volumes (vph)	Volumes (vph)	Volumes (vph)
12:00 AM			6.0	9.0	6.0	7.0
1:00			2.0	9.0	3.0	12.0
2:00			1.0	7.0	*	3.0
3:00			*	2.0	1.0	2.0
4:00			*	1.0	1.0	2.0
5:00			9.0	3.0	6.0	1.0
6:00			45.0	18.0	27.0	18.0
7:00			74.0	77.0	81.0	65.0
8:00			157.0	110.0	149.0	125.0
9:00			231.0	265.0	178.0	254.0
10:00			159.0	200.0	145.0	141.0
11:00			147.0	249.0	128.0	184.0
12:00			140.0	200.0	131.0	188.0
1:00			146.0	253.0	143.0	276.0
2:00			150.0	190.0	44.0	99.0
3:00	6	23	145.0	231.0		
4:00	168	301	150.0	290.0		
5:00	198	364	176.0	339.0		
6:00	154	254	142.0	240.0		
7:00	120	198	101.0	156.0		
8:00	93	125	85.0	133.0		
9:00	77	113	58.0	109.0		
10:00	31	95	23.0	58.0		
11:00	15	21	17.0	19.0		

* Indicates no data was collected during timeframe

Speeds

Location	Dufferin Street Near Green Street					
Start Time	05-Jun-24		06-Jun-24		07-Jun-24	
	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
	85th (km/h)	85th (km/h)	85th (km/h)	85th (km/h)	85th (km/h)	85th (km/h)
12:00 AM			54.0	53.0	35.0	55.0
1:00			*	51.0	33.0	*
2:00			72.0	45.0	*	*
3:00			*	48.0	*	50.0
4:00			*	50.0	62.0	*
5:00			36.0	58.0	34.0	58.0
6:00			36.0	59.0	41.0	61.0
7:00			34.0	59.0	35.0	59.0
8:00			40.0	59.0	39.0	59.0
9:00			47.0	59.0	47.0	59.0
10:00			35.0	59.0	50.0	59.0
11:00			35.0	58.0	38.0	58.0
12:00			37.0	60.0	42.0	
1:00			37.0	58.0		
2:00			42.0	59.0		
3:00	38.0	60.0	42.0	59.0		
4:00	36.0	60.0	41.0	59.0		
5:00	46.0	58.0	39.0	58.0		
6:00	46.0	60.0	32.0	58.0		
7:00	45.0	58.0	41.0	61.0		
8:00	46.0	59.0	51.0	57.0		
9:00	54.0	56.0	51.0	57.0		
10:00	38.0	60.0	31.0	55.0		
11:00	30.0	55.0	33.0	56.0		

Volumes

Location	Dufferin Street Near Green Street					
Start Time	05-Jun-24		06-Jun-24		07-Jun-24	
	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
	Volumes (vph)	Volumes (vph)	Volumes (vph)	Volumes (vph)	Volumes (vph)	Volumes (vph)
12:00 AM			1.0	3.0	4.0	5.0
1:00			*	2.0	1.0	*
2:00			2.0	3.0	*	*
3:00			*	2.0	*	3.0
4:00			*	7.0	3.0	*
5:00			6.0	30.0	7.0	27.0
6:00			26.0	87.0	26.0	72.0
7:00			44.0	162.0	42.0	136.0
8:00			93.0	235.0	71.0	176.0
9:00			78.0	175.0	73.0	161.0
10:00			86.0	173.0	70.0	118.0
11:00			82.0	169.0	62.0	109.0
12:00			98.0	169.0	1.0	
1:00			99.0	158.0		
2:00			105.0	163.0		
3:00	52.0	78.0	134.0	123.0		
4:00	121.0	138.0	139.0	155.0		
5:00	76.0	132.0	74.0	122.0		
6:00	72.0	120.0	50.0	97.0		
7:00	50.0	54.0	54.0	62.0		
8:00	41.0	50.0	28.0	34.0		
9:00	22.0	36.0	18.0	26.0		
10:00	15.0	16.0	7.0	25.0		
11:00	3.0	10.0	5.0	11.0		

Speeds

Location	Falkland Street Near Station Lane					
Start Time	05-Jun-24		06-Jun-24		07-Jun-24	
	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
	85th (km/h)	85th (km/h)	85th (km/h)	85th (km/h)	85th (km/h)	85th (km/h)
12:00 AM			46.0	39.0	43.0	38.0
1:00			34.0	37.0	40.0	29.0
2:00			*	*	*	*
3:00			50	49.0	36.0	28.0
4:00			30.0	50.0	28.0	42.0
5:00			40.0	39.0	37.0	36.0
6:00			40.0	39.0	44.0	40.0
7:00			39.0	39.0	40.0	40.0
8:00			39.0	37.0	40.0	37.0
9:00			40.0	36.0	41.0	36.0
10:00			39.0	37.0	38.0	36.0
11:00			39.0	35.0	39.0	36.0
12:00			39.0	37.0	40.0	38.0
1:00			39.0	37.0	26.0	37.0
2:00			38.0	36.0		
3:00	35.0	33.0	37.0	37.0		
4:00	38.0	37.0	39.0	37.0		
5:00	39.0	37.0	40.0	37.0		
6:00	38.0	37.0	40.0	37.0		
7:00	41.0	36.0	38.0	36.0		
8:00	38.0	37.0	41.0	37.0		
9:00	41.0	39.0	41.0	40.0		
10:00	38.0	37.0	38.0	37.0		
11:00	37.0	40.0	37.0	35.0		

Volumes

Location	Falkland Street Near Station Lane					
Start Time	05-Jun-24		06-Jun-24		07-Jun-24	
	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
	Volumes (vph)	Volumes (vph)	Volumes (vph)	Volumes (vph)	Volumes (vph)	Volumes (vph)
12:00 AM			2.0	9.0	4.0	9.0
1:00			2.0	4.0	1.0	1.0
2:00			*	*	*	*
3:00			2.0	3.0	2.0	2.0
4:00			4.0	14.0	5.0	17.0
5:00			44.0	36.0	26.0	29.0
6:00			13.0	52.0	24.0	66.0
7:00			83.0	141.0	68.0	157.0
8:00			116.0	300.0	99.0	264.0
9:00			81.0	226.0	75.0	187.0
10:00			78.0	236.0	71.0	204.0
11:00			74.0	212.0	82.0	241.0
12:00			87.0	236.0	91.0	266.0
1:00			80.0	229.0	3.0	15.0
2:00			76.0	221.0		
3:00	15.0	25.0	88.0	222.0		
4:00	142.0	292.0	125.0	231.0		
5:00	119.0	233.0	125.0	217.0		
6:00	102.0	175.0	50.0	181.0		
7:00	52.0	124.0	82.0	126.0		
8:00	86.0	79.0	45.0	136.0		
9:00	21.0	59.0	9.0	37.0		
10:00	11.0	17.0	10.0	24.0		
11:00	3.0	8.0	3.0	5.0		

Speeds

Location	Near East End of Montague		
Start Time	05-Jun-24	06-Jun-24	07-Jun-24
	Eastbound	Eastbound	Eastbound
	85th	85th	85th
12:00 AM		37.0	27.0
1:00		*	*
2:00		*	*
3:00		34.0	*
4:00		35.0	36.0
5:00		35.0	38.0
6:00		30.0	30.0
7:00		36.0	40.0
8:00		35.0	37.0
9:00		33.0	34.0
10:00		33.0	35.0
11:00		30.0	33.0
12:00		35.0	33.0
1:00		34.0	
2:00		35.0	
3:00		30.0	
4:00	30.0	38.0	
5:00	31.0	30.0	
6:00	34.0	33.0	
7:00	31.0	28.0	
8:00	31.0	39.0	
9:00	28.0	29.0	
10:00	25.0	34.0	
11:00	26.0	25.0	

Volumes

Location	Near East End of Montague		
Start Time	05-Jun-24	06-Jun-24	07-Jun-24
	Eastbound	Eastbound	Eastbound
	Volumes (vph)	Volumes (vph)	Volumes (vph)
12:00 AM		4.0	4.0
1:00		*	*
2:00		*	*
3:00		1.0	*
4:00		2.0	1.0
5:00		9.0	1.0
6:00		12.0	11.0
7:00		51.0	45.0
8:00		65.0	64.0
9:00		65.0	52.0
10:00		50.0	44.0
11:00		68.0	65.0
12:00		63.0	68.0
1:00		64.0	
2:00		43.0	
3:00		58.0	
4:00	33.0	46.0	
5:00	46.0	53.0	
6:00	48.0	37.0	
7:00	38.0	27.0	
8:00	19.0	23.0	
9:00	19.0	9.0	
10:00	5.0	2.0	
11:00	2.0	4.0	

* Note: data was collected on a one-way street

Speeds

Location	Pelham Street Near Prince Street		
Start Time	05-Jun-24	06-Jun-24	07-Jun-24
	Westbound	Westbound	Westbound
	85th	85th	85th
12:00 AM		43.0	54.0
1:00		34.0	40.0
2:00		41.0	41.0
3:00		53.0	53.0
4:00		53.0	58.0
5:00		51.0	44.0
6:00		48.0	48.0
7:00		47.0	50.0
8:00		45.0	46.0
9:00		43.0	42.0
10:00		38.0	38.0
11:00		40.0	38.0
12:00		40.0	41.0
1:00		39.0	
2:00		39.0	
3:00		41.0	
4:00	45.0	44.0	
5:00	42.0	47.0	
6:00	43.0	43.0	
7:00	42.0	42.0	
8:00	42.0	44.0	
9:00	41.0	47.0	
10:00	43.0	38.0	
11:00	45.0	43.0	

Volumes

Location	Pelham Street Near Prince Street		
Start Time	05-Jun-24	06-Jun-24	07-Jun-24
	Westbound	Westbound	Westbound
	Volumes (vph)	Volumes (vph)	Volumes (vph)
12:00 AM		7.0	3.0
1:00		2.0	2.0
2:00		1.0	1.0
3:00		3.0	1.0
4:00		4.0	7.0
5:00		13.0	8.0
6:00		21.0	21.0
7:00		56.0	56.0
8:00		115.0	85.0
9:00		73.0	76.0
10:00		76.0	50.0
11:00		100.0	82.0
12:00		88.0	62.0
1:00		84.0	
2:00		99.0	
3:00		83.0	
4:00	14.0	85.0	
5:00	79.0	83.0	
6:00	66.0	59.0	
7:00	43.0	58.0	
8:00	39.0	39.0	
9:00	35.0	14.0	
10:00	7.0	5.0	
11:00	9.0	6.0	

* Note: data was collected on a one-way street

Speeds

Location	Creighton Street Near Cornwallis Street					
Start Time	05-Jun-24		06-Jun-24		07-Jun-24	
	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
	85th (km/h)	85th (km/h)	85th (km/h)	85th (km/h)	85th (km/h)	85th (km/h)
12:00 AM			15.0	23.0	52.0	*
1:00			30.0	*	34.0	24.0
2:00			*	*	*	*
3:00			*	*	*	22.0
4:00			*	32.0	*	*
5:00			42.0	48.0	36.0	33.0
6:00			45.0	41.0	44.0	45.0
7:00			46.0	44.0	46.0	38.0
8:00			43.0	43.0	40.0	46.0
9:00			39.0	43.0	40.0	39.0
10:00			40.0	38.0	40.0	39.0
11:00			41.0	44.0	41.0	42.0
12:00			40.0	43.0	43.0	43.0
1:00			41.0	43.0	46.0	44.0
2:00			41.0	39.0		
3:00			44.0	44.0		
4:00			41.0	44.0		
5:00	41.0	42.0	43.0	47.0		
6:00	40.0	39.0	45.0	43.0		
7:00	41.0	43.0	38.0	46.0		
8:00	40.0	40.0	42.0	40.0		
9:00	35.0	40.0	43.0	44.0		
10:00	33.0	28.0	42.0	34.0		
11:00	*	*	*	34.0		

Volumes

Location	Creighton Street Near Cornwallis Street					
Start Time	05-Jun-24		06-Jun-24		07-Jun-24	
	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
	Volumes (vph)	Volumes (vph)	Volumes (vph)	Volumes (vph)	Volumes (vph)	Volumes (vph)
12:00 AM			1.0	1.0	2.0	*
1:00			1.0	*	1.0	1.0
2:00			*	*	*	*
3:00			*	*	*	1.0
4:00			*	1.0	*	*
5:00			5.0	1.0	5.0	4.0
6:00			26.0	6.0	17.0	5.0
7:00			37.0	15.0	33.0	15.0
8:00			50.0	42.0	43.0	32.0
9:00			48.0	20.0	46.0	35.0
10:00			53.0	38.0	56.0	29.0
11:00			44.0	36.0	44.0	33.0
12:00			45.0	30.0	55.0	44.0
1:00			59.0	38.0	23.0	12.0
2:00			59.0	25.0		
3:00			70.0	32.0		
4:00			84.0	38.0		
5:00	71.0	49.0	59.0	26.0		
6:00	38.0	23.0	34.0	37.0		
7:00	33.0	25.0	33.0	21.0		
8:00	21.0	13.0	21.0	19.0		
9:00	10.0	11.0	2.0	8.0		
10:00	4.0	4.0	5.0	4.0		
11:00	*	*	*	3.0		

Speeds

Location	Trunk 3 Near Civic # 11176					
Start Time	15-Jul-24		16-Jul-24		17-Jul-24	
	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
	85th (km/h)	85th (km/h)	85th (km/h)	85th (km/h)	85th (km/h)	85th (km/h)
12:00 AM	69.0	62.0	61.0	60.0	67.0	62.0
1:00 AM	68.0	48.0	63.0	42.0	63.0	70.0
2:00 AM	64.0	60.0	57.0	38.0	67.0	48.0
3:00 AM	59.0	62.0	62.0	42.0	62.0	63.0
4:00 AM	47.0	37.0	54.0	42.0	65.0	66.0
5:00 AM	41.0	60.0	51.0	55.0	46.0	59.0
6:00 AM	60.0	63.0	59.0	63.0	61.0	62.0
7:00 AM	62.0	65.0	62.0	65.0	59.0	65.0
8:00 AM	64.0	65.0	62.0	64.0	63.0	66.0
9:00 AM	64.0	63.0	64.0	63.0	65.0	67.0
10:00 AM	63.0	61.0	63.0	62.0	63.0	64.0
11:00 AM	62.0	62.0	62.0	61.0	65.0	64.0
12:00 PM	63.0	60.0	62.0	61.0	68.0	65.0
1:00 PM	64.0	62.0	61.0	61.0	69.0	66.0
2:00 PM	64.0	61.0	60.0	61.0	69.0	66.0
3:00 PM	64.0	60.0	64.0	60.0	62.0	54.0
4:00 PM	65.0	59.0	65.0	61.0	93.0	26.0
5:00 PM	65.0	61.0	66.0	61.0		
6:00 PM	66.0	63.0	65.0	61.0		
7:00 PM	65.0	64.0	65.0	64.0		
8:00 PM	65.0	61.0	64.0	61.0		
9:00 PM	67.0	62.0	65.0	66.0		
10:00 PM	67.0	64.0	67.0	63.0		
11:00 PM	68.0	57.0	65.0	67.0		

Volumes

Location	Trunk 3 Near Civic # 11176					
Start Time	15-Jul-24		16-Jul-24		17-Jul-24	
	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
	Volumes (vph)	Volumes (vph)	Volumes (vph)	Volumes (vph)	Volumes (vph)	Volumes (vph)
12:00 AM	39	22	33	18	35	36
1:00 AM	14	5	17	10	11	23
2:00 AM	6	3	8	7	5	7
3:00 AM	2	5	6	7	7	8
4:00 AM	8	2	15	3	8	6
5:00 AM	31	29	39	29	31	26
6:00 AM	80	103	94	108	105	160
7:00 AM	239	228	276	245	271	310
8:00 AM	391	367	462	394	439	492
9:00 AM	537	437	526	408	485	612
10:00 AM	545	470	516	429	486	551
11:00 AM	581	484	533	429	315	458
12:00 PM	578	498	616	479	518	438
1:00 PM	599	503	734	518	600	359
2:00 PM	618	552	677	525	231	173
3:00 PM	659	544	635	557	94	10
4:00 PM	684	572	741	646	39	50
5:00 PM	678	623	649	517		
6:00 PM	629	445	533	441		
7:00 PM	438	335	393	355		
8:00 PM	305	291	327	283		
9:00 PM	210	193	237	252		
10:00 PM	137	98	147	164		
11:00 PM	55	38	74	77		

Speeds

Location	Dufferin Street Near Green Street					
Start Time	15-Jul-24		16-Jul-24		17-Jul-24	
	Southbound	Northbound	Southbound	Northbound	Southbound	Northbound
	85th (km/h)	85th (km/h)	85th (km/h)	85th (km/h)	85th (km/h)	85th (km/h)
12:00 AM	57.0	33.0	61.0	25.0	57.0	47.0
1:00 AM	51.0	40.0	51.0	27.0	33.0	35.0
2:00 AM	64.0	*	48.0	*	46.0	27.0
3:00 AM	*	63.0	55.0	47.0	62.0	40.0
4:00 AM	47.0	29.0	46.0	*	44.0	*
5:00 AM	45.0	60.0	52.0	30.0	45.0	29.0
6:00 AM	59.0	31.0	59.0	43.0	57.0	33.0
7:00 AM	59.0	39.0	59.0	34.0	59.0	34.0
8:00 AM	58.0	34.0	57.0	36.0	60.0	44.0
9:00 AM	58.0	34.0	59.0	35.0	60.0	31.0
10:00 AM	55.0	35.0	57.0	33.0	58.0	32.0
11:00 AM	56.0	35.0	57.0	34.0	57.0	35.0
12:00 PM	55.0	36.0	57.0	32.0	51.0	39.0
1:00 PM	57.0	37.0	57.0	35.0	59.0	39.0
2:00 PM	58.0	33.0	55.0	35.0	38.0	38.0
3:00 PM	56.0	34.0	56.0	39.0	61.0	34.0
4:00 PM	57.0	34.0	57.0	34.0	93.0	26.0
5:00 PM	57.0	36.0	56.0	37.0		
6:00 PM	58.0	34.0	57.0	35.0		
7:00 PM	58.0	33.0	58.0	34.0		
8:00 PM	60.0	35.0	57.0	34.0		
9:00 PM	59.0	35.0	60.0	42.0		
10:00 PM	55.0	31.0	58.0	37.0		
11:00 PM	61.0	45.0	56.0	37.0		

Volumes

Location	Dufferin Street Near Green Street					
Start Time	15-Jul-24		16-Jul-24		17-Jul-24	
	Southbound	Northbound	Southbound	Northbound	Southbound	Northbound
	Volumes (vph)	Volumes (vph)	Volumes (vph)	Volumes (vph)	Volumes (vph)	Volumes (vph)
12:00 AM	11	4	11	1	11	10
1:00 AM	3	1	5	1	1	3
2:00 AM	2	*	1	*	1	1
3:00 AM	*	2	1	2	2	2
4:00 AM	2	1	4	*	2	*
5:00 AM	1	2	5	1	3	1
6:00 AM	21	6	22	5	12	14
7:00 AM	79	16	77	16	60	16
8:00 AM	122	32	138	35	104	29
9:00 AM	219	35	178	42	143	30
10:00 AM	194	43	172	32	119	45
11:00 AM	193	55	149	43	107	37
12:00 PM	185	56	189	42	29	3
1:00 PM	166	42	248	46	75	17
2:00 PM	192	54	259	48	4	3
3:00 PM	216	63	166	61	65	1
4:00 PM	187	91	178	115	9	41
5:00 PM	158	98	170	88		
6:00 PM	141	45	127	64		
7:00 PM	94	41	131	39		
8:00 PM	69	37	71	29		
9:00 PM	46	20	46	27		
10:00 PM	32	11	21	25		
11:00 PM	17	7	21	8		

Speeds

Location	Falkland Street Near Station Lane					
Start Time	15-Jul-24		16-Jul-24		17-Jul-24	
	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
	85th (km/h)	85th (km/h)	85th (km/h)	85th (km/h)	85th (km/h)	85th (km/h)
12:00 AM	42.0	41.0	46.0	41.0	40.0	44.0
1:00 AM	52.0	39.0	39.0	40.0	42.0	41.0
2:00 AM	46.0	44.0	42.0	37.0	42.0	37.0
3:00 AM	26.0	43.0	36.0	42.0	49.0	40.0
4:00 AM	37.0	37.0	39.0	42.0	37.0	37.0
5:00 AM	41.0	44.0	42.0	46.0	46.0	47.0
6:00 AM	39.0	41.0	41.0	41.0	42.0	41.0
7:00 AM	46.0	42.0	42.0	40.0	40.0	41.0
8:00 AM	42.0	40.0	41.0	39.0	40.0	37.0
9:00 AM	40.0	39.0	38.0	39.0	37.0	38.0
10:00 AM	38.0	39.0	37.0	38.0	38.0	39.0
11:00 AM	38.0	39.0	37.0	36.0		
12:00 PM	38.0	38.0	37.0	38.0		
1:00 PM	37.0	37.0	36.0	38.0		
2:00 PM	36.0	37.0	36.0	36.0		
3:00 PM	36.0	37.0	36.0	37.0		
4:00 PM	38.0	39.0	37.0	39.0		
5:00 PM	39.0	39.0	37.0	38.0		
6:00 PM	39.0	40.0	37.0	38.0		
7:00 PM	38.0	39.0	39.0	38.0		
8:00 PM	41.0	42.0	39.0	40.0		
9:00 PM	43.0	41.0	40.0	42.0		
10:00 PM	38.0	39.0	40.0	45.0		
11:00 PM	34.0	40.0	38.0	48.0		

Volumes

Location	Falkland Street Near Station Lane					
Start Time	15-Jul-24		16-Jul-24		17-Jul-24	
	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
	Volumes (vph)	Volumes (vph)	Volumes (vph)	Volumes (vph)	Volumes (vph)	Volumes (vph)
12:00 AM	8	7	6	7	11	9
1:00 AM	5	1	4	5	2	4
2:00 AM	2	2	2	3	1	2
3:00 AM	1	2	2	3	3	2
4:00 AM	5	1	9	2	3	1
5:00 AM	30	17	32	21	26	14
6:00 AM	49	56	61	60	59	71
7:00 AM	111	105	143	127	151	95
8:00 AM	162	146	228	164	220	157
9:00 AM	185	189	200	151	203	175
10:00 AM	196	189	222	178	209	181
11:00 AM	202	195	231	178		
12:00 PM	216	220	245	218		
1:00 PM	210	217	281	192		
2:00 PM	227	227	255	220		
3:00 PM	218	226	245	269		
4:00 PM	251	269	265	266		
5:00 PM	217	245	198	214		
6:00 PM	210	182	179	166		
7:00 PM	156	136	145	151		
8:00 PM	96	112	143	126		
9:00 PM	48	77	72	75		
10:00 PM	19	24	27	41		
11:00 PM	6	14	14	21		

Speeds

Location	Near East End of Montague		
Start Time	15-Jul-24	16-Jul-24	17-Jul-24
	Eastbound	Eastbound	Eastbound
	85th (km/h)	85th (km/h)	85th (km/h)
12:00 AM	22.0	41.0	31.0
1:00 AM	32.0	*	35.0
2:00 AM	26.0	31.0	*
3:00 AM	*	*	35.0
4:00 AM	*	31.0	*
5:00 AM	33.0	31.0	43.0
6:00 AM	34.0	35.0	33.0
7:00 AM	41.0	39.0	34.0
8:00 AM	38.0	35.0	35.0
9:00 AM	38.0	37.0	37.0
10:00 AM	35.0	32.0	35.0
11:00 AM	32.0	31.0	*
12:00 PM	31.0	33.0	*
1:00 PM	32.0	30.0	53.0
2:00 PM	30.0	32.0	52.0
3:00 PM	27.0	30.0	
4:00 PM	34.0	32.0	
5:00 PM	31.0	32.0	
6:00 PM	34.0	27.0	
7:00 PM	32.0	30.0	
8:00 PM	31.0	32.0	
9:00 PM	39.0	31.0	
10:00 PM	31.0	31.0	
11:00 PM	31.0	30.0	

Volumes

Location	Near East End of Montague		
Start Time	15-Jul-24	16-Jul-24	17-Jul-24
	Eastbound	Eastbound	Eastbound
	Volumes (vph)	Volumes (vph)	Volumes (vph)
12:00 AM	1	4	6
1:00 AM	2	*	1
2:00 AM	1	1	*
3:00 AM	*	*	1
4:00 AM	*	2	*
5:00 AM	4	10	6
6:00 AM	29	24	15
7:00 AM	61	69	63
8:00 AM	88	45	76
9:00 AM	74	39	73
10:00 AM	77	43	68
11:00 AM	107	51	*
12:00 PM	90	90	*
1:00 PM	104	82	2
2:00 PM	94	99	1
3:00 PM	54	73	
4:00 PM	55	68	
5:00 PM	71	70	
6:00 PM	72	51	
7:00 PM	70	59	
8:00 PM	43	47	
9:00 PM	27	41	
10:00 PM	12	17	
11:00 PM	5	7	

Speeds

Location	Pelham Street Near Prince Street		
Start Time	15-Jul-24	16-Jul-24	17-Jul-24
	Westbound	Westbound	Westbound
	85th (km/h)	85th (km/h)	85th (km/h)
12:00 AM	43.0	45.0	51.0
1:00 AM	43.0	48.0	42.0
2:00 AM	*	38.0	34.0
3:00 AM	39.0	39.0	41.0
4:00 AM	*	40.0	52.0
5:00 AM	38.0	35.0	40.0
6:00 AM	48.0	49.0	48.0
7:00 AM	47.0	50.0	48.0
8:00 AM	47.0	45.0	45.0
9:00 AM	48.0	45.0	47.0
10:00 AM	40.0	45.0	43.0
11:00 AM	41.0	41.0	43.0
12:00 PM	39.0	37.0	41.0
1:00 PM	39.0	38.0	39.0
2:00 PM	38.0	37.0	*
3:00 PM	35.0	37.0	58.0
4:00 PM	37.0	38.0	26.0
5:00 PM	39.0	39.0	
6:00 PM	41.0	40.0	
7:00 PM	43.0	43.0	
8:00 PM	41.0	41.0	
9:00 PM	45.0	42.0	
10:00 PM	43.0	41.0	
11:00 PM	38.0	40.0	

Volumes

Location	Pelham Street Near Prince Street		
Start Time	15-Jul-24	16-Jul-24	17-Jul-24
	Westbound	Westbound	Westbound
	Volumes (vph)	Volumes (vph)	Volumes (vph)
12:00 AM	4	3	7
1:00 AM	1	3	6
2:00 AM	*	4	2
3:00 AM	1	2	2
4:00 AM	*	1	1
5:00 AM	3	1	1
6:00 AM	4	4	9
7:00 AM	20	16	27
8:00 AM	50	56	64
9:00 AM	58	85	71
10:00 AM	100	93	89
11:00 AM	98	99	103
12:00 PM	105	94	101
1:00 PM	99	96	28
2:00 PM	121	115	*
3:00 PM	123	96	9
4:00 PM	97	125	3
5:00 PM	128	93	
6:00 PM	86	95	
7:00 PM	62	59	
8:00 PM	61	53	
9:00 PM	43	445	
10:00 PM	29	24	
11:00 PM	5	12	

Speeds

Location	Creighton Street Near Cornwallis Street					
Start Time	15-Jul-24		16-Jul-24		17-Jul-24	
	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
	85th (km/h)	85th (km/h)	85th (km/h)	85th (km/h)	85th (km/h)	85th (km/h)
12:00 AM	*	33.0	30.0	31.0	30.0	40.0
1:00 AM	39.0	*	25.0	32.0	44.0	*
2:00 AM	*	*	*	*	*	24.0
3:00 AM	*	*	*	*	*	*
4:00 AM	*	34.0	*	*	39.0	46.0
5:00 AM	36.0	38.0	41.0	44.0	37.0	46.0
6:00 AM	43.0	46.0	43.0	51.0	44.0	48.0
7:00 AM	45.0	45.0	40.0	47.0	44.0	47.0
8:00 AM	38.0	43.0	40.0	45.0	42.0	44.0
9:00 AM	42.0	40.0	35.0	42.0	39.0	43.0
10:00 AM	41.0	43.0	38.0	47.0	42.0	42.0
11:00 AM	37.0	40.0	36.0	40.0	38.0	42.0
12:00 PM	37.0	40.0	39.0	40.0	38.0	43.0
1:00 PM	37.0	40.0	36.0	39.0		
2:00 PM	39.0	39.0	36.0	38.0		
3:00 PM	37.0	42.0	38.0	41.0		
4:00 PM	40.0	45.0	42.0	43.0		
5:00 PM	38.0	43.0	41.0	44.0		
6:00 PM	40.0	44.0	40.0	41.0		
7:00 PM	40.0	40.0	37.0	42.0		
8:00 PM	37.0	46.0	41.0	40.0		
9:00 PM	36.0	36.0	40.0	42.0		
10:00 PM	36.0	43.0	38.0	50.0		
11:00 PM	42.0	36.0	30.0	34.0		

Volumes

Location	Creighton Street Near Cornwallis Street					
Start Time	15-Jul-24		16-Jul-24		17-Jul-24	
	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
	Volumes (vph)	Volumes (vph)	Volumes (vph)	Volumes (vph)	Volumes (vph)	Volumes (vph)
12:00 AM	*	1	5	4	2	1
1:00 AM	1	*	1	1	1	*
2:00 AM	*	*	*	*	*	2
3:00 AM	*	*	*	*	*	*
4:00 AM	*	1	*	*	1	1
5:00 AM	4	4	5	7	3	7
6:00 AM	2	23	8	24	9	17
7:00 AM	17	39	22	40	18	32
8:00 AM	41	53	39	53	48	55
9:00 AM	43	62	46	64	32	48
10:00 AM	41	58	43	61	49	65
11:00 AM	50	67	62	81	59	101
12:00 PM	62	80	62	102	66	77
1:00 PM	70	100	68	108		
2:00 PM	69	97	76	117		
3:00 PM	75	98	79	103		
4:00 PM	78	110	71	117		
5:00 PM	43	87	66	82		
6:00 PM	36	46	50	53		
7:00 PM	48	50	18	31		
8:00 PM	38	28	38	35		
9:00 PM	14	19	17	21		
10:00 PM	12	8	3	14		
11:00 PM	2	5	6	6		

	DAY 1	DAY 2	DAY 3
	Mon, May 6	Tue, May 7	Wed, May 8
9:00 AM	3	5	6
9:15 AM	3	7	5
9:30 AM	4	7	7
9:45 AM	4	7	7
10:00 AM	6	6	6
10:15 AM	5	5	5
10:30 AM	5	6	6
10:45 AM	5	6	5
11:00 AM	4	7	4
11:15 AM	3	5	4
11:30 AM	3	5	4
11:45 AM	2	7	5
12:00 PM	4	5	7
12:15 PM	7	6	7
12:30 PM	9	9	6
12:45 PM	9	10	6
1:00 PM	7	8	6
1:15 PM	7	9	7
1:30 PM	6	8	8
1:45 PM	5	9	9
2:00 PM	5	7	11
2:15 PM	7	6	9
2:30 PM	7	6	8
2:45 PM	7	6	10
3:00 PM	8	6	9
3:15 PM	8	6	7
3:30 PM	8	7	6
3:45 PM	7	7	7
Spaces Available			12
85% Percentile Occ			8.3
Peak Occupancy			69%

	DAY 1	DAY 2	DAY 3
	Wed, July 17	Thur, July 18	Fri, July 19
9:00 AM		4	2
9:15 AM		5	3
9:30 AM		4	2
9:45 AM		5	2
10:00 AM		5	3
10:15 AM		4	5
10:30 AM		4	6
10:45 AM		4	6
11:00 AM		4	7
11:15 AM		3	6
11:30 AM		5	6
11:45 AM		6	6
12:00 PM	7	7	7
12:15 PM	7	6	7
12:30 PM	7	7	7
12:45 PM	7	7	7
1:00 PM	7	7	7
1:15 PM	7	7	7
1:30 PM	7	7	7
1:45 PM	7	7	7
2:00 PM	7	6	7
2:15 PM	7	7	7
2:30 PM	7	7	7
2:45 PM	4	7	7
3:00 PM	6	6	7
3:15 PM	6	5	7
3:30 PM	6	7	7
3:45 PM	6	6	7
Spaces Available			7
85% Percentile Occ			7.0
Peak Occupancy			100%

	DAY 1	DAY 2	DAY 3
	Tue, May 21	Wed, May 22	Thurs, May 23
9:00 AM	4	3	3
9:15 AM	4	3	3
9:30 AM	4	4	3
9:45 AM	4	4	4
10:00 AM	4	4	4
10:15 AM	4	4	4
10:30 AM	4	4	4
10:45 AM	4	3	4
11:00 AM	4	4	4
11:15 AM	4	4	4
11:30 AM	4	4	3
11:45 AM	4	4	3
12:00 PM	4	4	3
12:15 PM	4	4	3
12:30 PM	4	4	3
12:45 PM	4	4	3
1:00 PM	4	4	4
1:15 PM	4	4	4
1:30 PM	4	4	4
1:45 PM	4	4	3
2:00 PM	4	4	4
2:15 PM	4	4	3
2:30 PM	4	4	3
2:45 PM	4	4	4
3:00 PM	4	3	4
3:15 PM	4	3	4
3:30 PM	4	3	4
3:45 PM	3	3	4
Spaces Available			4
85% Percentile Occ			4.0
Peak Occupancy			100%

	DAY 1	DAY 2	DAY 3
	Mon, July 15	Tue, July 16	Wed, July 17
9:00 AM	4	4	4
9:15 AM	4	4	4
9:30 AM	4	4	4
9:45 AM	4	3	4
10:00 AM	4	3	4
10:15 AM	4	3	4
10:30 AM	4	3	4
10:45 AM	4	3	4
11:00 AM	4	4	4
11:15 AM	4	4	4
11:30 AM	4	4	4
11:45 AM	4	4	
12:00 PM	4	4	
12:15 PM	4	4	
12:30 PM	3	4	
12:45 PM	3	3	
1:00 PM	3	4	
1:15 PM	3	3	
1:30 PM	3	4	
1:45 PM	4	4	
2:00 PM	4	4	
2:15 PM	4	4	
2:30 PM	4	3	
2:45 PM	3	4	
3:00 PM	4	4	
3:15 PM	3	4	
3:30 PM	3	4	
3:45 PM	4	4	
Spaces Available			4
85% Percentile Occ			4.0
Peak Occupancy			100%

	DAY 1	DAY 2	DAY 3
	Tue, May 6	Wed, May 7	Thurs, May 8
9:00 AM	5	5	5
9:15 AM	5	5	5
9:30 AM	5	5	5
9:45 AM	5	5	5
10:00 AM	5	5	5
10:15 AM	5	5	5
10:30 AM	5	5	5
10:45 AM	4	5	4
11:00 AM	4	5	5
11:15 AM	4	5	5
11:30 AM	5	5	5
11:45 AM	5	5	5
12:00 PM	5	4	5
12:15 PM	5	4	5
12:30 PM	4	4	5
12:45 PM	5	4	5
1:00 PM	5	4	5
1:15 PM	5	4	5
1:30 PM	5	4	5
1:45 PM	4	5	5
2:00 PM	5	5	5
2:15 PM	4	5	5
2:30 PM	4	5	5
2:45 PM	4	5	5
3:00 PM	4	4	5
3:15 PM	5	4	5
3:30 PM	5	5	5
3:45 PM	5	4	5
Spaces Available			5
85% Percentile Occ			5.0
Peak Occupancy			100%

	DAY 1	DAY 2	DAY 3
	Wed, July 17	Thurs, July 18	Fri, July 19
9:00 AM		5	5
9:15 AM		5	5
9:30 AM		5	5
9:45 AM		5	5
10:00 AM		5	5
10:15 AM		5	5
10:30 AM		5	5
10:45 AM		5	5
11:00 AM		5	4
11:15 AM		4	5
11:30 AM		5	5
11:45 AM		5	5
12:00 PM		5	5
12:15 PM		5	5
12:30 PM	5	5	5
12:45 PM	5	5	5
1:00 PM	5	5	5
1:15 PM	5	5	5
1:30 PM	5	5	5
1:45 PM	5	5	5
2:00 PM	5	5	5
2:15 PM	5	5	5
2:30 PM	5	5	5
2:45 PM	5	5	5
3:00 PM	5	5	5
3:15 PM	5	5	5
3:30 PM	5	5	5
3:45 PM	4	4	5
Spaces Available			5
85% Percentile Occ			5.0
Peak Occupancy			100%

	DAY 1	DAY 2	DAY 3
	Tue, May 21	Wed, May 22	Thurs, May 23
9:00 AM	2	2	1
9:15 AM	3	2	1
9:30 AM	3	3	1
9:45 AM	3	3	1
10:00 AM	3	4	1
10:15 AM	3	4	1
10:30 AM	3	3	1
10:45 AM	3	3	1
11:00 AM	4	3	2
11:15 AM	4	3	4
11:30 AM	4	3	4
11:45 AM	4	3	3
12:00 PM	4	3	4
12:15 PM	3	1	3
12:30 PM	2	2	1
12:45 PM	3	2	3
1:00 PM	2	2	3
1:15 PM	1	3	1
1:30 PM	2	3	2
1:45 PM	2	3	2
2:00 PM	2	3	1
2:15 PM	2	4	2
2:30 PM	2	2	2
2:45 PM	2	3	2
3:00 PM	1	3	2
3:15 PM	1	2	1
3:30 PM	2	2	2
3:45 PM	2	2	1
Spaces Available			4
85% Percentile Occ			3.4
Peak Occupancy			86%

	DAY 1	DAY 2	DAY 3
	Wed, July 17	Thurs, July 18	Fri, July 19
9:00 AM		1	3
9:15 AM		1	3
9:30 AM		1	1
9:45 AM		1	2
10:00 AM		1	3
10:15 AM		2	3
10:30 AM		4	4
10:45 AM		3	4
11:00 AM		4	3
11:15 AM		3	4
11:30 AM		3	2
11:45 AM		4	3
12:00 PM		4	4
12:15 PM	4	3	4
12:30 PM	4	3	4
12:45 PM	3	4	4
1:00 PM	4	4	4
1:15 PM	4	4	4
1:30 PM	3	3	4
1:45 PM	3	3	3
2:00 PM	4	4	4
2:15 PM	4	4	4
2:30 PM	3	4	4
2:45 PM	4	4	4
3:00 PM	4	4	4
3:15 PM	3	4	3
3:30 PM	3	4	3
3:45 PM	3	4	3
Spaces Available			4
85% Percentile Occ			4.0
Peak Occupancy			100%

	DAY 1	DAY 2	DAY 3
	Wed, July 10	Thurs, July 11	Fri, July 12
9:00 AM		2	1
9:15 AM		2	0
9:30 AM		4	0
9:45 AM		3	3
10:00 AM		2	2
10:15 AM		3	4
10:30 AM		4	3
10:45 AM		3	5
11:00 AM		5	5
11:15 AM		5	6
11:30 AM		6	6
11:45 AM		6	5
12:00 PM		6	6
12:15 PM		7	6
12:30 PM		6	6
12:45 PM		6	6
1:00 PM		6	7
1:15 PM		5	7
1:30 PM		5	7
1:45 PM		6	7
2:00 PM		6	7
2:15 PM		6	7
2:30 PM		6	6
2:45 PM	6	6	6
3:00 PM	6	5	6
3:15 PM	6	7	6
3:30 PM	6	6	5
3:45 PM	5	5	5
Spaces Available			7
85% Percentile Occ			6.3
Peak Occupancy			90%

APPENDIX B
INTERSECTION CAPACITY ANALYSIS

WSP
1 SPECTACLE LAKE DRIVE
DARTMOUTH, NS
CANADA B3B 1X7

T: +1 902-835-9955
WSP.COM

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	63	157	1	37	62	1
Future Volume (Veh/h)	63	157	1	37	62	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)	68	171	1	40	67	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)						
pX, platoon unblocked						
vC, conflicting volume			239		196	154
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			239		196	154
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		92	100
cM capacity (veh/h)			1328		793	892

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	239	41	68
Volume Left	0	1	67
Volume Right	171	0	1
cSH	1700	1328	794
Volume to Capacity	0.14	0.00	0.09
Queue Length 95th (m)	0.0	0.0	2.2
Control Delay (s)	0.0	0.2	10.0
Lane LOS		A	A
Approach Delay (s)	0.0	0.2	10.0
Approach LOS			A

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	23.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	116	52	4	96	41	2
Future Volume (Veh/h)	116	52	4	96	41	2
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)	126	57	4	104	45	2
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						2
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			126		238	126
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			126		238	126
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		94	100
cM capacity (veh/h)			1460		748	924

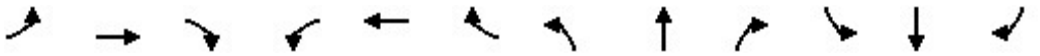
Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	126	57	108	47
Volume Left	0	0	4	45
Volume Right	0	57	0	2
cSH	1700	1700	1460	781
Volume to Capacity	0.07	0.03	0.00	0.06
Queue Length 95th (m)	0.0	0.0	0.1	1.5
Control Delay (s)	0.0	0.0	0.3	10.1
Lane LOS			A	B
Approach Delay (s)	0.0		0.3	10.1
Approach LOS				B

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	18.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	60	49	22	59	6	36	10	17	0	7	4
Future Volume (Veh/h)	3	60	49	22	59	6	36	10	17	0	7	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	65	53	24	64	7	39	11	18	0	8	4
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	71			118			221	216	92	236	240	68
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	71			118			221	216	92	236	240	68
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			95	98	98	100	99	100
cM capacity (veh/h)	1529			1470			715	669	966	686	650	996

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	121	95	68	12
Volume Left	3	24	39	0
Volume Right	53	7	18	4
cSH	1529	1470	759	735
Volume to Capacity	0.00	0.02	0.09	0.02
Queue Length 95th (m)	0.0	0.4	2.4	0.4
Control Delay (s)	0.2	2.0	10.2	10.0
Lane LOS	A	A	B	A
Approach Delay (s)	0.2	2.0	10.2	10.0
Approach LOS			B	A

Intersection Summary				
Average Delay	3.5			
Intersection Capacity Utilization	28.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	83	27	0	59	1	19	1	0	0	0	4
Future Volume (Veh/h)	2	83	27	0	59	1	19	1	0	0	0	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	90	29	0	64	1	21	1	0	0	0	4
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	65			119			177	174	104	174	188	64
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	65			119			177	174	104	174	188	64
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			97	100	100	100	100	100
cM capacity (veh/h)	1537			1469			781	719	950	788	706	1000

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	121	65	22	4
Volume Left	2	0	21	0
Volume Right	29	1	0	4
cSH	1537	1469	778	1000
Volume to Capacity	0.00	0.00	0.03	0.00
Queue Length 95th (m)	0.0	0.0	0.7	0.1
Control Delay (s)	0.1	0.0	9.8	8.6
Lane LOS	A		A	A
Approach Delay (s)	0.1	0.0	9.8	8.6
Approach LOS			A	A

Intersection Summary				
Average Delay	1.3			
Intersection Capacity Utilization	22.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	38	7	0	46	9	1
Future Volume (Veh/h)	38	7	0	46	9	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)	41	8	0	50	10	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)						
pX, platoon unblocked						
vC, conflicting volume			49		95	45
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			49		95	45
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1558		905	1025

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	49	50	11
Volume Left	0	0	10
Volume Right	8	0	1
cSH	1700	1558	914
Volume to Capacity	0.03	0.00	0.01
Queue Length 95th (m)	0.0	0.0	0.3
Control Delay (s)	0.0	0.0	9.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.0
Approach LOS			A

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	84	28	24	301	188	47
Future Volume (Veh/h)	84	28	24	301	188	47
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)	91	30	26	327	204	51
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	608	230	255			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	608	230	255			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	80	96	98			
cM capacity (veh/h)	450	810	1310			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	121	353	255
Volume Left	91	26	0
Volume Right	30	0	51
cSH	505	1310	1700
Volume to Capacity	0.24	0.02	0.15
Queue Length 95th (m)	7.4	0.5	0.0
Control Delay (s)	14.4	0.8	0.0
Lane LOS	B	A	
Approach Delay (s)	14.4	0.8	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	225	87	6	201	0	0
Future Volume (Veh/h)	225	87	6	201	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)	245	95	7	218	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)						
pX, platoon unblocked						
vC, conflicting volume			340		524	292
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			340		524	292
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			1219		510	747

Direction, Lane #	EB 1	WB 1
Volume Total	340	225
Volume Left	0	7
Volume Right	95	0
cSH	1700	1219
Volume to Capacity	0.20	0.01
Queue Length 95th (m)	0.0	0.1
Control Delay (s)	0.0	0.3
Lane LOS		A
Approach Delay (s)	0.0	0.3
Approach LOS		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	20.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	205	0	0	0	174	2
Future Volume (Veh/h)	205	0	0	0	174	2
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)	223	0	0	0	189	2
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			223		223	223
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			223		223	223
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		75	100
cM capacity (veh/h)			1346		765	817

Direction, Lane #	EB 1	NB 1
Volume Total	223	191
Volume Left	0	189
Volume Right	0	2
cSH	1700	766
Volume to Capacity	0.13	0.25
Queue Length 95th (m)	0.0	7.9
Control Delay (s)	0.0	11.3
Lane LOS		B
Approach Delay (s)	0.0	11.3
Approach LOS		B

Intersection Summary			
Average Delay	5.2		
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	86	94	1	83	138	0
Future Volume (Veh/h)	86	94	1	83	138	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)	93	102	1	90	150	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)						
pX, platoon unblocked						
vC, conflicting volume			195		236	144
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			195		236	144
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		80	100
cM capacity (veh/h)			1378		752	903

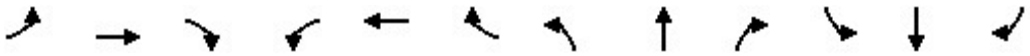
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	195	91	150
Volume Left	0	1	150
Volume Right	102	0	0
cSH	1700	1378	752
Volume to Capacity	0.11	0.00	0.20
Queue Length 95th (m)	0.0	0.0	5.9
Control Delay (s)	0.0	0.1	11.0
Lane LOS		A	B
Approach Delay (s)	0.0	0.1	11.0
Approach LOS			B

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	24.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	130	70	4	179	75	7
Future Volume (Veh/h)	130	70	4	179	75	7
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)	141	76	4	195	82	8
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						2
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			141		344	141
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			141		344	141
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		87	99
cM capacity (veh/h)			1442		651	907

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	141	76	199	90
Volume Left	0	0	4	82
Volume Right	0	76	0	8
cSH	1700	1700	1442	714
Volume to Capacity	0.08	0.04	0.00	0.13
Queue Length 95th (m)	0.0	0.0	0.1	3.4
Control Delay (s)	0.0	0.0	0.2	11.1
Lane LOS			A	B
Approach Delay (s)	0.0		0.2	11.1
Approach LOS				B

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	23.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	78	42	13	105	1	77	15	15	2	8	6
Future Volume (Veh/h)	13	78	42	13	105	1	77	15	15	2	8	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	85	46	14	114	1	84	16	16	2	9	7
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	115			131			290	279	108	302	302	114
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	115			131			290	279	108	302	302	114
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			87	97	98	100	98	99
cM capacity (veh/h)	1474			1454			640	617	946	617	600	938

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	145	129	116	18
Volume Left	14	14	84	2
Volume Right	46	1	16	7
cSH	1474	1454	667	700
Volume to Capacity	0.01	0.01	0.17	0.03
Queue Length 95th (m)	0.2	0.2	5.0	0.6
Control Delay (s)	0.8	0.9	11.5	10.3
Lane LOS	A	A	B	B
Approach Delay (s)	0.8	0.9	11.5	10.3
Approach LOS			B	B

Intersection Summary				
Average Delay	4.3			
Intersection Capacity Utilization	28.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	66	22	3	94	0	28	2	3	3	2	3
Future Volume (Veh/h)	3	66	22	3	94	0	28	2	3	3	2	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	72	24	3	102	0	30	2	3	3	2	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)												
pX, platoon unblocked												
vC, conflicting volume	102			96			202	198	84	202	210	102
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	102			96			202	198	84	202	210	102
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			96	100	100	100	100	100
cM capacity (veh/h)	1490			1498			750	695	975	750	684	953

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	99	105	35	8
Volume Left	3	3	30	3
Volume Right	24	0	3	3
cSH	1490	1498	762	794
Volume to Capacity	0.00	0.00	0.05	0.01
Queue Length 95th (m)	0.0	0.0	1.2	0.2
Control Delay (s)	0.2	0.2	10.0	9.6
Lane LOS	A	A	A	A
Approach Delay (s)	0.2	0.2	10.0	9.6
Approach LOS			A	A

Intersection Summary				
Average Delay	1.9			
Intersection Capacity Utilization	16.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	60	14	1	60	8	0
Future Volume (Veh/h)	60	14	1	60	8	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)	65	15	1	65	9	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)						
pX, platoon unblocked						
vC, conflicting volume			80		140	72
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			80		140	72
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1518		853	990

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	80	66	9
Volume Left	0	1	9
Volume Right	15	0	0
cSH	1700	1518	853
Volume to Capacity	0.05	0.00	0.01
Queue Length 95th (m)	0.0	0.0	0.3
Control Delay (s)	0.0	0.1	9.3
Lane LOS		A	A
Approach Delay (s)	0.0	0.1	9.3
Approach LOS			A

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	14.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	99	23	29	300	319	137
Future Volume (Veh/h)	99	23	29	300	319	137
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)	108	25	32	326	347	149
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	812	422	496			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	812	422	496			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	68	96	97			
cM capacity (veh/h)	338	632	1068			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	133	358	496
Volume Left	108	32	0
Volume Right	25	0	149
cSH	371	1068	1700
Volume to Capacity	0.36	0.03	0.29
Queue Length 95th (m)	12.8	0.7	0.0
Control Delay (s)	20.1	1.0	0.0
Lane LOS	C	A	
Approach Delay (s)	20.1	1.0	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	250	91	9	429	0	0
Future Volume (Veh/h)	250	91	9	429	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)	272	99	10	466	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)						
pX, platoon unblocked						
vC, conflicting volume			371		808	322
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			371		808	322
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			1188		348	719

Direction, Lane #	EB 1	WB 1
Volume Total	371	476
Volume Left	0	10
Volume Right	99	0
cSH	1700	1188
Volume to Capacity	0.22	0.01
Queue Length 95th (m)	0.0	0.2
Control Delay (s)	0.0	0.3
Lane LOS		A
Approach Delay (s)	0.0	0.3
Approach LOS		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	33.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	234	0	0	0	319	2
Future Volume (Veh/h)	234	0	0	0	319	2
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)	254	0	0	0	347	2
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			254		254	254
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			254		254	254
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		53	100
cM capacity (veh/h)			1311		735	785

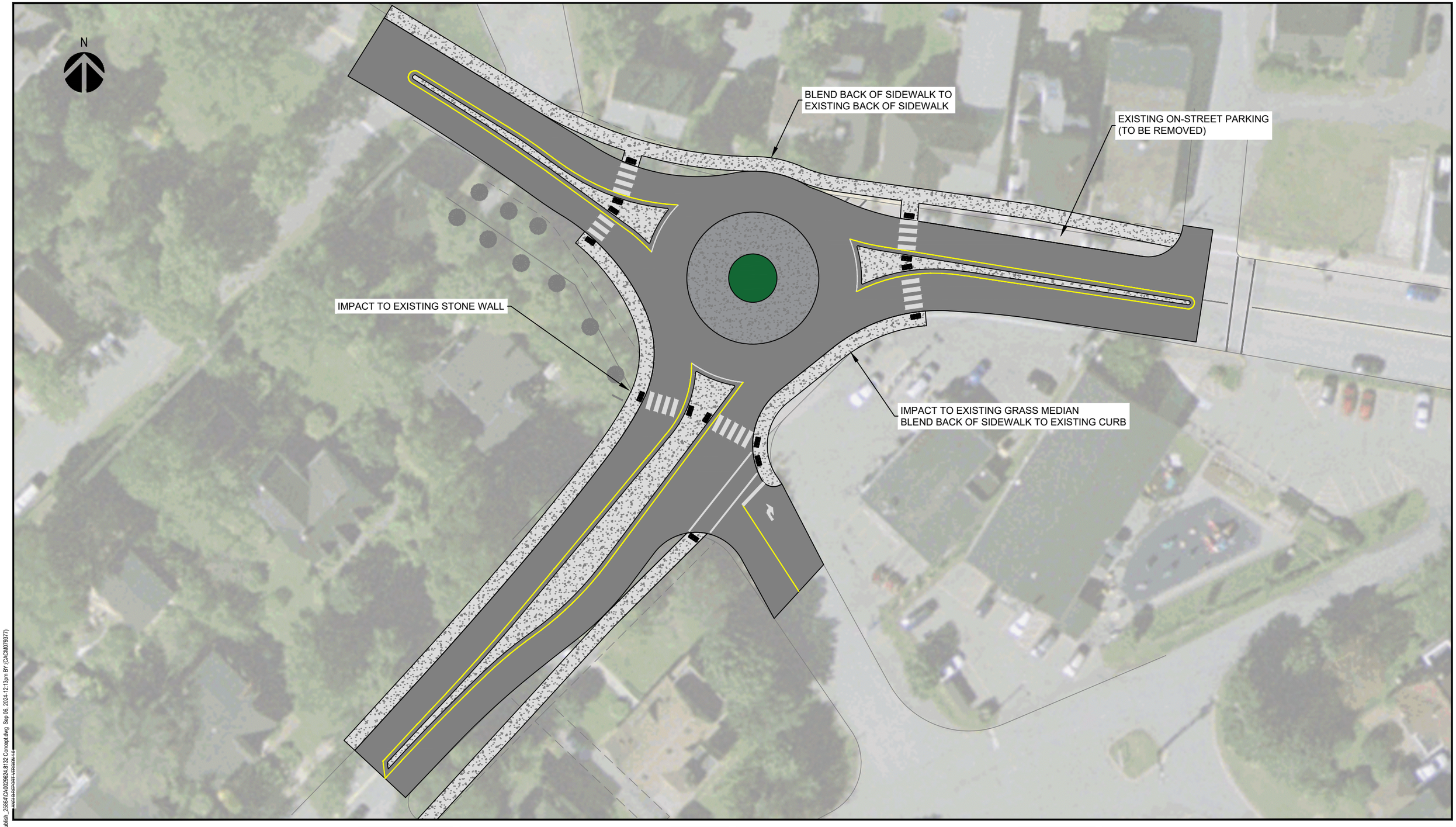
Direction, Lane #	EB 1	NB 1
Volume Total	254	349
Volume Left	0	347
Volume Right	0	2
cSH	1700	735
Volume to Capacity	0.15	0.47
Queue Length 95th (m)	0.0	20.6
Control Delay (s)	0.0	14.2
Lane LOS		B
Approach Delay (s)	0.0	14.2
Approach LOS		B

Intersection Summary				
Average Delay	8.2			
Intersection Capacity Utilization	36.8%	ICU Level of Service		A
Analysis Period (min)	15			

APPENDIX C
CONCEPT DESIGNS

WSP
1 SPECTACLE LAKE DRIVE
DARTMOUTH, NS
CANADA B3B 1X7

T: +1 902-835-9955
WSP.COM



SCALE: 1:500 METRIC

0 10 20 30 40

TOWN OF LUNENBURG

WSP Canada Inc.
1 Spectacle Lake Drive
Dartmouth, Nova Scotia, Canada B3B 1X7
T 902-835-9955 F 902-835-1645 www.wsp.com

PROJECT NO: CA0029624.8132

SCALE:	1:500
DATE:	2024-09-06
DESIGNED BY:	P.HATTON
DRAWN BY:	C.MACPHERSON

PROJECT: LUNENBURG TRAFFIC AND PARKING PLAN

TITLE: ROUNDABOUT CONCEPT

DRAWING: 01

N

EXISTING ON-STREET PARKING
(TO REMAIN)

EXISTING UTILITY POLES (TO BE RELOCATED)

SCALE: 1:500 METRIC

0 10 20 30 40

TOWN OF
LUNENBURG

WSP Canada Inc.
1 Spectacle Lake Drive
Dartmouth, Nova Scotia, Canada B3B 1X7
T 902-835-9955 F 902-835-1645 www.wsp.com

PROJECT NO: CA0029624.8132

SCALE: 1:500

DATE: 2024-10-28

DESIGNED BY: G.OBRIEN

DRAWN BY: S.HAY

PROJECT: LUNENBURG TRAFFIC AND PARKING PLAN

TITLE: TWO-WAY STOP CONCEPT

DRAWING: 00

N

EXISTING ON-STREET PARKING
(TO REMAIN)

EXISTING UTILITY POLES (TO REMAIN)

EXISTING ON-STREET PARKING
(TO REMAIN)

ON-STREET PARKING

SCALE: 1:500 METRIC

0 10 20 30 40

TOWN OF LUNENBURG

WSP Canada Inc.
1 Spectacle Lake Drive
Dartmouth, Nova Scotia, Canada B3B 1X7
T 902-835-9955 F 902-835-1645 www.wsp.com

PROJECT NO: CA0029624.8132

SCALE: 1:500

DATE: 2024-10-28

DESIGNED BY: P.HATTON

DRAWN BY: C.MACPHERSON

PROJECT: LUNENBURG TRAFFIC AND PARKING PLAN

TITLE: ALL-WAY STOP CONCEPT

DRAWING: 00

LUNENBURG WAR
MEMORIAL ARENA

TO VICTORIA ROAD

TO GREEN STREET

31

3

73

114

153

192

207

CONCRETE SIDEWALK

BICYCLE
PARKING
RACKS

194

4

7

199

BLEND TO EXISTING ASPHALT TRAIL

LUNENBURG
COMMUNITY CENTRE

LUNENBURG
CURLING CLUB

SCALE: 1:500 METRIC

0 10 20 30 40

TOWN OF
LUNENBURG

WSP Canada Inc.
1 Spectacle Lake Drive
Dartmouth, Nova Scotia, Canada B3B 1X7
T 902-835-9955 F 902-835-1645 www.wsp.com

PROJECT NO: CA0029624.8132

SCALE: 1:500

DATE: 2024-11-13

DESIGNED BY: P.HATTON

DRAWN BY: C.MACPHERSON

PROJECT:
LUNENBURG TRAFFIC AND PARKING PLAN

TITLE:
MARKET PARKING CONCEPT

DRAWING: 03

APPENDIX D
WHAT WE HEARD REPORT

WSP
1 SPECTACLE LAKE DRIVE
DARTMOUTH, NS
CANADA B3B 1X7

T: +1 902-835-9955
WSP.COM

1 WHAT WE HEARD

This “What We Heard” section provides a summary of the feedback received from the community as part of the Community Feedback Collection and Review phase. As part of the development of Lunenburg Traffic & Parking Study, stakeholder and public engagement took place on June 19, 2024 and again on September 12, 2024 (See photo of public engagement below). The engagement activities conducted are meant to inform the upcoming Plan on current concept designs and to understand the current usage and types of upgrades needed. Consultation activities included:

— Stakeholders Meeting (2), 2:00-4:00pm.

— Public Open House (2), 5:00-7:00pm.

1.1 STAKEHOLDER MEETING AND PUBLIC OPEN HOUSE – June 19, 2024

One (1) stakeholder meeting and one (1) open house session were held at the Lunenburg and District Volunteer Fire Department on June 19th, 2024. The purpose of the stakeholder meeting and Open House session was to provide the stakeholders and then public an opportunity to engage with the WSP team and Municipal staff to ask questions and provide feedback on the challenges and opportunities related to traffic and parking in Lunenburg. The stakeholder meeting was by invitation only while the public open house was advertised through Town News (https://www.townoflunenburg.ca/news/) and on the Town’s Facebook page. The events were attended as follows:

— 16 people attended the stakeholders meeting, 2:00-4:00pm.
— 20 people attended the first public open house session, 5:00-7:00pm.

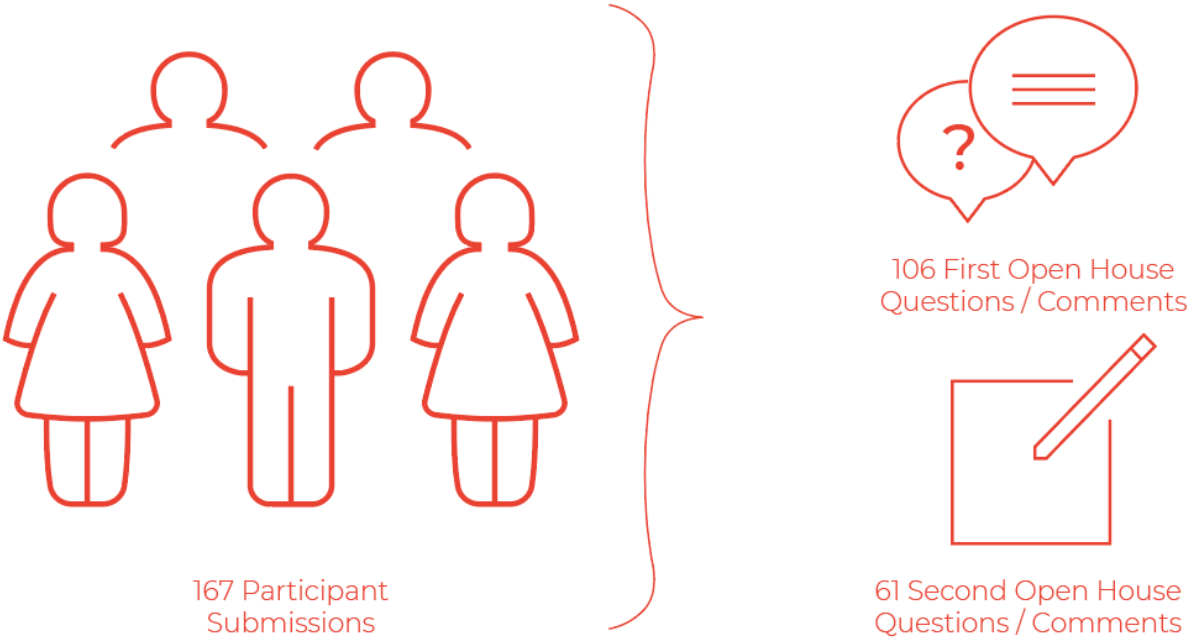
A number of Public Open House Display Boards were available at the open house and attendees were encouraged to leave comments. A total of 106 comments were collected and can be found in Appendix A.

1.2 STAKEHOLDER MEETING AND PUBLIC OPEN HOUSE – September 12, 2024

One (1) stakeholder meeting and one (1) open house session were held at the Lunenburg and District Volunteer Fire Department on September 12th, 2024. The purpose of the stakeholder meeting and Open House session was to provide the stakeholders and then public an opportunity to engage with the WSP team and Municipal staff to ask questions and provide feedback on the challenges and opportunities related to traffic and parking in Lunenburg, as well as providing insight on the concepts presented by the project team. The stakeholder meeting was by invitation only while the public open house was advertised through Town News (https://www.townoflunenburg.ca/news/) and on the Town's Facebook page. The events were attended as follows:

- 2 people attended the stakeholders meeting, 2:00-3:30pm.
- 21 people attended the second public open house session, 5:00-7:00pm.

A number of Public Open House Display Boards were available at the open house and attendees were encouraged to leave comments. A total of 61 comments were collected and can be found in Appendix B.



1.3 KEY THEMES

The engagement resulted in valuable feedback to support the development of the Lunenburg Traffic & Parking Study. Though the feedback received was wide ranging, certain key themes emerged. The five "Key Themes" heard are presented individually, but many of the comments identified are intricately connected. This feedback will be used by the Town and the Project Team to inform the options developed in the Traffic and Parking Plan.

Prioritize Pedestrian and Cyclist Accessibility
The Lunenburg Traffic & Parking Study should:

- Develop a more walkable network that prioritizes pedestrians and cyclists of all ages and abilities, as the existing lack of connectivity within the town discourages pedestrians and cyclists.
- Explore potential for trail connections and bike lanes, as 65% of MODL AT Plan survey respondents said they use the current MODL trails at least once a week.
- Enhance safety of crosswalks by prioritizing year-round maintenance of markings, signage, and visibility.

Revitalize Infrastructure for Safety
The Lunenburg Traffic & Parking Study should:

- Consider safety concerns as identified by residents such as:
    - Sharp street corners and poor visibility at street crossings.
    - Residents having to cycle/walk on the roadway due to lack of separate lanes or sidewalks.
    - Confusing intersections.
- Aim to improve wayfinding by revitalizing signage, with emphasis on one-way street signage.
- Implement and maintain snow-clearing and regular maintenance at crosswalks, parking spaces, AT trails and sidewalks. The number of MODL AT survey respondents who regularly cycle drops from 22% to 5% during the winter season.
- Ensure consideration is given to seniors and those with mobility issues.

Optimize Parking Systems
The Lunenburg Traffic & Parking Study should:

- Optimize space and efficiency of parking systems.
- Consider idling vehicles solutions such as loading zones for large truck deliveries and tour bus accommodations.
- Explore potential for smart parking solutions and/or residential parking passes.
- Consider modifying meter rates and parking restrictions.

Maintain Historic Culture
The Lunenburg Traffic & Parking Study should:

- Aim to preserve the cultural atmosphere within the national historic site.
- Considerations should be made to ensure safety for horse traffic while maximizing efficiency of streets.
- Ensure access to historic features and shops is considered.
- Account for increased tourist volumes.

Enhance Traffic Flow Management
The Lunenburg Traffic & Parking Study should:

- Aim to enhance traffic flow for personal, commercial, accessible, and recreational vehicles.
- Develop a plan that incorporates future growth and anticipates increased demand for cycling and pedestrian infrastructure.
- Consider needs of residents and minimize disruption through traffic flow management.
- Aim to create a safer and more efficient traffic environment through the collective implementation of proposed solutions.

1.4 CONCEPT SPECIFIC FEEDBACK

The engagement resulted in valuable feedback to support the development of the Lunenburg Traffic & Parking Study. In addition to general key themes, feedback specific to the project concepts emerged during the second Public Open House. A full view of the comments received is available in Appendix B with a summary in the following section.

Community Centre Parking Lot	Public feedback suggests that this layout is generally well-received. The community indicated that improved signage to the parking lot and its accesses would be desirable.
Classification	Public feedback suggests that any routes that are selected should be signed appropriately. Some indicated challenging areas for tour buses (Montague Street, Hill and Pine Street) which need extra care.
Parking Plan	Public feedback suggests that this plan is generally well-received but with some zoning and pricing modifications. The resident parking pass solution was seen as desirable. Many attendees were hopeful for a tour bus designated parking area that is not adjacent to the waterfront.
Dufferin / Lincoln / Falkland	Public feedback suggests that this configuration option is expected to have safety improvements, but that there is concern about the removal of street parking for business through the intersection.
Trunk 3 / Route 332	Public feedback suggests that additional traffic control at this intersection is strongly desired. Many requested that a roundabout also be considered at this intersection to enforce speed reductions and improve traffic flow.

Session #1

Aerial Map Board	Routing and Access Board	Existing Parking Board	Project Area Board	Intersections Board	Intro board	Questions/Comments Board
All the speed bumps, lights, etc are not going to help without a police presence and actual tickets being written.	Look at resident parking out of Old Town for second vehicles or vehicles with occasional uses or for workers from out of town.	No parking downtown, commuting parking lot (excluding accessible).	Horse traffic is an important historic feature - cars have dominated for 110 years - horses have been in town for 270! Careful about excluding them more.	Should all of these become multi-way stops?	Province said no to Mahone Bay reduced speed limits.	Deer crossing signs are important.
Crosswalk at bottom of Brook St.: your view is blocked going from tennis court side to other side if coming in town. Tree & pole there.	Shuttle system with an off-site parking lot or trolley system.	Charge per zone using a credit card.	Prioritize making more pedestrian traffic to solve some of car traffic.	Lower speed (Pelham/Blue Rocks).	These all seem too suburban for a small historic town.	
Do not buy "pre pay meters". We have wasted far too much $$ already in this town.	Starr Street: Blind corner, walkers but no sidewalk, speed a problem.	Don't need to raise meter price just to subsidize a shuttle system.	King & Pelham St. intersection: make it a 4-way to be consistent.	Dangerous for walkers crossing 332 (Kissing Bridge/Hwy 332).		
Put in place some kind of buffer zone for trees, shrubs, etc on corners, especially difficult to see in some parts of old town.	Drop speed limit and add speed tables.	Pro residential parking pass.	Need to calm traffic on Brook & Broad.	Sign for Kissing Bridge Road (Kissing Bridge/Hwy 332).		
Has moving the public works completely to the blue barn been considered & using the armories space as parking? I despise tearing down older buildings but sometimes a compromise has to be made.	Bad visibility coming from Lower Street.	Resident parking pass.	Walkability and priority for pedestrians.	Dufferin leading into Lincoln (in front of Knot Pub).		
Keep Linden ine-way (in) and make the twin street one way (out).	Tight for buses for museum and area.	Need more bicycle routes & parking.	Bike racks needed, people don't know where they are.			
Encourage (incentive) business owners to have employees park at the Anglican church area. Not much space there I know but better than having employees park where they work.	Museum drop off is desirable for buses.	No idling bylaw.	One way street sign at start of Linden St.			
As a town please actually implement some measures in the near future. Not another study etc and here we are 2 years later with nothing in place. A deadly accident is going to occur.	Lincoln, Montague, King, & others need devices to allow more pedestrian street life.	Buses should NOT stay on the waterfront or at academy.	S/W to Independent very rough to walk on.			
Where is the sidewalk for Maple Ave? Lightship & tourists are great but the regular people and families are living dangerously.	No double deckers on York St. Too much traffic already.	No charging parking for tourists.	Daycare being moved to Rec Complex (Green Street).			
More handicap spaces with lower height curbs.	Golf cart for accessibility?	No expensive meters.	New Town needs love too!!			
If not going to reconfigure the fountain intersection then start alerting drivers at Mackenzie there is a stop sign. How? Overhead lights, flashing neon signs, hot air balloons... But something has to be done. Mr. Doyle was disturbingly wrong when he wrote to me saying there were no traffic concerns at that intersection.	Unloading on Montague Street ~ 8-9AM	Please can this not be parking? A park? Trees? Outdoor space? (large parking lot on Bluenose/waterfront).	Converting poorly paved streets to well-maintained gravel or permeable might slow traffic & cost less.			
Eliminate parking in front of the Dial's on Falkland St. Hard to see people coming from waterfront to go up Broad using crosswalk. Especially when winnebagos or big trucks are parked almost down to crosswalk.	Campground may be defunctioning in coming years.	Weird corners such as Lincoln/Dufferin, Falkland, Pelham/King should become 3-4-5 way stops.	Pearmeable paving for storm water?			
Blind crest coming down Falkland in front of Bluenose Lodge - maybe roundabout at fountain would slow cars down.	Tough turns for trucks.	Additional metered off-street parking here (near Lincoln/Duke).	Sidewalk continuity.			
Intersection of Victoria/Tannery road - tourists coming from golf course direction don't understand where their turn is. Several times in the past week alone cars have turned into oncoming traffic. Do all tourists have to arrive in town at Fountain? Redirect to come from two directions - Back Harbour by cemetary to Academy or Victoria and Dufferin/Falkland. Would be a shame to heavy lift what could be a beautiful entrance into town with a roundabout or confusing lights.	Missing piece: how to connect with densification?	When Lincoln was repaved, traffic speed and noise increased - does road/street improvement cause this normally? Traffic slowing devices might solve this problem.	Dangerous Starr Street corner.			
Bluenose Drive one way?	No room for trucks accessing waterfront.	Large truck deliveries need attention/control on business streets - Montague, Lincoln.	Safe bicycle routes.			
Speeding down Brook & Tannery.	Scooter/E-Bike rentals.	Difficult for seniors or visitors to understand.				
Firefighter - volunteer, many now live outside of town and have to get to fire hall quickly. Can cars have flashing lights on dash or hood?		Resident parking permits are becoming necessary on Cumberland, Townsend and Fox.				
Handicap parking, Fire lane marking, Evaluate parking is fairly alotted ie properties with multiple access points, Monthly parking pass?		There is parking available as long as you leave Old Town.				
Handicap parking need on Montague near Rum Runner nearest in front of dockside.						
Hydrant back of 74 Montague facing Bluenose Drive.						
Need signage/crossmarks on road.						
Drivers do not understand "No" park zone. They see the streetlight but don't register there is a hydrant that should not be blocked.						
Need to ticket as well.						
Some residents have 2 separate street spots vs some residents that have none ie Montague, Pelham, Linden. Perhaps mapping these areas and consideration for making fair and accessible to as many as possible.						
Tour buses to use Rec complex for waiting area.						

Aerial Map Board	Routing and Access Board	Existing Parking Board	Project Area Board	Intersections Board	Intro board	Questions/Comments Board
Traffic calming may be required Blockhouse development.						
Parking area behind Hillcrest cemetery.						
King St. angled parking was a nightmare.						
Brook at Victoria is an issue, tree near/blocking ped crossing.						
Crosswalk on Victoria is an issue - used by many schoolchildren 2x a day and lights are often not working						
Can old landfill be used for parking lot for buses, overflow parking?						
Add parking regulations for new developments.						
Will lose space for parking during winter months.						
Cars shouldn't block walkers.						
Marble Head in Massachussets.						
Active transportation built into all new development.						
Downtown: Only working trucks & accessible vehicles. Everyone else uses golf carts.						
Transportation strategy needs to collaborate with MODL.						
Existing development empty lots being in-filled with multi-unit buildings. No parking minimums = serious traffic issues!						
No new builds without off street parking.						
Dust off and share the Active Transportation Plan (2012?).						
NYCUM HarbourView Haven						
Electric golf cart rentals for use in core.						
Need to reconfigure this parking lot for more safe access. (Near baseball field).						
Fire Hydrant & accessible parking space here (Bluenose on boardwalk).						
Parking on the gravel in the walking space (? This post it was near Lightship brewery).						
For residents in Old Town (Montague) that have no parking - parking pass option?						
Deer crossing signs.						
Seems to be potential for liability/accident (lawyer speaking...)						

Session #2

Parking Concept	Classification Map	Parking Plan	Dufferin Lincoln Falkland	Project Area	TK3 at Rte 332	Intro board
Build a dedicated parking area on Starr Street	Bus traffic needs to be limited/controlled/managed in Old Town.	need to clarify parking limit	Jane & Hebb concerns	Road painting should be refreshed more often	4-way up the road is a problem	Consider bike routes in the project or future project
Consider additional access here (west side of Community Centre)	Need to look at Wolfe Street - Speed reduction - Maybe stop sign at Morash Lane.	lets explore to keep vehicles out	King & Linclon & Pelham not consistent for locals and visitors	Pelham and Sawpit crossings need to be brighter, RRFB, more noticeable	don't want a roundabout, too swampy	Should have All-Way Stop King at Pelham
Note parking stall sizes	Tour bus, RV, truck routes should be signed better.	do not like pay towers, too expensive	Daycare crosswalk. Road too wide, passing on the inside at crosswalk	Poorly marked crosswalk at Bluenose by public washrooms, too long	consider a roundabout	Should get data from police on speed offenses
Improve signage to invite RVs to Community Centre parking	Too steep for them [heavy vehicles] to get off of Montague	park & ride, better access, tourist access from walking	need sidewalks on local streets	Consider Bump out and Pelham/King intersection visibility is poor coming from Pelham.	cut down the trees that block the view	
Dom't direct too much traffic to the Community Centre parking lot	Montague trucks near Kempt	Montague should be pedestrian only during the summer	LT feels dangeroud here [from Dufferin onto Lincoln]	paint one-way directions on the road	signage, lights, rumble strips, something to alert people	
	Perhaps "Google" maps can be changed to direct bus/truck traffic through appropriate routes	Pelham, Duke to King to be zone 2, residential	People love driving through all-way stops in Lunenburg	Parking lot of Cumberland, King & Duke need arrows	roundabout would be the best	
	Hill & Pelham, tour buses not familiar, get stuck	Small shuttle, remove cars, heritage town	businesses not happy about losing parking	signage needed in town, old signs at library		
	This is behaving like purple [Creighton Street]	Only employees are parking on Montague	This configuration is better than existing	crosswalk at Falkland & Green - too long, cars not paying attention		
		Canada Post 15-min parking spots	UNESCO: moving lion head, this is an issue	Need residential streets to have 30km limits		
		Should consider a new parking lot (old firehall, empty lots owned by Town)	high speeds on Dufferin Street, no sidewalks	Consider AWS here [Cornwallis and Creighton intersection]		
		Get tourist buses off waterfront (Linden Ave). Pollutes waterfront, blocks crosswalks	back end of the fire hall was once designated as business parking (permitted vehicles), but had low appetite	Enforce stopping from Duke		
		Consider parking (short term at Canada Post)		Speeding on Crieghton, need to consider additional stop signs		
		Should have an app to pay for parking		Reflective crosswalks		
		Parking spaces (unmarked) should be signed better		Creighton Street RACEWAY (from Hopson Street thru to Kissing Bridge/Hwy). No sidewalk speedway		

APPENDIX E
CONSTRUCTION COST ESTIMATES

WSP
1 SPECTACLE LAKE DRIVE
DARTMOUTH, NS
CANADA B3B 1X7

T: +1 902-835-9955
WSP.COM

LUNENBURG TRAFFIC AND PARKING PLAN

CLASS "D" COST ESTIMATE - TWO-WAY STOP

PROJECT NO.	CA0029624.8132
DATE:	2024-11-18
CLIENT:	Town of Lunenburg
CONSULTANT:	WSP
UNIT PRICE SOURCE:	WSP

NOTES: 1) ALL PRICES AND TOTALS BASED ON 2024 CANADIAN DOLLARS AND EXCLUDE HST.

ITEM	DESCRIPTION	UNITS	QNTY.	UNIT PRICE	COST
	STORM SEWER				
33	Catch Basins				
.1	1050 mm dia. Catchbasin	ea	8	$ 9,000	$ 72,000.00
34	Catch Basin Leads				
.1	250 mm dia. PVC DR35	m	40	$ 1,000	$ 40,000.00
			Sub-Total Street Const.		**$ 112,000**

ITEM	DESCRIPTION	UNITS	QNTY.	UNIT PRICE	COST
	STREET CONSTRUCTION				
41	Gravels				
.1	Type 1 - 150 mm thick	m^2	710	$ 23	$ 16,330.00
43	Asphaltic Concrete				
.1	Type C-HF 50 mm thick	m^2	710	$ 50	$ 35,500.00
.2	Type B-HF 100 mm thick	m^2	710	$ 35	$ 24,850.00
.3	Full Depth Asphalt Removal	m^2	365	$ 10	$ 3,650.00
44	Curb				
.1	Concrete Curb & Gutter	m	390	$ 250	$ 97,500.00
.2	Curb and Gutter Removal	m	50	$ 50	$ 2,500.00
45	Sidewalk				
.1	Concrete Sidewalk - 150mm Thick	m^2	50	$ 220	$ 11,000.00
.2	Sidewalk Removal	m^2	30	$ 120	$ 3,600.00
46	Tactile Walking Surface Indicator	each	17	$ 300	$ 5,100.00
51	Adjusting Existing Manhole Rim	each	9	$ 500	$ 4,500.00
53	Signs and Telespar Post	each	5	$ 800	$ 4,000.00
			Sub-Total Street Const.		**$ 208,530**

ITEM	DESCRIPTION	UNITS	QNTY.	UNIT PRICE	COST
	LANDSCAPING				
66	Topsoil and Sod 150mm	m^2	365	$ 30	$ 10,950.00
			Sub-Total Landscaping		**$ 10,950**

ITEM	DESCRIPTION	UNITS	QNTY.	UNIT PRICE	COST
	ADDITIONAL ITEMS				
76	Pavement Markings				
.1	Painted White Single Line-Solid	m	75	$ 7	$ 525.00
.2	Painted Crosswalk	m	15	$ 50	$ 750.00
.3	Painted Zebra Crosswalk	m	35	$ 35	$ 1,225.00
.4	Painted Yellow Single Centreline-Solid	m	200	$ 3	$ 600.00
.5	Painted Stop Bar	m	25	$ 21	$ 525.00
.6	Painted Hatch - White	m^2	90	$ 20	$ 1,800.00
.7	Painted Hatch - Yellow	m^2	90	$ 15	$ 1,350.00
77	Rectangular Rapid Flashing Beacon (RRFB)	L.S.	1	$ 12,000	$ 12,000.00
			Sub-Total Additional Items		**$ 18,775**

Disclaimer: This estimate of probable construction cost is approximate only. Actual cost may vary significantly from this estimate due to market conditions such as material and labour costs, time of year, industry workload, competition, etc. This estimate has been prepared based on our experience with similar projects. This estimate has not been prepared by obtaining any estimates or quotes from contractors. Due to the uncertainties of what contractors bid, WSP cannot make any assurances that this estimate will be within a reasonable range of the tendered low bid. When assessing this project for business feasibility purposes this estimate should not be relied upon without considering these factors.

SUB-TOTAL (All Items)	**$ 350,255**
CONTINGENCY (50%)	**$ 175,128**
TOTAL	**$ 525,383**

LUNENBURG TRAFFIC AND PARKING PLAN

CLASS "D" COST ESTIMATE - ALL-WAY STOP

PROJECT NO.	CA0029624.8132
DATE:	2024-11-18
CLIENT:	Town of Lunenburg
CONSULTANT:	WSP
UNIT PRICE SOURCE:	WSP

NOTES: 1) ALL PRICES AND TOTALS BASED ON 2024 CANADIAN DOLLARS AND EXCLUDE HST.

ITEM	DESCRIPTION	UNITS	QNTY.	UNIT PRICE	COST
	STORM SEWER				
33	Catch Basins				
.1	1050 mm dia. Catchbasin	ea	8	$ 9,000	$ 72,000.00
34	Catch Basin Leads				
.1	250 mm dia. PVC DR35	m	40	$ 1,000	$ 40,000.00
		Sub-Total Street Const.			**$ 112,000**

ITEM	DESCRIPTION	UNITS	QNTY.	UNIT PRICE	COST
	STREET CONSTRUCTION				
41	Gravels				
.1	Type 1 - 150 mm thick	m^2		$ 23	$ 16,330.00
43	Asphaltic Concrete				
.1	Type C-HF - 50 mm thick	m^2	710	$ 50	$ 35,500.00
.2	Type B-HF - 100 mm thick	m^2	710	$ 35	$ 24,850.00
.3	Full Depth Asphalt Removal	m^2	400	$ 10	$ 4,000.00
44	Curb				
.1	Concrete Curb & Gutter	m	445	$ 250	$ 111,250.00
.2	Curb Removal	m	50	$ 50	$ 2,500.00
45	Sidewalk				
.1	Concrete Sidewalk - 150mm Thick	m^2	485	$ 220	$ 106,700.00
.2	Sidewalk Removal	m^2	30	$ 120	$ 3,600.00
46	Tactile Walking Surface Indicator	each	36	$ 300	$ 10,800.00
51	Adjusting Existing Manhole Rim	each	9	$ 500	$ 4,500.00
53	Signs and Telespar Post	each	1	$ 800	$ 800.00
		Sub-Total Street Const.			**$ 320,830**

ITEM	DESCRIPTION	UNITS	QNTY.	UNIT PRICE	COST
	LANDSCAPING				
66	Topsoil and Sod 150mm	m^2	425	$ 30	$ 12,750.00
		Sub-Total Landscaping			**$ 12,750**

ITEM	DESCRIPTION	UNITS	QNTY.	UNIT PRICE	COST
	ADDITIONAL ITEMS				
76	Pavement Markings				
.1	Painted White Single Line-Solid	m	45	$ 7	$ 315.00
.2	Painted Crosswalk	m	15	$ 50	$ 750.00
.3	Painted Zebra Crosswalk	m	45	$ 35	$ 1,575.00
.4	Painted Yellow Single Centreline-Solid	m	225	$ 3	$ 675.00
.5	Painted Stop Bar	m	25	$ 21	$ 525.00
.6	Painted Hatch - White	m^2	90	$ 20	$ 1,800.00
77	Rectangular Rapid Flashing Beacon (RRFB)	L.S.	1	$ 12,000	$ 12,000.00
		Sub-Total Additional Items			**$ 17,640**

Disclaimer: This estimate of probable construction cost is approximate only. Actual cost may vary significantly from this estimate due to market conditions such as material and labour costs, time of year, industry workload, competition, etc. This estimate has been prepared based on our experience with similar projects. This estimate has not been prepared by obtaining any estimates or quotes from contractors. Due to the uncertainties of what contractors bid, WSP cannot make any assurances that this estimate will be within a reasonable range of the tendered low bid. When assessing this project for business feasibility purposes this estimate should not be relied upon without considering these factors.

SUB-TOTAL (All Items)	**$ 463,220**
CONTINGENCY (50%)	**$ 231,610**
TOTAL	**$ 694,830**

LUNENBURG TRAFFIC AND PARKING PLAN

CLASS "D" COST ESTIMATE - COMMUNITY CENTRE PARKING LOT

PROJECT NO.	CA0029624.8132
DATE:	2024-11-18
CLIENT:	Town of Lunenburg
CONSULTANT:	WSP
UNIT PRICE SOURCE:	WSP

NOTES: 1) ALL PRICES AND TOTALS BASED ON 2024 CANADIAN DOLLARS AND EXCLUDE HST.

ITEM	DESCRIPTION	UNITS	QNTY.	UNIT PRICE	COST
	STREET CONSTRUCTION				
41	Gravels				
.1	Type 1 - 150 mm thick	m^2	120	$ 23	$ 2,760.00
43	Asphaltic Concrete				
.1	Type C-HF 50 mm thick	m^2	120	$ 50	$ 6,000.00
.2	Type B-HF 100 mm thick	m^2	120	$ 35	$ 4,200.00
.3	Full Depth Asphalt Removal	m^2	300	$ 10	$ 3,000.00
44	Curb				
.1	Concrete Curb & Gutter	m	200	$ 250	$ 50,000.00
45	Sidewalk				
.1	Concrete Sidewalk - 150mm Thick	m^2	400	$ 220	$ 88,000.00
46	Tactile Walking Surface Indicator	each	17	$ 300	$ 5,100.00
53	Signs and Telespar Post	each	1	$ 800	$ 800.00
			Sub-Total Street Const.		**$ 159,860**

ITEM	DESCRIPTION	UNITS	QNTY.	UNIT PRICE	COST
	ADDITIONAL ITEMS				
76	Pavement Markings				
.1	Painted White Single Line-Solid	m	1,330	$ 7	$ 9,310.00
.2	Painted Stop Bar	m	25	$ 21	$ 525.00
.3	Painted Hatch - White	m^2	110	$ 20	$ 2,200.00
.4	Painted Accessible Parking Symbol	each	7	$ 115	$ 805.00
76	Bicycle Ammenities	L.S.	1	$ 10,000	$ 10,000.00
78	Rectangular Rapid Flashing Beacon (RRFB)	L.S.	1	$ 12,000	$ 12,000.00
			Sub-Total Additional Items		**$ 34,840**

Disclaimer: This estimate of probable construction cost is approximate only. Actual cost may vary significantly from this estimate due to market conditions such as material and labour costs, time of year, industry workload, competition, etc. This estimate has been prepared based on our experience with similar projects. This estimate has not been prepared by obtaining any estimates or quotes from contractors. Due to the uncertainties of what contractors bid, WSP cannot make any assurances that this estimate will be within a reasonable range of the tendered low bid. When assessing this project for business feasibility purposes this estimate should not be relied upon without considering these factors.

SUB-TOTAL (All Items)	**$ 194,700**
CONTINGENCY (50%)	**$ 97,350**
TOTAL	**$ 292,050**