


Clarenville
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Traffic Calming Report

July 09, 2021

Status: Final Report

Harbourside Transportation Consultants
8 Rowan Street, Suite 301
Terrace on the Square
St. John's, NL, Canada A1B 4J9
Tel: 709-579-6435
www.harboursidetransportation.com





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Town of Clarenville
99 Pleasant Street
Clarenville, NL A5A 1V9

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Prepared by:
Mark Stuckless, P.Eng.
Michael MacDonald, P.Eng.
Florence Allaire, MScE, P.Eng.

Harbourside Transportation Consultants
8 Rowan Street, Suite 301
Terrace on the Square
St. John's, NL, Canada A1B 4J9
Tel: 709-579-6435
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1 Introduction

The *Traffic Calming Report* provides a process for the initiation, assessment, development and implementation of traffic calming plans on roadways within the Town of Clarenville. The intent of this document is to ensure that a transparent approach and objective criteria are used to evaluate traffic calming needs throughout the Town of Clarenville, Newfoundland and Labrador.

1.1 What is Traffic Calming?

Traffic calming a term used to describe physical measures and initiatives, such as education or enforcement actions, that are intended to reduce the impacts of motor vehicle traffic on roadways and neighbourhoods, and improve safety and comfort levels for pedestrians and bicyclists.

Traffic calming is used to address traffic concerns identified by the community. Typically, the concerns are about motor vehicle speeds, shortcutting or through traffic and inappropriate driver behavior.

1.2 Why Use Traffic Calming?

When vehicle speeds, traffic volumes, and/or driver behaviour are considered to be inappropriate for the type of roadway, adjacent land use or pedestrian and bicycle activity, they can have a detrimental impact on the safety and livability of roadways and neighbourhoods.

As a result of these traffic issues, residents feel that roadways or neighbourhoods are not safe for pedestrians and bicyclists, particularly for children or seniors and will demand that the governing authority take action to resolve the traffic issues.

The purpose of traffic calming is to restore roadways to their intended function. Traffic calming measures when implemented properly can increase the safety and livability roadways or neighbourhoods by:

- Reducing vehicle speeds,
- Decreasing traffic volumes by discouraging shortcutting or through traffic,
- Minimizing conflicts between roadway users, and
- Improving the neighbourhood environment.

However, traffic calming measures can also have potentially negative effects on the mobility of neighbourhood residents, road maintenance activities and emergency vehicle response times. Traffic calming measures can unintentionally create new problems such as diverting traffic into an adjacent roadway or a different neighbourhood. Careful consideration is required when developing a traffic calming plan to determine the best combination of measure that will result in both a real and perceived improvement.

1.3 Where and When Traffic Calming is Considered

A traffic calming plan is considered when vehicle speeds, traffic volumes, and/or driver behaviour are considered to be inappropriate for a roadway. The purpose of traffic calming is to restore roadways to their intended function. This function is to provide a certain level of both mobility and access depending on the classification of the roadway and its role within the road network.



Roadways in the Town of Clarendville are classified as arterial, collector or local. The classification and their role with respect to mobility and access are described below:

- **Arterial:** The primary function of an arterial roadway is to provide for the movement of traffic through the road network. Arterial roadways are not intended to provide direct access to land. Roadways classified as arterial include the Trans-Canada Highway and Balbo Drive.
- **Collector:** A collector roadway has two primary functions of equal importance: traffic movement and land access. Roadways classified as major collector include Memorial Drive, Manitoba Drive, Harbour Drive, and Shoal Harbour Drive. Roadways classified as minor collector include Cormack Drive, Marine Drive, and Huntley Drive.
- **Local:** The primary function of a local roadway is to provide direct access to land. All remaining roadways are classified as local.

Traffic calming is primarily considered on local and collector roadways to reduce speed, volumes and conflicts between roadway users. In the past, traffic calming was not considered on arterial roadways since the use of traffic calming measures, such as volume reduction measures are inconsistent with the function of arterial roadways within the road network. However, recent guidance provided in the second edition of the TAC *Guide to Traffic Calming* (2018) now contains traffic calming measures applicable to speed management on arterial roadways. Traffic calming on arterial roadways is only recommended for the purpose of reducing speeds.

2 Traffic Calming Process

The traffic calming process is a process developed to manage requests for traffic calming in a transparent and consistent manner. Available literature, guidelines and best practices were reviewed to guide the development of this process.

The process is organized in a five stage, twelve step process. Details for the individual steps are provided in the following sections

Stage 1 Initiation: The purpose of the initiation stage is to confirm the nature and magnitude of the reported traffic issues and decide whether to proceed with the development of a traffic calming plan. Requests that pass the screening process are prioritized to ensure the most severe issues are addressed first. Council approval and funding allocation is required to proceed to the development of a traffic calming plan.

Step 1: Receive and Assess Request

Step 2: Screen Request

Step 3: Prioritize Request for Funding Allocation

Stage 2 Development: The purpose of the development stage is to create a traffic calming plan that addresses the identified traffic issues. The process involves the analysis and evaluation of potential solutions and development of a preferred solution through on-going consultation with affected stakeholders.



Step 4: Define Project Area and Develop Problem Statement

Step 5: Identify and Inform Stakeholders

Step 6: Develop Alternative Solutions

Step 7: Evaluate Alternative Solutions

Stage 3 Approval: The purpose of the approval stage is to allow a review of the project information and proposed traffic calming plan by the community and affected stakeholders. Council approval is required to proceed with implementation.

Step 8: Gauge Community Support

Step 9: Confirm Preferred Solution

Stage 4 Implementation: The purpose of the project implementation stage is to complete the detailed design and construction of the approved traffic calming plan.

Step 10: Implement Preferred Solution

Stage 5 Evaluation: The purpose of the evaluation stage is to monitor the effectiveness of the traffic calming plan in addressing the identified traffic issues, refine the installation as required and remove any measures that are not serving their intended purpose.

Step 11: Monitor and Evaluate

Step 12: Remove or Refine (If Necessary)

2.1 Step 1: Receive and Assess Request

Requests to initiate a traffic calming assessment can be made by a resident, group of residents representing a neighbourhood, or an elected official on behalf of a resident or group of residents. To initiate the traffic calming process, the applicant must submit a standard application form to the Town. The “Traffic Calming Request Form” contained in Appendix A will be made available on the Town website and in hard copy at Town hall. The form requires the applicant to provide the following information:

- Name
- Contact information
- Date of application
- Location/area of concern
- Traffic concern
- Time of day, day of week, season the concern occurs

Upon receiving a request, an initial assessment will be conducted to determine if the request is a candidate for a traffic calming assessment. If a similar request is already under review, or has previously been investigated and did not qualify for a traffic calming plan, a response will be provided to the applicant with a brief explanation to advise what, if any, follow-up action is being taken.



2.2 Step 2: Screen Request

Following the initial assessment of the request, candidate requests will be screened to confirm that a speeding, shortcutting and/or other driver behaviour problem exists and determine if the Town should proceed with the development of a traffic calming plan. The screening process ensures consistency in reviewing and responding to traffic calming requests and aids in prioritizing requests to ensure funding and resources are allocated to the most significant concerns.

2.2.1 Site Visit and Data Collection

A site visit will be conducted to observe and document conditions. The time of day and day of week for the site visit will be consistent with the issues outlined by the applicant.

Traffic data required for the screening process will be collected, the data collection requirements are outlined in Table 1.

Table 1: Data collection requirements

Indicator	Indicator Data	Collection Method	Data Parameters
Roadway Traffic Volumes	Average daily traffic volumes	Radar Video data collection	Minimum 24 hours of data
Speed	85 th percentile speed	Radar	Minimum 24 hours of data
Pedestrian/Cyclist Volumes	Pedestrian and/or cyclist volumes	Manual recording Video data collection	As appropriate depending on issue reported.
Collisions	Collisions statistics (fatal, injury, property damage only) Collisions with vulnerable road user (pedestrian/cyclist)	Obtain from Royal Canadian Mounted Police (RCMP) and/or Provincial database	A minimum of three years of data where possible
Inappropriate Driver Behaviour	Violations/complaints	Site observations Video data collection Consult RCMP	Multiple violations Complaints from multiple individuals

2.2.2 Estimate Non-local Traffic

Average daily traffic volumes will be used to estimate the percentage of non-local traffic present on the roadway. The non-local traffic estimate will provide an indication of potential shortcutting or through traffic volumes on the roadway.

One of the two following methods can be used to estimate non-local traffic: method 1 should be used to estimate non-local traffic on local roadways and method 2 should be used to estimate non-local traffic on collector roadways.

Method 1 Daily Trip Generation per Household: Non-local traffic is estimated using an average number of daily trips per household on the roadway or roadway’s catchment area. This method assumes an



average of 10 trips per household, which is roughly consistent with ITE trip generation estimates, any traffic above this estimate is considered non-local traffic.

$$\text{Non Local Traffic (\%)} = \frac{\text{ADT} - (10 \text{ vpd} * \text{\#households})}{\text{ADT}} * 100$$

Method 2 Traffic Volume Thresholds: Non-local traffic is estimated using the traffic volumes threshold established each roadway classification in the screening criteria. This method assumes that all traffic above the threshold is considered non-local traffic.

$$\text{Non Local Traffic (\%)} = \left(1 - \frac{V_{\text{threshold}}}{\text{ADT}}\right) * 100$$

Where:

Minor Collector	$V_{\text{threshold}} = 1,500 \text{ veh/day}$
Major Collector	$V_{\text{threshold}} = 3,000 \text{ veh/day}$

2.2.3 Complete Screening Process

The candidate request will be screened using different criteria established for local and collector roadways. The screening process considers the following criteria:

- **Grade:** Roadways where longitudinal grades exceed 8 percent on more than 50 percent of the roadway or segment should not be considered for traffic calming. Implementing traffic calming measures on roadways with steep grades can result in safety issues, particularly under inclement weather conditions
- **Collisions:** Roadways where a serious collision involving a vulnerable road user (i.e. a pedestrian or bicyclist) has occurred within the last three years should be considered for traffic calming.
- **Speed:** An operating speed which exceeds the posted speed limit of the roadway is an indication of a speeding problem. The 85th percentile speed is considered the operating speed of a roadway. The 85th percentile speed is the speed that is exceeded by the fastest 15 percent of vehicles, meaning that 85 percent of vehicles will travel at or below the 85th percentile speed. Roadways where the 85th percentile speed exceeds the following speed thresholds should be considered for traffic calming.

Local	Posted Speed Limit
Minor Collector	Posted Speed Limit + 5 km/h
Major Collector	Posted Speed Limit + 5 km/h
Arterial	Posted Speed Limit + 10 km/h

Where a roadway has a posted speed limit below 40 km/h, the 85th percentile speed will be compared to a speed limit of 40 km/h instead of the actual posted speed limit. A posted speed limit of 40 km/h is the lowest speed limit recommended by the TAC *Canadian Guidelines for Establishing Posted Speed Limits*.

- **Volume:** Significant daily traffic volumes which exceed typical levels expected based on the function of the roadway are an indication of through traffic. Roadways where the daily traffic volumes exceed the following volume thresholds should be considered for traffic calming.

Local	500 veh/day
-------	-------------



Minor Collector	1,500 veh/day
Major Collector	3,000 veh/day
Arterial	N/A

- **Non-Local Traffic: Significant proportions of non-local traffic** which exceed typical levels expected based on the function of the roadway are an indication of through traffic. Roadways where the non-local traffic proportions exceed the following non-local traffic thresholds should be considered for traffic calming.

Local	≥ 30 %
Minor Collector	≥ 60 %
Major Collector	≥ 80 %
Arterial	N/A

The speed and volume thresholds were developed based on speed and traffic volume data collected on arterial and collector roadways in Clarendville. The speed and traffic volume data can be found in Appendix B.

The screening criteria are summarized in Table 2. To pass the screening process and proceed to the development of a traffic calming plan, the request must satisfy one of the two following conditions:

- The grade and collision criteria have been met, OR
- The grade, and one of the speed, volume or non-local traffic criteria have been met

A flow chart of the screening process is illustrated in Figure 1.

Table 2: Screening criteria for traffic calming requests

Criteria	Description	Local	Collector		Arterial
			Minor	Major	
Grade	The longitudinal grade of the roadway does not exceed 8 percent on more than 50 percent of the roadway segment.	< 8 %	< 8 %	< 8 %	< 8 %
Collisions	A serious collision involving a vulnerable road user has occurred within the last three years.	≥ 1	≥ 1	≥ 1	≥ 1
Speed	The 85 th percentile speed exceeds the speed threshold for the roadway classification.	≥ posted speed limit	≥ posted speed limit + 5 km/h	≥ posted speed limit + 5 km/h	≥ posted speed limit + 10 km/h
Volume	The average daily traffic volume exceeds the volume threshold for the roadway classification.	≥ 500 veh/day	≥ 1,500 veh/day	≥ 3,000 veh/day	N/A
Non-Local Traffic	The estimate of non-local traffic exceeds the non-local traffic threshold for the roadway classification.	≥ 30 %	≥ 60 %	≥ 80	N/A

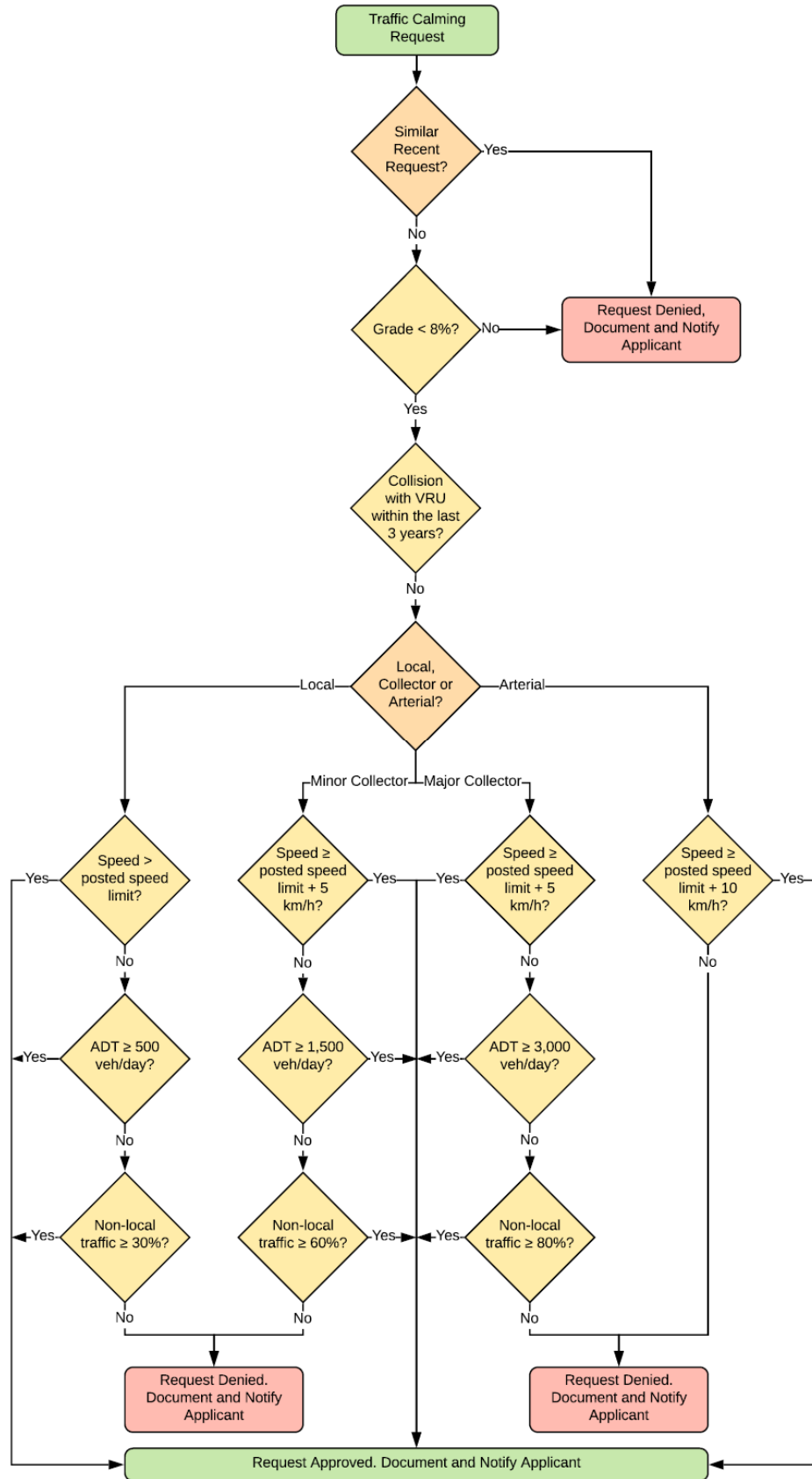


Figure 1: Flow chart of the initial screening process for traffic calming requests



2.3 Step 3: Prioritize Request for Funding Allocation

A request that passes the screening process and qualifies for a traffic calming plan will be prioritized to ensure the most severe problems are addressed first when limited funding amounts are allocated for traffic calming.

The prioritization considers a total score applied to each qualified request; higher scores are assigned higher priority than lower scores. The requests are ranked by reviewing and assigning points for criteria related to the roadway classification, activity generators, active transportation facilities provided, collision history, speed, traffic volumes and non-local traffic. A request can be assigned up to 100 points based on the criteria weighting and point allocation provided in Table 3.

Once the priority level of a candidate request is established it will be recorded in an overall database and priority list for traffic calming. The priority list is constantly updated as new requests are added and as requests are removed when they receive approval for funding.

The priority list for traffic calming provides Council and staff with an up-to-date priority listing of roadways that require attention to guide approval and funding allocation. In order for a traffic calming request to proceed to the development phase, it must obtain Council approval and be allocated funding.

Table 3: Ranking criteria and point allocation for traffic calming requests

Criteria	Point Allocation	Maximum Points
Classification	15 points for major collector; 10 points for minor collector roadways; 5 points for local roadways;	15
Activity generators	10 points per school, park or playground 5 points per community centre, older adult facility or licensed child care centre	15
Pedestrian facilities	10 points if no pedestrian facilities are present on either side of the roadway 5 points if pedestrian facility is present on one side of the roadway. 10 points if no formal pedestrian crossing facilities are present at activity generators	20
Collisions	5 points per collision involving a vulnerable road user in the last three years	10
Speed	1 point for every 1 km/h above the posted speed limit	20
Traffic Volumes	Local: 1 point for every 100 vehicles above the 500-vehicle threshold Minor Collector: 1 point for every 150 vehicles above the 1,500-vehicle threshold Major Collector: 1 point for every 500 vehicles above the 3,000-vehicle threshold	10
Non-local traffic	Local: 5 points for every 10% above 30% non-local traffic present Collector: 5 points for every 10% above 60% non-local traffic present	10
Total Points		100



2.4 Step 4: Develop Problem Statement and Define Project Area

A problem statement will be developed to detail the project scope and the specifics of the traffic issues that need to be addressed by the traffic calming plan. The problem statement should clearly identify the objectives of the traffic calming plan, these objectives will be used later in the process to monitor and evaluate the effectiveness of the plan after implementation.

The limits of the project area for the traffic calming plan will be defined. Typically, the limits of a project will include the candidate roadway; however, depending on the problem statement it may also comprise surrounding areas and/or parallel street to include any potential diversion routes.

2.5 Step 5: Identify and Inform Stakeholders

Traffic calming plan should be developed in consultation with the community and impacted stakeholders. Solutions developed without sufficient input have the potential to generate opposition, often resulting in preventing the implementation of the plan or leading to the removal of traffic calming measures after implementation. For a traffic calming plan to be successful, the community must support and be committed to the solution.

Though the traffic calming process, the community and stakeholders should be provided an opportunity to become better informed on local traffic concerns, offer input on potential solutions and/or participate in the development of the traffic calming plan. Potential participants in a traffic calming project could include:

- Directly impacted residents and businesses
- Road authority
- Elected officials
- Emergency services
- Public at large
- Community groups
- Cycling and walking advocacy groups

The level of consultation and community/stakeholder participation may be dependent on the scale of the traffic calming project. At this stage, the project team will define the scope of the consultation and identify key stakeholders. Identified stakeholders will be informed of the project and upcoming consultation process. Stakeholders can be informed of the project through various means:

- Email, website and social media
- Notices in local newspaper
- Hand delivery or mailing of notices to directly impact property owners and businesses

2.6 Step 6: Develop Alternative Solutions

Alternative traffic calming solutions will be developed to mitigate the traffic issues identified in the project statement. The number of alternatives developed will depend on the problem statement and local context.



To develop the traffic calming solutions traffic calming measures will be selected from the toolbox provided in Section 3. The alternative plans should be developed in sufficient detail to enable an assessment of feasibility and the development of preliminary cost estimates.

2.7 Step 7: Analyze and Evaluate Alternative Solutions

The alternative traffic calming solutions will be analyzed and evaluated using criteria that consider:

- Positive effects or benefits resulting from the proposed solution
- Negative effects or disbenefits associated with the proposed solution
- Capital and operating costs of the proposed solution

The alternative that offers the best overall benefits with the fewest impacts and/or lower cost will be identified as the preferred solution.

2.8 Step 8: Gauge Community Support

Depending on the potential impacts of the traffic calming plan, the community and stakeholders identified in Step 5 may be surveyed to gauge support/opposition for the traffic calming plan or to select between alternatives where there is a choice of two or more solutions. This step will ensure that residents, businesses and other stakeholders in the project area are given the opportunity to influence the traffic calming plan.

Community surveys will be developed specifically for each project. The objective of the survey will be to understand the degree to which a plan has support and/or opposition. The goal is to gather the broadest input possible; the Town should actively encourage all eligible participants to respond to the survey.

The survey is intended to be a consensus-building process, not a referendum. The survey should present a single traffic calming plan, with options for specific locations as appropriate; or where there are contentious issues such as turning restrictions. Residents should be asked to indicate their “level of comfort” with the plan(s) rather than “support”. This approach will allow them to acknowledge if they have concerns or hesitations with the option(s) presented without being simply for or against the plan(s). For the same reason a “neutral” choice should be provided so residents who hesitate to actively support a plan(s) but may not want to condemn it with a vote of “no support” are given to the option to acknowledge that the plan(s) would not bother them if implemented. This consensus building approach reflects the reality that it can be challenging to satisfy all opinions. Neutral and support response can be counted together as the number of people indicating acceptance of the plan(s).

The survey should also include an open-ended question that asks what aspects of the plan a respondent supports and why, as well as what aspects are a concern and why. This type of question can often provide important insight that is more useful than just an indication of support.

To gain approval and advance the traffic calming plan, the survey responses should meet the following minimum response and approval rates:

- **Response Rate:** 50 percent of the eligible participants. A lower response rate may be accepted at the discretion of Council.



- **Approval Rate:** 60 percent of the survey responses received indicate support or acceptance (i.e. neutral response) of the plan.

If no plan meets the predetermined targets for acceptance, a decision should be made on the process to address outstanding concerns. The plan with the highest acceptance could be modified to minimize or eliminate these concerns. If the modifications result in substantial changes to the plan a second community survey should be completed. However, if the concerns can be successfully addressed without substantial changes to the plan, a second community survey may not be required.

If the traffic calming plan is rejected and the roadway should not be considered for traffic calming measures under the process for a minimum of two years.

2.9 Step 9: Final Approval

Once the preferred solution is confirmed through community support, a recommendation report will be provided to Council for final approval.

2.10 Step 10: Implementation

Once the traffic calming plan has been approved by Council, the project will proceed to the detailed design, tender and construction phases. Throughout this stage documentation supporting the implementation of the traffic calming plan should be issues to impacted stakeholder and/or the public at large.

2.11 Step 11: Monitor and Evaluate

After implementation, the traffic calming plan should be monitored and evaluated to ensure the traffic calming measures are achieving the desired objectives without causing unnecessary impacts on residents. This will allow to identify the need for refinements to the plan or the possible removal of measure where objectives are not achieved.

Six months after implementation, traffic volume and speed data should be collected and reviewed against the initial data to confirm that the desired outcomes have been addressed by the traffic calming plan. Any resident concerns regarding the traffic calming measures following the implementation should be documented to be reviewed at this stage.

2.12 Step 12: Refine or Remove (if necessary)

If the monitoring and evaluation of the traffic calming plan concludes that the traffic calming plan or specific traffic calming measures within the did not achieve the desired objectives. The plan should be reviewed and refine. Where possible the potential to implement additional measures to work in conjunction with the previously installed measures or modifications to measures should be identified. Any changes to the traffic calming plan should be documented to guide the development of future plans.



3 Traffic Calming Toolbox

This toolbox is intended to present a range of traffic calming measures that can be implemented alone or in combination with each other to create a traffic calming plan. Information on the application and effects on traffic volumes, speeds, conflicts and the neighbourhood environment are provided for each measure. The toolbox presents some of the most common traffic calming measures used in North America, this is not an exhaustive list of all traffic calming measures available.

The traffic calming measures and their potential benefits and disbenefits are summarized in Table 4. Further details on each traffic calming are provided in the following sections. The traffic calming measures are separated into six categories:

- **Vertical deflections:** Vertical deflections are traffic calming measures which cause a vertical upward movement of the vehicle. Motorists are expected to slow to avoid unpleasant sensations when traversing the traffic calming measure. Vertical deflections are primarily used for speed reduction, but may also reduce traffic volumes, reduce conflicts and enhance the neighbourhood environment.
- **Horizontal deflections:** Horizontal deflections are primarily intended reduce traffic volumes by discouraging short-cutting or through traffic. Potential secondary effects of horizontal measures include reducing vehicle speeds, reducing conflicts and enhancing the environment for non-motorists.
- **Roadway narrowing:** Roadway narrowing are traffic calming measures which cause a narrowing of the roadway. These measures are intended to increase motorists' feeling of confinement, resulting in reduced speeds. Roadway narrowing measures are primarily used for speed reduction, but may also enhance the neighbourhood environment and re-allocate space to other road users.
- **Surface treatments:** Surface treatments are traffic calming measures which cause vibrations of the vehicle. Motorists are expected to slow to avoid unpleasant sensations when traversing the traffic calming measure. Surface treatments are primarily used for speed reduction.
- **Pavement markings:** Pavement markings measures can influence drivers to reduce speed by drawing attention to a specific area or information or by creating optical effects that create the impression that the driver's speed is increasing.
- **Access restrictions:** Access restrictions are traffic calming measures which restrict specific vehicle movements. These measures that are typically used at intersections, but in some cases may be applicable to mid-block locations. Access restrictions are primarily used to discourage short-cutting or through traffic, but may also reduce conflicts and enhance the neighbourhood environment.

This toolbox is not a roadway design standard, design guidance is provided in other resources such as:

- *TAC Geometric Design Guide for Canadian Road*
- *TAC Manual of Uniform Traffic Control Devices*
- *TAC Canadian Guide to Traffic Calming*
- *Nation Association of City Transportation Officials' (NACTO) Urban Street Design Guide*



Table 4: Potential Benefits and Disbenefits of Traffic Calming Measures

Traffic Calming Measures	Potential Benefits				Potential Impacts		
	Speed Reduction	Volume Reduction	Conflict Reduction	Environment	Local Access	Emergency Response	Maintenance
Vertical Deflection							
Raised Crosswalk	●	○	◉	◉	○	◉	◉
Speed Hump/Table	●	◉	●	◉	○	●	◉
Speed Cushion	●	◉	●	◉	○	◉	◉
Raised Intersection	●	○	◉	◉	○	◉	◉
Horizontal Deflection							
Chicane	●	●	●	◉	○	◉	◉
Curb Radius Reduction	◉	○	○	◉	○	○	◉
Lateral Shift	◉	○	○	○	○	○	○
Speed Kidney	◉	○	○	◉	○	○	◉
Traffic Circle/Mini Roundabout	●	◉	●	●	○	◉	◉
Roadway Narrowing							
Curb Extension	◉	○	○	●	○	○	◉
Lane Narrowing	◉	○	○	○	○	○	○
On-Street Parking	◉	○	○	◉	○	◉	◉
Raised Median Island	◉	○	◉	○	●	○	◉
Road Diet	●	○	●	●	○	◉	○
Vertical Centreline Treatment	◉	○	○	○	○	◉	◉
Surface Treatment							
Sidewalk Extension/ Textured Crosswalk	◉	○	◉	◉	○	○	●
Textured Pavement	◉	○	○	◉	○	○	●
Transverse Rumble Strips	◉	○	○	○	○	○	◉
Pavement Markings							
Converging Chevrons	●	○	○	○	○	○	◉
Dragon Teeth	●	○	○	○	○	○	◉
Full-lane Transverse Bars	●	○	○	○	○	○	◉
Peripheral Transverse Bars	●	○	○	○	○	○	◉
On-Road 'Sign'	●	○	○	○	○	○	◉



Traffic Calming Measures	Potential Benefits				Potential Impacts			
	Speed Reduction	Volume Reduction	Conflict Reduction	Environment	Local Access	Emergency Response	Maintenance	
Access Restriction								
Directional Closure	●	●	⊙	⊙	⊙	⊙	⊙	
Diverter	○	●	⊙	⊙	●	⊙	⊙	
Full Closure	○	●	●	⊙	●	●	⊙	
Intersection Channelization	○	⊙	⊙	⊙	●	⊙	⊙	
Raised Median Through Intersection	○	●	⊙	⊙	●	⊙	⊙	
Right-in/Right-out Island	○	●	⊙	⊙	⊙	⊙	⊙	
Legend	●	Substantial Benefits				●	Substantial Disbenefits	
	⊙	Moderate Benefits				⊙	Moderate Disbenefits	
	○	No Benefits/ Limited Data				○	No Disbenefits/ Limited Data	



3.1 Vertical Deflections

Vertical deflections are traffic calming measures which cause a vertical upward movement of the vehicle. Motorists are expected to slow to avoid unpleasant sensations when traversing the traffic calming measure. Vertical deflections are primarily used for speed reduction, but may also reduce traffic volumes, reduce conflicts and enhance the neighbourhood environment.

3.1.1 Raised Crosswalk

A raised crosswalk is a marked pedestrian crosswalk at an intersection or mid-block location constructed at a higher elevation than the adjacent roadway.

A raised crosswalk can be constructed with textured materials. Refer to 3.4.1 Sidewalk Extension/Textured Crosswalk for additional details.

The purpose of a raised crosswalk is to reduce vehicle speeds, improve pedestrian visibility and reduce pedestrian-vehicle conflicts.

Location Applicability

Local, Collector
Urban cross section

Cost

Low to medium



Figure 2: Raised Crosswalk - Image Source NACTO Urban Street Design Guide



3.1.2 Speed Hump/Table

A speed hump is a raised area of a roadway, which deflects both the wheels and body of a traversing vehicle.

A speed table is an elongated speed hump with a flat-topped section that is long enough to raise the entire wheelbase of a vehicle.

The flat-topped section of a speed table may be constructed with textured materials. Refer to 3.4.1 Sidewalk Extension/Textured Crosswalk for additional details.

The purpose of a speed hump/table is to reduce vehicle speeds and reduce pedestrian-vehicle conflicts. A series of speed humps/tables is more effective than a single installation.

Location Applicability

Local, Collector
Urban cross section

Cost

Low to medium



Figure 3: Speed Hump - Image Source: Richard Drdul



Figure 4: Speed Table - Image Source: NACTO Urban Street Design Guide



3.1.3 Speed Cushion

A speed cushion is a segmented speed hump which allows for the passage of larger vehicles such as emergency vehicles or buses without difficulty, while light vehicles will still have at least one side of the vehicle deflected upwards.

The purpose of a speed cushion is to reduce passenger vehicle speeds and reduce

pedestrian-vehicle conflicts. A series of speed cushions is more effective than a single installation.

Location Applicability

Local, Collector
Urban cross section

Cost

Low



Figure 5: Speed Cushion - Image Source: NACTO Urban Street Design Guide



3.1.4 Raised Intersection

A raised intersection is a full intersection including crosswalks, constructed at a higher elevation than the adjacent roadways.

The purpose of a raised intersection is to reduce vehicle speeds, better define crosswalk areas and reduce pedestrian-vehicle conflicts.

Location Applicability

Local, Collector
Urban cross section

Cost

Medium to high



Figure 6: Raised Intersection – Image Source: NACTO Urban Street Design Guide



3.2 Horizontal Deflections

Horizontal deflections are primarily intended reduce traffic volumes by discouraging short-cutting or through traffic. Potential secondary effects of horizontal measures include reducing vehicle speeds, reducing conflicts and enhancing the environment for non-motorists.

3.2.1 Chicane

A chicane is a series of curb extensions on alternating sides of the roadway which narrow the roadway cross section and require drivers to steer from one side of the roadway to the other to travel through the chicane.

The purpose of a chicane is to discourage shortcutting or through traffic and reduce vehicle speeds. With a chicane through traffic is further discouraged on a two-way roadway

where a chicane incorporates a narrowing to less than the width of two vehicles, so that when vehicles travelling in opposite directions meet at the chicane, one vehicle must yield.

Location Applicability

Local, Collector
Urban cross section, maximum two lanes

Cost

Medium



Figure 7: Chicane - Image Source: NACTO Urban Street Design Guide



3.2.2 Curb Radius Reduction

A curb radius reduction is the reconstruction or modification of an intersection corner using a smaller radius, usually in the 3.0 to 5.0 metre range.

The purpose of a curb radius reduction is to reduce the speed of right turning vehicles, reduce crossing distances for pedestrians and to improve the visibility of pedestrians.

Location Applicability

Local, Collector, Low Volume Arterial
Urban cross section

Cost

Low to medium

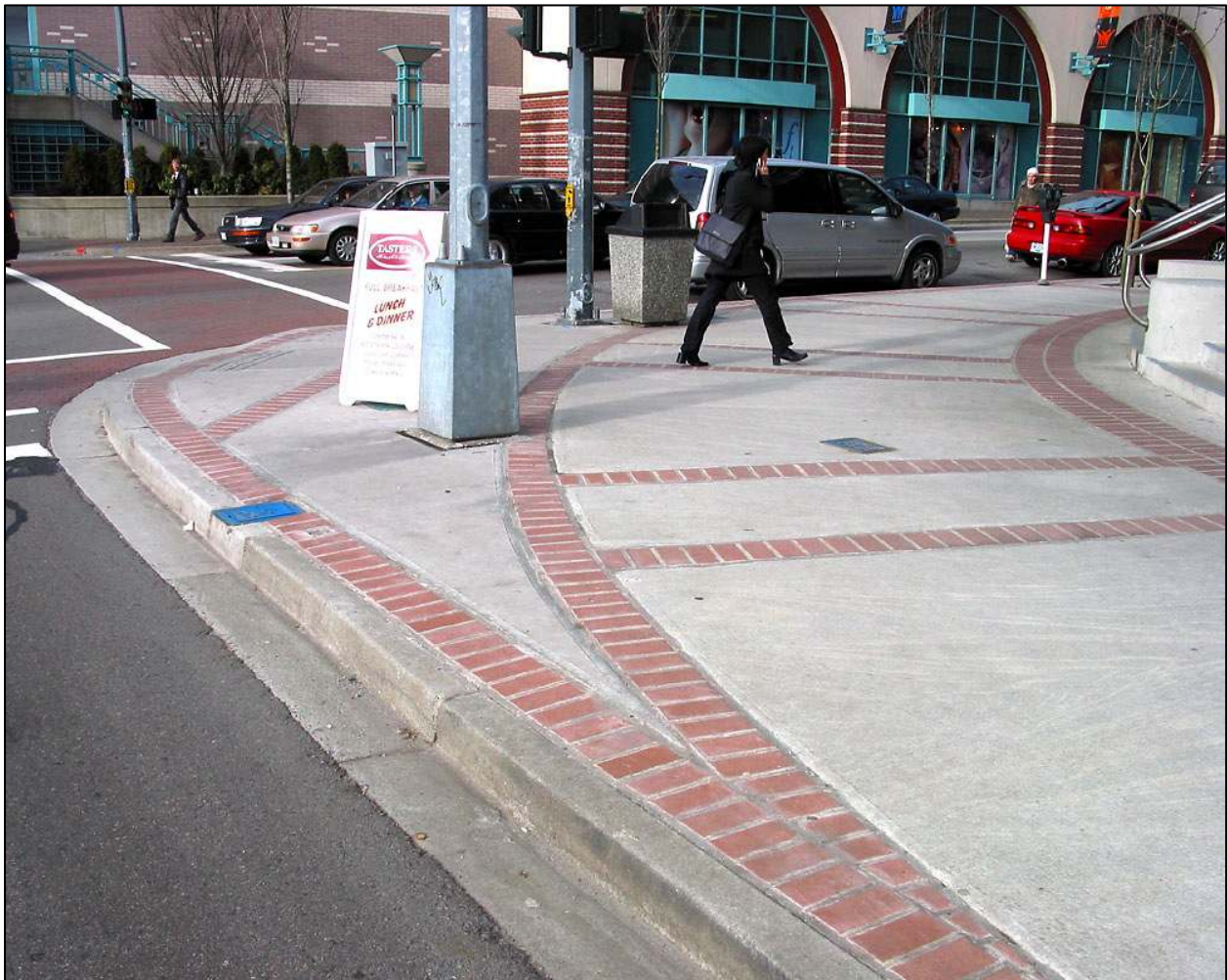


Figure 8: Curb Radius Reduction - Image Source: Richard Drdul



3.2.3 Lateral Shift

A lateral shift in a roadway occurs where an otherwise section is redesigned using pavement markings or curb extensions to create a curvilinear alignment (a 'jog') in the roadway similar to a chicane.

The purpose of a lateral shift is to reduce vehicle speeds.

Location Applicability

Local, Collector
Urban cross section

Cost

Low to medium



Figure 9: Lateral Shift - Image Source: FHWA Traffic Calming ePrimer



3.2.4 Speed Kidney

A speed kidney is an arrangement of three speed humps elongated with a curvilinear shape in the direction of traffic. Vehicles choosing to drive in a straight path with experience discomfort as two or four wheels traverse different parts of the speed kidney. Vehicles are required to take a curvilinear path in order to avoid the vertical deflection.

The purpose of a speed kidney is to reduce vehicle speeds.

Location Applicability

Local, Collector
Urban cross section

Cost

Low to medium



Figure 10: Speed Kidney - Image Source: FHWA



3.2.5 Mini-Roundabout/Traffic Circle

A traffic circle/mini-roundabout is a raised island located in the centre of the intersection, which requires vehicles to travel through the intersection in a circular, counter-clockwise direction around the island.

A mini-roundabout is designed in accordance with full-size roundabout design principles. A mini-roundabout will include splitter islands and deflection of vehicles on all approaches but have a smaller diameter and traversable central island.

A traffic circle is typically smaller than a mini-roundabout and does not include splitter islands.

The purpose of a traffic circle/mini-roundabout is to reduce vehicle speeds. A series of traffic circles or mini-roundabouts is more effective than a single installation.

Location Applicability

Local, Collector intersections

Urban or rural cross section, max. two lanes

Cost

Traffic circle: Low to medium

Mini-roundabout: Medium to high



Figure 11: Mini-roundabout - Image Source: City of Stockton



Figure 12: Traffic Circle - Image Source: Richard Drdul



3.3 Roadway Narrowing

Roadway narrowing are traffic calming measures which cause a narrowing of the roadway. These measures are intended to increase motorists' feeling of confinement, resulting in reduced speeds. Roadway narrowing measures are primarily used for speed reduction, but may also enhance the neighbourhood environment and re-allocate space to other road users.

3.3.1 Cub Extension

A curb extension is a horizontal intrusion of the curb into the roadway resulting in a narrower section of roadway. The curb is extended on one or both sides of the roadway to reduce the roadway width to as little as 6.0 metres for two-way travel on a two-lane roadway. A curb extension is also known as neckdown, choker, curb bulb or bulb-out.

The purpose of a curb extension is to reduce vehicle speeds, to reduce crossing distances for pedestrians and to increase the visibility of pedestrians.

Location Applicability

Local, Collector, Arterial
Urban cross section

Cost

Medium to high



Figure 13: Curb Extension - Image Source: Richard Drdul



3.3.2 Lane Narrowing

Lane narrowing is the reduction of lane widths using pavement markings or other features such as bicycle lanes, street beautification and pavement texture. The intention is for drivers to perceive the roadway to be less comfortable at higher speeds due to the narrowing of lanes.

The purpose of lane narrowing is to reduce vehicle speeds.

Location Applicability

Local, Collector
Urban cross section

Cost

Low to medium



Figure 14: Lane Narrowing - Image Source: FHWA



3.3.3 On-Street Parking

On-street parking is the reduction of the roadway width available for vehicle travel by allowing vehicles to park adjacent and parallel to the curb. The purpose of using on-street parking to narrow the effective roadway space is to reduce vehicle speeds.

Location Applicability

Local, Collector
Urban cross section

Cost

Low to medium



Figure 15: On-Street Parking - Image Source: Richard Drdul



3.3.4 Raised Median Island

A raised median island is an elevated median constructed on the centreline of a two-way roadway to reduce the overall width of the adjacent travel lanes.

The purpose of a raised median island is to reduce vehicle speeds and to reduce pedestrian-vehicle conflicts.

Location Applicability

Local, Collector, Urban Arterial
Urban or rural cross section

Cost

Medium to high



Figure 16: Raised Median Island - Image Source: Richard Drdul



3.3.5 Road Diet

A road diet is the reconfiguration of a roadway where the number of travel lanes and/or the effective width of the roadway is reduced in order to allocate the reclaimed space for other uses such as wider sidewalks, turning lanes, bicycle lanes and parking.

Location Applicability

Collector, Arterial

Urban cross section, minimum four lanes

Cost

Variable



Figure 17: Road Diet - Image Source: FHWA



3.3.6 Vertical Centreline Treatment

A vertical centreline treatment is the use of vertical treatments such as flexible post-mounted delineators or raised pavement markers to create a centre median with the purpose of giving drivers a perception of lane narrowing and creating a sense of constriction.

The purpose of a vertical centreline treatment is to reduce vehicle speeds.

Location Applicability

Local, Collector

Urban or rural cross section, maximum two lanes

Cost

Low



Figure 18: Vertical Centreline Treatment - Image Source: Calm Streets Boston



3.4 Surface Treatments

Surface treatments are traffic calming measures which cause vibrations of the vehicle. Motorists are expected to slow to avoid unpleasant sensations when traversing the traffic calming measure. Surface treatments are primarily used for speed reduction.

3.4.1 Sidewalk Extension/Textured Crosswalk

A sidewalk extension is a sidewalk continued across a local street intersection at the level of the adjacent roadway. Textured/patterned elements that contrast the roadway can be incorporated into the sidewalk extension.

The purpose of a sidewalk extension is to visually enhance a pedestrian crossing location so drivers become more aware of its presence. With a sidewalk extension/textured crosswalk

the continuation of the surface and enhanced visual/tactile identification of the crosswalk area emphasized pedestrian priority.

Location Applicability

Local, Collector and Arterial
Urban Cross Section

Cost

Low to Medium



Figure 19: Textured Crosswalk - Image Source: NACTO Urban Street Design Guide



Figure 20: Sidewalk Extension - Image Source: City of Victoria



3.4.2 Textured Pavement

Textured pavement is a roadway pavement that incorporates textured and/or patterned surface which contrasts adjacent roadways in the surrounding area. The difference in texture alerts drivers of the potential need to reduce speed.

Location Applicability

Local, Collector
Urban Cross Section

Cost

Low to Medium



Figure 21: Textured Pavement - Image Source: Halifax



3.4.3 Transverse Rumble Strips

Rumble strips are patterns of raised buttons, bars or grooves in the pavement closely spaced at regular intervals on the roadway that create both noise and vibration in a moving vehicle.

The purpose of a rumble strip is to alert motorists to a traffic control device with is associated with unusual or changing conditions ahead.

Location Applicability

Local, Collector and Arterial

Cost

Low



Figure 22: Transverse Rumble Strips - Image Source: Journal Times



3.5 Pavement Markings

Pavement markings measures can influence drivers to reduce speed by drawing attention to a specific area or information or by creating optical effects that create the impression that the driver's speed is increasing.

3.5.1 Converging Chevrons

Pavement markings painted in the shape of a forward-facing V pointing in the roadway travel direction. They can be spaced closer together or painted thinner as distance increases to create the illusion that a vehicle's speed is increasing.

Converging chevrons are used to alert the driver of the need to reduce speed.

Location Applicability

Local, Collector and Arterial

Rural Cross Section

Entrance to Rural Community

Cost

Low

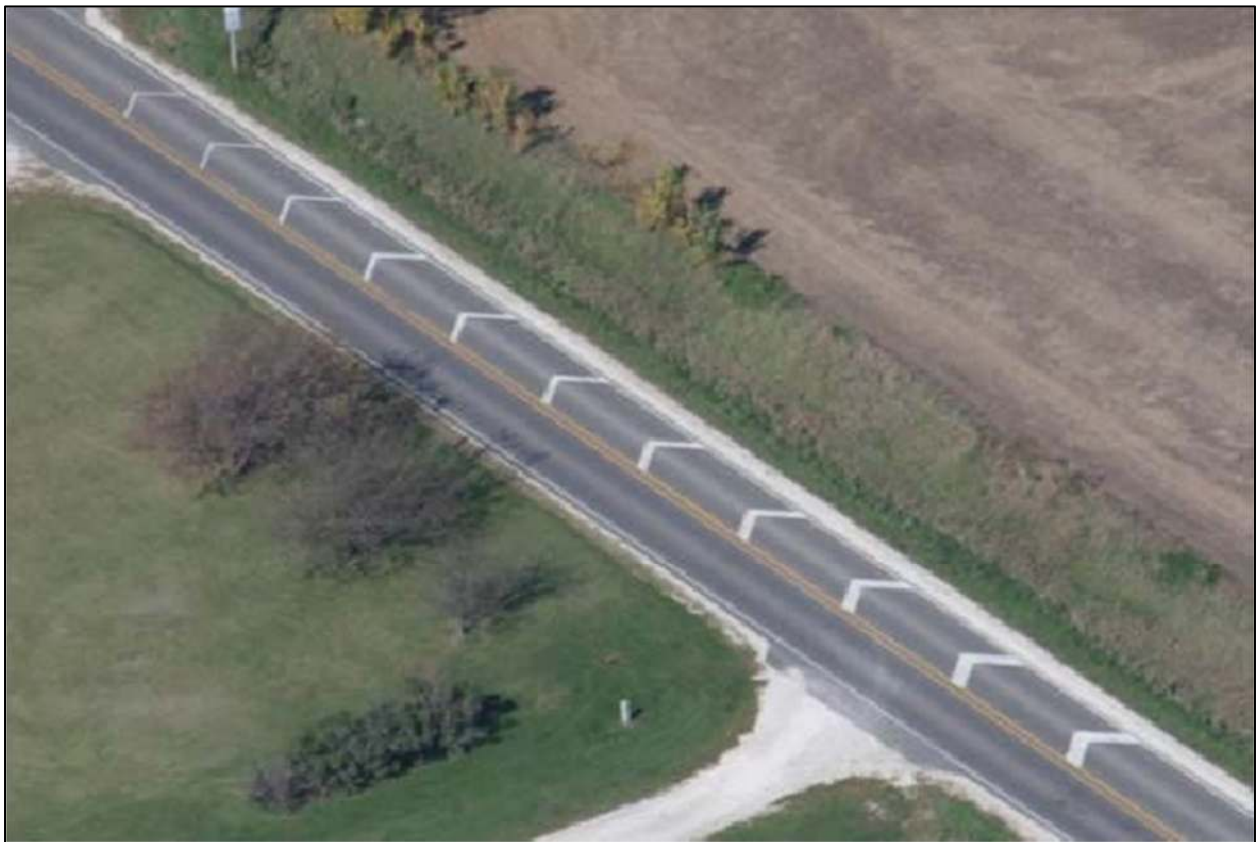


Figure 23: Converging Chevrons - Image Source: FHWA



3.5.2 Dragon's Teeth

A series of triangular pavement markings along the edge of the travelled lane. They may be painted with increasing size to give the impression of roadway narrowing.

Dragon's teeth are used to provide a visual change of the roadway and alert the driver that they are entering a rural community.

Location Applicability

Local, Collector and Arterial
Rural Cross Section
Entrance to Rural Community

Cost

Low



Figure 24: Dragon's Teeth - Image Source: meganix.net/pavement



3.5.3 Full-Lane Transverse Bars

A series of parallel pavement markings which extend across the majority of the travelled lane width. They may be placed closer together with distance to create the illusion that a vehicle's speed is increasing.

Full-lane transverse bars are used to alert the driver of the need to reduce speed.

Location Applicability

Local, Collector and Arterial
Rural Cross Sections

Cost

Low



Figure 25: Full-Lane Transverse Bars - Image Source: FHWA



3.5.4 Peripheral Transverse Bars

A series of parallel pavement markings along the edge of the travelled lane. They may be placed closer together with distance to create the illusion that a vehicle's speed is increasing.

Peripheral transverse bars are used to alert the driver of the need to reduce speed. Peripheral transverse bars are similar to full-lane transverse bars but require less maintenance.

Location Applicability

Local, Collector and Arterial
Rural Cross Sections

Cost

Low



Figure 26: Peripheral Transverse Bars - Image Source: FHWA



3.5.5 On-Road 'Sign' Pavement Markings

Pavement markings that provide information that would typically be shown to drivers through signage but are painted on the roadway to provide a larger image, and one that is directly in the driver's line of sight. Examples include speed limit, school zone, stop ahead, etc.

Location Applicability

Local, Collector and Arterial
Urban and Rural Cross Sections

Cost

Low



Figure 27: On-Road 'Sign' Pavement Markings - Image Source: Unknown



3.6 Access Restrictions

Access restrictions are traffic calming measures which restrict specific vehicle movements. These measures that are typically used at intersections, but in some cases may be applicable to mid-block locations. Access restrictions are primarily used to discourage short-cutting or through traffic, but may also reduce conflicts and enhance the neighbourhood environment.

3.6.1 Directional Closure

A directional closure is a curb extension or vertical barrier extending to approximately the centerline of the roadway, effectively obstructing the movement of one direction of traffic. Bicycles are typically permitted to travel through a directional closure in both directions. The preferred orientation is to prevent ingress to a roadway rather than to prevent egress from a roadway.

The purpose of a directional closure is to obstruct short-cutting or through traffic. Not effective on rural cross sections unless obstructions are placed at roadside at directional closure location.

Location Applicability

Local at intersection with Collector/Arterial

Cost

Low to high



Figure 28: Directional Closure - Image Source: Richard Drdul



3.6.2 Diverter

A diverter is a raised barrier placed diagonally across an intersection, that forces traffic to turn and prevents traffic from proceeding straight through the intersection. Diverters typically include gaps for bicycles and pedestrians. Diverters can be mountable for emergency vehicles. Avoid on designated emergency routes unless the design accommodates the passage of emergency vehicles.

The purpose of a diverter is to obstruct and re-direct short-cutting and through traffic.

Location Applicability

Local, Collector

Cost

Low to medium



Figure 29: Diverter - Image Source: Richard Drdul



3.6.3 Full Closure

A full closure is a barrier extending across the entire width of a roadway, which obstructs all motor vehicle traffic movements from continuing along the roadway. Full closures typically include gaps for bicycles and pedestrians. Full closures can be mountable for emergency vehicles, avoid on designated emergency routes unless the design accommodates the passage of emergency vehicles.

The purpose of a full closure is to eliminate short-cutting and through traffic. Not effective on rural cross sections unless obstructions are placed at roadside at directional closure location.

Location Applicability

Local at intersections or mid-block

Cost

Medium to high



Figure 30: Full Closure - Image Source: City of Victoria



3.6.4 Intersection Channelization

Intersection channelization is the use of raised islands or bollards located in an intersection, used to obstruct specific traffic movements and physically direct traffic through an intersection. Bicycles are typically permitted to make all movements, including those which vehicles are prevented from making. Avoid on designated emergency routes unless the design accommodates the passage of emergency vehicles.

The purpose of intersection channelization is to obstruct short-cutting and through traffic. Intersection channelization can reduce pedestrian crossing distances and provide refuge areas.

Location Applicability

Local, Collector at intersection with Collector/Arterial

Cost

Low to medium



Figure 31: Intersection Channelization - Image Source: City of Stockton



3.6.5 Raised Median Through Intersection

A raised median through an Intersection is an island located on the centerline of a two-way roadway through an intersection, which prevents left turns and through movements to and from the intersecting roadways. The island provides a refuge for pedestrians and cyclists, enabling them to cross one direction of traffic at a time. The purpose of a raised median through an Intersection is to obstruct short-cutting or through traffic and reduce crossing distance for pedestrians.

A raised median through an Intersection can reduce speeds in some instances when combined with narrow lane widths. Refer to 3.3.4 Raised Median Island for additional details.

Location Applicability

Collector, Arterial at intersections with Local

Cost

Low to medium



Figure 32: Raised Median Through Intersection - Image Source: Richard Drdul



3.6.6 Right-in/Right-out Island

A right-in/right-out island is a raised triangular island at an intersection approach which obstructs left turns and through movements to and from the intersecting street or driveway. Bicycles are typically permitted to make left turn and through movement from the intersecting street.

The purpose of a right-in/right-out island is to obstruct short-cutting or through traffic.

Location Applicability

Local, Collector
Urban cross section

Cost

Low to medium



Figure 33: Right-in/Right-out Island - Image Source: Richard Drdul



4 Design of New Subdivisions with Traffic Calming Measures

Although the process focuses on implementing traffic calming plans on existing roadways to address existing problems, traffic calming measures can also be used in the design of new subdivisions. Traffic calming measures can be incorporated into the design of new subdivisions to encourage traffic-calmed neighborhoods. Introducing traffic calming measures into the design stage of new developments will improve the aesthetics of the subdivision, reduce speeds and through traffic volumes and provide, a safer and friendlier environment for pedestrians and bicyclists.

Certain traffic calming measures require specific right-of-way, such as traffic circles, these traffic calming measures can easily be incorporated into new developments at the early design stages. Other traffic calming measures, such as raised crosswalks and chicanes, require considerations for storm water management since these traffic calming measures can extend across the width of a roadway or abut to the curb. These measures can prevent surface water run-off from getting to the catch basins and can result in flooding uphill of the traffic calming measure. When these types of traffic calming measures are incorporated into the design of the subdivisions, these problems can be averted by including the traffic calming measures in the storm water management design.



Appendix A

Traffic Calming Request Form

Traffic Calming Request



Clareville
REAL • LIFE • POTENTIAL

To initiate a traffic calming assessment please complete the form and return to the Town of Clareville.

Applicant Name: _____

Mailing Address: _____

E-mail Address: _____

What roadway or location would you like reviewed?

Please select any of the following area that relate to the nature of your concern:

- Residential area School, playground or day care area
 Recreational area

Please select any of the following traffic concerns related to traffic calming:

- High speed in neighbourhood Collision concerns
 High volume of vehicle traffic Cut-through traffic
 Pedestrian safety Inappropriate driver behaviour

When does the problem typically occur?

- Morning rush hour Weekdays
 Mid-day Weekends
 Evening rush hour Other (specify): _____
 Late evening

Which season does the problem occur?

- Summer Spring Fall Winter

Please describe your concerns:

Signing below indicates your understanding that the Town of Clareville will assess the traffic calming request in accordance with the *Traffic Calming Policy*.

Applicant Signature: _____ Date: _____



Appendix B

Traffic Volume and Speed Data

Harbourside Transportation Consultants

Suite 301 - Terrace on the Square
 8 Rowan Street, PO Box 23169
 St. John's NL A1B 4J9
 T 709.579.6435 | F 709.579.7515

Balbo Drive
 Across From Shoal Harbour United Church
 Latitude: 48' 11.1910 North
 Longitude: 53' 58.6189 West

Northbound

Start Time	1	41	51	61	71	81	91	101	111	121	131	141	151	999	Total
07/17/20	6	3	7	0	0	0	0	0	0	0	0	0	0	0	16
01:00	3	4	3	0	0	0	0	0	0	0	0	0	0	0	10
02:00	5	1	2	0	0	0	0	0	0	0	0	0	0	0	8
03:00	1	0	1	0	1	0	0	0	0	0	0	0	0	0	3
04:00	0	1	2	0	0	0	0	0	0	0	0	0	0	0	3
05:00	2	1	2	1	0	0	0	0	0	0	0	0	0	0	6
06:00	4	6	15	6	0	0	0	0	0	0	0	0	0	0	31
07:00	19	18	22	3	0	0	0	0	0	0	0	0	0	0	62
08:00	39	18	34	5	0	0	0	0	0	0	0	0	0	0	96
09:00	61	21	25	2	1	0	0	0	1	0	0	0	0	0	111
10:00	110	21	22	3	1	0	0	0	0	0	0	0	0	0	157
11:00	159	37	25	2	0	0	0	0	0	0	0	0	0	0	223
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	409	131	160	22	3	0	0	0	1	0	0	0	0	0	726
Percent	56.3%	18.0%	22.0%	3.0%	0.4%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grand Total	1777	655	593	67	7	0	0	0	1	0	0	0	0	0	3100

15th Percentile : 10 KPH
 50th Percentile : 34 KPH
 85th Percentile : 53 KPH
 95th Percentile : 58 KPH

Stats
 Mean Speed(Average) : 34 KPH
 15 KPH Pace Speed : 41-55 KPH
 Number in Pace : 951
 Percent in Pace : 30.7%
 Number of Vehicles > 50 KPH : 668
 Percent of Vehicles > 50 KPH : 21.5%

Harbourside Transportation Consultants

Suite 301 - Terrace on the Square
 8 Rowan Street, PO Box 23169
 St. John's NL A1B 4J9
 T 709.579.6435 | F 709.579.7515

Balbo Drive
 Across From Shoal Harbour United Church
 Latitude: 48' 11.1910 North
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Southbound

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02:00	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
03:00	0	1	1	5	1	0	0	0	0	0	0	0	0	0	8
04:00	2	1	10	4	2	0	0	0	0	0	0	0	0	0	19
05:00	1	6	11	12	5	0	0	0	0	0	0	0	0	0	35
06:00	2	10	46	29	3	0	0	0	0	0	0	0	0	0	90
07:00	10	30	94	41	1	0	0	0	0	0	0	0	0	0	176
08:00	20	43	128	32	1	0	0	0	0	0	0	0	0	0	224
09:00	21	61	76	9	1	0	0	0	0	0	0	0	0	0	168
10:00	78	75	62	8	0	0	0	0	0	0	0	0	0	0	223
11:00	71	86	60	4	0	0	0	0	0	0	0	0	0	0	221
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
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17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	206	320	494	151	14	0	0	0	0	0	0	0	0	0	1185
Percent	17.4%	27.0%	41.7%	12.7%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grand Total	577	825	1298	325	26	0	0	0	0	0	0	0	0	0	3051

15th Percentile : 31 KPH
 50th Percentile : 50 KPH
 85th Percentile : 59 KPH
 95th Percentile : 66 KPH

Stats
 Mean Speed(Average) : 47 KPH
 15 KPH Pace Speed : 46-60 KPH
 Number in Pace : 1710
 Percent in Pace : 56.0%
 Number of Vehicles > 50 KPH : 1649
 Percent of Vehicles > 50 KPH : 54.0%

Harbourside Transportation Consultants

Suite 301 - Terrace on the Square
 8 Rowan Street, PO Box 23169
 St. John's NL A1B 4J9
 T 709.579.6435 | F 709.579.7515

Balbo Drive
 Across From Shoal Harbour United Church
 Latitude: 48' 11.1910 North
 Longitude: 53' 58.6189 West

Northbound, Southbound

Start Time	1	41	51	61	71	81	91	101	111	121	131	141	151	999	Total
07/17/20	6	8	11	1	0	0	0	0	0	0	0	0	0	0	26
01:00	3	6	5	5	0	0	0	0	0	0	0	0	0	0	19
02:00	6	1	2	1	0	0	0	0	0	0	0	0	0	0	10
03:00	1	1	2	5	2	0	0	0	0	0	0	0	0	0	11
04:00	2	2	12	4	2	0	0	0	0	0	0	0	0	0	22
05:00	3	7	13	13	5	0	0	0	0	0	0	0	0	0	41
06:00	6	16	61	35	3	0	0	0	0	0	0	0	0	0	121
07:00	29	48	116	44	1	0	0	0	0	0	0	0	0	0	238
08:00	59	61	162	37	1	0	0	0	0	0	0	0	0	0	320
09:00	82	82	101	11	2	0	0	0	1	0	0	0	0	0	279
10:00	188	96	84	11	1	0	0	0	0	0	0	0	0	0	380
11:00	230	123	85	6	0	0	0	0	0	0	0	0	0	0	444
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	615	451	654	173	17	0	0	0	1	0	0	0	0	0	1911
Percent	32.2%	23.6%	34.2%	9.1%	0.9%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grand Total	2354	1480	1891	392	33	0	0	0	1	0	0	0	0	0	6151

15th Percentile : 15 KPH
 50th Percentile : 44 KPH
 85th Percentile : 57 KPH
 95th Percentile : 63 KPH

Stats
 Mean Speed(Average) : 40 KPH
 15 KPH Pace Speed : 46-60 KPH
 Number in Pace : 2631
 Percent in Pace : 42.8%
 Number of Vehicles > 50 KPH : 2317
 Percent of Vehicles > 50 KPH : 37.7%

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Balbo Drive
 Across From Shoal Harbour United Church
 Latitude: 48° 11.1910 North
 Longitude: 53° 58.6189 West

Start Time	16-Jul-20 Thu	Northbound	Southbound	Combined Total	
12:00 AM		*	*	*	
01:00		*	*	*	
02:00		*	*	*	
03:00		*	*	*	
04:00		*	*	*	
05:00		*	*	*	
06:00		*	*	*	
07:00		*	*	*	
08:00		*	*	*	
09:00		*	*	*	
10:00		*	*	*	
11:00		*	*	*	
12:00 PM		253	229	482	
01:00		255	228	483	
02:00		266	238	504	
03:00		253	200	453	
04:00		292	225	517	
05:00		300	164	464	
06:00		168	146	314	
07:00		179	143	322	
08:00		165	117	282	
09:00		130	91	221	
10:00		83	54	137	
11:00		31	28	59	
Total		2375	1863		
Percent		56.0%	44.0%		

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Balbo Drive
 Across From Shoal Harbour United Church
 Latitude: 48° 11.1910 North
 Longitude: 53° 58.6189 West

Start Time	17-Jul-20 Fri	Northbound	Southbound	Combined Total	
12:00 AM		15	10	25	■
01:00		10	9	19	■
02:00		8	2	10	■
03:00		3	8	11	■
04:00		3	19	22	■
05:00		6	36	42	■
06:00		32	89	121	■
07:00		62	180	242	■
08:00		96	220	316	■
09:00		110	168	278	■
10:00		157	224	381	■
11:00		223	220	443	■
12:00 PM		*	*	*	
01:00		*	*	*	
02:00		*	*	*	
03:00		*	*	*	
04:00		*	*	*	
05:00		*	*	*	
06:00		*	*	*	
07:00		*	*	*	
08:00		*	*	*	
09:00		*	*	*	
10:00		*	*	*	
11:00		*	*	*	
Total		725	1185		
Percent		38.0%	62.0%		
Grand Total		3100	3048		
Percentage		50.4%	49.6%		
ADT		ADT 6,148		AADT 6,148	

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Balbo Drive
 South of Route 231 Intersection
 Latitude: 48° 12.3662 North
 Longitude: 53° 57.5799 West

Northbound

Start Time	1	41	51	61	71	81	91	101	111	121	131	141	151	999	Total
07/31/20	2	1	2	0	0	0	0	0	0	0	0	0	0	0	5
01:00	1	3	2	0	0	0	0	0	0	0	0	0	0	0	6
02:00	1	2	1	1	0	0	0	0	0	0	0	0	0	0	5
03:00	1	1	1	1	0	0	0	0	0	0	0	0	0	0	4
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	1	0	8	1	0	0	0	0	0	0	0	0	0	0	10
06:00	7	6	15	8	1	0	0	0	0	0	0	0	0	0	37
07:00	5	7	21	8	0	0	0	0	0	0	0	0	0	0	41
08:00	24	13	16	7	1	0	0	0	0	0	0	0	0	0	61
09:00	16	25	30	5	0	0	0	0	0	0	0	0	0	0	76
10:00	37	29	50	11	0	0	0	0	0	0	0	0	0	0	127
11:00	40	60	67	4	0	0	0	0	0	0	0	0	0	0	171
12 PM	78	70	61	5	0	0	0	0	0	0	0	0	0	0	214
13:00	61	81	70	4	1	0	0	0	0	0	0	0	0	0	217
14:00	52	69	73	5	0	0	0	0	0	0	0	0	0	0	199
15:00	45	87	100	7	0	0	0	0	0	0	0	0	0	0	239
16:00	97	81	90	8	0	0	0	0	0	0	0	0	0	0	276
17:00	74	90	113	11	0	0	0	0	0	0	0	0	0	0	288
18:00	39	48	101	11	1	0	0	0	0	0	0	0	0	0	200
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	581	673	821	97	4	0	0	0	0	0	0	0	0	0	2176
Percent	26.7%	30.9%	37.7%	4.5%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grand Total	707	793	960	117	6	0	0	0	0	0	0	0	0	0	2583

15th Percentile : 21 KPH
 50th Percentile : 47 KPH
 85th Percentile : 57 KPH
 95th Percentile : 59 KPH

Stats
 Mean Speed(Average) : 43 KPH
 15 KPH Pace Speed : 46-60 KPH
 Number in Pace : 1356
 Percent in Pace : 52.5%
 Number of Vehicles > 50 KPH : 1083
 Percent of Vehicles > 50 KPH : 41.9%

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Balbo Drive
 South of Route 231 Intersection
 Latitude: 48' 12.3662 North
 Longitude: 53' 57.5799 West

Southbound

Start Time	1	41	51	61	71	81	91	101	111	121	131	141	151	999	Total
07/31/20	2	0	8	2	0	0	0	0	0	0	0	0	0	0	12
01:00	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
02:00	1	2	2	1	0	0	0	0	0	0	0	0	0	0	6
03:00	0	1	2	1	0	0	0	0	0	0	0	0	0	0	4
04:00	0	2	7	5	1	1	0	0	0	0	0	0	0	0	16
05:00	0	5	13	7	1	0	0	0	0	0	0	0	0	0	26
06:00	0	9	38	18	3	0	0	0	0	0	0	0	0	0	68
07:00	7	20	98	33	0	0	0	0	0	0	0	0	0	0	158
08:00	24	49	102	24	4	0	0	0	0	0	0	0	0	0	203
09:00	11	44	84	13	1	0	0	0	0	0	0	0	0	0	153
10:00	12	62	89	13	0	0	0	0	0	0	0	0	0	0	176
11:00	10	59	87	12	0	0	0	0	0	0	0	0	0	0	168
12 PM	21	54	106	15	0	0	0	0	0	0	0	0	0	0	196
13:00	6	85	90	8	0	0	0	0	0	0	0	0	0	0	189
14:00	21	75	92	14	1	0	0	0	0	0	0	0	0	0	203
15:00	5	51	96	10	0	0	0	0	0	0	0	0	0	0	162
16:00	6	47	80	14	3	0	0	0	0	0	0	0	0	0	150
17:00	5	36	83	18	0	0	0	0	0	0	0	0	0	0	142
18:00	4	40	90	17	1	0	0	0	0	0	0	0	0	0	152
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	135	642	1168	225	15	1	0	0	0	0	0	0	0	0	2186
Percent	6.2%	29.4%	53.4%	10.3%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grand Total	153	739	1302	253	18	1	0	0	0	0	0	0	0	0	2466

15th Percentile : 42 KPH
 50th Percentile : 52 KPH
 85th Percentile : 59 KPH
 95th Percentile : 65 KPH

Stats
 Mean Speed(Average) : 52 KPH
 15 KPH Pace Speed : 46-60 KPH
 Number in Pace : 1671
 Percent in Pace : 67.8%
 Number of Vehicles > 50 KPH : 1574
 Percent of Vehicles > 50 KPH : 63.8%

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Balbo Drive
 South of Route 231 Intersection
 Latitude: 48' 12.3662 North
 Longitude: 53' 57.5799 West

Northbound, Southbound

Start Time	1	41	51	61	71	81	91	101	111	121	131	141	151	999	Total
07/31/20	4	1	10	2	0	0	0	0	0	0	0	0	0	0	17
01:00	1	4	3	0	0	0	0	0	0	0	0	0	0	0	8
02:00	2	4	3	2	0	0	0	0	0	0	0	0	0	0	11
03:00	1	2	3	2	0	0	0	0	0	0	0	0	0	0	8
04:00	0	2	7	5	1	1	0	0	0	0	0	0	0	0	16
05:00	1	5	21	8	1	0	0	0	0	0	0	0	0	0	36
06:00	7	15	53	26	4	0	0	0	0	0	0	0	0	0	105
07:00	12	27	119	41	0	0	0	0	0	0	0	0	0	0	199
08:00	48	62	118	31	5	0	0	0	0	0	0	0	0	0	264
09:00	27	69	114	18	1	0	0	0	0	0	0	0	0	0	229
10:00	49	91	139	24	0	0	0	0	0	0	0	0	0	0	303
11:00	50	119	154	16	0	0	0	0	0	0	0	0	0	0	339
12 PM	99	124	167	20	0	0	0	0	0	0	0	0	0	0	410
13:00	67	166	160	12	1	0	0	0	0	0	0	0	0	0	406
14:00	73	144	165	19	1	0	0	0	0	0	0	0	0	0	402
15:00	50	138	196	17	0	0	0	0	0	0	0	0	0	0	401
16:00	103	128	170	22	3	0	0	0	0	0	0	0	0	0	426
17:00	79	126	196	29	0	0	0	0	0	0	0	0	0	0	430
18:00	43	88	191	28	2	0	0	0	0	0	0	0	0	0	352
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	716	1315	1989	322	19	1	0	0	0	0	0	0	0	0	4362
Percent	16.4%	30.1%	45.6%	7.4%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grand Total	860	1532	2262	370	24	1	0	0	0	0	0	0	0	0	5049

15th Percentile : 35 KPH
 50th Percentile : 50 KPH
 85th Percentile : 58 KPH
 95th Percentile : 63 KPH

Stats
 Mean Speed(Average) : 47 KPH
 15 KPH Pace Speed : 46-60 KPH
 Number in Pace : 3028
 Percent in Pace : 60.0%
 Number of Vehicles > 50 KPH : 2657
 Percent of Vehicles > 50 KPH : 52.6%

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Balbo Drive
 South of Route 231 Intersection
 Latitude: 48° 12.3662 North
 Longitude: 53° 57.5799 West

Start Time	30-Jul-20 Thu	Northbound	Southbound	Combined Total	
12:00 AM		*	*	*	
01:00		*	*	*	
02:00		*	*	*	
03:00		*	*	*	
04:00		*	*	*	
05:00		*	*	*	
06:00		*	*	*	
07:00		*	*	*	
08:00		*	*	*	
09:00		*	*	*	
10:00		*	*	*	
11:00		*	*	*	
12:00 PM		*	*	*	
01:00		*	*	*	
02:00		*	*	*	
03:00		*	*	*	
04:00		*	*	*	
05:00		*	*	*	
06:00		*	*	*	
07:00		118	97	215	████████████████████
08:00		132	85	217	████████████████████
09:00		74	46	120	████████████████
10:00		54	34	88	██████████
11:00		29	17	46	██████
Total		407	279		
Percent		59.3%	40.7%		

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Balbo Drive
 South of Route 231 Intersection
 Latitude: 48° 12.3662 North
 Longitude: 53° 57.5799 West

Start Time	31-Jul-20 Fri	Northbound	Southbound	Combined Total	
12:00 AM		5	12	17	■
01:00		6	2	8	■
02:00		5	6	11	■
03:00		4	4	8	■
04:00		0	16	16	■
05:00		10	27	37	■
06:00		37	67	104	■
07:00		42	159	201	■
08:00		62	204	266	■
09:00		74	154	228	■
10:00		131	174	305	■
11:00		167	170	337	■
12:00 PM		220	197	417	■
01:00		215	187	402	■
02:00		199	205	404	■
03:00		240	160	400	■
04:00		273	150	423	■
05:00		286	142	428	■
06:00		200	150	350	■
07:00		*	*	*	
08:00		*	*	*	
09:00		*	*	*	
10:00		*	*	*	
11:00		*	*	*	
Total		2176	2186		
Percent		49.9%	50.1%		
Grand Total		2583	2465		
Percentage		51.2%	48.8%		
ADT		ADT 5,048		AADT 5,048	

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Cormack Drive
 Near Civic Address 18
 Latitude: 48° 9.0617 North
 Longitude: 53° 57.5411 West

Eastbound

Start Time	1 40	41 50	51 60	61 70	71 80	81 90	91 100	101 110	111 120	121 130	131 140	141 150	151 999	Total
08/05/20	0	2	0	0	0	0	0	0	0	0	0	0	0	2
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
06:00	1	1	1	0	1	0	0	0	0	0	0	0	0	4
07:00	1	5	0	0	0	0	0	0	0	0	0	0	0	6
08:00	1	5	3	1	0	0	0	0	0	0	0	0	0	10
09:00	7	7	6	1	0	0	0	0	0	0	0	0	0	21
10:00	4	15	7	0	0	0	0	0	0	0	0	0	0	26
11:00	5	12	13	2	0	0	0	0	0	0	0	0	0	32
12 PM	15	22	21	1	0	0	0	0	0	0	0	0	0	59
13:00	11	15	8	1	0	0	0	0	0	0	0	0	0	35
14:00	11	18	19	2	0	0	0	0	0	0	0	0	0	50
15:00	3	16	5	3	0	0	0	0	0	0	0	0	0	27
16:00	15	26	23	3	0	0	0	0	0	0	0	0	0	67
17:00	3	22	24	2	0	0	0	0	0	0	0	0	0	51
18:00	12	12	10	5	0	0	0	0	0	0	0	0	0	39
19:00	9	15	18	0	0	0	0	0	0	0	0	0	0	42
20:00	10	13	12	0	0	0	0	0	0	0	0	0	0	35
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	108	208	171	21	1	0	0	0	0	0	0	0	0	509
Percent	21.2%	40.9%	33.6%	4.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grand Total	120	222	176	21	1	0	0	0	0	0	0	0	0	540

15th Percentile : 26 KPH
 50th Percentile : 46 KPH
 85th Percentile : 56 KPH
 95th Percentile : 59 KPH

Stats
 Mean Speed(Average) : 44 KPH
 15 KPH Pace Speed : 41-55 KPH
 Number in Pace : 310
 Percent in Pace : 57.4%
 Number of Vehicles > 50 KPH : 198
 Percent of Vehicles > 50 KPH : 36.7%

Harbourside Transportation Consultants

Suite 301 - Terrace on the Square
 8 Rowan Street, PO Box 23169
 St. John's NL A1B 4J9
 T 709.579.6435 | F 709.579.7515

Cormack Drive
 Near Civic Address 18
 Latitude: 48° 9.0617 North
 Longitude: 53° 57.5411 West

Westbound

Start Time	1 40	41 50	51 60	61 70	71 80	81 90	91 100	101 110	111 120	121 130	131 140	141 150	151 999	Total
08/05/20	1	1	0	0	0	0	0	0	0	0	0	0	0	2
01:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
02:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	1	2	2	1	0	0	0	0	0	0	0	0	0	6
06:00	2	7	8	2	0	0	0	0	0	0	0	0	0	19
07:00	0	10	14	3	0	0	0	0	0	0	0	0	0	27
08:00	6	16	23	4	0	0	0	0	0	0	0	0	0	49
09:00	11	18	20	5	0	0	0	0	0	0	0	0	0	54
10:00	17	32	18	1	0	0	0	0	0	0	0	0	0	68
11:00	13	22	18	2	0	0	0	0	0	0	0	0	0	55
12 PM	18	31	30	4	2	0	0	0	0	0	0	0	0	85
13:00	19	25	24	2	0	0	0	0	0	0	0	0	0	70
14:00	12	36	33	3	1	0	0	0	0	0	0	0	0	85
15:00	16	23	21	0	0	0	0	0	0	0	0	0	0	60
16:00	15	24	19	7	1	0	0	0	0	0	0	0	0	66
17:00	6	22	28	4	1	0	0	0	0	0	0	0	0	61
18:00	6	23	20	2	0	0	0	0	0	0	0	0	0	51
19:00	18	20	22	2	1	0	0	0	0	0	0	0	0	63
20:00	7	26	12	1	0	0	0	0	0	0	0	0	0	46
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	168	339	314	43	6	0	0	0	0	0	0	0	0	870
Percent	19.3%	39.0%	36.1%	4.9%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grand Total	176	349	324	44	6	0	0	0	0	0	0	0	0	899

15th Percentile : 30 KPH
 50th Percentile : 47 KPH
 85th Percentile : 57 KPH
 95th Percentile : 61 KPH

Stats
 Mean Speed(Average) : 45 KPH
 15 KPH Pace Speed : 41-55 KPH
 Number in Pace : 511
 Percent in Pace : 56.8%
 Number of Vehicles > 50 KPH : 374
 Percent of Vehicles > 50 KPH : 41.6%

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Cormack Drive
 Near Civic Address 18
 Latitude: 48° 9.0617 North
 Longitude: 53° 57.5411 West

Eastbound, Westbound

Start Time	1	41	51	61	71	81	91	101	111	121	131	141	151	Total
	40	50	60	70	80	90	100	110	120	130	140	150	999	
08/05/20	1	3	0	0	0	0	0	0	0	0	0	0	0	4
01:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
02:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	1	2	3	1	0	0	0	0	0	0	0	0	0	7
06:00	3	8	9	2	1	0	0	0	0	0	0	0	0	23
07:00	1	15	14	3	0	0	0	0	0	0	0	0	0	33
08:00	7	21	26	5	0	0	0	0	0	0	0	0	0	59
09:00	18	25	26	6	0	0	0	0	0	0	0	0	0	75
10:00	21	47	25	1	0	0	0	0	0	0	0	0	0	94
11:00	18	34	31	4	0	0	0	0	0	0	0	0	0	87
12 PM	33	53	51	5	2	0	0	0	0	0	0	0	0	144
13:00	30	40	32	3	0	0	0	0	0	0	0	0	0	105
14:00	23	54	52	5	1	0	0	0	0	0	0	0	0	135
15:00	19	39	26	3	0	0	0	0	0	0	0	0	0	87
16:00	30	50	42	10	1	0	0	0	0	0	0	0	0	133
17:00	9	44	52	6	1	0	0	0	0	0	0	0	0	112
18:00	18	35	30	7	0	0	0	0	0	0	0	0	0	90
19:00	27	35	40	2	1	0	0	0	0	0	0	0	0	105
20:00	17	39	24	1	0	0	0	0	0	0	0	0	0	81
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	276	547	485	64	7	0	0	0	0	0	0	0	0	1379
Percent	20.0%	39.7%	35.2%	4.6%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grand Total	296	571	500	65	7	0	0	0	0	0	0	0	0	1439

15th Percentile : 29 KPH
 50th Percentile : 47 KPH
 85th Percentile : 57 KPH
 95th Percentile : 60 KPH

Stats
 Mean Speed(Average) : 45 KPH
 15 KPH Pace Speed : 41-55 KPH
 Number in Pace : 821
 Percent in Pace : 57.1%
 Number of Vehicles > 50 KPH : 572
 Percent of Vehicles > 50 KPH : 39.7%

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Cormack Drive
 Near Civic Address 18
 Latitude: 48° 9.0617 North
 Longitude: 53° 57.5411 West

Start Time	04-Aug-20 Tue	Eastbound	Westbound	Combined Total	
12:00 AM		*	*	*	
01:00		*	*	*	
02:00		*	*	*	
03:00		*	*	*	
04:00		*	*	*	
05:00		*	*	*	
06:00		*	*	*	
07:00		*	*	*	
08:00		*	*	*	
09:00		*	*	*	
10:00		*	*	*	
11:00		*	*	*	
12:00 PM		*	*	*	
01:00		*	*	*	
02:00		*	*	*	
03:00		*	*	*	
04:00		*	*	*	
05:00		*	*	*	
06:00		*	*	*	
07:00		*	*	*	
08:00		*	*	*	
09:00		15	17	32	██████████
10:00		9	2	11	████
11:00		7	10	17	██████
Total		31	29		
Percent		51.7%	48.3%		

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Cormack Drive
 Near Civic Address 18
 Latitude: 48° 9.0617 North
 Longitude: 53° 57.5411 West

Start Time	05-Aug-20 Wed	Eastbound	Westbound	Combined Total	
12:00 AM		2	2	4	■
01:00		1	1	2	■
02:00		1	2	3	■
03:00		0	0	0	
04:00		0	0	0	
05:00		1	7	8	■
06:00		4	18	22	■
07:00		6	28	34	■
08:00		10	48	58	■
09:00		21	54	75	■
10:00		26	68	94	■
11:00		33	55	88	■
12:00 PM		58	85	143	■
01:00		35	73	108	■
02:00		50	83	133	■
03:00		27	59	86	■
04:00		67	66	133	■
05:00		52	62	114	■
06:00		38	50	88	■
07:00		42	63	105	■
08:00		35	46	81	■
09:00		*	*	*	
10:00		*	*	*	
11:00		*	*	*	
Total		509	870		
Percent		36.9%	63.1%		
Grand Total		540	899		
Percentage		37.5%	62.5%		
ADT		ADT 1,439		AADT 1,439	

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Huntley Drive
 Near Civic Address 12
 Latitude: 48' 11.0333 North
 Longitude: 53' 59.3128 West

Westbound

Start Time	1	41	51	61	71	81	91	101	111	121	131	141	151	Total
07/17/20	3	1	0	1	0	0	0	0	0	0	0	0	0	5
01:00	2	0	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
03:00	2	1	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	1	1	0	1	0	0	0	0	0	0	0	0	0	3
07:00	9	4	1	0	0	0	0	0	0	0	0	0	0	14
08:00	8	9	3	0	0	0	0	0	0	0	0	0	0	20
09:00	21	6	0	1	0	0	0	0	0	0	0	0	0	28
10:00	14	7	2	0	0	0	0	0	0	0	0	0	0	23
11:00	29	12	1	0	0	0	0	0	0	0	0	0	0	42
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	89	41	8	3	0	0	0	0	0	0	0	0	0	141
Percent	63.1%	29.1%	5.7%	2.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grand Total	452	164	39	3	0	0	0	0	0	0	0	0	0	658

15th Percentile : 8 KPH
 50th Percentile : 29 KPH
 85th Percentile : 46 KPH
 95th Percentile : 52 KPH

Stats
 Mean Speed(Average) : 29 KPH
 15 KPH Pace Speed : 36-50 KPH
 Number in Pace : 220
 Percent in Pace : 33.4%
 Number of Vehicles > 50 KPH : 42
 Percent of Vehicles > 50 KPH : 6.4%

Harbourside Transportation Consultants

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Huntley Drive
 Near Civic Address 12
 Latitude: 48' 11.0333 North
 Longitude: 53' 59.3128 West

Eastbound

Start Time	1	41	51	61	71	81	91	101	111	121	131	141	151	Total
07/17/20	1	1	0	0	0	0	0	0	0	0	0	0	0	2
01:00	3	1	0	0	0	0	0	0	0	0	0	0	0	4
02:00	1	0	0	1	0	0	0	0	0	0	0	0	0	2
03:00	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
05:00	2	0	3	0	0	0	0	0	0	0	0	0	0	5
06:00	8	1	3	0	0	0	0	0	0	0	0	0	0	12
07:00	13	11	3	0	0	0	0	0	0	0	0	0	0	27
08:00	29	35	4	1	0	0	0	0	0	0	0	0	0	69
09:00	35	22	5	0	0	0	0	0	0	0	0	0	0	62
10:00	35	14	5	1	0	0	0	0	0	0	0	0	0	55
11:00	34	12	2	0	0	0	0	0	0	0	0	0	0	48
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	162	98	25	3	0	0	0	0	0	0	0	0	0	288
Percent	56.3%	34.0%	8.7%	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grand Total	662	335	69	3	0	0	0	0	0	0	0	0	0	1069

15th Percentile : 9 KPH
 50th Percentile : 32 KPH
 85th Percentile : 47 KPH
 95th Percentile : 52 KPH

Stats
 Mean Speed(Average) : 31 KPH
 15 KPH Pace Speed : 36-50 KPH
 Number in Pace : 418
 Percent in Pace : 39.1%
 Number of Vehicles > 50 KPH : 72
 Percent of Vehicles > 50 KPH : 6.7%

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Huntley Drive
 Near Civic Address 12
 Latitude: 48' 11.0333 North
 Longitude: 53' 59.3128 West

Westbound, Eastbound

Start Time	1	41	51	61	71	81	91	101	111	121	131	141	151	Total
07/17/20	4	2	0	1	0	0	0	0	0	0	0	0	0	7
01:00	5	1	0	0	0	0	0	0	0	0	0	0	0	6
02:00	1	0	1	1	0	0	0	0	0	0	0	0	0	3
03:00	3	1	0	0	0	0	0	0	0	0	0	0	0	4
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
05:00	2	0	3	0	0	0	0	0	0	0	0	0	0	5
06:00	9	2	3	1	0	0	0	0	0	0	0	0	0	15
07:00	22	15	4	0	0	0	0	0	0	0	0	0	0	41
08:00	37	44	7	1	0	0	0	0	0	0	0	0	0	89
09:00	56	28	5	1	0	0	0	0	0	0	0	0	0	90
10:00	49	21	7	1	0	0	0	0	0	0	0	0	0	78
11:00	63	24	3	0	0	0	0	0	0	0	0	0	0	90
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	251	139	33	6	0	0	0	0	0	0	0	0	0	429
Percent	58.5%	32.4%	7.7%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grand Total	1114	499	108	6	0	0	0	0	0	0	0	0	0	1727

15th Percentile : 9 KPH
 50th Percentile : 31 KPH
 85th Percentile : 47 KPH
 95th Percentile : 52 KPH

Stats
 Mean Speed(Average) : 30 KPH
 15 KPH Pace Speed : 36-50 KPH
 Number in Pace : 638
 Percent in Pace : 36.9%
 Number of Vehicles > 50 KPH : 114
 Percent of Vehicles > 50 KPH : 6.6%

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Huntley Drive
 Near Civic Address 12
 Latitude: 48° 11.0333 North
 Longitude: 53° 59.3128 West

Start Time	16-Jul-20 Thu	Westbound	Eastbound	Combined Total	
12:00 AM		*	*	*	
01:00		*	*	*	
02:00		*	*	*	
03:00		*	*	*	
04:00		*	*	*	
05:00		*	*	*	
06:00		*	*	*	
07:00		*	*	*	
08:00		*	*	*	
09:00		*	*	*	
10:00		*	*	*	
11:00		*	*	*	
12:00 PM		47	66	113	████████████████████
01:00		40	80	120	████████████████████
02:00		43	115	158	████████████████████
03:00		44	67	111	████████████████████
04:00		41	77	118	████████████████████
05:00		65	72	137	████████████████████
06:00		55	58	113	████████████████████
07:00		36	74	110	████████████████████
08:00		53	80	133	████████████████████
09:00		55	54	109	████████████████████
10:00		26	23	49	██████████
11:00		12	15	27	██████
Total		517	781		
Percent		39.8%	60.2%		

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Huntley Drive
 Near Civic Address 12
 Latitude: 48° 11.0333 North
 Longitude: 53° 59.3128 West

Start Time	17-Jul-20 Fri	Westbound	Eastbound	Combined Total	
12:00 AM		5	2	7	■
01:00		2	4	6	■
02:00		1	2	3	■
03:00		3	1	4	■
04:00		0	1	1	■
05:00		0	5	5	■
06:00		3	12	15	■
07:00		14	27	41	■
08:00		20	69	89	■
09:00		28	62	90	■
10:00		23	55	78	■
11:00		42	48	90	■
12:00 PM		*	*	*	
01:00		*	*	*	
02:00		*	*	*	
03:00		*	*	*	
04:00		*	*	*	
05:00		*	*	*	
06:00		*	*	*	
07:00		*	*	*	
08:00		*	*	*	
09:00		*	*	*	
10:00		*	*	*	
11:00		*	*	*	
Total		141	288		
Percent		32.9%	67.1%		
Grand Total		658	1069		
Percentage		38.1%	61.9%		
ADT		ADT 1,727	AADT 1,727		

Harbourside Transportation Consultants

Suite 301 - Terrace on the Square
 8 Rowan Street, PO Box 23169
 St. John's NL A1B 4J9
 T 709.579.6435 | F 709.579.7515

Manitoba Drive - Eastbound
 Near Tim Hortons
 Latitude: 48° 9.8060 North
 Longitude: 53° 58.9726 West

Eastbound, Eastbound

Start Time	1	41	51	61	71	81	91	101	111	121	131	141	151	Total
	40	50	60	70	80	90	100	110	120	130	140	150	999	
07/30/20	4	5	6	3	0	0	0	0	0	0	0	0	0	18
01:00	2	2	1	1	2	1	0	0	0	0	0	0	0	9
02:00	1	2	1	0	0	1	0	0	0	0	0	0	0	5
03:00	4	2	1	0	0	0	0	0	0	0	0	0	0	7
04:00	4	1	2	2	0	0	0	0	0	0	0	0	0	9
05:00	21	11	10	3	0	0	0	0	0	0	0	0	0	45
06:00	62	21	14	7	0	0	0	0	0	0	0	0	0	104
07:00	94	60	45	8	0	0	0	0	0	0	0	0	0	207
08:00	88	122	126	18	4	0	0	0	0	0	0	0	0	358
09:00	87	131	114	18	1	0	0	0	0	0	0	0	0	351
10:00	130	197	128	7	0	1	0	0	0	0	0	0	0	463
11:00	150	230	144	9	0	0	0	0	0	0	0	0	0	533
12 PM	222	291	101	5	0	0	0	0	0	0	0	0	0	619
13:00	255	266	112	6	0	0	0	0	0	0	0	0	0	639
14:00	171	342	101	6	0	0	0	0	0	0	0	0	0	620
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	1295	1683	906	93	7	3	0	0	0	0	0	0	0	3987
Percent	32.5%	42.2%	22.7%	2.3%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grand Total	1753	2441	1639	211	11	3	0	0	0	0	0	0	0	6058

15th Percentile : 20 KPH
 50th Percentile : 45 KPH
 85th Percentile : 55 KPH
 95th Percentile : 59 KPH

Stats
 Mean Speed(Average) : 42 KPH
 15 KPH Pace Speed : 41-55 KPH
 Number in Pace : 3261
 Percent in Pace : 53.8%
 Number of Vehicles > 50 KPH : 1864
 Percent of Vehicles > 50 KPH : 30.8%

Harbourside Transportation Consultants

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Manitoba Drive - Eastbound
 Near Tim Hortons
 Latitude: 48° 9.8060 North
 Longitude: 53° 58.9726 West

Start Time	29-Jul-20 Wed	Eastbound	Eastbound	Combined Total	
12:00 AM		*	*	*	
01:00		*	*	*	
02:00		*	*	*	
03:00		*	*	*	
04:00		*	*	*	
05:00		*	*	*	
06:00		*	*	*	
07:00		*	*	*	
08:00		*	*	*	
09:00		*	*	*	
10:00		*	*	*	
11:00		*	*	*	
12:00 PM		*	*	*	
01:00		*	*	*	
02:00		*	*	*	
03:00		*	*	*	
04:00		327	186	513	
05:00		265	118	383	
06:00		180	111	291	
07:00		201	124	325	
08:00		157	94	251	
09:00		119	72	191	
10:00		38	34	72	
11:00		25	20	45	
Total		1312	759		
Percent		63.4%	36.6%		

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Manitoba Drive - Eastbound
 Near Tim Hortons
 Latitude: 48° 9.8060 North
 Longitude: 53° 58.9726 West

Start Time	30-Jul-20 Thu	Eastbound	Eastbound	Combined Total	
12:00 AM		10	8	18	■
01:00		8	1	9	■
02:00		3	2	5	■
03:00		5	2	7	■
04:00		6	3	9	■
05:00		34	11	45	■
06:00		84	20	104	■
07:00		151	57	208	■
08:00		223	134	357	■
09:00		211	140	351	■
10:00		301	162	463	■
11:00		343	191	534	■
12:00 PM		386	233	619	■
01:00		412	227	639	■
02:00		387	233	620	■
03:00		*	*	*	
04:00		*	*	*	
05:00		*	*	*	
06:00		*	*	*	
07:00		*	*	*	
08:00		*	*	*	
09:00		*	*	*	
10:00		*	*	*	
11:00		*	*	*	
Total		2564	1424		
Percent		64.3%	35.7%		
Grand Total		3876	2183		
Percentage		64.0%	36.0%		
ADT		ADT 6,620		AADT 6,620	

Harbourside Transportation Consultants

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 T 709.579.6435 | F 709.579.7515

Manitoba Drive - WB
 At Corner of Sobeys Access
 Latitude: 48' 9.8100 North
 Longitude: 53' 58.9314 West

Westbound, Westbound

Start Time	1	41	51	61	71	81	91	101	111	121	131	141	151	Total
	40	50	60	70	80	90	100	110	120	130	140	150	999	
07/30/20	4	0	3	2	0	1	0	0	0	0	0	0	0	10
01:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
02:00	0	0	0	2	0	0	0	0	0	0	0	0	0	2
03:00	1	1	1	1	0	0	0	0	0	0	0	0	0	4
04:00	5	0	1	1	0	0	0	0	0	0	0	0	0	7
05:00	9	1	6	3	0	0	0	0	0	0	0	0	0	19
06:00	24	8	17	5	3	0	0	0	0	0	0	0	0	57
07:00	35	24	27	15	2	0	0	0	0	0	0	0	0	103
08:00	70	42	71	16	3	0	0	0	0	0	0	0	0	202
09:00	80	38	62	19	3	1	0	0	0	0	0	0	0	203
10:00	144	46	49	21	1	0	0	0	0	0	0	0	0	261
11:00	193	66	65	10	2	0	0	0	0	0	0	0	0	336
12 PM	245	85	72	14	0	0	0	0	0	0	0	0	0	416
13:00	303	107	59	14	0	0	0	0	0	0	0	0	0	483
14:00	252	105	53	18	1	0	0	0	0	0	0	0	0	429
15:00	234	78	53	12	0	0	0	0	0	0	0	0	0	377
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	1599	601	540	153	15	2	0	0	0	0	0	0	0	2910
Percent	54.9%	20.7%	18.6%	5.3%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grand Total	2113	777	732	200	22	4	0	0	0	0	0	0	0	3848

15th Percentile : 10 KPH
 50th Percentile : 36 KPH
 85th Percentile : 55 KPH
 95th Percentile : 61 KPH

Stats
 Mean Speed(Average) : 35 KPH
 15 KPH Pace Speed : 41-55 KPH
 Number in Pace : 1143
 Percent in Pace : 29.7%
 Number of Vehicles > 50 KPH : 958
 Percent of Vehicles > 50 KPH : 24.9%

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 T 709.579.6435 | F 709.579.7515

Manitoba Drive - WB
 At Corner of Sobeyes Access
 Latitude: 48' 9.8100 North
 Longitude: 53' 58.9314 West

Start Time	29-Jul-20 Wed	Westbound	Westbound	Combined Total
12:00 AM		*	*	*
01:00		*	*	*
02:00		*	*	*
03:00		*	*	*
04:00		*	*	*
05:00		*	*	*
06:00		*	*	*
07:00		*	*	*
08:00		*	*	*
09:00		*	*	*
10:00		*	*	*
11:00		*	*	*
12:00 PM		*	*	*
01:00		*	*	*
02:00		*	*	*
03:00		*	*	*
04:00		*	*	*
05:00		146	110	256
06:00		106	76	182
07:00		104	87	191
08:00		76	98	174
09:00		34	41	75
10:00		25	17	42
11:00		7	9	16
Total		498	438	
Percent		53.2%	46.8%	

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Manitoba Drive - WB
 At Corner of Sobeyes Access
 Latitude: 48° 9.8100 North
 Longitude: 53° 58.9314 West

Start Time	30-Jul-20 Thu	Westbound	Westbound	Combined Total	
12:00 AM		3	7	10	█
01:00		0	1	1	
02:00		1	1	2	
03:00		0	4	4	
04:00		0	7	7	█
05:00		2	17	19	█
06:00		12	45	57	█
07:00		32	72	104	█
08:00		99	106	205	█
09:00		93	108	201	█
10:00		136	128	264	█
11:00		199	136	335	█
12:00 PM		238	178	416	█
01:00		287	196	483	█
02:00		253	179	432	█
03:00		218	154	372	█
04:00		*	*	*	
05:00		*	*	*	
06:00		*	*	*	
07:00		*	*	*	
08:00		*	*	*	
09:00		*	*	*	
10:00		*	*	*	
11:00		*	*	*	
Total		1573	1339		
Percent		54.0%	46.0%		
Grand Total		2071	1777		
Percentage		53.8%	46.2%		
ADT		ADT 4,175		AADT 4,175	

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 T 709.579.6435 | F 709.579.7515

Marine Drive
 In Memorial United Church Parking Lot
 Latitude: 48° 9.2867 North
 Longitude: 53° 57.7798 West

Northbound

Start Time	1	41	51	61	71	81	91	101	111	121	131	141	151	999	Total
07/22/20	1	1	2	0	1	0	0	0	0	0	0	0	0	0	5
01:00	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:00	2	0	0	0	1	0	0	0	0	0	0	0	0	0	3
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	4	2	0	3	0	0	0	0	0	0	0	0	0	0	9
07:00	7	1	0	0	0	0	0	0	0	0	0	0	0	0	8
08:00	17	8	6	0	0	0	0	0	0	0	0	0	0	0	31
09:00	18	17	5	1	0	0	0	0	0	0	0	0	0	0	41
10:00	36	4	5	0	0	0	0	0	0	0	0	0	0	0	45
11:00	18	7	6	0	0	0	0	0	0	0	0	0	0	0	31
12 PM	43	11	9	0	0	0	0	0	0	0	0	0	0	0	63
13:00	30	13	9	2	0	0	0	0	0	0	0	0	0	0	54
14:00	27	10	8	0	0	0	0	0	0	0	0	0	0	0	45
15:00	30	14	2	1	0	0	0	0	0	0	0	0	0	0	47
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	234	89	54	7	2	0	0	0	0	0	0	0	0	0	386
Percent	60.6%	23.1%	14.0%	1.8%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grand Total	351	141	79	9	2	1	0	0	0	0	0	0	0	0	583

15th Percentile : 9 KPH
 50th Percentile : 33 KPH
 85th Percentile : 50 KPH
 95th Percentile : 57 KPH

Stats
 Mean Speed(Average) : 32 KPH
 15 KPH Pace Speed : 36-50 KPH
 Number in Pace : 185
 Percent in Pace : 31.7%
 Number of Vehicles > 50 KPH : 91
 Percent of Vehicles > 50 KPH : 15.6%

Harbourside Transportation Consultants

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Marine Drive
 In Memorial United Church Parking Lot
 Latitude: 48° 9.2867 North
 Longitude: 53° 57.7798 West

Southbound

Start Time	1	41	51	61	71	81	91	101	111	121	131	141	151	Total
07/22/20	1	2	1	0	0	0	0	0	0	0	0	0	0	4
01:00	1	0	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	1	2	0	0	0	0	0	0	0	0	0	0	0	3
06:00	3	0	3	1	0	0	0	0	0	0	0	0	0	7
07:00	6	5	5	2	0	0	0	0	0	0	0	0	0	18
08:00	8	16	9	2	1	0	0	0	0	0	0	0	0	36
09:00	11	15	7	1	1	0	0	0	0	0	0	0	0	35
10:00	12	23	6	0	0	0	0	0	0	0	0	0	0	41
11:00	17	27	10	1	0	0	0	0	0	0	0	0	0	55
12 PM	22	27	6	1	0	0	0	0	0	0	0	0	0	56
13:00	15	17	15	3	0	0	0	0	0	0	0	0	0	50
14:00	16	14	7	0	0	0	0	0	0	0	0	0	0	37
15:00	30	20	5	3	0	0	0	0	0	0	0	0	0	58
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	143	169	74	14	2	0	0	0	0	0	0	0	0	402
Percent	35.6%	42.0%	18.4%	3.5%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grand Total	201	238	107	18	2	0	0	0	0	0	0	0	0	566

15th Percentile : 16 KPH
 50th Percentile : 43 KPH
 85th Percentile : 53 KPH
 95th Percentile : 59 KPH

Stats
 Mean Speed(Average) : 39 KPH
 15 KPH Pace Speed : 41-55 KPH
 Number in Pace : 292
 Percent in Pace : 51.6%
 Number of Vehicles > 50 KPH : 127
 Percent of Vehicles > 50 KPH : 22.4%

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Marine Drive
 In Memorial United Church Parking Lot
 Latitude: 48° 9.2867 North
 Longitude: 53° 57.7798 West

Northbound, Southbound

Start Time	1	41	51	61	71	81	91	101	111	121	131	141	151	999	Total
07/22/20	2	3	3	0	1	0	0	0	0	0	0	0	0	0	9
01:00	2	0	1	0	0	0	0	0	0	0	0	0	0	0	3
02:00	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:00	2	0	0	0	1	0	0	0	0	0	0	0	0	0	3
05:00	1	2	0	0	0	0	0	0	0	0	0	0	0	0	3
06:00	7	2	3	4	0	0	0	0	0	0	0	0	0	0	16
07:00	13	6	5	2	0	0	0	0	0	0	0	0	0	0	26
08:00	25	24	15	2	1	0	0	0	0	0	0	0	0	0	67
09:00	29	32	12	2	1	0	0	0	0	0	0	0	0	0	76
10:00	48	27	11	0	0	0	0	0	0	0	0	0	0	0	86
11:00	35	34	16	1	0	0	0	0	0	0	0	0	0	0	86
12 PM	65	38	15	1	0	0	0	0	0	0	0	0	0	0	119
13:00	45	30	24	5	0	0	0	0	0	0	0	0	0	0	104
14:00	43	24	15	0	0	0	0	0	0	0	0	0	0	0	82
15:00	60	34	7	4	0	0	0	0	0	0	0	0	0	0	105
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	377	258	128	21	4	0	0	0	0	0	0	0	0	0	788
Percent	47.8%	32.7%	16.2%	2.7%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grand Total	552	379	186	27	4	1	0	0	0	0	0	0	0	0	1149

15th Percentile : 12 KPH
 50th Percentile : 40 KPH
 85th Percentile : 52 KPH
 95th Percentile : 58 KPH

Stats
 Mean Speed(Average) : 36 KPH
 15 KPH Pace Speed : 41-55 KPH
 Number in Pace : 472
 Percent in Pace : 41.1%
 Number of Vehicles > 50 KPH : 218
 Percent of Vehicles > 50 KPH : 19.0%

Harbourside Transportation Consultants

Suite 301 - Terrace on the Square
 8 Rowan Street, PO Box 23169
 St. John's NL A1B 4J9
 T 709.579.6435 | F 709.579.7515

Marine Drive
 In Memorial United Church Parking Lot
 Latitude: 48° 9.2867 North
 Longitude: 53° 57.7798 West

Start Time	21-Jul-20 Tue	Northbound	Southbound	Combined Total	
12:00 AM		*	*	*	
01:00		*	*	*	
02:00		*	*	*	
03:00		*	*	*	
04:00		*	*	*	
05:00		*	*	*	
06:00		*	*	*	
07:00		*	*	*	
08:00		*	*	*	
09:00		*	*	*	
10:00		*	*	*	
11:00		*	*	*	
12:00 PM		*	*	*	
01:00		*	*	*	
02:00		*	*	*	
03:00		*	*	*	
04:00		*	*	*	
05:00		40	47	87	██
06:00		39	23	62	████████████████████████████████████
07:00		40	31	71	██████████████████████████████████████
08:00		36	26	62	████████████████████████████████████
09:00		27	20	47	██████████████████████████████████
10:00		8	11	19	████████
11:00		6	4	10	████
Total		196	162		
Percent		54.7%	45.3%		

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 T 709.579.6435 | F 709.579.7515

Marine Drive
 In Memorial United Church Parking Lot
 Latitude: 48° 9.2867 North
 Longitude: 53° 57.7798 West

Start Time	22-Jul-20 Wed	Northbound	Southbound	Combined Total	
12:00 AM		5	4	9	█
01:00		2	1	3	█
02:00		1	1	2	█
03:00		1	0	1	█
04:00		3	0	3	█
05:00		0	3	3	█
06:00		9	8	17	██
07:00		8	17	25	███
08:00		31	36	67	█████
09:00		41	35	76	██████
10:00		45	41	86	███████
11:00		31	56	87	███████
12:00 PM		64	56	120	█████████
01:00		55	49	104	█████████
02:00		45	37	82	███████
03:00		46	60	106	█████████
04:00		*	*	*	
05:00		*	*	*	
06:00		*	*	*	
07:00		*	*	*	
08:00		*	*	*	
09:00		*	*	*	
10:00		*	*	*	
11:00		*	*	*	
Total		387	404		
Percent		48.9%	51.1%		
Grand Total		583	566		
Percentage		50.7%	49.3%		
ADT		ADT 1,259	AADT 1,259		

Harbourside Transportation Consultants

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 T 709.579.6435 | F 709.579.7515

Memorial Drive - NB
 Near Civic Address 251
 Latitude: 48° 9.7388 North
 Longitude: 53° 58.1238 West

Northbound

Start Time	1	41	51	61	71	81	91	101	111	121	131	141	151	Total
07/24/20	4	3	3	0	0	0	0	0	0	0	0	0	0	10
01:00	7	3	4	2	4	0	0	0	0	0	0	0	0	20
02:00	1	0	2	0	0	0	0	0	0	0	0	0	0	3
03:00	1	1	1	0	0	0	0	0	0	0	0	0	0	3
04:00	1	2	1	0	0	0	0	0	0	0	0	0	0	4
05:00	4	5	7	0	0	0	0	0	0	0	0	0	0	16
06:00	6	11	15	4	0	0	0	0	0	0	0	0	0	36
07:00	10	13	19	7	0	0	0	0	0	0	0	0	0	49
08:00	14	24	33	2	0	0	0	0	0	0	0	0	0	73
09:00	31	28	21	1	0	0	0	0	0	0	0	0	0	81
10:00	21	52	26	3	0	0	0	0	0	0	0	0	0	102
11:00	47	56	18	3	0	0	0	0	0	0	0	0	0	124
12 PM	51	70	37	1	0	0	0	0	0	0	0	0	0	159
13:00	40	70	24	1	0	0	0	0	0	0	0	0	0	135
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	238	338	211	24	4	0	0	0	0	0	0	0	0	815
Percent	29.2%	41.5%	25.9%	2.9%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grand Total	504	724	477	52	5	0	0	0	0	0	0	0	0	1762

15th Percentile : 20 KPH
 50th Percentile : 45 KPH
 85th Percentile : 55 KPH
 95th Percentile : 59 KPH

Stats
 Mean Speed(Average) : 42 KPH
 15 KPH Pace Speed : 41-55 KPH
 Number in Pace : 963
 Percent in Pace : 54.7%
 Number of Vehicles > 50 KPH : 534
 Percent of Vehicles > 50 KPH : 30.3%

Harbourside Transportation Consultants

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 St. John's NL A1B 4J9
 T 709.579.6435 | F 709.579.7515

Memorial Drive - NB
 Near Civic Address 251
 Latitude: 48° 9.7388 North
 Longitude: 53° 58.1238 West

Northbound - Turning Lane

Start Time	1	41	51	61	71	81	91	101	111	121	131	141	151	Total
07/24/20	6	0	3	0	0	0	0	0	0	0	0	0	0	9
01:00	0	1	1	1	2	0	2	0	0	0	0	0	0	7
02:00	1	0	1	2	0	0	0	0	0	0	0	0	0	4
03:00	1	1	0	0	0	0	0	0	0	0	0	0	0	2
04:00	2	0	1	1	0	0	0	0	0	0	0	0	0	4
05:00	6	2	6	1	0	0	0	0	0	0	0	0	0	15
06:00	6	2	24	2	0	0	0	0	0	0	0	0	0	34
07:00	8	14	19	5	0	0	0	0	0	0	0	0	0	46
08:00	16	16	39	5	0	0	0	0	0	0	0	0	0	76
09:00	23	39	25	4	0	0	0	0	0	0	0	0	0	91
10:00	28	63	32	4	0	0	0	0	0	0	0	0	0	127
11:00	43	82	37	0	0	0	0	0	0	0	0	0	0	162
12 PM	57	81	27	3	1	0	0	0	0	0	0	0	0	169
13:00	55	75	43	1	0	0	0	0	0	0	0	0	0	174
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	252	376	258	29	3	0	2	0	0	0	0	0	0	920
Percent	27.4%	40.9%	28.0%	3.2%	0.3%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grand Total	436	692	491	55	5	0	2	0	0	0	0	0	0	1681

15th Percentile : 23 KPH
 50th Percentile : 45 KPH
 85th Percentile : 56 KPH
 95th Percentile : 59 KPH

Stats
 Mean Speed(Average) : 43 KPH
 15 KPH Pace Speed : 41-55 KPH
 Number in Pace : 938
 Percent in Pace : 55.8%
 Number of Vehicles > 50 KPH : 553
 Percent of Vehicles > 50 KPH : 32.9%

Harbourside Transportation Consultants

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 St. John's NL A1B 4J9
 T 709.579.6435 | F 709.579.7515

Memorial Drive - NB
 Near Civic Address 251
 Latitude: 48° 9.7388 North
 Longitude: 53° 58.1238 West

Northbound, Northbound - Turning Lane

Start Time	1	41	51	61	71	81	91	101	111	121	131	141	151	Total
07/24/20	10	3	6	0	0	0	0	0	0	0	0	0	0	19
01:00	7	4	5	3	6	0	2	0	0	0	0	0	0	27
02:00	2	0	3	2	0	0	0	0	0	0	0	0	0	7
03:00	2	2	1	0	0	0	0	0	0	0	0	0	0	5
04:00	3	2	2	1	0	0	0	0	0	0	0	0	0	8
05:00	10	7	13	1	0	0	0	0	0	0	0	0	0	31
06:00	12	13	39	6	0	0	0	0	0	0	0	0	0	70
07:00	18	27	38	12	0	0	0	0	0	0	0	0	0	95
08:00	30	40	72	7	0	0	0	0	0	0	0	0	0	149
09:00	54	67	46	5	0	0	0	0	0	0	0	0	0	172
10:00	49	115	58	7	0	0	0	0	0	0	0	0	0	229
11:00	90	138	55	3	0	0	0	0	0	0	0	0	0	286
12 PM	108	151	64	4	1	0	0	0	0	0	0	0	0	328
13:00	95	145	67	2	0	0	0	0	0	0	0	0	0	309
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	490	714	469	53	7	0	2	0	0	0	0	0	0	1735
Percent	28.2%	41.2%	27.0%	3.1%	0.4%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grand Total	940	1416	968	107	10	0	2	0	0	0	0	0	0	3443

15th Percentile : 21 KPH
 50th Percentile : 45 KPH
 85th Percentile : 55 KPH
 95th Percentile : 59 KPH

Stats
 Mean Speed(Average) : 42 KPH
 15 KPH Pace Speed : 41-55 KPH
 Number in Pace : 1900
 Percent in Pace : 55.2%
 Number of Vehicles > 50 KPH : 1087
 Percent of Vehicles > 50 KPH : 31.6%

Harbourside Transportation Consultants

Suite 301 - Terrace on the Square
 8 Rowan Street, PO Box 23169
 St. John's NL A1B 4J9
 T 709.579.6435 | F 709.579.7515

Memorial Drive - NB
 Near Civic Address 251
 Latitude: 48' 9.7388 North
 Longitude: 53' 58.1238 West

Start Time	23-Jul-20 Thu	Northbound	Northbound -	Combined Total	
12:00 AM		*	*	*	
01:00		*	*	*	
02:00		*	*	*	
03:00		*	*	*	
04:00		*	*	*	
05:00		*	*	*	
06:00		*	*	*	
07:00		*	*	*	
08:00		*	*	*	
09:00		*	*	*	
10:00		*	*	*	
11:00		*	*	*	
12:00 PM		*	*	*	
01:00		*	*	*	
02:00		144	144	288	
03:00		140	122	262	
04:00		162	100	262	
05:00		111	85	196	
06:00		100	65	165	
07:00		102	101	203	
08:00		87	64	151	
09:00		53	50	103	
10:00		34	22	56	
11:00		14	8	22	
Total		947	761		
Percent		55.4%	44.6%		

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 T 709.579.6435 | F 709.579.7515

Memorial Drive - NB
 Near Civic Address 251
 Latitude: 48° 9.7388 North
 Longitude: 53° 58.1238 West

Start Time	24-Jul-20 Fri	Northbound	Northbound -	Combined Total	
12:00 AM		10	9	19	█
01:00		20	7	27	█
02:00		3	4	7	█
03:00		3	2	5	█
04:00		4	4	8	█
05:00		16	15	31	█
06:00		36	34	70	█
07:00		49	46	95	█
08:00		73	76	149	█
09:00		81	91	172	█
10:00		102	127	229	█
11:00		124	162	286	█
12:00 PM		159	169	328	█
01:00		135	174	309	█
02:00		*	*	*	
03:00		*	*	*	
04:00		*	*	*	
05:00		*	*	*	
06:00		*	*	*	
07:00		*	*	*	
08:00		*	*	*	
09:00		*	*	*	
10:00		*	*	*	
11:00		*	*	*	
Total		815	920		
Percent		47.0%	53.0%		
Grand Total		1762	1681		
Percentage		51.2%	48.8%		
ADT		ADT 3,443		AADT 3,443	

Harbourside Transportation Consultants

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 T 709.579.6435 | F 709.579.7515

Memorial Drive - SB
 Near Canada Post
 Latitude: 48° 9.7370 North
 Longitude: 53° 58.1353 West

Southbound

Start Time	1	41	51	61	71	81	91	101	111	121	131	141	151	Total
07/24/20	6	7	1	1	0	0	0	0	0	0	0	0	0	15
01:00	1	4	2	0	0	0	0	0	0	0	0	0	0	7
02:00	1	1	0	0	0	0	0	0	0	0	0	0	0	2
03:00	1	2	1	0	0	0	0	0	0	0	0	0	0	4
04:00	1	2	1	1	0	0	0	0	0	0	0	0	0	5
05:00	3	6	5	0	0	0	0	0	0	0	0	0	0	14
06:00	4	23	5	1	0	0	0	0	0	0	0	0	0	33
07:00	15	35	21	2	0	0	0	0	0	0	0	0	0	73
08:00	64	97	27	1	0	0	0	0	0	0	0	0	0	189
09:00	69	81	14	0	0	0	0	0	0	0	0	0	0	164
10:00	137	122	18	1	0	0	0	0	0	0	0	0	0	278
11:00	178	137	19	0	0	0	0	0	0	0	0	0	0	334
12 PM	130	138	15	0	0	0	0	0	0	0	0	0	0	283
13:00	105	76	8	1	0	0	0	0	0	0	0	0	0	190
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	715	731	137	8	0	0	0	0	0	0	0	0	0	1591
Percent	44.9%	45.9%	8.6%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grand Total	1490	1696	293	16	3	0	0	0	0	0	0	0	0	3498

15th Percentile : 14 KPH
 50th Percentile : 41 KPH
 85th Percentile : 48 KPH
 95th Percentile : 54 KPH

Stats
 Mean Speed(Average) : 36 KPH
 15 KPH Pace Speed : 36-50 KPH
 Number in Pace : 1882
 Percent in Pace : 53.8%
 Number of Vehicles > 50 KPH : 312
 Percent of Vehicles > 50 KPH : 8.9%

Harbourside Transportation Consultants

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 T 709.579.6435 | F 709.579.7515

Memorial Drive - SB
 Near Canada Post
 Latitude: 48° 9.7370 North
 Longitude: 53° 58.1353 West

Start Time	Fri 24-Jul-20	<-----Quarter		Hour----->		Hour Total	
		1st	2nd	3rd	4th		
12:00 AM		4	4	3	4	15	
01:00		1	3	1	2	7	
02:00		0	2	0	0	2	
03:00		0	1	2	1	4	
04:00		0	2	2	1	5	
05:00		2	4	2	6	14	
06:00		4	8	9	12	33	
07:00		12	11	23	27	73	
08:00		43	61	45	40	189	
09:00		23	31	55	55	164	
10:00		67	65	72	74	278	
11:00		91	89	72	82	334	
12:00 PM		82	75	61	65	283	
01:00		44	56	51	39	190	
02:00		*	*	*	*	*	
03:00		*	*	*	*	*	
04:00		*	*	*	*	*	
05:00		*	*	*	*	*	
06:00		*	*	*	*	*	
07:00		*	*	*	*	*	
08:00		*	*	*	*	*	
09:00		*	*	*	*	*	
10:00		*	*	*	*	*	
11:00		*	*	*	*	*	
Day Total						1591	
Total						3498	
ADT		ADT 3,640		AADT 3,640			

Harbourside Transportation Consultants

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Memorial Drive (TCH)
 At Jubilee Crescent
 Latitude: 48° 8.8114 North
 Longitude: 53° 57.6292 West

Southbound

Start Time	1	41	51	61	71	81	91	101	111	121	131	141	151	999	Total
07/31/20	0	3	4	1	0	0	0	0	0	0	0	0	0	0	8
01:00	0	1	2	1	0	0	0	0	0	0	0	0	0	0	4
02:00	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
03:00	4	2	2	0	0	0	0	0	0	0	0	0	0	0	8
04:00	1	0	3	1	0	0	0	0	0	0	0	0	0	0	5
05:00	1	7	4	2	0	0	0	0	0	0	0	0	0	0	14
06:00	3	6	12	10	2	0	0	0	0	0	0	0	0	0	33
07:00	9	14	13	9	1	0	0	0	0	0	0	0	0	0	46
08:00	2	30	42	15	3	0	0	0	0	0	0	0	0	0	92
09:00	2	30	37	12	0	0	0	0	0	0	0	0	0	0	81
10:00	8	37	24	18	3	0	0	0	0	0	0	0	0	0	90
11:00	19	40	45	15	0	0	0	0	0	0	0	0	0	0	119
12 PM	12	42	60	15	5	0	0	0	0	0	0	0	0	0	134
13:00	5	63	68	19	0	0	0	0	0	0	0	0	0	0	155
14:00	7	48	58	28	6	0	0	0	0	0	0	0	0	0	147
15:00	9	38	58	15	1	0	0	0	0	0	0	0	0	0	121
16:00	9	47	59	16	1	0	0	0	0	0	0	0	0	0	132
17:00	11	37	36	18	3	0	0	0	0	0	0	0	0	0	105
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	103	446	527	195	25	0	0	0	0	0	0	0	0	0	1296
Percent	7.9%	34.4%	40.7%	15.0%	1.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grand Total	120	521	607	224	31	0	0	0	0	0	0	0	0	0	1503

15th Percentile : 42 KPH
 50th Percentile : 51 KPH
 85th Percentile : 61 KPH
 95th Percentile : 68 KPH

Stats
 Mean Speed(Average) : 51 KPH
 15 KPH Pace Speed : 46-60 KPH
 Number in Pace : 868
 Percent in Pace : 57.8%
 Number of Vehicles > 50 KPH : 862
 Percent of Vehicles > 50 KPH : 57.4%

Harbourside Transportation Consultants

Suite 301 - Terrace on the Square
 8 Rowan Street, PO Box 23169
 St. John's NL A1B 4J9
 T 709.579.6435 | F 709.579.7515

Memorial Drive (TCH)
 At Jubilee Crescent
 Latitude: 48° 8.8114 North
 Longitude: 53° 57.6292 West

Northbound

Start Time	1	41	51	61	71	81	91	101	111	121	131	141	151	999	Total
07:31/20	2	3	1	0	0	0	0	0	0	0	0	0	0	0	6
01:00	1	2	5	1	0	0	0	0	0	0	0	0	0	0	9
02:00	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
03:00	1	2	0	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
05:00	4	3	6	1	0	0	0	0	0	0	0	0	0	0	14
06:00	5	7	27	7	1	0	0	0	0	0	0	0	0	0	47
07:00	3	31	36	11	3	0	0	0	0	0	0	0	0	0	84
08:00	22	54	69	18	1	0	0	0	0	0	0	0	0	0	164
09:00	13	53	71	9	0	0	0	0	0	0	0	0	0	0	146
10:00	10	67	95	14	3	0	0	0	0	0	0	0	0	0	189
11:00	18	92	115	20	0	0	0	0	0	0	0	0	0	0	245
12 PM	19	89	109	28	0	0	0	0	0	0	0	0	0	0	245
13:00	26	69	109	24	1	0	0	0	0	0	0	0	0	0	229
14:00	17	82	128	30	0	0	0	0	0	0	0	0	0	0	257
15:00	16	59	78	23	2	0	0	0	0	0	0	0	0	0	178
16:00	22	73	82	21	2	0	0	0	0	0	0	0	0	0	200
17:00	8	71	95	16	4	0	0	0	0	0	0	0	0	0	194
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	187	759	1030	223	17	0	0	0	0	0	0	0	0	0	2216
Percent	8.4%	34.3%	46.5%	10.1%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grand Total	231	878	1160	244	19	0	0	0	0	0	0	0	0	0	2532

15th Percentile : 41 KPH
 50th Percentile : 51 KPH
 85th Percentile : 58 KPH
 95th Percentile : 65 KPH

Stats
 Mean Speed(Average) : 50 KPH
 15 KPH Pace Speed : 46-60 KPH
 Number in Pace : 1599
 Percent in Pace : 63.2%
 Number of Vehicles > 50 KPH : 1423
 Percent of Vehicles > 50 KPH : 56.2%

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 T 709.579.6435 | F 709.579.7515

Memorial Drive (TCH)
 At Jubilee Crescent
 Latitude: 48° 8.8114 North
 Longitude: 53° 57.6292 West

Southbound, Northbound

Start Time	1	41	51	61	71	81	91	101	111	121	131	141	151	Total
07:31/20	2	6	5	1	0	0	0	0	0	0	0	0	0	14
01:00	1	3	7	2	0	0	0	0	0	0	0	0	0	13
02:00	1	3	1	0	0	0	0	0	0	0	0	0	0	5
03:00	5	4	2	0	0	0	0	0	0	0	0	0	0	11
04:00	1	0	6	1	0	0	0	0	0	0	0	0	0	8
05:00	5	10	10	3	0	0	0	0	0	0	0	0	0	28
06:00	8	13	39	17	3	0	0	0	0	0	0	0	0	80
07:00	12	45	49	20	4	0	0	0	0	0	0	0	0	130
08:00	24	84	111	33	4	0	0	0	0	0	0	0	0	256
09:00	15	83	108	21	0	0	0	0	0	0	0	0	0	227
10:00	18	104	119	32	6	0	0	0	0	0	0	0	0	279
11:00	37	132	160	35	0	0	0	0	0	0	0	0	0	364
12 PM	31	131	169	43	5	0	0	0	0	0	0	0	0	379
13:00	31	132	177	43	1	0	0	0	0	0	0	0	0	384
14:00	24	130	186	58	6	0	0	0	0	0	0	0	0	404
15:00	25	97	136	38	3	0	0	0	0	0	0	0	0	299
16:00	31	120	141	37	3	0	0	0	0	0	0	0	0	332
17:00	19	108	131	34	7	0	0	0	0	0	0	0	0	299
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	290	1205	1557	418	42	0	0	0	0	0	0	0	0	3512
Percent	8.3%	34.3%	44.3%	11.9%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grand Total	351	1399	1767	468	50	0	0	0	0	0	0	0	0	4035

15th Percentile : 41 KPH
 50th Percentile : 51 KPH
 85th Percentile : 59 KPH
 95th Percentile : 66 KPH

Stats
 Mean Speed(Average) : 50 KPH
 15 KPH Pace Speed : 46-60 KPH
 Number in Pace : 2466
 Percent in Pace : 61.1%
 Number of Vehicles > 50 KPH : 2285
 Percent of Vehicles > 50 KPH : 56.6%

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Memorial Drive (TCH)
 At Jubilee Crescent
 Latitude: 48° 8.8114 North
 Longitude: 53° 57.6292 West

Start Time	30-Jul-20 Thu	Southbound	Northbound	Combined Total	
12:00 AM		*	*	*	
01:00		*	*	*	
02:00		*	*	*	
03:00		*	*	*	
04:00		*	*	*	
05:00		*	*	*	
06:00		*	*	*	
07:00		*	*	*	
08:00		*	*	*	
09:00		*	*	*	
10:00		*	*	*	
11:00		*	*	*	
12:00 PM		*	*	*	
01:00		*	*	*	
02:00		*	*	*	
03:00		*	*	*	
04:00		*	*	*	
05:00		*	*	*	
06:00		*	*	*	
07:00		77	114	191	
08:00		60	79	139	
09:00		40	69	109	
10:00		19	35	54	
11:00		11	18	29	
Total		207	315		
Percent		39.7%	60.3%		

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Memorial Drive (TCH)
 At Jubilee Crescent
 Latitude: 48° 8.8114 North
 Longitude: 53° 57.6292 West

Start Time	31-Jul-20 Fri	Southbound	Northbound	Combined Total	
12:00 AM		8	6	14	■
01:00		4	9	13	■
02:00		2	3	5	■
03:00		8	3	11	■
04:00		5	3	8	■
05:00		15	14	29	■
06:00		33	49	82	■
07:00		45	83	128	■
08:00		92	165	257	■
09:00		81	146	227	■
10:00		91	190	281	■
11:00		119	243	362	■
12:00 PM		133	244	377	■
01:00		156	230	386	■
02:00		146	256	402	■
03:00		121	179	300	■
04:00		132	202	334	■
05:00		106	193	299	■
06:00		*	*	*	
07:00		*	*	*	
08:00		*	*	*	
09:00		*	*	*	
10:00		*	*	*	
11:00		*	*	*	
Total		1297	2218		
Percent		36.9%	63.1%		
Grand Total		1504	2533		
Percentage		37.3%	62.7%		
ADT		ADT 4,304	AADT 4,304		

Harbourside Transportation Consultants

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 T 709.579.6435 | F 709.579.7515

Shoal Harbour Drive - NB
 Near Notre Dame Home Furnishings
 Latitude: 48° 10.0540 North
 Longitude: 53° 59.2283 West

Northbound, Northbound

Start Time	1	41	51	61	71	81	91	101	111	121	131	141	151	Total
	40	50	60	70	80	90	100	110	120	130	140	150	999	
08/05/20	1	0	6	4	0	2	0	0	0	0	0	0	0	13
01:00	0	0	2	1	0	0	0	0	0	0	0	0	0	3
02:00	0	0	0	0	1	0	0	0	0	0	0	0	0	1
03:00	0	0	0	2	0	0	0	0	0	0	0	0	0	2
04:00	0	3	4	3	0	0	0	0	0	0	0	0	0	10
05:00	0	3	10	2	2	0	0	0	0	0	0	0	0	17
06:00	1	4	14	17	5	0	0	0	0	0	0	0	0	41
07:00	4	8	40	42	12	0	0	0	0	0	0	0	0	106
08:00	5	29	95	62	8	0	0	0	0	0	0	0	0	199
09:00	22	37	125	35	3	0	0	0	0	0	0	0	0	222
10:00	27	70	142	60	5	0	0	0	0	0	0	0	0	304
11:00	29	74	191	61	7	0	0	0	0	0	0	0	0	362
12 PM	57	65	199	80	8	0	0	0	0	0	0	0	0	409
13:00	73	97	187	47	4	0	0	0	0	0	0	0	0	408
14:00	35	70	182	55	17	0	0	0	0	0	0	0	0	359
15:00	41	71	183	84	3	0	0	0	0	0	0	0	0	382
16:00	26	38	168	103	9	0	0	0	0	0	0	0	0	344
17:00	24	26	134	95	13	0	0	0	0	0	0	0	0	292
18:00	14	24	80	70	9	0	1	0	0	0	0	0	0	198
19:00	27	21	108	76	10	3	0	0	0	0	0	0	0	245
20:00	12	31	103	41	5	1	0	0	0	0	0	0	0	193
21:00	6	13	50	27	2	1	0	0	0	0	0	0	0	99
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	404	684	2023	967	123	7	1	0	0	0	0	0	0	4209
Percent	9.6%	16.3%	48.1%	23.0%	2.9%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grand Total	414	689	2054	977	125	7	1	0	0	0	0	0	0	4267

15th Percentile : 43 KPH
 50th Percentile : 55 KPH
 85th Percentile : 64 KPH
 95th Percentile : 69 KPH

Stats
 Mean Speed(Average) : 53 KPH
 15 KPH Pace Speed : 51-65 KPH
 Number in Pace : 2542
 Percent in Pace : 59.6%
 Number of Vehicles > 50 KPH : 3164
 Percent of Vehicles > 50 KPH : 74.2%

Harbourside Transportation Consultants

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 T 709.579.6435 | F 709.579.7515

Shoal Harbour Drive - NB
 Near Notre Dame Home Furnishings
 Latitude: 48' 10.0540 North
 Longitude: 53' 59.2283 West

Start Time	04-Aug-20 Tue	Northbound	Northbound	Combined Total
12:00 AM		*	*	*
01:00		*	*	*
02:00		*	*	*
03:00		*	*	*
04:00		*	*	*
05:00		*	*	*
06:00		*	*	*
07:00		*	*	*
08:00		*	*	*
09:00		*	*	*
10:00		*	*	*
11:00		*	*	*
12:00 PM		*	*	*
01:00		*	*	*
02:00		*	*	*
03:00		*	*	*
04:00		*	*	*
05:00		*	*	*
06:00		*	*	*
07:00		*	*	*
08:00		*	*	*
09:00		*	*	*
10:00		18	29	47
11:00		3	8	11
Total		21	37	
Percent		36.2%	63.8%	

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Shoal Harbour Drive - NB
 Near Notre Dame Home Furnishings
 Latitude: 48° 10.0540 North
 Longitude: 53° 59.2283 West

Start Time	05-Aug-20 Wed	Northbound	Northbound	Combined Total	
12:00 AM		7	6	13	■
01:00		1	2	3	
02:00		0	1	1	
03:00		0	2	2	
04:00		2	8	10	■
05:00		11	6	17	■
06:00		18	23	41	■
07:00		50	61	111	■
08:00		99	95	194	■
09:00		96	128	224	■
10:00		137	169	306	■
11:00		156	203	359	■
12:00 PM		183	226	409	■
01:00		199	209	408	■
02:00		165	193	358	■
03:00		158	224	382	■
04:00		133	212	345	■
05:00		101	192	293	■
06:00		76	120	196	■
07:00		97	150	247	■
08:00		59	132	191	■
09:00		30	69	99	■
10:00		*	*	*	
11:00		*	*	*	
Total		1778	2431		
Percent		42.2%	57.8%		
Grand Total		1799	2468		
Percentage		42.2%	57.8%		
ADT		ADT 4,267		AADT 4,267	

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Shoal Harbour Drive - SB
 Across From Notre Dame Home Furnishings
 Latitude: 48' 10.0544 North
 Longitude: 53' 59.2525 West

Southbound, Southbound

Start Time	1	41	51	61	71	81	91	101	111	121	131	141	151	999	Total
07/28/20	1	1	6	2	0	0	0	0	0	0	0	0	0	0	10
01:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	0	2	1	0	0	0	0	0	0	0	0	0	0	3
03:00	0	1	1	3	0	0	0	0	0	0	0	0	0	0	5
04:00	0	1	6	5	0	0	0	0	0	0	0	0	0	0	12
05:00	0	5	11	9	4	0	0	0	0	0	0	0	0	0	29
06:00	3	9	43	32	4	0	0	0	0	0	0	0	0	0	91
07:00	18	22	84	49	7	0	0	0	0	0	0	0	0	0	180
08:00	27	39	129	36	9	0	0	0	0	0	0	0	0	0	240
09:00	41	66	112	26	4	0	0	0	0	0	0	0	0	0	249
10:00	44	63	134	33	4	0	0	0	0	0	0	0	0	0	278
11:00	55	87	149	40	1	0	1	0	0	0	0	0	0	0	333
12 PM	155	92	123	26	1	0	0	0	0	0	0	0	0	0	397
13:00	120	91	100	26	3	1	0	0	0	0	0	0	0	0	341
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	464	477	901	288	37	1	1	0	0	0	0	0	0	0	2169
Percent	21.4%	22.0%	41.5%	13.3%	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Grand Total	795	875	1703	500	64	4	1	0	0	0	0	0	0	0	3942

15th Percentile : 29 KPH
 50th Percentile : 51 KPH
 85th Percentile : 59 KPH
 95th Percentile : 67 KPH

Stats
 Mean Speed(Average) : 48 KPH
 15 KPH Pace Speed : 46-60 KPH
 Number in Pace : 2141
 Percent in Pace : 54.3%
 Number of Vehicles > 50 KPH : 2272
 Percent of Vehicles > 50 KPH : 57.6%

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Shoal Harbour Drive - SB
 Across From Notre Dame Home Furnishings
 Latitude: 48' 10.0544 North
 Longitude: 53' 59.2525 West

Start Time	27-Jul-20 Mon	Southbound	Southbound	Combined Total
12:00 AM		*	*	*
01:00		*	*	*
02:00		*	*	*
03:00		*	*	*
04:00		*	*	*
05:00		*	*	*
06:00		*	*	*
07:00		*	*	*
08:00		*	*	*
09:00		*	*	*
10:00		*	*	*
11:00		*	*	*
12:00 PM		*	*	*
01:00		*	*	*
02:00		79	257	336
03:00		70	217	287
04:00		75	218	293
05:00		58	192	250
06:00		34	120	154
07:00		29	134	163
08:00		19	121	140
09:00		16	75	91
10:00		5	30	35
11:00		4	15	19
Total		389	1379	
Percent		22.0%	78.0%	

Harbourside Transportation Consultants

Suite 301 - Terrace on the Square
 8 Rowan Street, PO Box 23169
 St. John's NL A1B 4J9
 T 709.579.6435 | F 709.579.7515

Shoal Harbour Drive - SB
 Across From Notre Dame Home Furnishings
 Latitude: 48' 10.0544 North
 Longitude: 53' 59.2525 West

Start Time	28-Jul-20 Tue	Southbound	Southbound	Combined Total	
12:00 AM		2	8	10	■
01:00		1	1	2	
02:00		0	2	2	
03:00		1	5	6	■
04:00		7	4	11	■
05:00		9	21	30	■
06:00		34	57	91	■
07:00		43	141	184	■
08:00		58	180	238	■
09:00		54	198	252	■
10:00		67	213	280	■
11:00		95	239	334	■
12:00 PM		87	307	394	■
01:00		74	261	335	■
02:00		*	*	*	
03:00		*	*	*	
04:00		*	*	*	
05:00		*	*	*	
06:00		*	*	*	
07:00		*	*	*	
08:00		*	*	*	
09:00		*	*	*	
10:00		*	*	*	
11:00		*	*	*	
Total		532	1637		
Percent		24.5%	75.5%		
Grand Total		921	3016		
Percentage		23.4%	76.6%		
ADT		ADT 3,937		AADT 3,937	