



City Of Vaughan

NEIGHBOURHOOD AREA TRAFFIC CALMING POLICY, DESIGN AND SPEED MANAGEMENT PLAN

PHASE 3 PILOT EVALUATION REPORT
WSP PROJECT NUMBER: 211-09129-00

March 8, 2024

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Introduction

Background and Purpose

This report presents the findings and recommendations of Phase 3 of the Neighbourhood Traffic Calming Policy, Design, and Speed Management Plan, also known as the Traffic Calming Plan. The City of Vaughan has made significant progress towards the goal of making roads safer and creating a more effective and sustainable transportation system. An updated Traffic Calming Plan, including a comprehensive Traffic Calming Program, will advance opportunities to educate the public about road safety, collaborate with stakeholders to develop innovative tools, implement context specific traffic calming measures, and evaluate the impact of traffic calming measures.

The neighbourhood traffic calming pilot projects were developed to evaluate and test various aspects of a new traffic calming program. The project has tested and implemented proposed policy and process considerations, data collection approaches, and traffic calming measures in real-world scenarios. These trials have included refining existing measures (through new draft guidelines), designing new measures associated with existing ones, and introducing new measures and technologies that have not previously been used in Vaughan. The pilot has also tested some seasonal measures during the winter to assess the measures' effectiveness under different conditions.

By systematically evaluating various aspects of the program from planning to implementation, the pilot project has provided constructive insights and recommendations for the development and improvement of a new Traffic Calming Program. The report suggests that a more sustainable and effective transportation system can be achieved by continuing to build on the successes of the pilot project and addressing the areas that need improvement.

Neighbourhood Selection Process

Implementing pilot projects aims to examine the draft Policy and Procedures and Toolbox of Measures. Pilot location selection principles were developed based on the knowledge obtained from the **Background Review Report** and feedback from Councillors, stakeholders, and residents. Guided by the principles, WSP conducted a geospatial data analysis that informed the identification of candidate locations in each Ward for the pilot tests.

Pilot Location Selection Principles

The locations selected represented diverse land use contexts, roadway types, demographics, and potential suitability of traffic calming measures. The key principles used for this project were summarized below:

- 1 Different roadway and land use types**
To cover different roadway types and geometry (e.g. minor arterial roads with transit services, collector roads designated as emergency routes, etc.) and land use contexts (e.g. commercial frontages near the school and community parks, etc.) that require engaging different stakeholders (e.g. EMS, Waste, Transit, school boards etc.)
- 2 Testability**
To provide opportunities to apply and test different traffic calming measures.
- 3 Areas with few existing traffic calming devices**
To prioritize areas with no or very few existing traffic calming devices installed (e.g. unassumed roadways within newly developed neighbourhoods, under-treated roadways within established

neighbourhoods) and avoid areas that already have good safety and speed management through traffic calming.

Existing speeding or traffic infiltration issues

4

To include locations that require traffic calming treatment to mitigate existing speeding or shortcutting issues based on speed analysis, traffic volume, traffic-calming-related resident concerns, and speeding-related collision data.

Availability of data

5

Preferably choose locations with recent available traffic data (including speed, volume, and collision history) to support the evaluation of traffic calming concerns. Alternatively, choose locations where data can easily be collected without being affected by other factors such as nearby construction or closures.

Equity-deserving neighbourhoods

6

To include equity-deserving neighbourhoods such as those with a high refugee population, senior population, low-income households, and single-parent households.

Fix existing devices.

7

To include locations that not only need new traffic calming devices but also offer opportunities to fix the existing devices along the same corridor or within the same area based on asset evaluation results.

Pilot Location Identification

Geospatial Data Analysis

A set of spatial analysis maps were generated based on various data sets available to illustrate the following information geographically:

- General and speed-related collisions by demographic and severity levels based on five-year TES collision data from 2016 to 2021 and two-year YRP collision data from 2020-2022
- General and traffic calming specific resident concerns received between 2019 and 2022 Phase 1 public engagement results (2023) of the Have Your Say survey for locations where people observe or experience issues related to traffic calming and speed management in Vaughan
- Distribution and density of existing traffic calming devices with priority level for remediation action based on asset evaluation results
- Speed differential between actual operation speed and posted speed limits based on a 2021 dataset
- Road cross-section (i.e. lane number) and traffic volumes at intersections and midblocks based on a 2016 to 2020 dataset
- Emergency response routes, transit routes, land use and road classification,
- Demographics for equity indicators

Appendix A shows these maps that provide a comprehensive overview of the analyzed data sets.

Candidate Location Selection Process

The decision-making process took a qualitative peer-review approach considering the principles, statistical maps, and resident comments collected from the Public Consultation / Engagement events, and the City's initial feedback.

Selection criteria were derived based on the principles and categorized into three relative importance levels, as shown in **Table 1**. The relative importance level reflects the order of consideration of the corresponding statistical maps when identifying candidate locations.

Table 1. Relative Importance Level of Location Selection Criteria

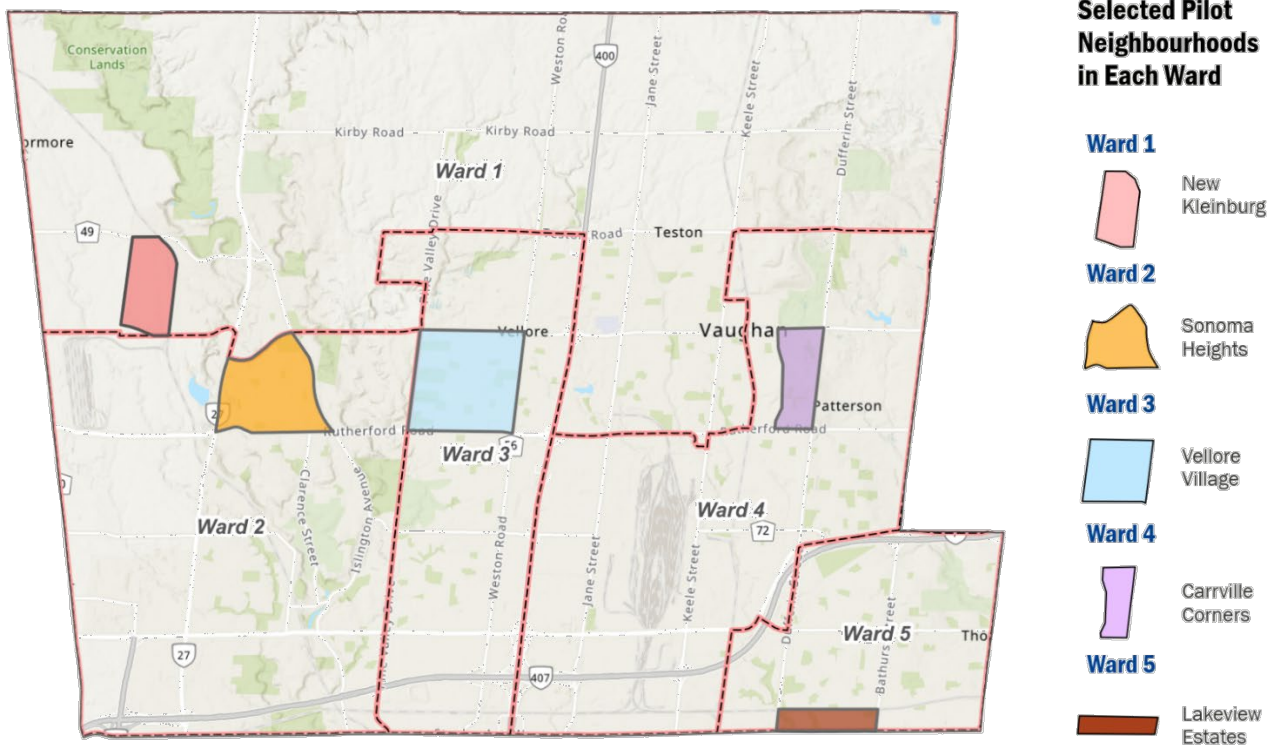
Relative Importance Level	Criteria Category	Criteria
1	Objective Need	<ul style="list-style-type: none"> • Speed, traffic volume, collisions • The number of existing traffic calming devices
2	Subjective Need	<ul style="list-style-type: none"> • Traffic calming specific resident concerns
3	Potential Benefit	<ul style="list-style-type: none"> • Land use context (i.e. schools, parks, and other key community destinations) • Variety of roadway types to be covered • Equitable traffic calming resource allocation • Layering of traffic calming opportunities to improve existing measures

Please see **Appendix B** for the comparison of Pilot Selection results.

Figure 1 shows the final locations for the five neighbourhood pilots. Further refinements of study areas and identification of pilot projects were undertaken in consultation with City staff through field visits of the final neighbourhood locations.

- Ward 1 – New Kleinburg
- Ward 2 – Sonoma Heights
- Ward 3 – Vellore Village
- Ward 4 – Carville Corners
- Ward 5 – Lakeview Estates

Figure 1. Selected Pilot Neighbourhood for Traffic Calming Study in Vaughan



Within each of the pilot communities, individual street segments were reviewed using traffic volumes and vehicle speeds to identify potential traffic calming measures. The next sections provide specific details regarding the pilot measures proposed and implemented as part of the Pilot program.

Appendix C includes further details for each Ward, including community engagement feedback received through an online survey, digital mapping exercise, virtual open house, and community walkabout workshop.

Traffic Calming Pilot Opportunities

Initial pilot project design concepts were developed from a review of available data and from feedback through engaging Councillors, stakeholders and the community. These were refined following another round of engagement prior to implementation. The following section outlines the study areas and traffic calming plan development and implementation.

Ward 1 – New Kleinburg

Table 2. Ward 1 Study Area Overview

Street	Road Classification	Posted Speed	Operating 85 th Percentile Speed	Operating 95 th Percentile Speed	Transit Route	Active Transportation Infrastructure
Barons St	Major Collector	40	50	54	Bus 361 – Nashville Express	<ul style="list-style-type: none"> - Sidewalk on both sides on Hopewell St to Mactier Dr; only on east side on Hopewell St to Major MacKenzie Dr - Bike lanes: both sides between Hopewell St to Cranbrook Cres (Northern leg)
Mactier Dr	Minor Collector	40	56	62	Bus 361 – Nashville Express	<ul style="list-style-type: none"> - Sidewalk on both sides on Barons St to 80 m east of Pelee Ave; only on west side from east of Pelee Ave to Rotondo Cres - Rotondo Cres to Huntington Rd: on both sides
East's Corners Blvd	Special Classification/ Minor Collector	40	56	63	N/A	<ul style="list-style-type: none"> - Sidewalks on both sides - Bike lanes: both sides

Proposed Traffic Calming Measures Plan

The proposed Traffic Calming Plan was developed and refined through multiple workshops with the City Staff, elected officials, and public residents.

1. **Enhanced Crosswalk** at the intersections of Secord Ave/Barons St and Richler Ave/Barons St
2. **Bike lane Crossing** at the intersections of Secord Ave/Barons St and Richler Ave/Barons St
3. **Curb Extensions** at the intersections of Secord Ave/Barons St and Richler Ave/Barons St*
4. **“Stop for Pedestrian” Signage** at the roundabouts of Barons St/East Corners Blvd and Mactier Dr/East Corners Blvd
5. **Roundabout Navigation Signage** at the roundabouts of Barons St/East Corners Blvd and Mactier Dr/East Corners Blvd*
6. **Bollards** on Barons St*
7. **Edge Line** on Barons St
8. **Radar Message Board** on Mactier Dr
9. **Speed Cushion** on Mactier Dr
10. **Centreline Flex Post** on Barons St and Mactier Dr
11. **Slow Down School Zone Flex Post** on Barons St
12. **Boulevard Silhouette** on East’s Corners Blvd

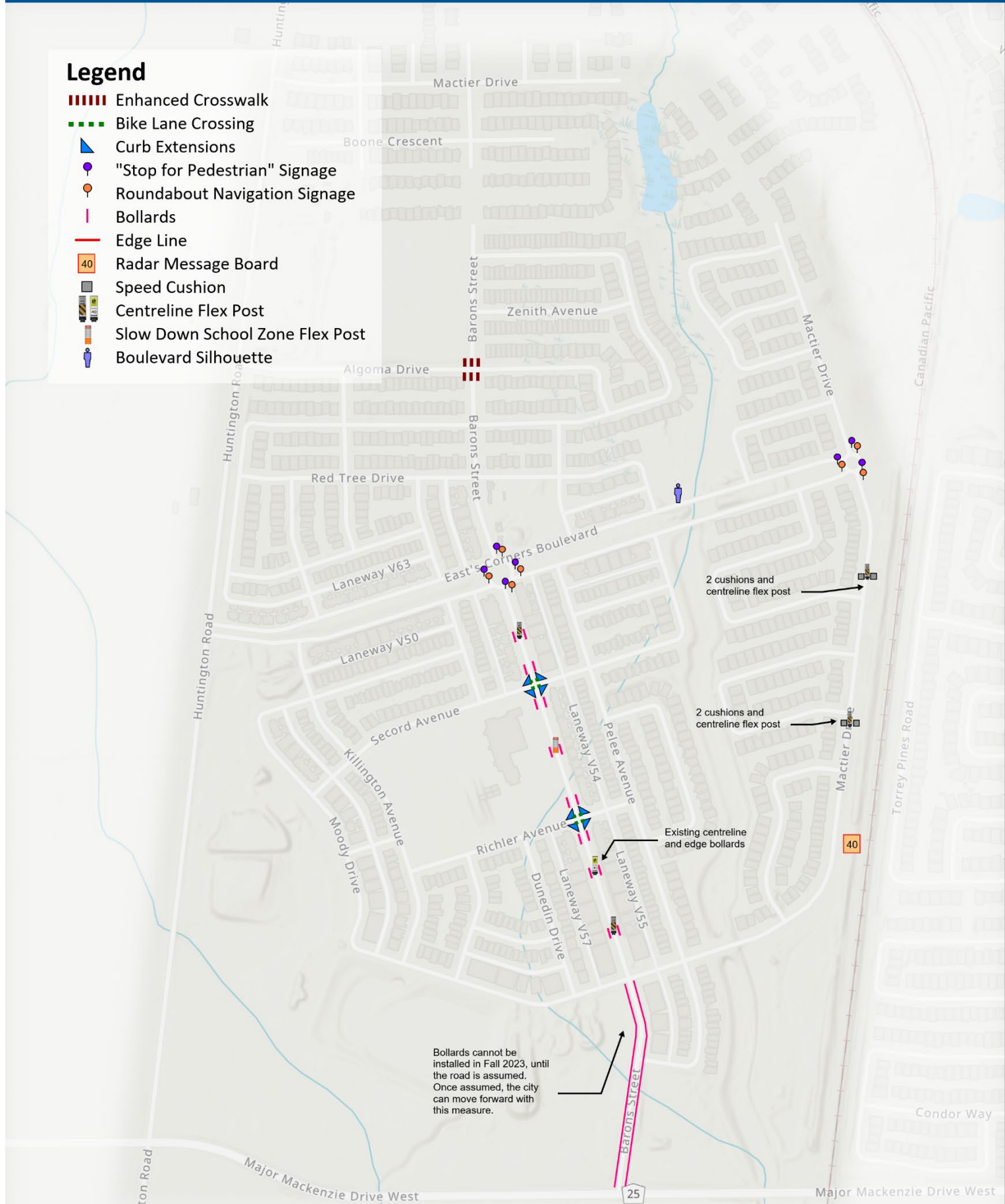
Implementation of the proposed plan commenced in late summer and continued into the fall of 2023. Measures marked in asterisk* indicate measures scheduled for spring 2024 instalment due to resources availability.

Ward 1: New Kleinburg

Proposed Traffic Calming Pilot Opportunities

Legend

- Enhanced Crosswalk
- Bike Lane Crossing
- Curb Extensions
- "Stop for Pedestrian" Signage
- Roundabout Navigation Signage
- Bollards
- Edge Line
- Radar Message Board
- Speed Cushion
- Centreline Flex Post
- Slow Down School Zone Flex Post
- Boulevard Silhouette



The following images show some of the traffic calming treatment installations.

Figure 2. Ward 1 Traffic Calming Treatments



Speed Cushions on Mactier Dr



Bike Lane Crossing at Barons St/Richler Ave



Enhanced Crosswalk at Barons St/Richler Ave



Curb Extension at Barons St/Richler Ave



Centreline Flex Post and Bollards on Barons St



Boulevard Silhouette on East's Corners Blvd

Ward 2 – Sonoma Heights

Table 3. Ward 2 Study Area Overview

Street	Road Classification	Posted Speed	Operating 85 th Percentile Speed	Operating 95 th Percentile Speed	Transit Route	Active Transportation Infrastructure
Napa Valley Ave	Minor Collector	40	50	55	Bus 361 – Nashville Express Bus 85 – Rutherford Bus 13 – Islington	<ul style="list-style-type: none"> - Sidewalk on both sides - Bike lanes: <ul style="list-style-type: none"> ○ Rutherford Rd to Sonoma Blvd: both sides ○ Sonoma Blvd to Fontesalva Ave: only on the West side ○ Fontesalva Ave to Sunset Ridge: both sides ○ Sunset Ridge to Amarone Ave: no bike lanes ○ Amarone Ave to Castle Park Blvd: both sides ○ Castle Park Blvd to Islington Ave: no bike lanes
Napa Valley – Second Installation			49	53		-
Sonoma Blvd	Minor Collector	40	n/a	n/a	N/A	- Sidewalk on both sides
Forest Fountain Dr	Minor Collector	40	49	53	N/A	- Sidewalk on both sides
Monte Carlo Drive	Local Road	40	42	46		-
David Todd Avenue	Local Road	40	30	37		-

Proposed Traffic Calming Measures Plan

The proposed Traffic Calming Plan was developed and refined through multiple workshops with City Staff, elected officials, and residents.

1. **Curb Extensions** at the intersections of Forest Fountain Dr/Sonoma Blvd St and Monte Carlo Dr/Mondavi Rd*
2. **Bollards** installed on Napa Valley Ave*
3. **Centreline Flex Post** on Napa Valley Ave
4. **Slow Down School Zone Flex Post** on Napa Valley, especially in school areas
5. **“Stop for Pedestrian” Signage** at 6 roundabouts*:
 - a. Silverado Trail/Sunset Ridge
 - b. Silverado Trail/Forest Fountain Dr
 - c. Lio Ave/Monte Carlo Dr
 - d. Via Cristina Way/Sonoma Blvd
 - e. Montebello Ave/Monte Carlo Dr
 - f. Buena Vista Dr/Forest Fountain Dr
6. **Centreline Hardening** installed at the intersection of Monte Carlo Dr/Napa Valley Ave*
7. **Enhanced Crosswalk** on Napa Valley Av/Monte Carlo Dr
8. **Boulevard Silhouette** on Montebello Ave
9. **Enhanced Radar Message Board Design** on Sunset Ridge, nearby Sonoma Heights Community Park
10. **“Stop for Pedestrian” Signage** on East’s Corners Blvd
11. **Tiger Tails on Stop Signs** at the intersection of Monte Carlo Dr/Mondavi Rd

Implementation of the proposed plan commenced in late summer and continued into the fall of 2023. Measures marked in asterisk* indicate measures scheduled for spring 2024 instalment due to resources availability.

Ward 2: Sonoma Heights

Proposed Traffic Calming Pilot Opportunities

Legend

- Enhanced Crosswalk
- Curb Extensions
- "Stop for Pedestrian" Signage
- Bollards
- Edge Lines
- Enhanced Radar Message Board Design
- Centreline Flex Post
- Slow Down School Zone Flex Post
- Boulevard Silhouette
- Tiger Tails on Stop Sign
- Centreline Hardening
- Roundabout



The following images show some of the traffic calming treatment installations.

Figure 3. Ward 3 Traffic Calming Measures



Tiger Tails on stop signs at Monte Carlo Dr/Mondavi Rd



Curb Extensions at Forest Fountain Dr/Sonoma Blvd



Slow Down School Zone Flex Post combined with bollards on Napa Valley



Boulevard Silhouette on Montebello Ave



Radar Message Board on Sunset Ridge

Ward 3 – Vellore Village

Table 4. Ward 3 Study Area Overview

Street	Road Classification	Posted Speed	Operating 85 th Percentile Speed	Operating 95 th Percentile Speed	Transit Route	Active Transportation Infrastructure
Maria Antonia Rd	Minor Collector	40	51	56	N/A	- Sidewalk on both sides
Fossil Hill Road	Minor Collector	40	51	56	N/A	- Sidewalk on both sides
Villa Royale Av	Local	40	52	59	N/A	- Sidewalk only on south side
Davos Rd	Minor Collector	40	52	58	Bus 21 – Vellore: along Davos Rd between Weston Rd and Via Campanile Bus 4 – Major Mackenzie: Along Davos Rd between Via Campanile and Pine Valley Dr	- Sidewalk on both sides

Proposed Traffic Calming Measures Plan

The proposed Traffic Calming Plan was developed and refined through multiple workshops with the City Staff, elected officials, and public residents.

1. **Boulevard Silhouette** on Villa Royale Ave and Davos Rd
2. **Curb Extensions** at the intersection of Lucerne Dr/Davos Rd
3. **Enhanced Crosswalk** at the 5 intersections*:
 - a. Maria Antonia Rd/Vellore Ave
 - b. Maria Antonia Rd/Kingsview Dr
 - c. Lucerne Dr/Davos Rd
 - d. Fossil Hill Rd/St. Urbain Dr
 - e. Fossil Hill Rd/La Rocca Ave
4. **“Stop for Pedestrian” Signage** by the access driveways to the Vellore Village Community Centre on Villa Royale Ave and Davos Rd
5. **Edge Line** installed along Maria Antonia Rd and Fossil Hill Rd
6. **Speed Cushion** installed on Fossil Hill Rd
7. **Centreline Flex Post** on Vellore Ave and Davos Rd
8. **Bollard** on Vellore Ave

Implementation of the proposed plan commenced in late summer and continued into the fall of 2023. Measures marked in asterisk* indicate measures scheduled for spring 2024 instalment due to resources availability.

The following images show some of the traffic calming treatment installations in Ward 3.

Figure 4. Ward 3 Traffic Calming Measures



Speed Cushions on Fossil Hill Rd



Boulevard Silhouette on Davos Rd



Centreline Flex Post combined with bollards on Vellore Ave/Via Toscana

Ward 4 – Carrville Corners

Table 5. Ward 4 Study Area Overview

Street	Road Classification	Posted Speed	Operating 85 th Percentile Speed	Operating 95 th Percentile Speed	Transit Route	Active Transportation Infrastructure
Freedom Trail	Minor Collector	40 km/h	54	59	N/A	- Sidewalk on both sides
Peter Rupert Ave	Minor Collector	40	48	53	Bus 105 - Dufferin	- Sidewalk on both sides - Bike lanes: <ul style="list-style-type: none"> ○ Major MacKenzie to Jazz Dr/Ascalon Dr: no bike lanes ○ Jazz Dr/Ascalon Dr to Warbler Ave: bike lanes on both sides ○ Warbler Ave to Rutherford Rd: no bike lanes
Grand Trunk Ave	Minor Collector	40	52	58	N/A	- Sidewalk on both sides
Grand Trunk – Second installation			53	59		-
Ivy Glen Dr	Minor Collector	40	56	62	N/A	- Sidewalk on both sides
Ivy Glen – Second Installation			49	53		-
Maurier Blvd	Minor Collector	40	54	59	N/A	- Sidewalk on both sides

Proposed Traffic Calming Measures Plan

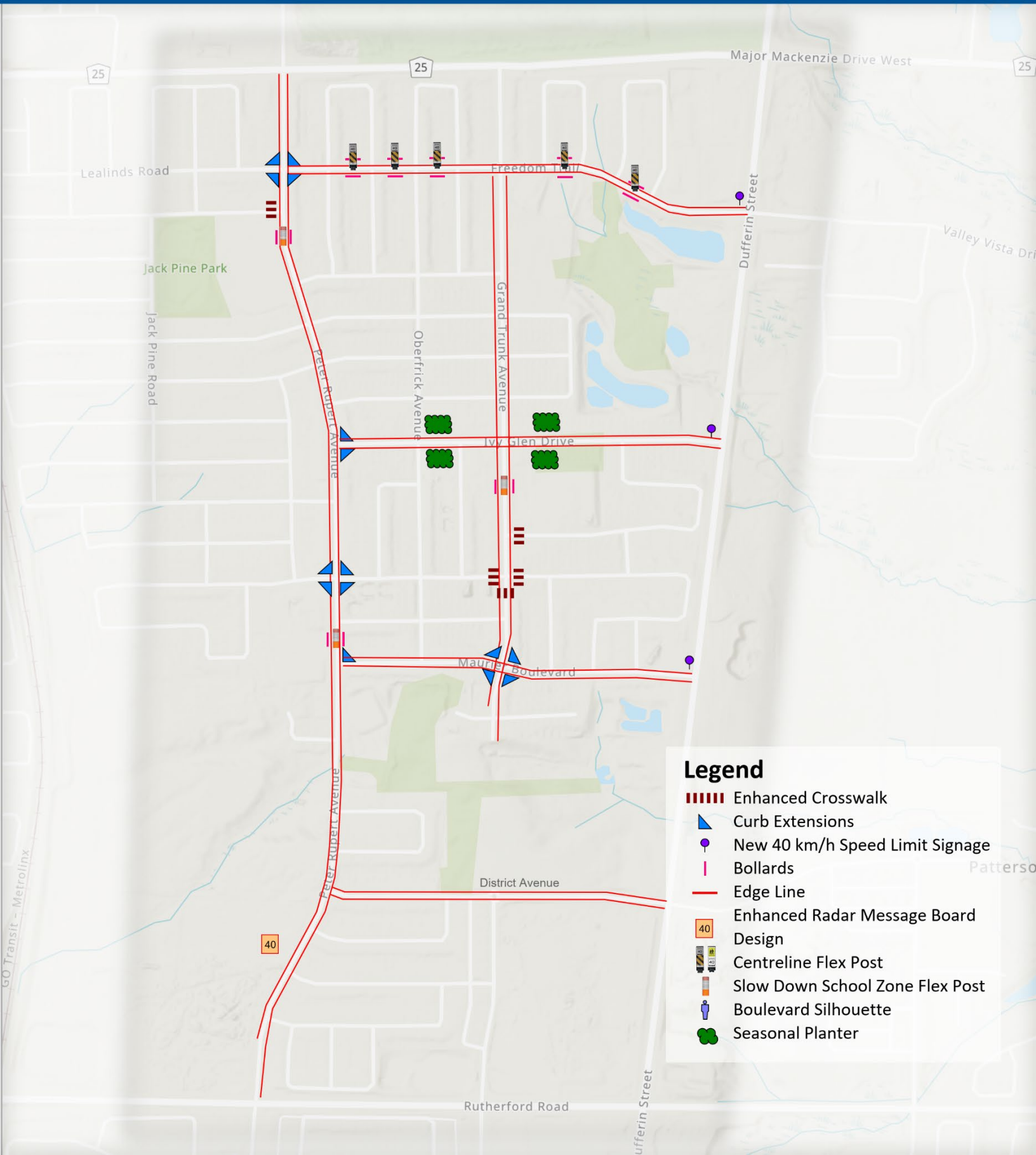
The proposed Traffic Calming Plan was developed and refined through multiple workshops with City Staff, elected officials, and public residents.

1. **Centreline Flex Post** installed along Freedom Trail
2. **Slow Down School Zone Flex Post** installed by Roméo Dallaire Public School, St. Cecilia Catholic Elementary School, and Dr. Roberta Bondar Public School
3. **Curb Extensions** installed at five intersections: *
 - a. Peter Rupert Ave/Freedom Trail
 - b. Peter Rupert Ave/Ivy Glen Dr
 - c. Peter Rupert Ave/Golden Forest Rd
 - d. Peter Rupert Ave/Maurier Blvd
 - e. Maurier Blvd/Grand Trunk Ave
4. **Enhanced Crosswalk** at three intersections:
 - a. Petticoat Rd/Peter Rupert Ave
 - b. Grand Trunk Ave/Sir Sanford Fleming Way
 - c. Grand Trunk Ave/Carrier Cres
5. **New 40 km/h Speed Limit Signage** at Dufferin St/Ivy Glen Dr and Dufferin St/Maurier Blvd
6. **Seasonal Planter** on Ivy Glen Dr
7. **Edge Line** installed along five streets:
 - a. Freedom Trail – from Dufferin St to Peter Rupert Ave
 - b. Peter Rupert Ave – from Major Mackenzie Dr to Rutherford
 - c. Grand Trunk Ave – from Freedom Trail to the end of the road, past Maurier Blvd
 - d. Maurier Blvd – from Dufferin St to Peter Rupert Ave
 - e. District Ave – from Dufferin St to Peter Rupert Ave
8. **Enhanced Radar Message Board Design** on Peter Rupert Ave
9. **Boulevard Silhouette** on Peter Rupert Ave and Grand Trunk Ave
10. **Bollard** installed with centreline flex posts along Freedom Trail, Peter Rupert Ave, and Grand Trunk Ave

Implementation of the proposed plan commenced in late summer and continued into the fall of 2023. Measures marked in asterisk* indicate measures scheduled for spring 2024 instalment due to resources availability.

Ward 4: Carrville Corners

Proposed Traffic Calming Pilot Opportunities



Legend

- Enhanced Crosswalk
- Curb Extensions
- New 40 km/h Speed Limit Signage
- Bollards
- Edge Line
- Enhanced Radar Message Board Design
- Centreline Flex Post
- Slow Down School Zone Flex Post
- Boulevard Silhouette
- Seasonal Planter

The following images show some of the traffic calming treatment installations.

Figure 5. Ward 4 Traffic Calming Measures



Slow Down School Zone Flex Post combined with bollards on Peter Rupert Ave



Centreline Flex Posts on Freedom Trail



Seasonal Planters on Ivy Glen Dr



Edge Lines on Peter Rupert Ave



Boulevard Silhouette on Petticoat Rd

Ward 5 – Lakeview Estates

Table 6. Ward 5 Study Area Overview

Street	Road Classification	Posted Speed	Operating 85 th Percentile Speed	Operating 95 th Percentile Speed	Transit Route	Active Transportation Infrastructure
Conley St	Minor Collector	40	45	48	N/A	- Sidewalk on both sides
Conley St - second installation			50	55		-
New Westminster Dr	Major Collector	40			Bus 3 - Thornhill	- Sidewalk on both sides

Proposed Traffic Calming Measures Plan

The proposed Traffic Calming Plan for Lakeview Estates was developed and refined through multiple workshops with City Staff, elected officials, and residents.

1. **Enhanced Crosswalk** at the intersection of Conley St/New Westminster Dr
2. **Curb Extensions** at the intersections of Secord Ave/Barons St and Richler Ave/Barons St
3. **Tiger Tails on Stop Signs** at the intersections of Secord Ave/Barons St and Richler Ave/Barons St
4. **Centreline Flex Post** at the roundabouts of Barons St/East Corners Blvd and Mactier Dr/East Corners Blvd
5. **Slow Down School Zone Flex Post** at the roundabouts of Barons St/East Corners Blvd and Mactier Dr/East Corners Blvd
6. **Bollards** on Barons St
7. **Radar Message Board** on Mactier Dr
8. **Centreline Hardening** on Mactier Dr
9. **Seasonal Planter** on Barons St and Mactier Dr
10. **Edge Line** on East's Corners Blvd

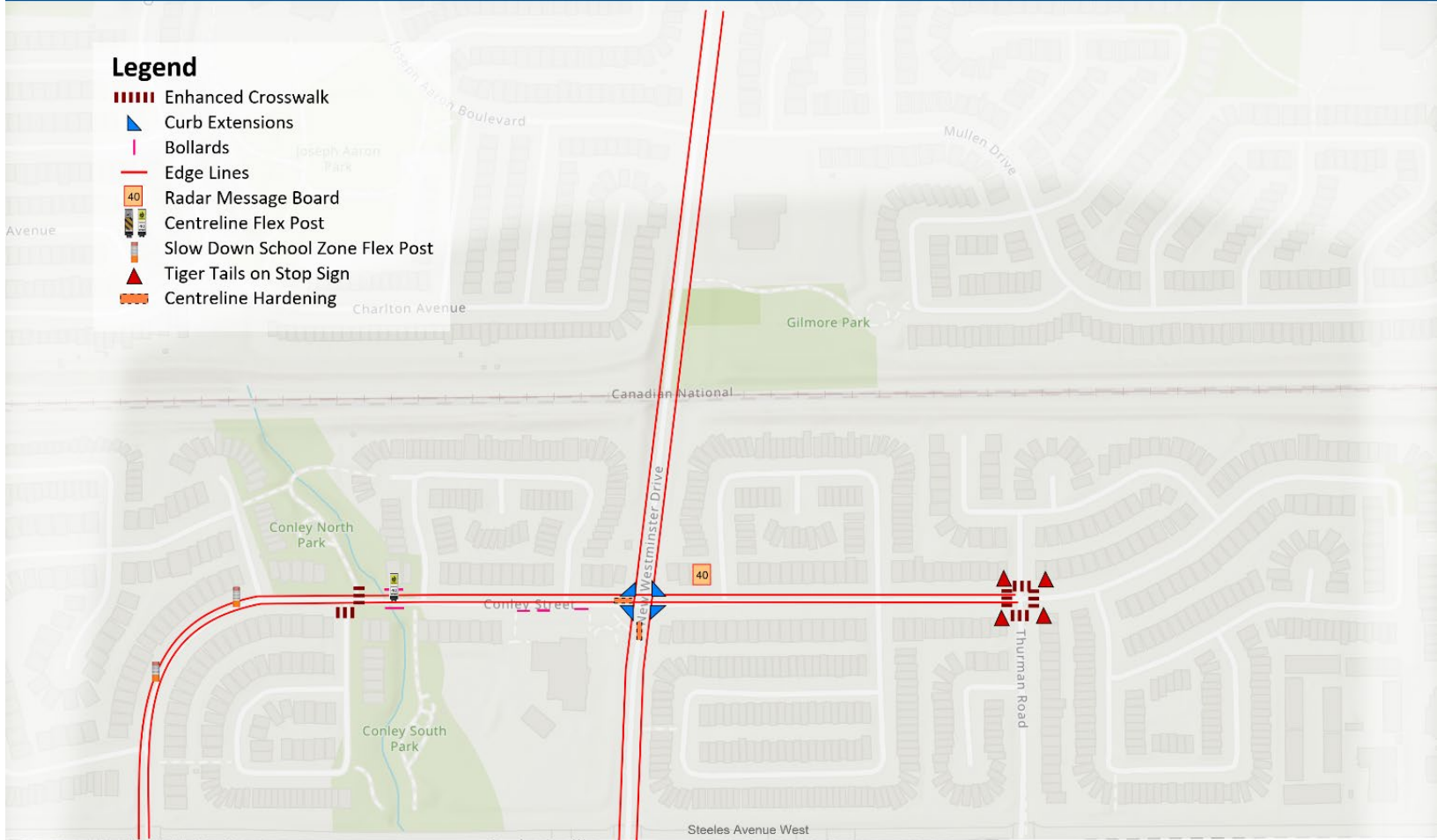
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Ward 5: Lakeview Estates

Proposed Traffic Calming Pilot Opportunities

Legend

- Enhanced Crosswalk
- Curb Extensions
- Bollards
- Edge Lines
- Radar Message Board
- Centreline Flex Post
- Slow Down School Zone Flex Post
- Tiger Tails on Stop Sign
- Centreline Hardening



The following images show some of the traffic calming treatment installations.

Figure 6. Ward 5 Traffic Calming Measures



Slow Down School Zone Flex Post
on Conley St



Edge Lines on Conley St



Centreline Flex Post combined with Bollards.
on Conley St



Radar Message Board at Conley St

Screening and Prioritization of Streets

The pilot projects provided an opportunity to test the proposed revisions to the City's traffic calming policy and procedures, including screening and prioritization of streets receiving traffic calming measures.

Observations and Recommendations

Pre-Screening

The City's current (2010) policy includes an 85th percentile speed of 10 km/h or greater for engineered traffic calming measures to be considered (speed humps, raised crosswalks, medians, curb extensions, road narrowings and chicanes). Based on the findings, WSP recommends using both 85th percentile and average speeds, in accordance with the conditions and outcome objectives of addressing issues related to frequency of speeding and higher speed differentials. That may include the threshold speeds for the 85th percentile to be at least 10 km/h above the posted speed limit for pre-screening of traffic calming measures including consideration of Level 1 (quick-build) measures. Taking average speed into account during pre-screening is also recommended. It is suggested to introduce a minimum average speed requirement to identify streets where overall speeds consistently exceed the limit. Considering average speed provides a broader perspective on the speed distribution on a given street, whereas 85th provide an indication of higher end speeds for pre-screening purposes.

Speed Distribution

The current method of using the percentage of vehicles exceeding 10 km/h above the speed limit for point allocation can be refined. It is recommended to shift towards using average speed instead. By using average speed, a more accurate representation of the speed distribution on a given street can be obtained. This approach takes into account all vehicles and provides a comprehensive view of the speed levels experienced.

To address extreme cases of high speed, it is suggested to consider both the 85th and 95th percentile speeds for point allocation. While the 85th percentile captures most of the speed data, incorporating the 95th percentile ensures that streets with consistently high speeds are given priority for traffic calming measures. This approach will help focus efforts on locations where high-speed incidents occur frequently.

Traffic Volume

The analysis revealed that all counted streets had traffic volumes over 2000 vehicles per day, except for David Todd with only 240 vehicles per day. To account for the impact of traffic volume, it is recommended to assign 10% of the overall score to streets with appropriate thresholds for local roads and minor and major collectors. This adjustment acknowledges the importance of addressing traffic calming measures on streets with higher volumes, as they potentially have a greater impact on traffic flow and safety.

Safety

The use of collision history as a criterion for prioritization is challenging due to the random and infrequent nature of collisions, an issue that is even more difficult to overcome on lower-volume streets. Rather than relying on raw collision data, WSP recommends the use of network screening methods, including the application of safety performance functions and the use of statistical methods to compute expected collision frequencies. Areas with higher expected collisions or with greatest potential for safety performance should be prioritized.

Speeding tickets issued is not a reliable indicator for prioritizing traffic calming measures. The issuance of speeding tickets depends on the level of enforcement efforts and does not strongly correlate with the actual incidents of speeding. Therefore, the focus should be on implementing countermeasures based on data-driven safety assessments rather than relying on ticketing data.

Pedestrian and Bicycle Factors

Considering the presence of pedestrians in all urban areas, it is crucial to prioritize designated school zones and community safety zones for traffic calming measures. These areas typically have higher pedestrian activity, requiring additional attention to ensure the safety of vulnerable road users, especially children, students and seniors.

Moreover, it is recommended to revise the approach to accommodate cycling within urban areas. While edge lines may provide some space for cycling, it is essential to ensure appropriate infrastructure, such as dedicated bike lanes and clear signage, or comfortable shared routes on low volume local roads. By creating a safer environment for cyclists, it encourages active transportation and contributes to overall road safety.

Engagement

Piloted Activities

The pilot project has placed strong emphasis on engaging Councillors, stakeholders and the community through comprehensive and innovative approaches to ensure that community feedback and perspectives are taken into account during the pilot development, implementation and evaluation process. The project recognizes the importance of considering all internal operational processes and considerations to understand the impact on staff resources, municipal budgets, and cross-departmental integration, necessary to inform the final implementation of the Traffic Calming Program. Please see the “Phase 3 Engagement Summary” for supplemental information regarding the activities and findings associated with the plan development process.

The Phase 3 Pilots of the Neighbourhood Traffic Calming Plan included the following activities with Councillors, residents and stakeholders to gather insights and feedback on traffic calming in Vaughan.

- Interviews with various Ward Councillors to understand their concerns and priorities regarding traffic calming, and to receive feedback regarding candidate neighbourhoods suitable for pilot measures. These interviews provided valuable input to proposed policies, including the need for clear processes and guidelines, as well as easily understandable traffic calming policies for the public. The interviews included suggestions for implementing softer, practical measures that could be quickly implemented, the trialing of seasonal measures through the winter, a continuous monitoring program to evaluate the effectiveness and operational performance of implemented measures and streamlined opportunities to help improve operational efficiencies to meet the needs of residents.
- Stakeholder interviews were conducted with York Regional Police, York Region Public Health, PointA (Smart Commute), and the York Region public and separate school boards emphasized the importance of implementing measures that don't impede emergency vehicles, designing roads to discourage speeding and aggressive driving, and tailoring programs to the distinct needs of suburban communities. They also highlighted the need for education for all road users, addressing concerns in and around school zones, and integrating traffic calming measures in areas promoting walking and cycling.
- The Traffic Advisory Committee (TAC) included internal and external agencies provided a platform for discussions among various stakeholders. A meeting was held with TAC members which highlighted the need for pilot projects to consider the operational impacts of traffic calming measures, the timing of

implementation, reducing potential confusion among motorists, and implementing best practices to improve pedestrian crossings within roundabouts and crosswalks through signage placement.

- Virtual engagement sessions were conducted through Zoom for each Ward in May 2023, allowing residents to provide feedback on the traffic calming pilot projects and ask questions about upcoming implementation within their communities. traffic calming in Vaughan. Virtual Engagement #1, held on February 1, 2023, focused on issues such as stop sign compliance, aggressive and distracted driving, and the need for permanent traffic calming measures. Virtual Engagement #2, held on February 6, 2023, addressed concerns about intersections, roundabouts, crosswalks, school start times, distracted driving, parking, and efficient traffic movement on arterial roads.
- A survey was undertaken for each of the Pilot neighbourhoods. These survey results provide valuable insights into the concerns, preferences, and priorities of residents regarding traffic calming in Vaughan, which supported the identification of measures to support traffic calming and road safety in their communities that can be implemented as part of the pilot program.
- Mobile signage and mail drops were undertaken in the Spring 2023 to all neighbourhood residents within the pilot areas to inform them of the project and the upcoming installments.
- Community walking tours and/or pop-up sessions and community centres were newly piloted engagement approaches that were undertaken as part of this project. The Walking Tours and Pop-ups were held in community centres and parks in June 2023 to provide residents an educational opportunity to learn about the potential pilot measures that are being proposed for their neighbourhoods, provide feedback, and ask questions about implementation considerations. The audience included residents and stakeholders (including Councillors) who registered in advance of the events, as well interested residents who participated in the events as part of their daily activities while attending these settings as part of their regular recreational or leisure activities.
- A new engagement feature also included the pilot of Site Podium. This innovative app-based platform program provides real-time updates for residents to follow pilot installments in their areas. Through the app, residents can share feedback through comments and interactive functions, such as a “thumbs up” button. Registration or login is not required to use the app.

These engagement activities provided a comprehensive understanding of the community’s concerns and priorities regarding traffic calming in Vaughan. The input received from various meetings and sessions helped shape the recommendations and strategies for addressing these concerns and improving road safety in the city.

Please see **Appendix C** for detailed engagement findings for each Ward.

Observations and Recommendations

Walking Tours and Pop Ups

The walking tours organized as part of the public engagement process provided a valuable and educational opportunity for participants to learn about traffic calming initiatives. The sessions aimed to engage members of the public who may have had reservations or concerns about traffic calming measures. Throughout the tours, there was a noticeable shift in participants' attitudes towards traffic calming. Initially, some individuals may have been skeptical or resistant to the idea of implementing such measures. However, as they gained a deeper understanding of the rationale behind the initiatives and saw the tangible benefits in terms of improved road safety.

Tour participants also included general members of the public who were unfamiliar with the project, but joined the sessions as it progressed through their neighbourhood. The walking tours successfully captured their

attention, providing a fun and interactive way to learn more about the project and contribute their perspectives. Throughout the tour, participants had the chance to walk through various areas of the community and understand the purpose and impact of these measures on improving road safety.

Overall, the walking tour proved to be a successful platform for engaging the public, providing an educational opportunity, and fostering a sense of ownership and collaboration in creating safer and more livable neighborhoods. It served as an effective tool in raising awareness, dispelling misconceptions, and building support for traffic calming initiatives. It is noted that several virtual meeting participants were not interested in the walking tours. Consider ways to reach a wider audience such as leveraging already planned community events and offering incentives to encourage greater participation.

Site Podium

Based on the results highlighted in the report, it is evident that there is a need to improve public engagement and communication methods in order to enhance the effectiveness of traffic calming initiatives in Vaughan. The findings indicate that the Site Podium app, which was intended to update residents about the installation of treatments, had limited interest and uptake. One of the key recommendations is to introduce in-situ signage that clearly communicate how residents can provide feedback through the Site Podium app. By incorporating more noticeable and informative signage, residents will be more likely to engage with the app and provide their input on the treatments. This can be achieved by placing signs at strategic locations within the neighborhoods, such as near the installed treatments or at key intersections, where they will attract the attention of residents and prompt them to take action. Another consideration is to offer incentives for residents to sign up for the app and participate in the engagement process.

Communications

Alternative communication methods were undertaken in the form of mobile signage and mail drops. It is uncertain whether these methods led to additional awareness, as many residents who communicated their interests in the pilot program had done so through social media and online communications channels. The findings also highlight that residents preferred to email the City of Vaughan regarding the treatments, indicating a preference for direct and personalized communication. The findings emphasize the importance of increasing awareness about public engagement activities. It is suggested to leverage various communication channels to reach a wider audience. For example, in addition to the Instagram post that promoted the Community Walkabout Workshops, other social media platforms such as Facebook and Twitter can be utilized to share information about upcoming workshops and encourage participation. Additionally, local community newsletters, bulletin boards, and community centers can serve as effective channels to disseminate information and raise awareness about public engagement opportunities.

Traffic Calming Measures

Piloted Activities

To evaluate the effectiveness of the traffic calming measures piloted, various metrics were collected and analyzed:

- Average speed
- 85th percentile operating speed (the speed at or below which 85 percent of vehicles travel under free-flowing conditions)

- 95th percentile operating speed (the speed at or below which 95 percent of vehicles travel under free-flowing conditions)
- % of vehicles 10 km/h above posted speed
- % of vehicles 15 km/h above posted speed
- Average Daily Traffic

The data collected before and after the primary pilot studies conducted on all five wards suggest that the interventions have positively impacted the assessed corridors. The interventions have resulted in a 4.2 km/h decrease in the average speeds, which is equivalent to about 8%. Additionally, there has been a significant decrease of 5% in the percentage of vehicles travelling at 10 km/h above the speed limit.

The impact of the pilot study is further studied for each ward in the following sections, using the 85th percentile speed as the reference measure. **Figure 7** provides a comparison of the speed measures for Barons Street as an example, highlighting the effectiveness of the interventions piloted. The different speed measures tell the same story, further emphasizing the positive impact of the interventions.

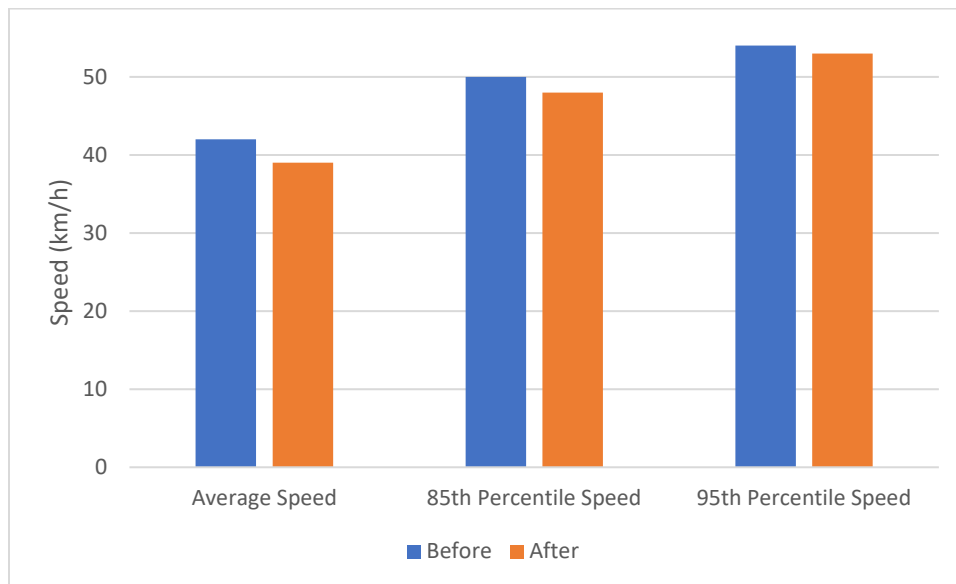


Figure 7: Comparison of average speed, 85th and 95th percentile speeds before and after the pilot for Barons Street

According to NACTO’s Report entitled *Setting Safe Speed Limits on Urban Streets*, “while posted or 85th percentile motor vehicle speeds are commonly used design speed targets, 95th percentile speed captures high-end speeding, which causes greater stress to pedestrians and cyclists. Setting target speed based on this threshold results in a higher level of comfort for all users of the roadway.” Furthermore, “cities should not collect and report on 85th percentile speeds in isolation—95th percentile speeds and average speeds help round out the picture of dangerous speeds on the street. 95th percentile can be used as an estimate of the fastest speed that a typical user will encounter and to measure how well speeds have been managed.”

Figure 8 shows the before- and after-effects of the pilot on Barons Street. The percentage of vehicles above 10 km/h and 15 km/h beyond the speed limit have decreased by 6% and 1%, respectively. Another way to report this is the percentage change: the vehicles above 10 km/h reduced by 45% compared to pre-install conditions and the vehicles above 15 km/h decreased by 50% compared to pre-install conditions.

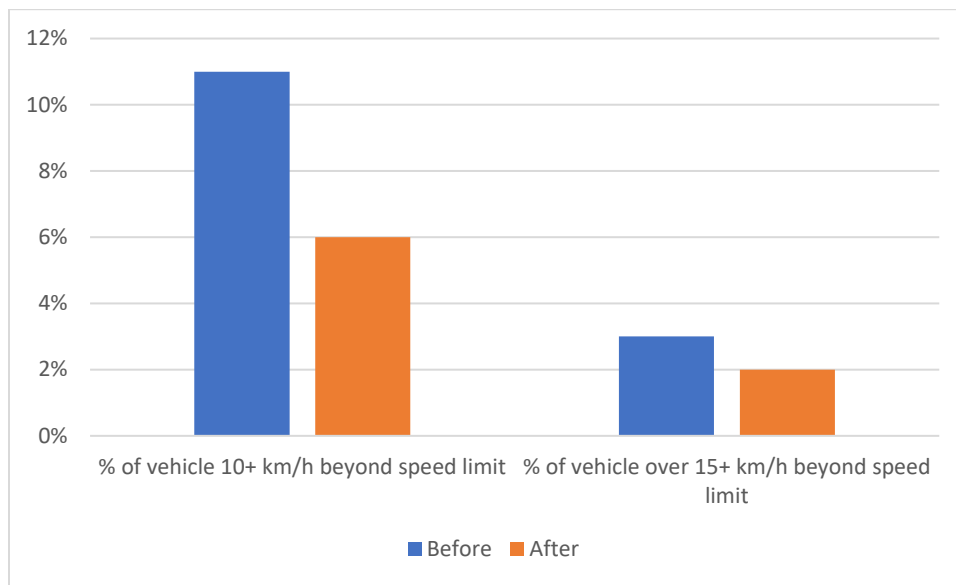


Figure 8: Pre- and post-comparison of the percentage of vehicles beyond the speed limit for Barons Street

Ward 1 – New Kleinburg

Traffic calming measures were introduced in Ward 1 which included flex posts along Barons Street, rubber speed cushions on Mactier Street, edge lines and pavement markings along Barons, and signage along East Corners. This included pedestrian signage and boulevard silhouettes.

As part of the implementation plan, bollards will be installed along the curb extensions at intersections along Barons Street in the Spring of 2024. This is following the completion of edge line and curb extension pavement markings in Phase 1, which was finished in the Fall of 2023.

Figure 9 shows the change in the 85th percentile speeds for the corridors in Ward 1. All the corridors have seen a decrease in the speed when comparing the pre and post-pilot speed data. For Barons Street, the initial 85th percentile speed was 10 km/h above the speed limit, which decreased to 45 km/h after the installation of flex posts where the data was collected. Mactier Drive (location 2) was collected at a point where two cushions and a centerline flex post were installed. It significantly decreased speed from 50 km/h to 34 km/h. It should be noted that Mactier Drive (location 1) has no exact location in which the data was collected. Thus, no conclusions about the intervention’s direct effect can be made, though a significant decrease was also recorded.

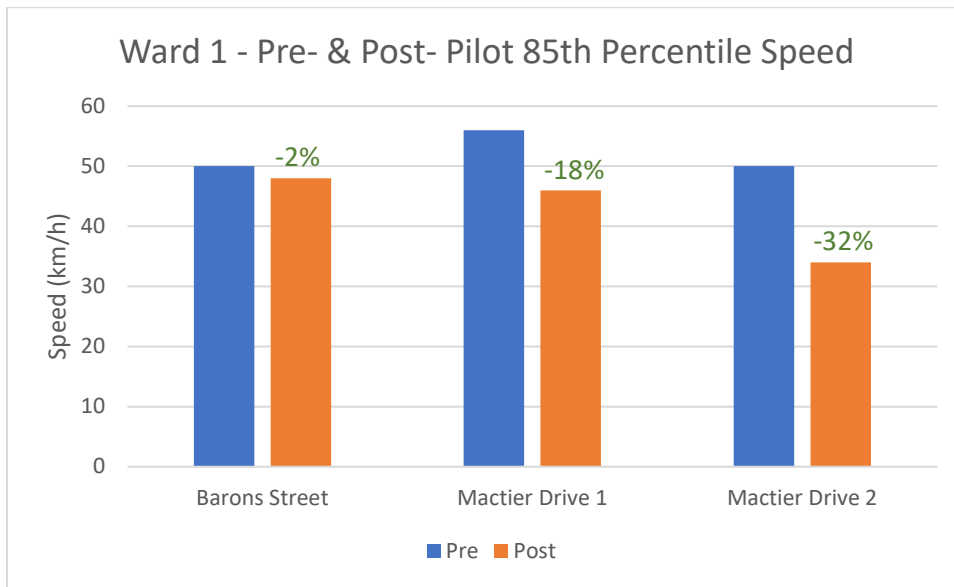


Figure 9: Pre and Post 85th percentile speeds comparison for the corridors within Ward 1

Ward 2 – Sonoma Heights

Traffic calming measures implemented in Ward 2 include Tiger Tails to improve stop compliance on Napa Valley and Monte Carlo, parking prohibition relocations at Napa Valley to improve intersection safety, an enhanced radar message board on Sunset Ridge, Boulevard Silhouettes on Montebello, flex posts and school-specific centerline flex posts throughout the community, as well as edge line pavement markings.

In Phase 2 of the implementation plan, flex posts will be maintained through the Winter 2024. Bollards and signage will be installed at roundabouts within the study area in the Summer of 2024, following the completion of road rehabilitation projects in the Spring of 2024.

Figure 10 shows the impact of the pilot on the corridors of Napa Valley Avenue, Sunset Ridge, and Forest Fountain Drive. There is an overall decrease in the collected speeds. Both locations of collection on Napa Valley Avenue were at a location where a “Slow Down School Zone” flex post was installed; however, not the same outcome was seen. This could be due to various external factors that might have affected the results. The location that has seen an increase in speed is at a straight segment of the corridor while there was a decrease in speed, there is a bend in the road. The Forest Fountain Drive data collection location is not close to a specific intervention. However, the nearby curb extensions and “Stop for Pedestrians” signage were effective measures

during the pilot program. Sunset Ridge's minimal decrease in speed can be attributed to the nearby installation of the enhanced radar message board.

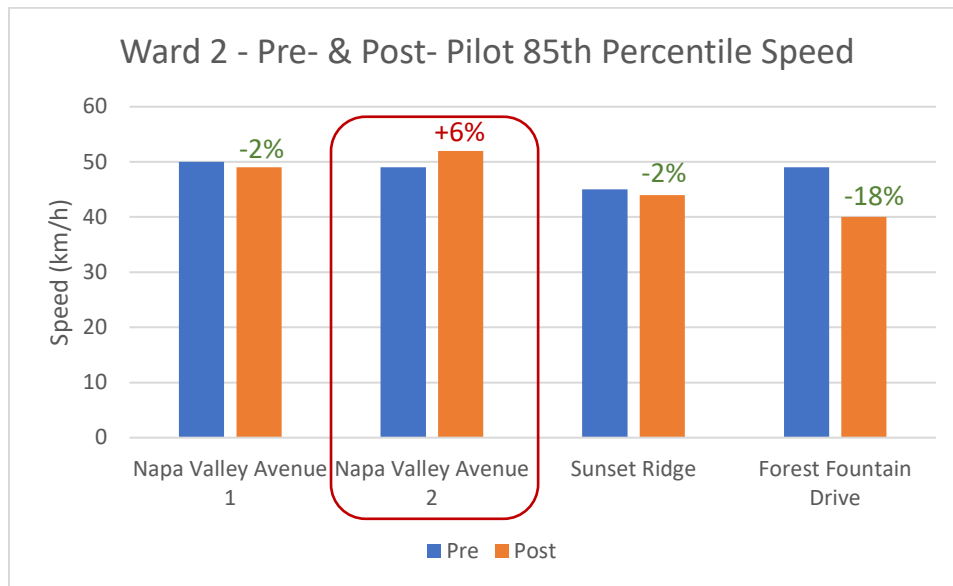


Figure 10: Pre and Post 85th percentile speeds comparison for the corridors within Ward 2

Ward 3 – Vellore Village

Traffic calming measures were introduced in Ward 3 which included flex posts, edge line pavement markings and crayon flex posts along Davos Road, Via Campanile, and Vellore Avenue. Rubber speed cushions were installed on Fossil Hill (at two locations north of Davos Road and at Kingsview Park north of Villa Royale Avenue). Boulevard signage was installed at two locations on Davos Road and Villa Royale.

Figure 11 indicates a general reduction in traffic speeds in Ward 3, except for Fossil Hill Road. Although the collection point for Fossil Hill Road was not directly located near any intervention, edge lines were introduced at that point. However, to determine the reasons for the speed increase, more information on the location and direction of the data collection is required. Additionally, it was reported anecdotally that the speed cushions were effective initially, but the residents became accustomed to them over time. It is recommended that the City do additional pilots of temporary speed cushions with different configurations to assess effectiveness.

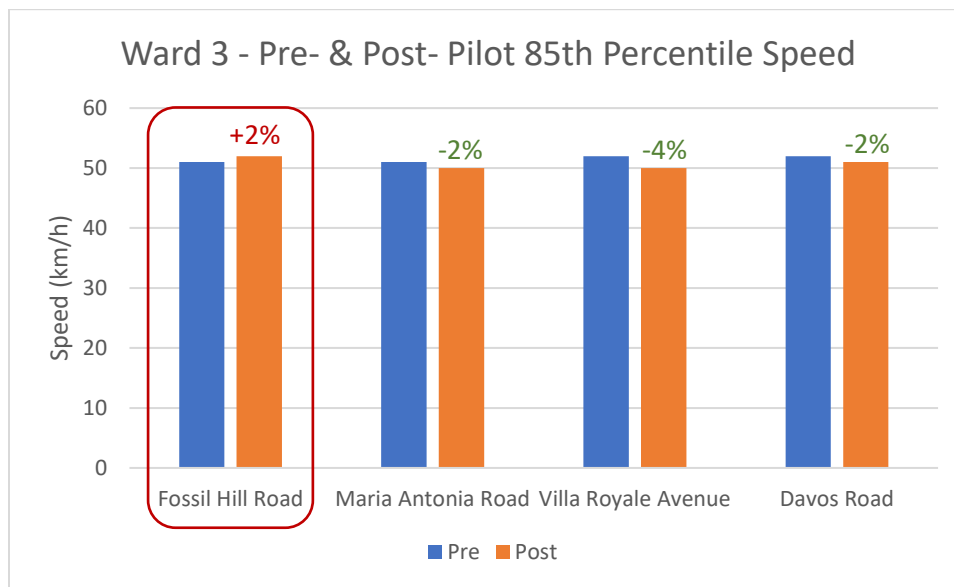


Figure 11: Pre and Post 85th percentile speeds comparison for the corridors within Ward 3

Ward 4 – Carrville Corners

Traffic calming measures were introduced in Ward 4 which included flex posts, curb extension pavement markings, edge line pavement markings, school specific flex posts, boulevard silhouettes and seasonal planters. Seasonal planters in the form of chicanes located along Ivy Glen proved to be the most effective measure experienced in this Ward. The bundling of traffic calming measures worked well together to enhance effectiveness.

As part of the Phase 2 implementation plan, bollards will be installed along the curb extensions at intersections along Peter Rupert and Freedom Trail in the Spring of 2024. This is following the completion of edge line and curb extension pavement markings in Phase 1, which was finished in the Fall of 2023.

Figure 12 shows the overall speed decrease in Ward 4, except Maurier Boulevard. The data collection points for Maurier, Ivy Glen Drive (location 2) and Grand Trunk Avenue (location 1) were placed in the middle of the corridor with no direct influence of a specific intervention except for edge lines.

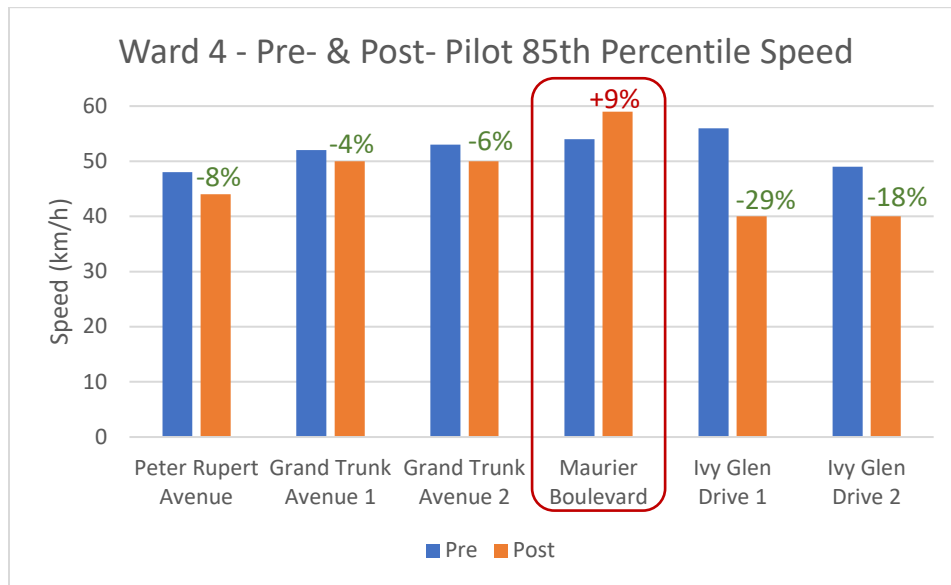


Figure 12: Pre and Post 85th percentile speeds comparison for the corridors within Ward 4

Ward 5 – Lakeview Estates

Pilot measures included crayon flex posts, enhanced radar message boards, and edge lines. Data collection was undertaken at specific points away from flex posts, to discern the effectiveness of a singular measure. As part of the Phase 2 implementation plan, left turn hardening bollards will be installed at New Westminster and Conley in the Spring of 2024, and pedestrian crossing treatments at Conley and Thurman. This is following the completion of edge line and curb extension pavement markings in Phase 1, which was finished in the fall of 2023.

Figure 13 shows that Ward 5 has seen an overall speed increase after the pilot study. No definite conclusions can be made about the main contributing factors, but it can be noted that the edge lines along Conley Street could have had an influence. While the edge lines help define and restrict vehicle space, without additional physical measures, they can convey a safe, separated environment to motorists that encourages speeding.

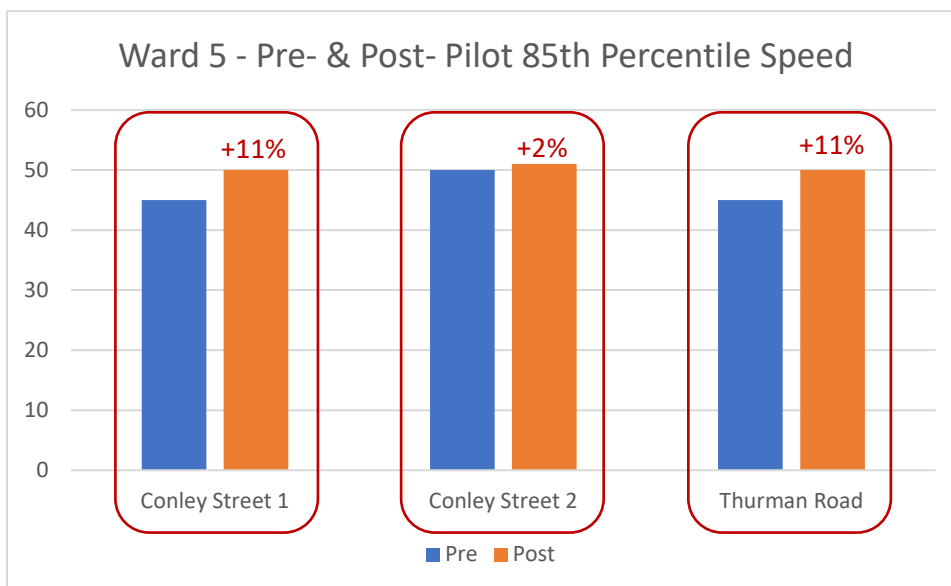


Figure 13: Pre and Post 85th percentile speeds comparison for the corridors within Ward 5

Observations and Recommendations

Signs and Pavement Markings: These included on road messaging, edge lines and boulevard silhouettes. When used on their own, they were found to be ineffective in reducing speeds. It was observed that they were more effective when used in conjunction with physical measures to remind people to slow down. This aligns with traffic calming best practices, which emphasize the importance of combining messaging with physical measures for optimal effectiveness. Other jurisdictions have observed higher speeds with the introduction of edge lines and centrelines without other measures, with the theory that the delineation of an edge, or the channelization of a narrower lane may make drivers more comfortable and encourage higher speeds. Therefore, it is recommended to use signs and markings in combination with physical measures, such as speed cushions, planters, or flexible bollards to reinforce the message and encourage drivers to reduce their speed, in line with established traffic calming best practices.

Vertical Deflection: The effectiveness of speed cushions was observed to vary depending on the configuration. In the case where speed cushions were used alongside a centreline flex sign, they were found to be effective in reducing speeds. However, when speed cushions were used alone, higher speeds were observed. This suggests the need to align with traffic standards and best practices when implementing speed cushions. Therefore, it is recommended to conduct more pilot tests with speed cushions under different configurations, taking into consideration established traffic standards and best practices. This will help identify the optimal combination of speed cushions and accompanying signage, ensuring adherence to traffic standards and maximizing the impact on speed reduction.

Horizontal Deflection: The installation of planters on Ivy Glen was found to be effective in reducing speeds. Furthermore, the planters were well-received by City Parks staff, indicating their positive impact on both traffic calming and aesthetic enhancement. This aligns with traffic calming best practices, which highlight the use of physical elements, such as planters, as effective traffic calming measures, particularly on wide streets such as Ivy Glen. There were no comments received about impacts to parking or driveway access.

To build upon this success, it is recommended to consider implementing more pilot tests using planters as chicanes in other areas, in accordance with established traffic calming best practices. Additionally, exploring different configurations, such as staggering the placement of planters on local streets, should be reviewed, while ensuring compliance with traffic standards. This will provide valuable insights into the effectiveness of planters as a traffic calming measure in various contexts, while adhering to established traffic standards and best practices.

Intersection Treatments: Centreline hardening to calm left-turns was not installed due to availability of materials and prioritization of other installations. However, curb extensions using edge lines and flexible bollards was piloted. It offers the benefits of reducing the crossing distance for pedestrians and cyclists, as well as slowing turning vehicles to improve visibility of vulnerable road users and increase stopping sight distance and reaction time. Initially, more flexible bollards were included in the design, but this was scaled back to three per intersection corner, which was found to be sufficient. Traffic circles and roundabouts were not piloted, as an appropriate location was not identified. These should be considered for future pilots.

Overall, these findings highlight the importance of combining physical measures with appropriate signage, in accordance with traffic calming best practices and traffic standards. By conducting further tests and exploring different configurations while adhering to established guidelines, the effectiveness of speed cushions and planters can be optimized. These recommendations aim to create safer environments for pedestrians, cyclists, and motorists, promoting a culture of responsible and considerate driving behavior, in line with traffic calming best practices and traffic standards.

Implementation and Installation

Pilot Activities

The pilot study focused on evaluating the internal staff processes and interdepartmental coordination between internal teams within Public Works, including Traffic Services, Road Operations, and Parks and Recreation departments in the planning, design, and delivery of traffic calming projects. The study revealed the following results and observations:

- The pilot project identified a strong collaboration between different departments involved in traffic calming initiatives. Close coordination and effective communication were observed, enabling seamless planning, design, and delivery of traffic calming measures.
- The pilot study emphasized the need for sufficient lead time to plan and execute traffic calming measures. Early involvement of all relevant departments was found to be crucial for the smooth progression of the project. This allowed for thorough planning and coordination, reducing potential delays and challenges during installation.
- The pilot study highlighted the importance of developing standardized operating procedures to streamline the flow of projects between departments. Clear guidelines and well-defined processes were found to ensure consistency and efficiency in implementing traffic calming measures. Establishing standard procedures facilitated smoother coordination and handover between teams, minimizing potential bottlenecks.
- The pilot project revealed that the installation phase of traffic calming measures can be challenging and time-consuming. Valuable insights were gained on how to navigate through the installation process effectively. Lessons learned from the pilot can be used to refine and improve the overall traffic calming program when implemented on a larger scale.

Observations and Recommendations

Based on the pilot study evaluating the internal staff processes and interdepartmental coordination for traffic calming projects, the following comprehensive recommendations can be made to further optimize the implementation of traffic calming measures:

Strengthen Collaboration: Enhance communication and coordination between Traffic Services, Road Operations, and Parks and Recreation departments. Foster a culture of collaboration and teamwork through regular meetings, cross-departmental trainings, and shared project management tools. This will facilitate seamless planning, design, and delivery of traffic calming measures by ensuring all departments are aligned and working towards a common goal.

Allocate Sufficient Lead Time: Recognize the importance of allocating adequate lead time for the planning and execution of traffic calming measures. Early involvement of relevant departments should be prioritized to allow for thorough planning, coordination, and identification of potential challenges or delays. By providing ample time for project preparation, potential roadblocks can be addressed proactively, minimizing disruptions during installation and ensuring a smoother progression of projects.

Establish Standard Operating Procedures: Develop and implement standardized operating procedures to streamline the flow of projects between departments. Clear guidelines and well-defined processes should be established to ensure consistency and efficiency in implementing traffic calming measures. This includes defining roles and responsibilities, establishing timelines, and providing clear instructions for handovers between teams. Standard procedures will help minimize bottlenecks, reduce ambiguity, and facilitate a more

streamlined and coordinated approach to project delivery. For example, establish a budget to support the purchasing of equipment and labor required for installations. Additionally, ensure that all design drawings, including pavement markings, undergo engineering review and sign off to ensure compliance with safety standards.

Address Installation Challenges: Recognize the challenges and time-consuming nature of the installation phase for traffic calming measures. It is crucial to identify and address these challenges to optimize the installation process. This can be achieved through continuous improvement initiatives, sharing best practices, and exploring innovative installation techniques. By documenting lessons learned from the pilot study and incorporating them into future projects, the overall efficiency and effectiveness of the traffic calming program can be enhanced. For instance, establish a dedicated team or contractor responsible for the installation of traffic calming measures, ensuring they have the necessary resources and support to carry out their tasks efficiently.

Evaluate and Incorporate Community Feedback: Actively seek feedback from local residents, road users, and other stakeholders to evaluate the effectiveness of traffic calming measures. Conduct surveys, interviews, or community meetings to gather qualitative feedback on the perceived impact of the measures. This feedback can provide valuable insights into the community's perspective, identify any unintended consequences, and help identify areas for improvement. Incorporating community feedback into the decision-making process will enhance the overall success and acceptance of traffic calming initiatives.

Monitor and Evaluate Performance: Implement a robust monitoring and evaluation system to assess the impact of traffic calming measures. This can include monitoring traffic flow patterns, collecting data on the number and severity of traffic incidents, conducting observational studies on driver behavior, and engaging with relevant stakeholders to collect data on enforcement efforts. By regularly analyzing and evaluating the performance of implemented measures, it becomes possible to identify areas of success and areas that require further improvement. This data-driven approach will help inform future decision-making and optimize the design and implementation of traffic calming strategies.

By implementing these comprehensive recommendations, the internal staff processes and interdepartmental coordination for traffic calming projects can be further optimized. This will result in more efficient and successful implementation of traffic calming measures, leading to safer road environments and enhanced quality of life for the community. By continuously striving to improve and innovate, the traffic calming program can serve as a model for effective interdepartmental collaboration and successful implementation of traffic management initiatives.

Data Collection and Evaluation

Pilot Activities

Pre- and post-installation feedback loops were established to assess the perceptions and satisfaction of local residents and road users regarding the implemented traffic calming measures. These feedback loops were conducted through social media engagements, survey, project email, and Site Podium, and gathered feedback on aspects such as perceived changes in traffic safety, ease of movement, and overall satisfaction with the measures. The constructive feedback received helped refine the placement of any measures, where required, and also helped identify opportunities where measures can be improved in the future to maximize results. Maintaining community feedback loops has had a positive impact and should be continued as part of the Traffic Calming Plan program.

The pilot has pointed out some areas that need improvement in the data collection process. Due to operational limitations, the timing of post-installation data collection was not consistent, which had an impact on the effectiveness results. For example, if the post-installation data collection is carried out approximately 1-2 weeks following the installation date, it may yield a greater effectiveness indicator in reducing the speed differential than if it is carried out approximately 4-5 weeks later. This is because drivers may become accustomed and familiar with the established traffic calming measures over time.

The data collection tools used were intended to ensure the accurate placement of tubes both before and after the installation of traffic calming interventions. This was done to guarantee a consistent comparison of results. However, it should be noted that the accuracy of these tools may be influenced by their distance from the intervention site (which would be at a varying distance interval).

Observations and Recommendations

Verifying Location of Data Collection: It is critical to ensure that the locations of data collection are consistent before and after installations. This will help in comparing the results and measuring the effectiveness of the interventions. To ensure proper installation, WSP recommends that a photo of each installation be taken, which could be helpful for verification purposes.

Data Collection Location Relative to Interventions: One of the key goals of traffic calming is to create a consistently lower speed environment along a route or across a whole area, rather than to cause localized speed reduction. As such, it is recommended that the data collection be taken both at the intervention, and before or after the intervention. This will provide a clearer picture of how the interventions are collectively impacting the traffic and road conditions for the corridor, as well as accounting for interdependencies between different treatments.

Data Sources: In addition to speed surveys, alternative data sources such as big traffic data from third-party crowdsourced and connected cars should be considered. This offers a potentially more effective and comprehensive way to assess before and after conditions. One such example is SMATS iNode data collection and analytics application (<https://www.smatstraffic.com/>), which can pinpoint hot spots and get a better sense of speeds along the entire corridor before and after interventions and different times of the day and week, even in real-time.

Metrics: Various speed metrics were collected, providing a good understanding of the road conditions before and after installation. However, not all collected speed metrics are necessary for screening purposes. It is recommended to simplify the analysis by using only average, 85th percentile, and 95th percentile speeds, as well as Average Daily Traffic (ADT). This will make the analysis easier and more efficient, while still providing valuable insights into the impact of the interventions.

Observational Studies: Consider conducting observational studies to assess driver behavior and compliance with the traffic calming measures. This can involve the use of video recording devices to monitor driver speeds, adherence to traffic rules, and overall compliance with the implemented measures. Observational studies can provide valuable information on the effectiveness of the measures in influencing driver behavior and promoting safer driving habits.

Conclusion

This report presents the findings and recommendations of Phase 3 Pilot Projects of the Neighbourhood Traffic Calming Policy, Design, and Speed Management Plan. The neighbourhood traffic calming pilot projects were developed to evaluate and test various aspects of a new traffic calming program including screening and prioritization of streets, engagement, traffic calming measures, implementation, data collection and evaluation. By systematically evaluating various aspects of the program from planning to implementation, the pilot project has provided constructive insights and recommendations for the development and improvement of a new Traffic Calming Program. The report suggests that a more sustainable and effective transportation system can be achieved by continuing to build on the successes of the pilot project and addressing the areas that need improvement.