# Active Transportation Crossing Assessment for Roadway Crossing Locations on Sunshine Coast

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Prepared for: Transportation Choices Sunshine Coast, Vancouver Coastal Health and Sunshine Coast School District 46

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# Contents

# Acknowledgements

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- Transportation Choices - Sunshine Coast (TraC)
- Connect the Coast Society
- Vancouver Coastal Health
- Sunshine Coast School District 46
- Sunshine Coast Regional District
- Town of Gibsons
- British Columbia Cycling Coalition
- Insurance Corporation of British Columbia, and
- The Ministry of Transportation and Infrastructure

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## Context

Traffic safety is a key issue for communities on Sunshine Coast. This report provides insight into conditions at two intersections near elementary schools on the Coast, and offers a compelling case for active transportation crossing controls at each.

This work was initiated by Transportation Choices (TraC) Sunshine Coast, Vancouver Coastal Health and Sunshine Coast School District through a grant from BC Cycling Coalition. These three organizations have been focused for years on promoting active transportation and traffic safety throughout Sunshine Coast. During recent years there have been a number of initial safety assessments, studies and publications concerning traffic safety surrounding elementary schools on Sunshine Coast, including, but not limited to:

- Active School Travel - Summary of Priorities by Sunshine Coast Active Travel Kids Committee (June, 2023)
- Summary of Safety Observations by Paul de Leur, Insurance Corporation of British Columbia (Sunshine Coast visit, May 28-30, 2023)
- Active Travel Project for Gibsons (2018)
- Best Routes to School Map - Cedar Grove Elementary, developed by Transportation Choices Sunshine Coast, Vancouver Coastal Health, Sunshine Coast Regional District, BC Cycling Coalition, Dedicated Action for School Health (DASH) and Sunshine Coast School District 46 (June, 2021)
- Best Routes to School Map - Langdale Elementary, developed by Transportation Choices Sunshine Coast, Vancouver Coastal Health, Sunshine Coast Regional District, BC Cycling Coalition, Dedicated Action for School Health (DASH) and Sunshine Coast School District 46 (May, 2022)

This body of work examines safety issues in the vicinity of elementary schools on British Columbia's Sunshine Coast. The consulting team reviewed the work and identified the intersection of Pratt Road and Chaster Road near Cedar Grove Elementary, and Forbes Road and Port Mellon Highway near Langdale Elementary, as two locations with traffic safety issues that could be assessed and reported in a comprehensive manner, given the resources available.

The Transportation Association of Canada issued its third edition of its Pedestrian Crossing Control Guide in June, 2018. British Columbia, by contrast, last updated its pedestrian crossing control guide in 1994. A great deal has changed in the past 30 years in terms of available crossing control methods and technology as well as societal values and attitudes concerning safety and access for vulnerable road users. This study therefore relies more heavily on the more recent Canadian national guidance in its assessment. It examines the volume, speed and movement of motor vehicles at each intersection, and compares that with the volume and movement of pedestrians, those using mobility aids, people riding bicycles and those using micro-mobility devices. The objective is to assess whether some form of traffic control is warranted at each location as a means to improve mobility, access and safety for vulnerable road users.

## Guiding Principles

The Transportation Association of Canada has established a number of principles to guide practitioners in the decision making process concerning the provision of active transportation crossing controls. The expectation is that those assessing traffic control measures will choose locations and treatments that meet all or most of the guiding principles.

The seven principles include:

1. Safety – It is fundamental that the road system protects pedestrians and other vulnerable road users.
2. Delay – Reducing delay for active transportation users is key to reducing risky or non-compliant crossing behaviour.
3. Connectivity – Effective crossing opportunities for active transportation users are available at regular intervals throughout the roadway network.
4. Expectancy – The presence of crossing treatments meet driver expectations, increasing the likelihood of drivers responding to situations correctly and in a timely manner.
5. Equity – Demographics of those using active transport modes and the mix and speed of motor vehicles using the roads are considered.
6. Consistency – The approach to roadway crossing facilities is consistent across the jurisdiction.
7. Pragmatism – Practical issues of crossing treatments are considered, including for example, effectiveness of the device given local circumstances and cost to install and maintain the treatment.

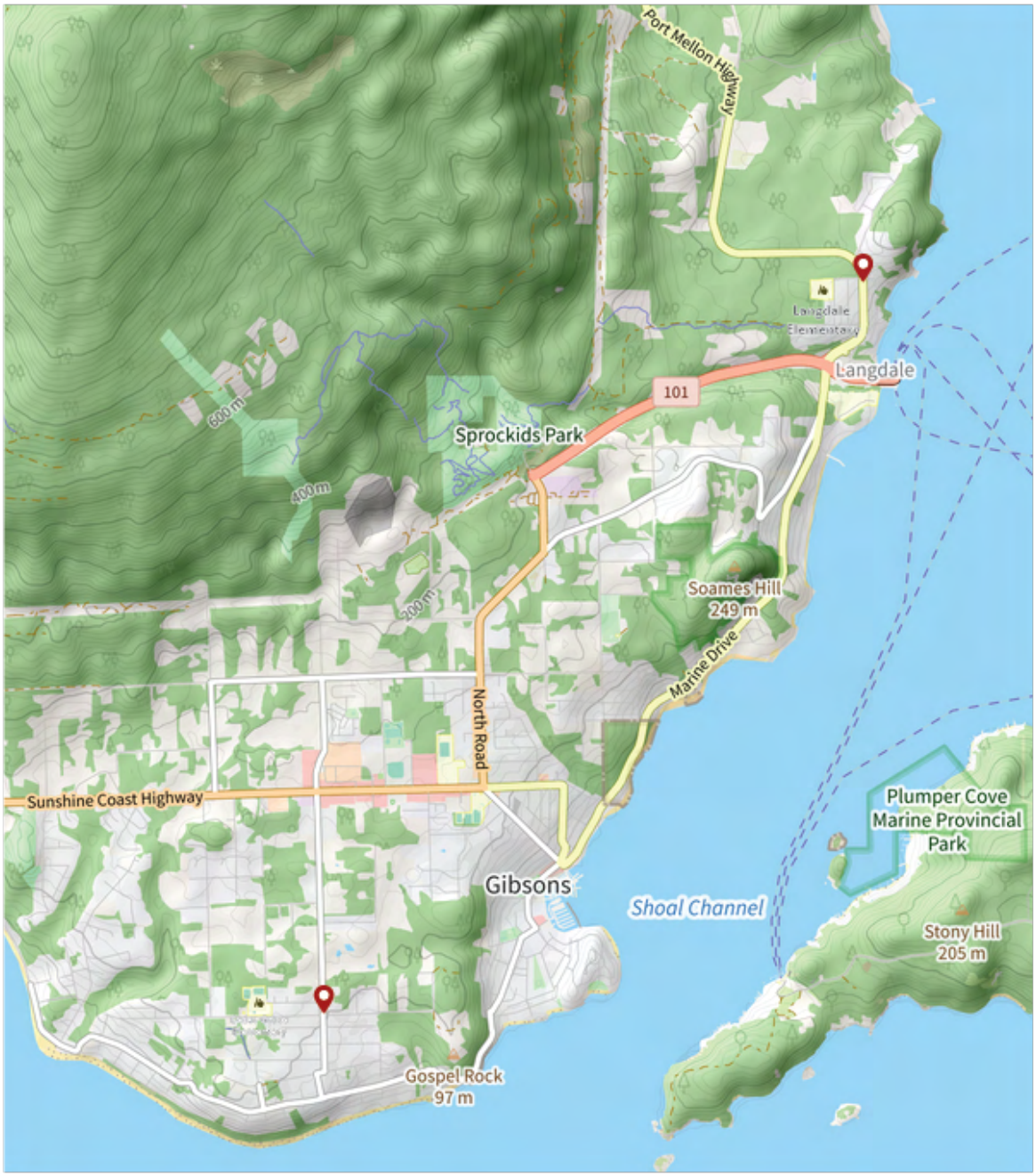
## Assessment Process

The approach to assess whether a crossing control treatment is warranted and an appropriate treatment option involves the following steps:

1. An Initiation Event - Involving reaction by responsible agencies to crossing delays or collisions involving pedestrians and other vulnerable road users or concerns raised by community members or other stakeholders in the community. Or proactively through a traffic impact study as part of a new development.
2. Preliminary Assessment - To determine whether there is a need for any crossing control treatment at the location in question.
3. Treatment Selection - Assuming that a crossing control measure is warranted, the next step is to identify a type of treatment that would be appropriate under the circumstances (see Appendix A).
4. Assessment of Potential Impact of the Selected Treatment - Once a treatment has been selected, it should be assessed with respect to the guiding principles, thus allowing consideration of the guiding principles in light of local site conditions, the priorities, values and specific goals of local communities and decision makers.
5. Treatment Installation - In accordance with provincial and federal guidance, and
6. Monitoring and Evaluation - Post implementation to allow for adjustments to, and reconsideration of, a treatment option.

The initial review of traffic school safety in the vicinity of elementary schools on Sunshine Coast by Vancouver Coastal Health, Transportation Choices - Sunshine Coast, Sunshine Coast

School District 46 and the Insurance Corporation of BC, highlighted a number of safety concerns for active transportation users. This body of work was the initiation event which enabled the consulting team to identify safety concerns affecting active transportation users at two intersections shown in the Figure below, including Forbes and Port Mellon Highway in Langdale, and Pratt and Chaster intersection in Sunshine Coast Regional District. These situations appeared to justify further study, and could be assessed in a fulsome manner, given available resources.




The consulting team, supported by community members, collected motor vehicle speed data, and data concerning motor vehicle, and active transportation user volumes and movements on weekdays during the weeks of Monday October 7th and October 14th, 2024. The data

is available in Appendices A to C. The data includes:

Forbes and Port Mellon Highway

- Motor vehicles volumes and movements
- Active transportation volumes and movements
- Motor vehicle speeds

Pratt and Chaster

- Motor vehicles volumes and movements
- Active transportation volumes and movements
- Motor vehicle speeds

The consulting team also visited each site and collected data concerning:

- Roadway geometry and stopping sight distances
- Existing signage
- Speed limits
- Proximity of intersections in question to the nearest traffic control device
- Signal timing at each control device
- Active transportation desire lines

This data permitted a preliminary assessment in accordance with the following Figure, drawn from TAC's Pedestrian Crossing Control Guide: Third Edition (2018).

## Preliminary Assessment

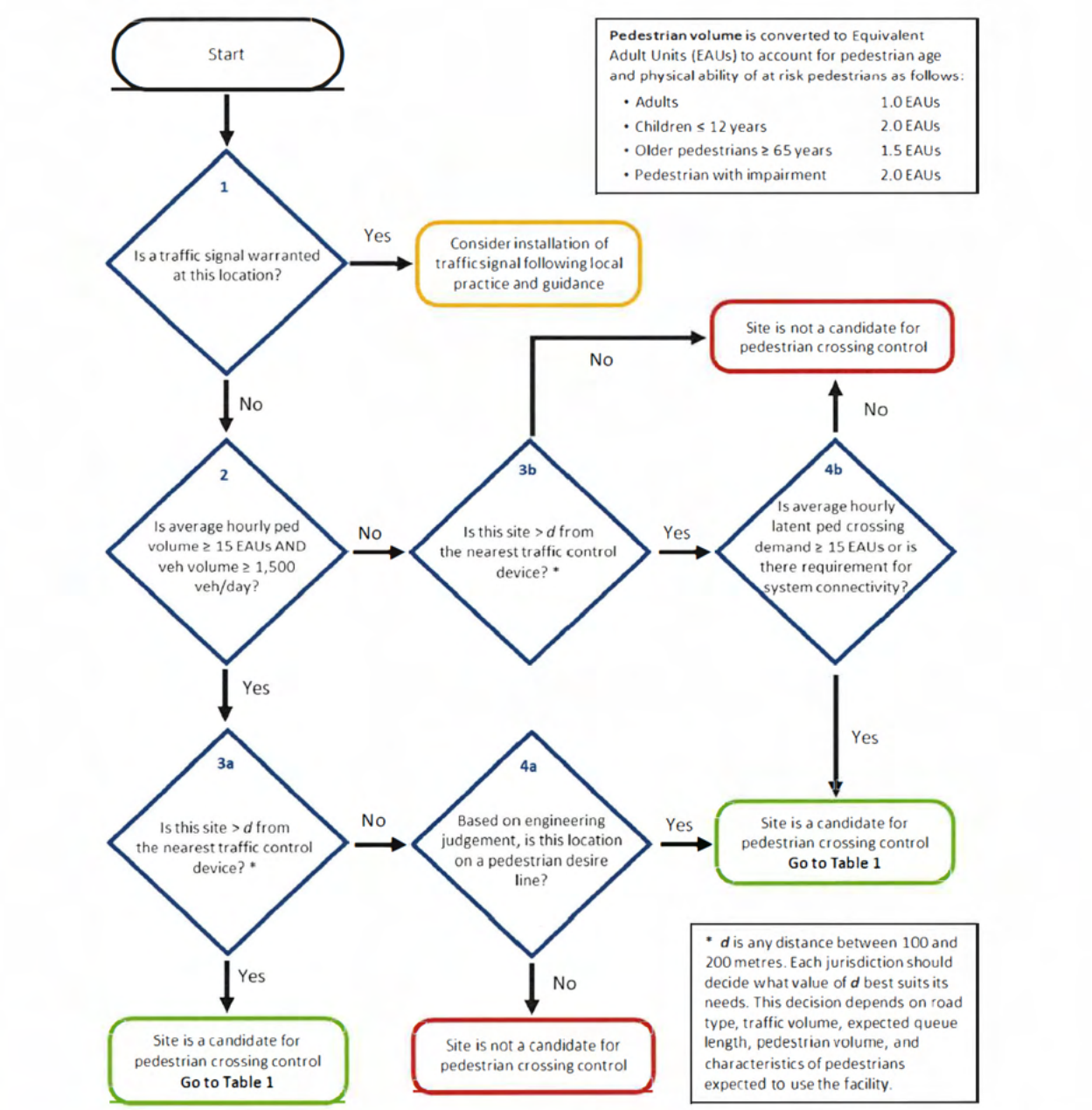



**Figure 8: Decision Support Tool – Preliminary Assessment**

## Port Mellon Highway at Forbes Road

The following information describes site conditions at the intersection of Port Mellon Highway and Forbes and the outcome of the preliminary assessment.

### Site Conditions

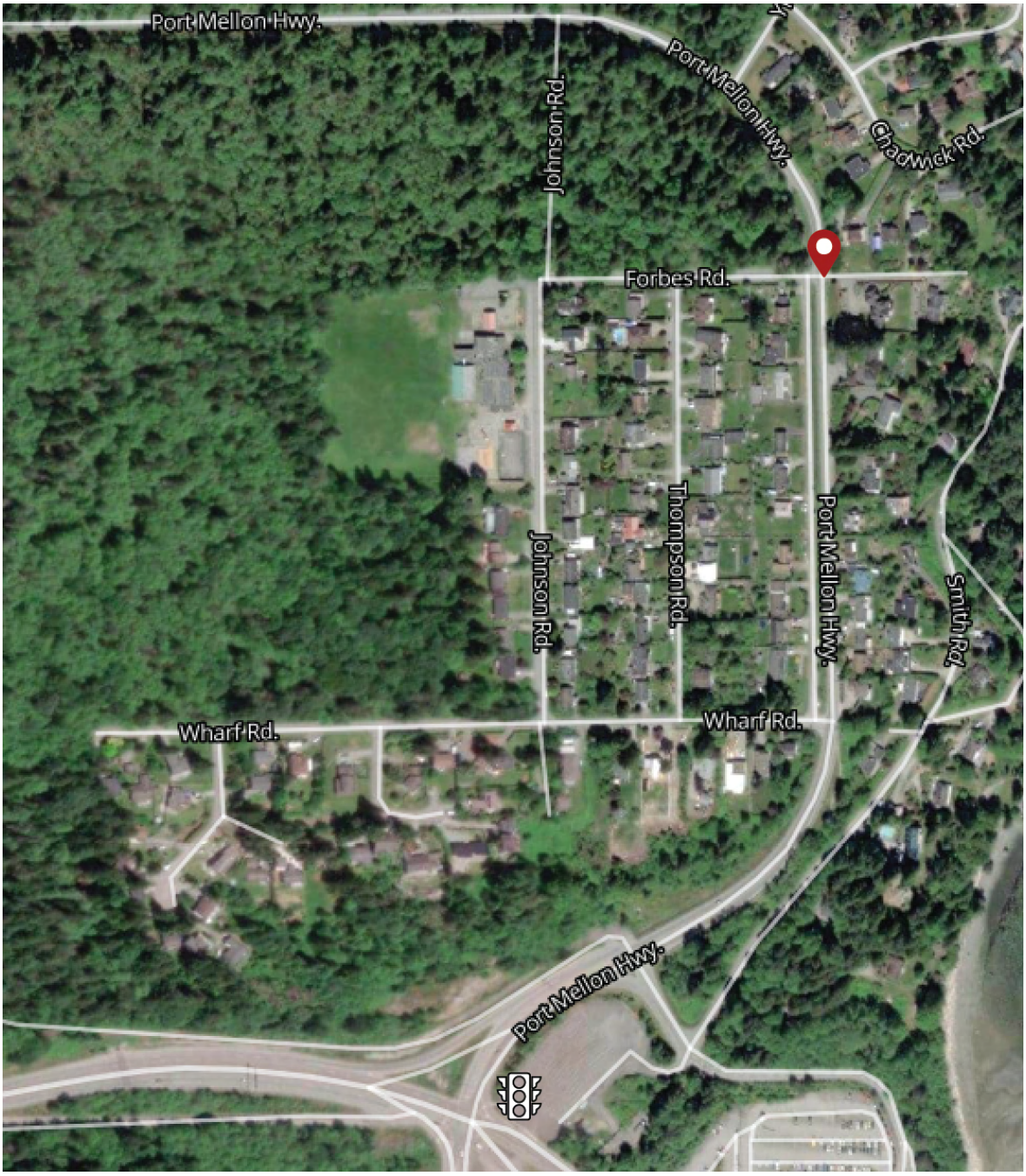
Port Mellon Highway, shown on the map below, bisects communities in Langdale, including a residential neighbourhood, YMCA Camp, parks and waterfront access located on the northeast side of the Highway, and a residential neighbourhood, bus stops and an elementary school located on the southwest side. The intersection of Forbes and Port Mellon Highway is marked on the map below, and is located at a key juncture between these two neighbourhoods. This intersection, and the stretch of Highway between Forbes and YMCA Road to the north, is a common route for elementary school students, YMCA Camp participants, and for Camp staff, walking and cycling between these neighbourhoods.  Residents also cross the Highway between YMCA and Forbes Roads regularly to access the bus stop on Forbes west of the Highway, and to visit friends, for recreation and to walk their pets.


*Community Size:* Two thousand *(*2,000) or less. Area F: West Howe Sound has a population of 2,407 - but some of those live on islands on this portion of the coast, hence the effective population is somewhat lower.

*Number of Travel Lanes to Cross:* One (1) lane in each direction.

*Speed limit:* 50 km/h

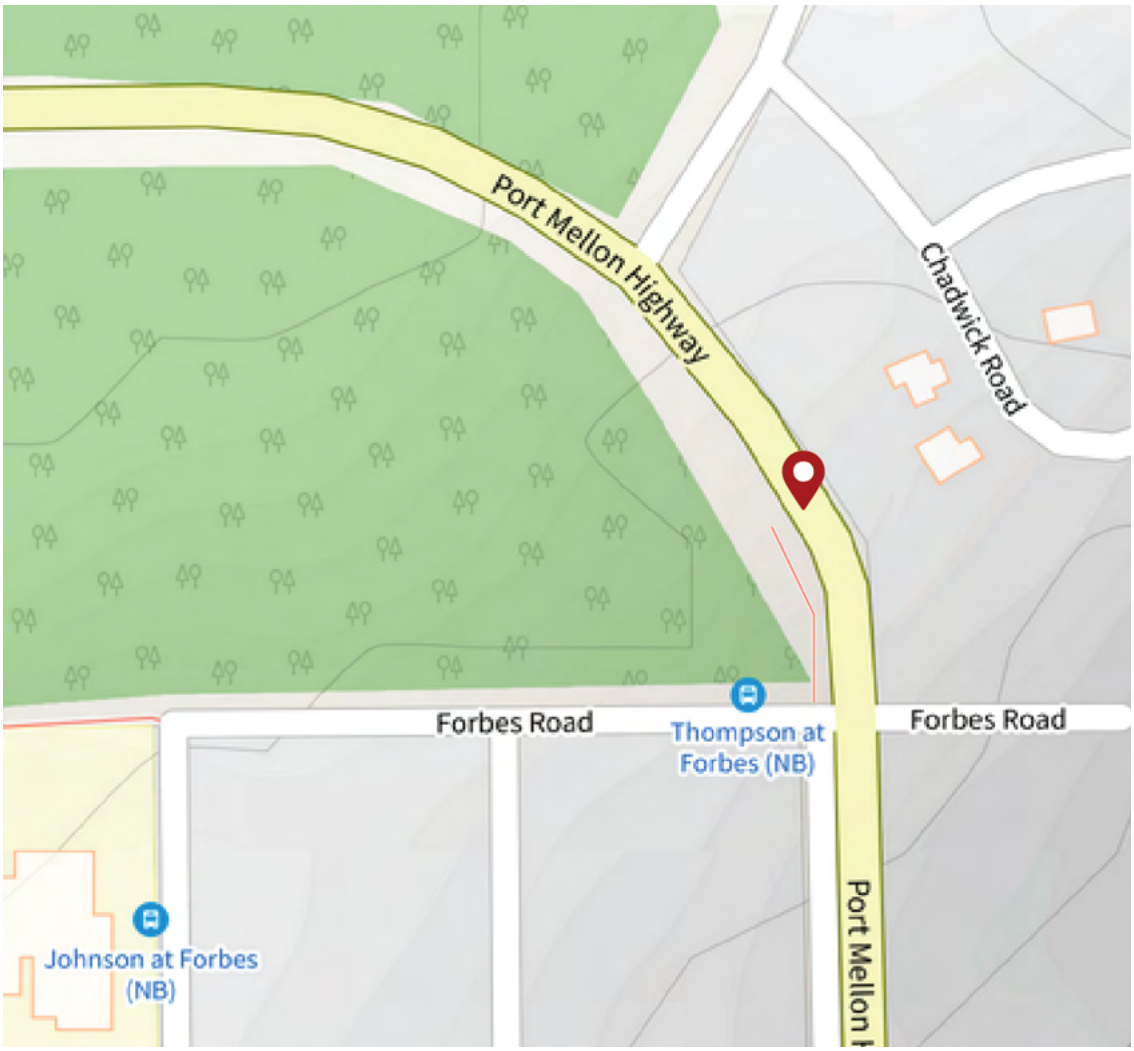
*Distance to Nearest Alternate Crossing Offering Equal or Higher Control:* At Port Mellon and Sunshine Coast Highways, approximately 750 metres south (see image below for details).




*Motor Vehicle Stopping Sight Distance:* Approximately 100 to 120 metres from the selected active transportation crossing location marked on the map below, to locations just north of YMCA Road and just south of Forbes Road, where grades and curves in the road begin to obscure a driver's view of the crossing site. This crossing location is recommended as it is

situated on a route that people commonly use for active travel, while maximizing the sight lines for motor vehicle drivers approaching from the north and south on Port Mellon Highway.

*Grades:* Elevation at Forbes Road and Port Mellon Highway is 67 metres while the elevation at the Port Mellon and Sunshine Coast Highways intersection is 21 m. A difference of 46 m. Forty-six metres over 750 m, gives us a grade of 6.1% (46/750 = .061). The grade between the intersection of YMCA Road and the proposed crossing location is estimated at 3.3%. The elevation at the crossing point is 71 m, and the elevation at YMCA Road and Port Mellon Highway is 74 m. The distance between the recommended crossing point and YMCA Road is 90 m, giving a three point 3.3% grade (3/90 = .033).




*Pedestrian Equivalent Adult Units (EAUs) crossing during the Peak Four Hours of a Typical Day:* One hundred ten EAUs (110 EAUs or 27.5 per hour). A high volume is defined as “25 pedestrians per hour for at least four hours of a typical day” (ITE, 2010, P 153).

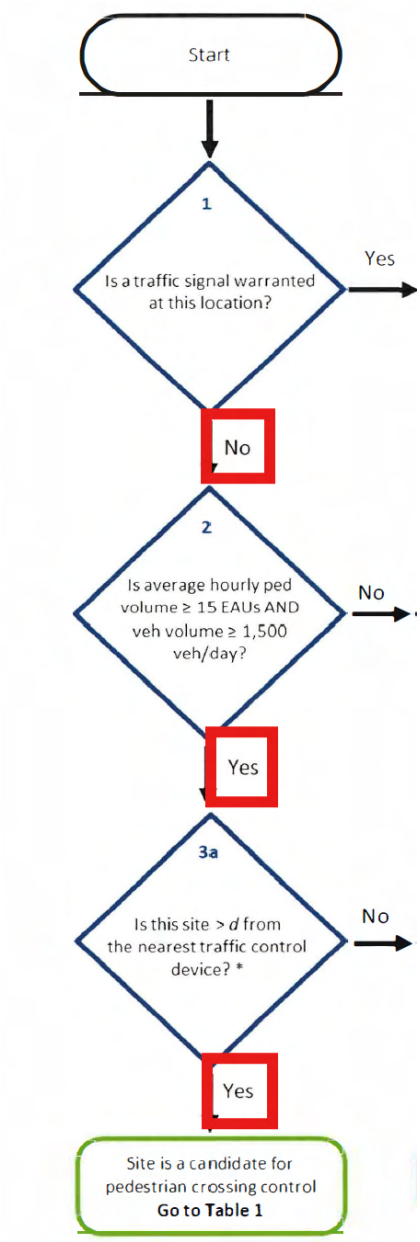
*Estimated Average Daily Motor Vehicle Traffic Volumes (ADT):* Between 2,190 and 3,650 ADT

*Results of Speed Study:* Eight-fifth percentile speeds northbound 64 km/h, southbound 59 km/h.

## Discussion

The Figure on the following page provides an illustration of the preliminary crossing assessment findings. Vehicle and pedestrian volumes do not represent a high enough value to consider a traffic signal. However, a traffic control measure is warranted, given that the daily volume of motor vehicles was measured at between 2,190 and 3,650, thus exceeding the recommended minimum threshold of 1,500 vehicles per day. In addition, a four hour count of active transportation users crossing at this location was measured at 110 EAUs or 27.5 EAUs per hour, above the threshold of 25 pedestrians per hour set by the Institute of Transportation Engineers as the baseline for implementation of a crossing treatment (ITE, 2010, p. 153). Further, the distance to the nearest controlled crossing for pedestrians is over 750 m away, well over the limit of 200 m recommended by TAC. Some form of traffic control is thus warranted.

## Preliminary Crossing Assessment




Vehicle and Pedestrian volumes do not represent a high enough value for consideration for a traffic signal

Peak Hour Vehicle Volume: 219

Vehicle Volumes Estimated: 2,190 - 3,650

ADT exceeds 1,500 per day

Peak AT Volumes: 46 EAUs

Estimated Average AT Volume: ~19 EAUs

Hourly AT Volumes exceed 15 EAUs

4 hour active transportation crossing count in a typical day: 110 EAUs or 27.5 EAU's per hour

Over the threshold of 25 pedestrians per hour for at least four hours on a typical day (ITE, 2010))

Nearest Traffic control device is over 700m away and

Exceeds d[1]

Based on ADT and speed limit, TAC recommends a standard crosswalk with Side Mounted Signs, as indicated in the following Figure. However, the speed study indicates an eighty-fifth percentile of over 60 km/h, so this speed is used as the effective speed limit.

[1] The value of 'd' is to be set by the local jurisdiction to best suit its needs, typically defined between 100 and 200m, is the distance a person would be easily expected to walk to another crossing location. For the purposes of this preliminary assessment, d is set to 200m.

| Average Daily Traffic | Speed Limit [2] (km/h) | Total Number of Lanes [1] | | | | |
|---|---|---|---|---|---|---|
| | | 1 or 2 lanes | 3 lanes (two-way) | 3 lanes (one-way) | 2 or 3 lanes/direction w/ raised refuge | 2 lanes/ direction w/o raised refuge |
| 1,500 < ADT ≤ 4,500 | ≤ 50 | GM | GM | GM | GM | GM+ |
| | 60 | GM+ | GM+ | OF | RRFB or OF [3] | RRFB |
| | 70 | RRFB | RRFB | OF | OF | OF |
| 4,500 < ADT ≤ | ≤ 50 | GM | GM | GM | GM | RRFB |
| | 60 | GM+ | GM+ | OF | RRFB or OF [3] | OF |

| Optional Components |
|---|
| **General Case** |
| • Crossing guards<br>• Offset crosswalk arrangement for crossings with raised refuge island.<br>• Curb corner radius reduction<br>• Raised crosswalk |
| **School Areas** |
| *Same as General Case except with the following additions:*<br>• In-Street School Crosswalk sign<br>• RRFB treatment system |

Considering that there are also relatively poor sightlines for motor vehicles travelling north and southbound as well as the presence of buses, single unit trucks and tractor trailer combinations, a high visibility traffic control measure is recommended. A Rectangular Rapid Flashing Beacon (RRFB) application at this location would improve the prominence of the recommended active transportation crossing location to drivers, and would augment the existing Advanced Warning Signs (WC-16). These recommendations are consistent with Optional Components for School Areas in Table Three (3) within TAC's Pedestrian Crossing Control Guide[2] (shown to the left).

To augment and support use of the RRFB, this report recommends that a multi-use path (MUP) be constructed on the east side of Port Mellon Highway, linking the recommended crossing point with YMCA Road. Measurements taken at this location found that there is approximately eight metres (8 m) between the outside edge of the general purpose travel lane and fence lines denoting private property to the east, suggesting that there is likely adequate space to accommodate a two-way MUP and the recommended setbacks from the Highway. The location of the proposed MUP would thus provide a comfortable and safe passage for active transportation users travelling along the Highway between the proposed active transportation crossing and YMCA Road. If, however, construction of a MUP is not possible, the general purpose travel lane and shoulder in the northbound direction are between 5.1 m and 4.8 m wide, suggesting adequate space to accommodate a travel lane of between 3.6 m and 3.3 m and a shoulder of 1.5 m for active transportation users. This option is however much less desirable, as it leaves active transportation users more vulnerable to collisions and other conflicts with motor vehicle traffic.

[2] Table 3 within TAC's PCCG notes that "(t)he GM+ Treatment System should be enhanced by at least one of the desirable components (listed in the Table). If none of the desirable components are provided, the practitioner should consider installing the RRFB treatment system to enhance the crossing conspicuity (P42)." Note that none of the Desirable Components are provided. An RRFB is thus considered appropriate under these circumstances.

## Potential Impacts

The following is a review of the impacts of the proposed traffic control measure in relation to the guiding principles. The recommended crossing treatment is consistent with each of the guiding principles, as follows:

**Safety** – Currently most pedestrians and cyclists use the existing MUP to travel from Forbes to the recommended crossing point south of YMCA Road. However, some pedestrians and cyclists have a tendency to stay on the west side of the Highway, crossing to the east side at YMCA Road, where sightlines for vehicles travelling southbound are limited to thirty metres (30 m) or less. This situation endangers vulnerable road users and could be made much safer if pedestrians and cyclists were directed to cross at the recommended location and supported by an RRFB which would alert drivers to the presence of vulnerable road users at least one hundred twenty metres (120 m) from the recommended crossing point.

**Connectivity** – the recommended crossing point serves a well defined desire line between the residential neighbourhood to the northeast and an elementary school and bus stop on the southwest side of Port Mellon Highway. There is no other crossing treatment available for over seven hundred metres (700 m), thus offering system connectivity while avoiding an overload on driver workload and expectations.

**Expectancy** – Given that there is a school and transit stop on one side of the Highway and a residential neighbourhood and a kids camp on the other side, drivers should expect vulnerable road users to cross Port Mellon Highway between Forbes and YMCA Roads. A marked crossing with an RRFB will encourage pedestrians to cross at that location, thus increasing the likelihood that drivers will stop in a timely manner.

**Equity** – An enhanced crossing involving an RRFB is appropriate given the high number of elementary school children that use this crossing.

**Consistency** – Although RRFB's are relatively rare on Sunshine Coast, there is a growing number of these treatments at crossing locations throughout British Columbia. Given that Port Mellon Highway is under the jurisdiction of the provincial Ministry of Transportation and Infrastructure, the recommended treatment is therefore consistent across the jurisdiction in question.

**Pragmatism** – RRFB's have been installed on Sunshine Coast for less than $25,000. Further, such treatments are relatively easy to install and maintain, particularly given the climate that is prevalent on the Sunshine Coast.

**Delay** – During peak periods when students are heading to and from school and shifts are starting and ending at Port Mellon Mill, delays for pedestrians and cyclists crossing Port Mellon Highway do occur. An RRFB at this location will help to reduce delays for vulnerable road users, thus reducing risky or non-compliant crossing behaviour and the risk of collisions between motor vehicles and active transportation users.

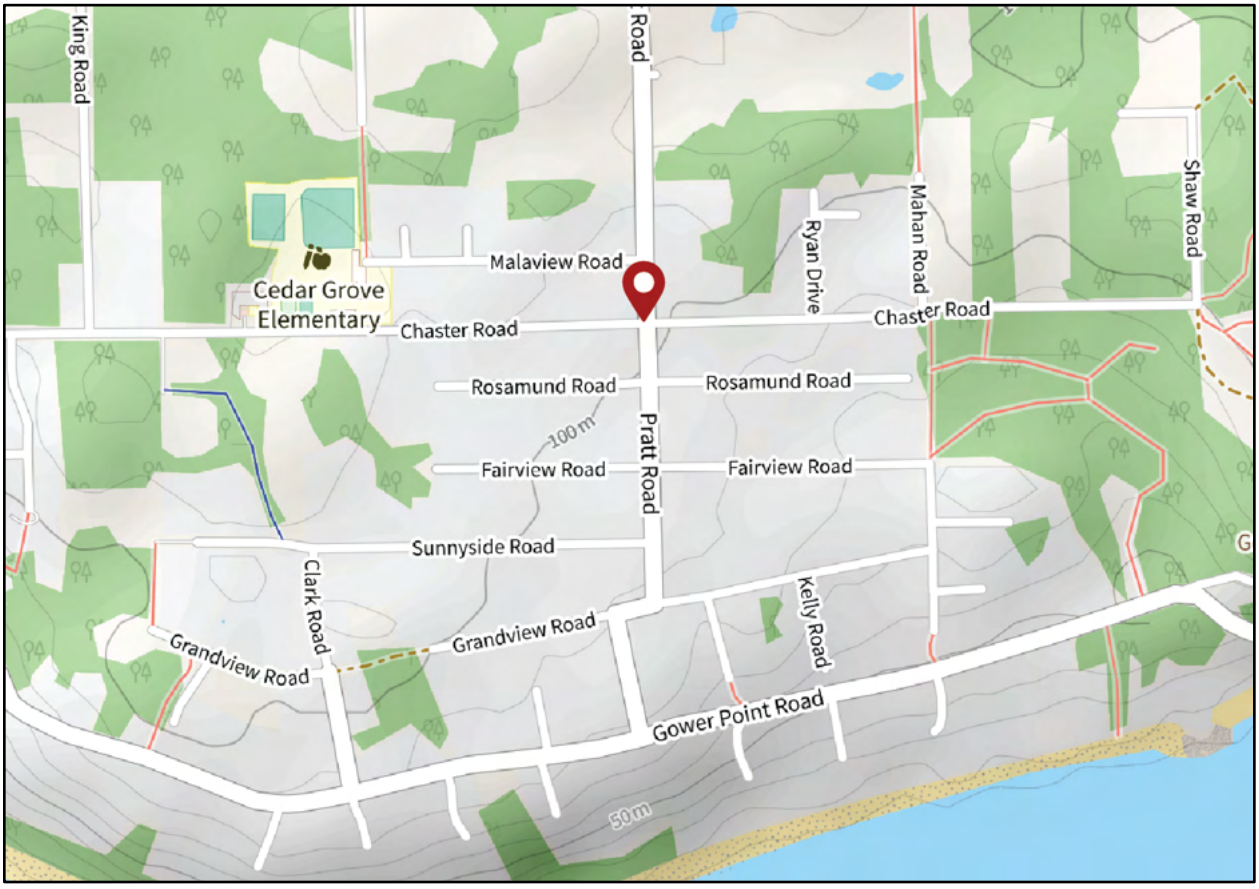
Since the recommended treatment is consistent with each of the guiding principles, we recommend installation of an RRFB at or near the identified crossing point on Port Mellon Highway between Forbes and YMCA Road.

## Pratt Road at Chaster Road

The following information describes site conditions at the intersection of Pratt Road and Chaster Road and the outcome of the preliminary assessment.

### Site Conditions

The intersection of Pratt and Chaster Roads is marked on the map below. This intersection is located between Cedar Grove Elementary, to the west of Pratt Road and the residential community to the east of Pratt. There are also transit stops on each side of Pratt, just north of Chaster. This intersection is on a commonly used route for students travelling by foot and bicycle between their homes and Cedar Grove Elementary, as well as residents using transit and travelling within the neighbourhood for various purposes. Note that there is a significant development planned for the area at the east end of Chaster. Touchstone Development, with 360 units and an anticipated population of over 700 people is expected to be fully occupied by 2030.



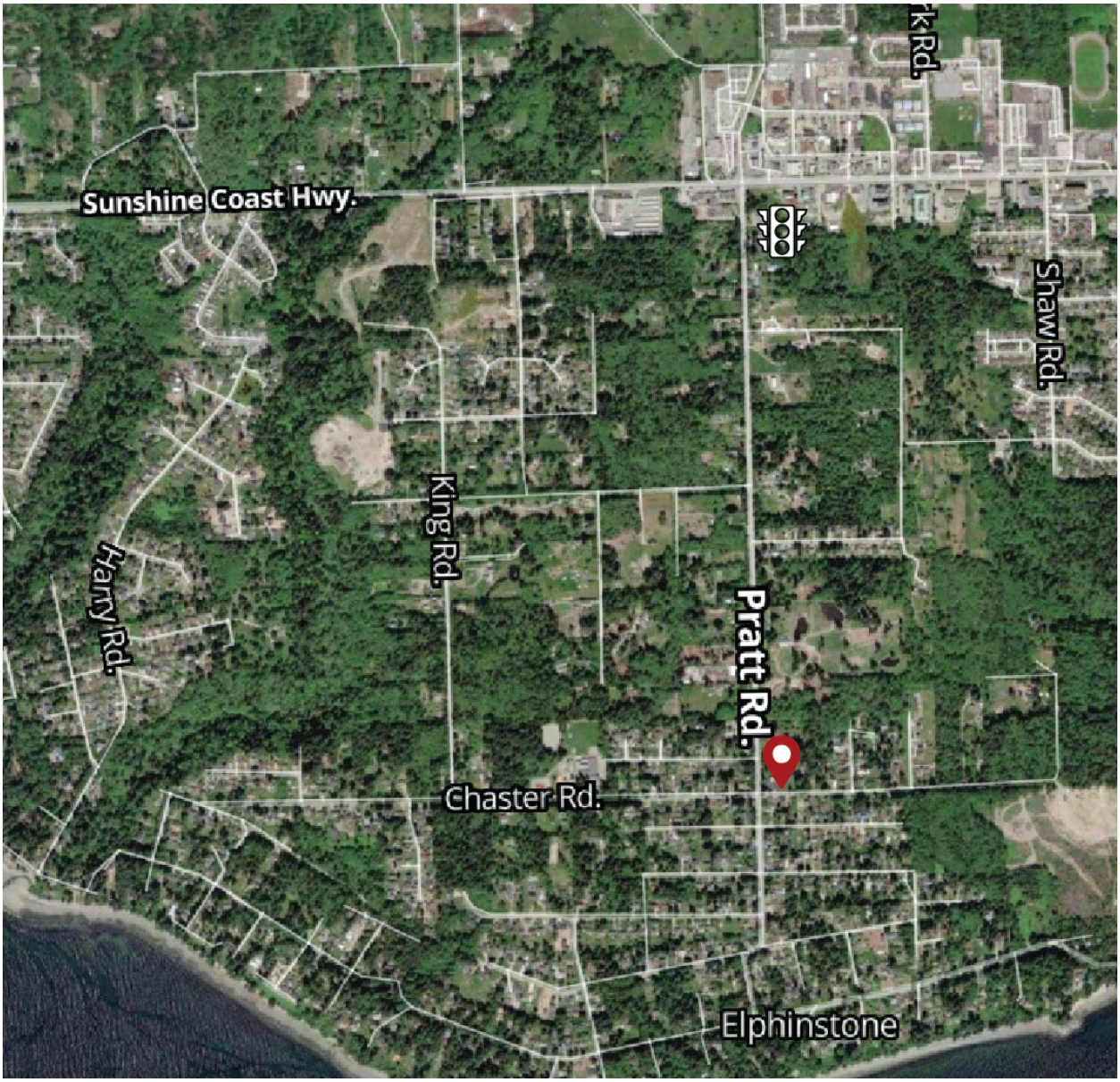

*Community Size:* Pratt and Chaster is in a rural area within the Sunshine Coast Regional District, however the population is best understood by considering the population of the Town of Gibsons (the boundary of which is 400 m east). Gibsons has a population of just under 5,000 (4,758 in 2021).

*Number of Travel Lanes to Cross:* One (1) in each direction.

*Speed limit:* 50 km/h

*Motor Vehicle Stopping Sight Distance:* The intersection is pinpointed on the aerial view below. This crossing point offers unimpeded views north and south of approximately two hundred fifty metres (250 m) or more.

*Distance to Nearest Alternate Crossing Offering Equal or Higher Control:* The intersection of Sunshine Coast Highway (Gibsons Way) and Chaster is 1.6 km to the north. Pratt forms a T-intersection with Grandview Road, 400 m south.




*Grades:* The intersection of Pratt and Chaster is at an elevation of 98 m. The intersection of Pratt and Grandview is at 79 m. The grade is thus 4.75% (19/400 = .0475). The intersection of Sunshine Coast Highway (Gibsons Way) is at 134 m. The grade is thus 2.25% (36/1600 = .0225).

*Pedestrian Equivalent Adult Units (EAUs) crossing during the Peak Four Hours of a Typical Day:* One hundred seventy-nine point five EAUs (179.5 EAUs) or (44.875 per hour). A high volume is defined as “25 pedestrians per hour for at least four hours of a typical day” (ITE, 2010, P 153).

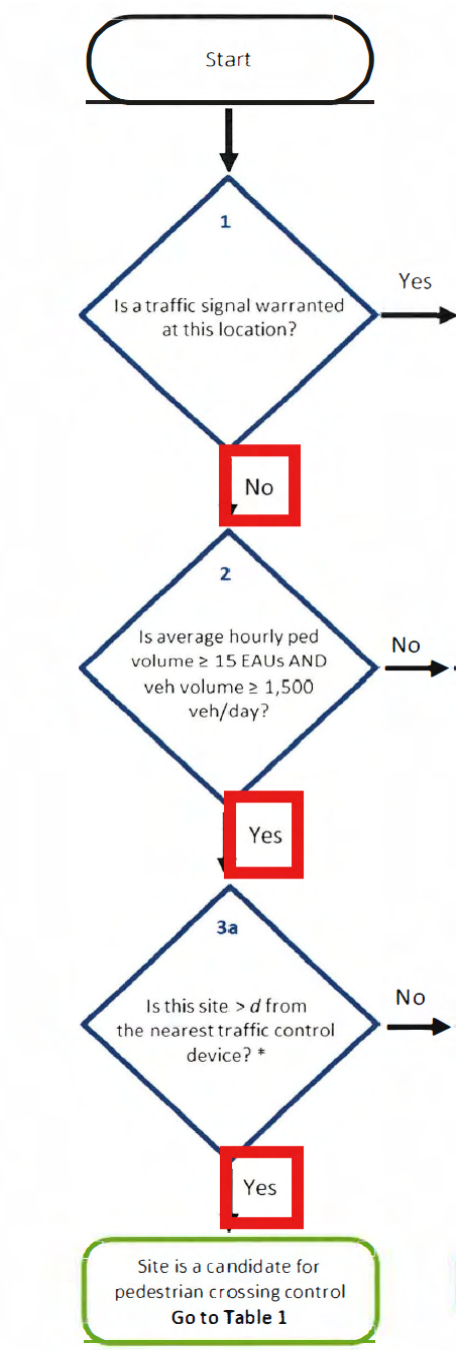
*Estimated Average Daily Motor Vehicle Traffic Volumes:* Between 4,380 and 7,300 ADT, almost three times higher than the minimum threshold of 1,500 ADT, set by TAC (2018).

*Results of Speed Study:* Eighty-Fifth ($85^{th}$) percentile speeds northbound of 59 km/h, southbound of 63 km/h.

## Discussion

The Figure on the following page provides an illustration of the findings. Vehicle and pedestrian volumes do not represent a high enough value to consider a traffic signal. However, a traffic control measure is warranted, given that the daily volume of motor vehicles was measured at between 4,380 and 7,300 ADT, thus exceeding the recommended minimum of 1,500 vehicles per day. In addition, a four hour count of active transportation users crossing at this location was 179.5 EAU’s, or 44.875 EAU’s per hour, well over the threshold of 25 pedestrians per hour for four hours on a typical day, set by the Institute of Transportation Engineers (ITE, 2010, p. 153). Further, the distance to the nearest controlled crossing for pedestrians is over 1.6 km away at Pratt and Sunshine Coast Highway, well over the threshold of 200 m recommended by TAC.

## Preliminary Crossing Assessment




Vehicle and Pedestrian volumes do not represent a high enough value for consideration for a traffic signal

Peak Hour Vehicle Volume: 439

Vehicle Volumes: 4,380 - 7,300 ADT

ADT. Exceeds 1,500 per day

Peak AT Volumes: 89 EAUs

Estimated Average Hourly AT Volume: ~37 EAUs

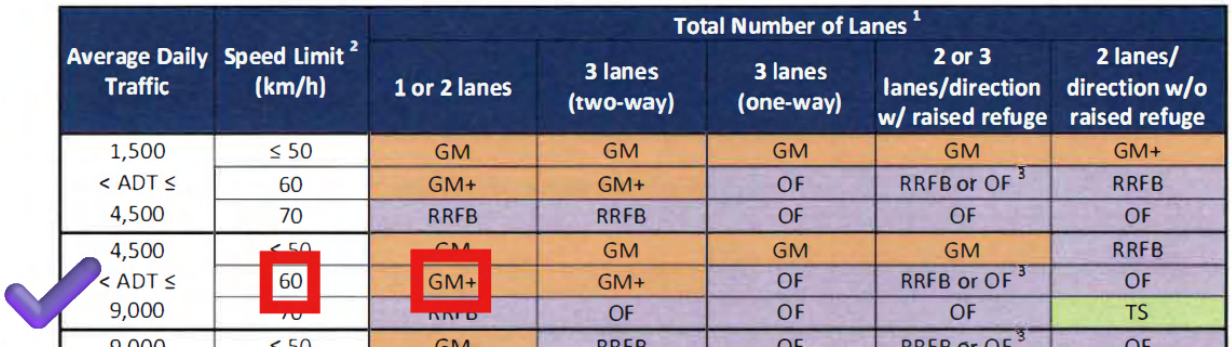
Hourly AT Volumes exceed 15 EAU

4 hour pedestrian crossing count during a typical day: 179.5 EAU's, averaging 44.875 EAU's per peak hour.

Above the threshold of 25 pedestrians per hour for at least four hours on a typical day (ITE, 2010).

Nearest Traffic control device is over 1km away

Exceeds d



| Average Daily Traffic | Speed Limit [2] (km/h) | Total Number of Lanes [1] | | | | |
|---|---|---|---|---|---|---|
| | | 1 or 2 lanes | 3 lanes (two-way) | 3 lanes (one-way) | 2 or 3 lanes/direction w/ raised refuge | 2 lanes/ direction w/o raised refuge |
| 1,500 | ≤ 50 | GM | GM | GM | GM | GM+ |
| < ADT ≤ | 60 | GM+ | GM+ | OF | RRFB or OF [3] | RRFB |
| 4,500 | 70 | RRFB | RRFB | OF | OF | OF |
| 4,500 | < 50 | GM | GM | GM | GM | RRFB |
| < ADT ≤ | 60 | GM+ | GM+ | OF | RRFB or OF [3] | OF |
| 9,000 | 70 | RRFB | OF | OF | OF | TS |
| 9,000 | < 50 | GM | RRFB | OF | RRFB or OF [3] | OF |

Based on ADT and speed limit, TAC recommends a standard crosswalk with Side Mounted Signs. However, recorded speeds indicate an 85% percentile of over 60km/h, so this speed is used as the effective speed limit. In addition, buses, single unit trucks and tractor trailer combinations regularly use this route, thus suggesting a higher element of risk for vulnerable road users. A Rectangular Rapid Flashing Beacon or a Four Way Stop are thus recommended at this intersection. Other data supports this conclusion, including the daily volume of motor vehicles, which was measured at between 4,380 and 7,300 ADT, thus exceeding the recommended minimum threshold of 1,500 vehicles per day, and a four hour count of active transportation users which was 179.5 EAU's or 44.875 EAU's per hour, well above the threshold of 25 pedestrians per hour for four hours on a typical day, set by the Institute of Transportation Engineers (ITE, 2010, p. 153). Further, the distance to the nearest pedestrian controlled crossing is over 1.6 km away, above the threshold of 200 m recommended by TAC.

The case for a Four Way Stop is likely to strengthen in coming years as Touchstone Development nears completion, adding over 700 residents approximately 800 m to the east, on Chaster. With volumes of motor vehicle traffic growing in each direction[3], the potential for collisions increases accordingly. Since a Four Way Stop offers a cost effective means to calm traffic, it should be considered for early implementation.

## Potential Impacts

The following is a review of the impacts of the proposed traffic control measures in relation to the guiding principles. The recommended crossing treatments are consistent with each of the guiding principles, as follows:

**Safety** – Daily motor vehicle volumes on Pratt at Chaster are three times higher than the threshold set for consideration of a traffic control measure. Further 85th percentile speeds of motor vehicle traffic on Pratt Road are over 60 km/h, ten kilometres an hour higher than the posted speed limit. This situation means that active transportation users and motor vehicles crossing Pratt may face significant delays and that those who lack the ability to accurately assess the speed and distance of motor vehicle traffic may be vulnerable to conflicts and collisions involving higher speed motor vehicle traffic on Pratt Road.

**Connectivity** – The intersection of Chaster and Pratt serves a common travel route for active transportation users between the residential neighbourhoods to the east of Pratt and Cedar Grove elementary school on Chaster, and between the bus stops on Pratt

[3] Traffic volumes on Pratt are currently just over double those on Chaster.

north of Chaster and the residential communities on each side of Pratt. There is no other crossing treatment available for over 400 metres in either direction on Pratt. Crossing control at Pratt and Chaster would thus offer system connectivity while avoiding an overload on driver workload and expectations.

**Expectancy** – Given that there is a school and transit stops near this intersection, drivers should expect vulnerable road users to cross Pratt Road at Chaster. A marked crossing with an RRFB or a Four Way Stop will encourage pedestrians to cross at that location, thus increasing the likelihood that drivers will stop for vulnerable road users in a timely manner.

**Equity** – An enhanced crossing involving an RRFB or a Four Way Stop are appropriate given the high number of elementary school children that use this crossing.

**Consistency** – Both RRFB's and Four Way Stops are consistent across the jurisdiction in question.

**Pragmatism** – RRFB's have been installed on Sunshine Coast for less than $25,000 and Four Way Stops for even less. Further, such treatments are relatively easy to install and maintain, particularly given the climate that is prevalent on the Sunshine Coast.

**Delay** – During peak periods when students are heading to and from school, delays for pedestrians and cyclists crossing Pratt Road do occur. An RRFB or a Four Way Stop at this location will help to reduce delays for vulnerable road users, thus reducing risky or non-compliant crossing behaviour and the risk of collisions between motor vehicles and active transportation users.

Since the proposed treatments are consistent with each of the guiding principles, this report recommends installation of an RRFB or a Four Way Stop at the intersection of Pratt and Chaster Road.

## Conclusion & Next Steps

This report examines whether active transportation crossing controls should be installed at or near intersections in close proximity to two elementary schools on British Columbia's Sunshine Coast, including the intersection of Pratt Road and Chaster Road near Cedar Grove Elementary and Forbes Road and Port Mellon Highway near Langdale Elementary School. A comprehensive review of data including, but not limited to:

- Average daily motor vehicle traffic volumes and movements,
- Motor vehicle 85th percentile speeds, and
- Volumes and movements of active transportation users through each intersection,

suggest that in each case crossing treatments involving a Rectangular Rapid Flashing Beacon and associated signage and pavement markings are recommended. These improvements will alert drivers to the presence of active transportation users seeking to cross and will improve overall transportation system performance. In the case of Pratt and Chaster, a Four Way Stop may be considered as an alternate treatment option since motor vehicle volumes on Chaster are anticipated to increase in coming years to approach those currently evident on Pratt Road.

Going forward, Vancouver Coastal Health, Sunshine Coast School District 46 and Transportation Choices Sunshine Coast should work with staff from the Ministry of Transportation and Infrastructure, to install, monitor and evaluate these crossing controls.

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# Appendix A: Treatment Selection Matrix

**Table 1: Decision Support Tool – Treatment Selection Matrix**

| Average Daily Traffic | Speed Limit [2] (km/h) | Total Number of Lanes [1] | | | | |
|---|---|---|---|---|---|---|
| | | 1 or 2 lanes | 3 lanes (two-way) | 3 lanes (one-way) | 2 or 3 lanes/direction w/ raised refuge | 2 lanes/ direction w/o raised refuge |
| 1,500 < ADT ≤ 4,500 | ≤ 50 | GM | GM | GM | GM | GM+ |
| | 60 | GM+ | GM+ | OF | RRFB or OF [3] | RRFB |
| | 70 | RRFB | RRFB | OF | OF | OF |
| 4,500 < ADT ≤ 9,000 | ≤ 50 | GM | GM | GM | GM | RRFB |
| | 60 | GM+ | GM+ | OF | RRFB or OF [3] | OF |
| | 70 | RRFB | OF | OF | OF | TS |
| 9,000 < ADT ≤ 12,000 | ≤ 50 | GM | RRFB | OF | RRFB or OF [3] | OF |
| | 60 | RRFB | RRFB | OF | RRFB or OF [3] | TS |
| | 70 | OF | OF | OF | TS | TS |
| 12,000 < ADT ≤ 15,000 | ≤ 50 | RRFB | RRFB | OF | RRFB or OF [3] | OF |
| | 60 | RRFB | OF | OF | RRFB or OF [3] | TS |
| | 70 | OF | TS | TS | TS | TS |
| > 15,000 | ≤ 50 | RRFB | OF | OF | RRFB or OF [3] | TS |
| | 60 | RRFB | TS | TS | TS | TS |
| | 70 | OF | TS | TS | TS | TS |

[1] The total number of lanes is representative of pedestrian-exposed crossing distance. The following can help determine the applicable number of lanes for a given roadway:

- Travel lanes, two-way left turn lanes, other turning lanes, and part time parking lanes should each be considered as one lane.
- Full time parking lanes on one or both sides of the roadway should be considered as one lane. Curb extensions may be constructed to reduce the total crossing distance and hence, the number of lanes.
- Engineering judgement based on local conditions should be used to determine the lane equivalent associated with bicycle lanes.

[2] At roundabouts, the maximum design speed of entering or exiting vehicles is often lower than the approaching roadway speed and can be used in place of the roadway speed limit.

[3] If three lanes per direction use OF.

**Additional notes:**

Treatment systems are hierarchical (GM → GM+ → RRFB → OF → TS). Higher order treatment systems may be substituted for lower order treatment systems. The rationale for substituting higher order treatment systems should be consistent throughout the jurisdiction. Remain consistent in application of DESIRABLE components of the GM+ system as best as possible.

Raised refuge may be a pedestrian refuge island or raised median. Raised refuge should be a minimum of 2.4 metres wide to accommodate groups of pedestrians, bicycles, and mobility aids such as wheelchairs and scooters.

A TS treatment system should be selected: (1) for cross-sections with greater than six lanes where a raised refuge is present; (2) for cross sections with greater than four lanes where no raised refuge is present; and (3) for speeds greater than 70 km/h.

Always ensure adequate sight distance at the site as per the TAC *Geometric Design Guide for Canadian Roads*, and if it is insufficient, create it by applying available tools.

A crossing location with a very wide (7m or more) pedestrian refuge area between opposing directions of traffic may be considered to divide the crossing into two independent sections and may be treated as two separate crosswalks. This may occur at locations with a wide raised refuge or offset crosswalk.

| Passive crossing treatment systems | | Active crossing treatment systems | | Traffic signal systems |
|---|---|---|---|---|
| GM Go to Table 2 | GM+ Go to Table 3 | RRFB Go to Table 4 | OF Go to Table 5 | TS go to Table 6 (pedestrian signal) or Table 7 (full signal) |

# Appendix B: 85th % Speeds

## Pratt @ Chaster

| **Northbound** | | | |
|---|---|---|---|
| 40 | 50 | 54 | 58 |
| 44 | 50 | 54 | 58 |
| 44 | 50 | 54 | 58 |
| 45 | 50 | 54 | 58 |
| 45 | 50 | 54 | 58 |
| 45 | 50 | 54 | 58 |
| 46 | 50 | 55 | 59 |
| 47 | 51 | 55 | 59 |
| 47 | 51 | 55 | **59** |
| 47 | 52 | 55 | 59 |
| 48 | 52 | 56 | 60 |
| 48 | 52 | 56 | 60 |
| 48 | 52 | 56 | 61 |
| 48 | 52 | 56 | 61 |
| 48 | 52 | 57 | 61 |
| 48 | 52 | 57 | 63 |
| 48 | 53 | 57 | 63 |
| 49 | 53 | 57 | 64 |
| 50 | 54 | 57 | 65 |
| 50 | 54 | 57 | 67 |
| 50 | 54 | 58 | 68 |

Pratt @ Chaster

| **Southbound** | | | |
|---|---|---|---|
| 1 | 52 | 57 | 61 |
| 43 | 53 | 57 | 62 |
| 45 | 53 | 57 | 62 |
| 47 | 53 | 57 | 62 |
| 48 | 53 | 58 | 63 |
| 48 | 54 | 58 | 63 |
| 48 | 54 | 58 | 63 |
| 48 | 55 | 58 | **63** |
| 49 | 55 | 59 | 63 |
| 50 | 55 | 59 | 64 |
| 50 | 55 | 59 | 65 |
| 50 | 56 | 59 | 65 |
| 50 | 56 | 59 | 66 |
| 52 | 56 | 59 | 66 |
| 52 | 57 | 60 | 66 |
| 52 | 57 | 60 | 66 |
| 52 | 57 | 61 | 71 |

## Port Mellon Hwy @ Forbes

| Northbound | | | |
|---|---|---|---|
| 26 | 53 | 57 | 62 |
| 29 | 53 | 57 | 62 |
| 42 | 53 | 58 | 62 |
| 44 | 53 | 58 | 62 |
| 45 | 53 | 58 | 62 |
| 45 | 53 | 58 | 62 |
| 46 | 53 | 58 | 62 |
| 46 | 53 | 58 | 64 |
| 47 | 53 | 59 | **64** |
| 47 | 53 | 59 | 64 |
| 49 | 53 | 59 | 65 |
| 49 | 53 | 59 | 65 |
| 49 | 53 | 59 | 65 |
| 50 | 53 | 59 | 66 |
| 50 | 53 | 59 | 68 |
| 50 | 53 | 60 | 68 |
| 51 | 53 | 60 | 69 |
| 52 | 53 | 60 | 71 |
| 52 | 53 | 60 | 72 |
| 52 | 53 | 60 | 72 |
| 52 | 53 | 61 | 72 |
| 52 | 53 | 61 | 73 |
| 53 | 53 | 61 | 75 |
| 53 | 53 | 61 | 78 |
| 53 | 53 | 61 | 78 |

Port Mellon Hwy @ Forbes

| Southbound | | | |
|---|---|---|---|
| 32 | 45 | 45 | 58 |
| 32 | 45 | 49 | 58 |
| 34 | 45 | 50 | **59** |
| 38 | 45 | 50 | 60 |
| 39 | 45 | 51 | 62 |
| 40 | 45 | 52 | 63 |
| 42 | 45 | 52 | 65 |
| 42 | 45 | 52 | 65 |
| 42 | 45 | 52 | 67 |
| 43 | 45 | 53 | 72 |
| 43 | 45 | 54 | |
| 45 | 45 | 55 | |

# Appendix C: AT Counts

## Pratt @ Chaster

A - Adult (12+)

B - Children (<12)

C - Seniors (65+)

D - Individuals with Impairments

| Pratt @ Chaster | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Start Time** | **Type** | **730** | **745** | **800** | **815** | **830** | **845** | **900** | **915** |
| **PEDS** | **A** | 0 | 2 | 5 | 11 | 3 | 3 | 2 | 10 |
| | **B** | 1 | 0 | 1 | 7 | 0 | 1 | 0 | 0 |
| | **C** | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 |
| | **D** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **BIKES & OTHER AT** | **A** | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 0 |
| | **B** | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| | **C** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | **D** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **COMBINED AT EAUs** | **A** | 0 | 2 | 5 | 11 | 4 | 5 | 4 | 10 |
| | **B** | 2 | 0 | 2 | 16 | 2 | 2 | 0 | 0 |
| | **C** | 0 | 0 | 0 | 0 | 0 | 1.5 | 3 | 1.5 |
| | **D** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Pratt @ Chaster | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Start Time | Type | 130 | 145 | 200 | 215 | 230 | 245 | 300 | 315 |
| PEDS | A | 0 | 3 | 4 | 7 | 6 | 1 | 7 | 11 |
| | B | 0 | 0 | 0 | 0 | 10 | 7 | 0 | 10 |
| | C | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | D | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| BIKES & OTHER AT | A | 1 | 0 | 0 | 3 | 0 | 0 | 3 | 0 |
| | B | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| | C | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 |
| | D | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| COMBINED AT EAUs | A | 1 | 3 | 4 | 10 | 6 | 1 | 10 | 11 |
| | B | 0 | 0 | 0 | 0 | 20 | 14 | 4 | 20 |
| | C | 1.5 | 0 | 0 | 0 | 0 | 3 | 0 | 0 |
| | D | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

## Port Mellon Hwy @ Forbes

| Port Mellon Hwy @ Forbes | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Start Time** | **Type** | **730** | **745** | **800** | **815** | **830** | **845** | **900** | **915** |
| **PEDS** | **A** | 4 | 4 | 5 | 2 | 5 | 2 | 2 | 4 |
| | **B** | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 |
| | **C** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | **D** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **BIKES & OTHER AT** | **A** | 1 | 1 | 1 | 2 | 3 | 0 | 0 | 0 |
| | **B** | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| | **C** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | **D** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **COMBINED AT EAUs** | **A** | 5 | 5 | 6 | 4 | 8 | 2 | 2 | 4 |
| | **B** | 0 | 4 | 0 | 4 | 4 | 0 | 0 | 0 |
| | **C** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | **D** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Port Mellon Hwy @ Forbes | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Start Time | Type | 200 | 215 | 230 | 245 | 300 | 315 | 330 | 345 |
| PEDS | A | 10 | 0 | 6 | 3 | 3 | 3 | 0 | 0 |
| | B | 0 | 0 | 6 | 2 | 0 | 0 | 3 | 0 |
| | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | D | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| BIKES & OTHER AT | A | 0 | 0 | 2 | 1 | 0 | 2 | 2 | 0 |
| | B | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | D | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| COMBINED AT EAUs | A | 10 | 0 | 8 | 4 | 3 | 5 | 2 | 0 |
| | B | 4 | 0 | 12 | 8 | 0 | 0 | 6 | 0 |
| | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | D | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

# Appendix D: Motor Vehicle Movement Counts

## Pratt @ Chaster

| | Pratt | | | Chaster | | | Pratt | | | Chaster | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | SB Right | SB Thru | SB Left | WB Right | WB Thru | WB Left | NB Right | NB Thru | NB Left | EB Right | EB Thru | EB Left | | Total |
| 7:30 - 7:45 | 6 | 4 | 1 | 3 | 0 | 11 | 0 | 25 | 1 | 2 | 0 | 1 | | 54 |
| 7:45 - 8:00 | 6 | 6 | 3 | 7 | 0 | 20 | 0 | 25 | 7 | 0 | 1 | 2 | | 77 |
| 8:00 - 8:15 | 18 | 6 | 3 | 1 | 0 | 26 | 1 | 23 | 10 | 3 | 0 | 0 | | 91 |
| 8:15 - 8:30 | 26 | 18 | 2 | 13 | 0 | 40 | 0 | 27 | 11 | 2 | 2 | 0 | | 141 |
| 8:30 - 8:45 | 5 | 17 | 1 | 7 | 0 | 30 | 0 | 35 | 3 | 2 | 1 | 1 | | 102 |
| 8:45 - 9:00 | 12 | 25 | 2 | 5 | 1 | 15 | 0 | 33 | 4 | 5 | 1 | 1 | | 104 |
| 9:00 - 9:15 | 3 | 13 | 0 | 4 | 0 | 10 | 0 | 28 | 3 | 1 | 0 | 0 | | 62 |
| 9:15 - 9:30 | 6 | 14 | 1 | 7 | 0 | 16 | 0 | 30 | 4 | 3 | 0 | 0 | | 81 |

| | Pratt | | | Chaster | | | Pratt | | | Chaster | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | SB Right | SB Thru | SB Left | WB Right | WB Thru | WB Left | NB Right | NB Thru | NB Left | EB Right | EB Thru | EB Left | | Total |
| 13:00 - 13:15 | 12 | 15 | 4 | 1 | 1 | 23 | 0 | 28 | 13 | 2 | 0 | 1 | | 100 |
| 13:15 - 13:30 | 23 | 17 | 4 | 4 | 0 | 13 | 0 | 22 | 12 | 1 | 0 | 1 | | 97 |
| 13:30 - 13:45 | 7 | 21 | 2 | 9 | 1 | 19 | 0 | 27 | 10 | 5 | 1 | 0 | | 102 |
| 13:45 - 14:00 | 8 | 26 | 1 | 6 | 0 | 19 | 2 | 35 | 8 | 0 | 0 | 5 | | 110 |
| 14:00 - 14:15 | 6 | 22 | 3 | 4 | 1 | 23 | 0 | 31 | 6 | 0 | 0 | 3 | | 99 |
| 14:15 - 14:30 | 17 | 24 | 4 | 4 | 1 | 21 | 1 | 25 | 10 | 4 | 0 | 0 | | 111 |
| 14:30 - 14:45 | 9 | 19 | 4 | 6 | 1 | 20 | 1 | 28 | 16 | 2 | 2 | 0 | | 108 |
| 14:45 - 15:00 | 15 | 36 | 2 | 11 | 0 | 17 | 0 | 24 | 11 | 4 | 1 | 0 | | 121 |

| A.M. Peak Hour (Midnight to Noon) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pratt | | | Chaster | | | Pratt | | | Chaster | | |
| Time | SB Right | SB Thru | SB Left | WB Right | WB Thru | WB Left | NB Right | NB Thru | NB Left | EB Right | EB Thru | EB Left |
| 8:00 - 8:15 | 18 | 6 | 3 | 1 | 0 | 26 | 1 | 23 | 10 | 3 | 0 | 0 |
| 8:15 - 8:30 | 26 | 18 | 2 | 13 | 0 | 40 | 0 | 27 | 11 | 2 | 2 | 0 |
| 8:30 - 8:45 | 5 | 17 | 1 | 7 | 0 | 30 | 0 | 35 | 3 | 2 | 1 | 1 |
| 8:45 - 9:00 | 12 | 25 | 2 | 5 | 1 | 15 | 0 | 33 | 4 | 5 | 1 | 1 |
| | | | | | | | | | | | | |
| **8:00 - 9:00** | **61** | **66** | **8** | **26** | **1** | **111** | **1** | **118** | **28** | **12** | **4** | **2** |
| | | | | | | | | | | | | |
| | | | | | | | | | | Peak Hour Factor: | 0.777 | |

| P.M. Peak Hour (Noon to Midnight) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pratt | | | Chaster | | | Pratt | | | Chaster | | |
| Time | SB Right | SB Thru | SB Left | WB Right | WB Thru | WB Left | NB Right | NB Thru | NB Left | EB Right | EB Thru | EB Left |
| 14:00 - 14:15 | 6 | 22 | 3 | 4 | 1 | 23 | 0 | 31 | 6 | 0 | 0 | 3 |
| 14:15 - 14:30 | 17 | 24 | 4 | 4 | 1 | 21 | 1 | 25 | 10 | 4 | 0 | 0 |
| 14:30 - 14:45 | 9 | 19 | 4 | 6 | 1 | 20 | 1 | 28 | 16 | 2 | 2 | 0 |
| 14:45 - 15:00 | 15 | 36 | 2 | 11 | 0 | 17 | 0 | 24 | 11 | 4 | 1 | 0 |
| | | | | | | | | | | | | |
| **14:00 - 15:00** | **47** | **101** | **13** | **25** | **3** | **81** | **2** | **108** | **43** | **10** | **3** | **3** |

## Port Mellon @ Forbes

| Time | Port Mellon | | | Forbes | | | Port Mellon | | | Forbes | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SB Right | SB Thru | SB Left | WB Right | WB Thru | WB Left | NB Right | NB Thru | NB Left | EB Right | EB Thru | EB Left | | Total |
| 7:30 - 7:45 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 27 | 2 | 0 | 0 | 0 | | 45 |
| 7:45 - 8:00 | 0 | 22 | 0 | 1 | 0 | 0 | 0 | 34 | 4 | 0 | 0 | 0 | | 61 |
| 8:00 - 8:15 | 1 | 15 | 0 | 2 | 0 | 1 | 0 | 22 | 6 | 0 | 0 | 0 | | 47 |
| 8:15 - 8:30 | 4 | 19 | 0 | 0 | 0 | 0 | 0 | 19 | 23 | 0 | 0 | 0 | | 65 |
| 8:30 - 8:45 | 3 | 14 | 0 | 1 | 0 | 0 | 0 | 22 | 6 | 0 | 0 | 0 | | 46 |
| 8:45 - 9:00 | 0 | 14 | 0 | 1 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | | 35 |
| 9:00 - 9:15 | 1 | 11 | 0 | 0 | 0 | 0 | 1 | 18 | 1 | 0 | 0 | 0 | | 32 |
| 9:15 - 9:30 | 0 | 4 | 1 | 0 | 0 | 1 | 0 | 5 | 2 | 0 | 0 | 0 | | 13 |

| | Port Mellon | | | Forbes | | | Port Mellon | | | Forbes | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | SB Right | SB Thru | SB Left | WB Right | WB Thru | WB Left | NB Right | NB Thru | NB Left | EB Right | EB Thru | EB Left | | Total |
| 14:00 - 14:15 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 12 | 1 | 1 | 0 | 0 | | 31 |
| 14:15 - 14:30 | 2 | 19 | 0 | 0 | 0 | 0 | 0 | 14 | 17 | 1 | 0 | 0 | | 53 |
| 14:30 - 14:45 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 18 | 12 | 4 | 0 | 4 | | 50 |
| 14:45 - 15:00 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 3 | 0 | 1 | | 44 |
| 15:00 - 15:15 | 1 | 24 | 0 | 0 | 0 | 0 | 0 | 20 | 1 | 2 | 0 | 0 | | 48 |
| 15:15 - 15:30 | 0 | 15 | 1 | 0 | 0 | 0 | 0 | 19 | 3 | 0 | 0 | 2 | | 40 |
| 15:30 - 15:45 | 0 | 46 | 0 | 0 | 0 | 0 | 0 | 19 | 3 | 1 | 0 | 0 | | 69 |
| 15:45 - 16:00 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 8 | 1 | 2 | 0 | 0 | | 28 |

| A.M. Peak Hour (Midnight to Noon) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Port Mellon | | | Forbes | | | Port Mellon | | | Forbes | | |
| | Time | SB Right | SB Thru | SB Left | WB Right | WB Thru | WB Left | NB Right | NB Thru | NB Left | EB Right | EB Thru | EB Left |
| | 7:45 - 8:00 | 0 | 22 | 0 | 1 | 0 | 0 | 0 | 34 | 4 | 0 | 0 | 0 |
| | 8:00 - 8:15 | 1 | 15 | 0 | 2 | 0 | 1 | 0 | 22 | 6 | 0 | 0 | 0 |
| | 8:15 - 8:30 | 4 | 19 | 0 | 0 | 0 | 0 | 0 | 19 | 23 | 0 | 0 | 0 |
| | 8:30 - 8:45 | 3 | 14 | 0 | 1 | 0 | 0 | 0 | 22 | 6 | 0 | 0 | 0 |
| | | | | | | | | | | | | | |
| **A.M. PEAK** | **7:45 - 8:45** | **8** | **70** | **0** | **4** | **0** | **1** | **0** | **97** | **39** | **0** | **0** | **0** |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | Peak Hour Factor: | 0.842 | |

| P.M. Peak Hour (Noon to Midnight) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Port Mellon | | | Forbes | | | Port Mellon | | | Forbes | | |
| | Time | SB Right | SB Thru | SB Left | WB Right | WB Thru | WB Left | NB Right | NB Thru | NB Left | EB Right | EB Thru | EB Left |
| | 14:45 - 15:00 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 3 | 0 | 1 |
| | 15:00 - 15:15 | 1 | 24 | 0 | 0 | 0 | 0 | 0 | 20 | 1 | 2 | 0 | 0 |
| | 15:15 - 15:30 | 0 | 15 | 1 | 0 | 0 | 0 | 0 | 19 | 3 | 0 | 0 | 2 |
| | 15:30 - 15:45 | 0 | 46 | 0 | 0 | 0 | 0 | 0 | 19 | 3 | 1 | 0 | 0 |
| | | | | | | | | | | | | | |
| **P.M. PEAK** | **14:45 - 15:45** | **1** | **111** | **1** | **0** | **0** | **0** | **0** | **72** | **7** | **6** | **0** | **3** |