

City of Vaughan

Martin Grove Road In-Service Road Safety Review



FINAL REPORT



CIMA+ file number: B001467E
April 2025


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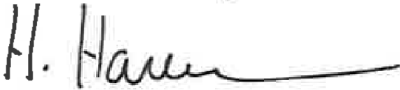
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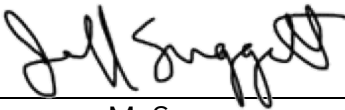


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Executive Summary

Introduction

CIMA+ was retained by the City of Vaughan to conduct an in-service road safety review along Martin Grove Road between Highway 7 and Highway 27, located in Ward 2, as part of the City's MoveSmart Mobility Management Strategy. An in-service road safety review is a detailed engineering study of an existing road that identifies and addresses safety. The goal is to continue to improve road safety for all users. Specifically, the purpose of this review was to assess the current and future transportation planning and infrastructure requirements for the subject corridor. Through an assessment of road infrastructure, traffic safety and operations, the study identified additional road safety opportunities for all road users and make recommendations on short- and long-term implementation plans.

Study Area

The study area included Martin Grove Road between Highway 7 and Highway 27, located in Ward 2. Martin Grove Road is a major north-south collector road between Highway 7 and Langstaff Road and a minor north-south collector road between Langstaff Road and Highway 27. Within the study area, it is surrounded by residential land uses and provides access to several institutions, including Father E. Bulfon Community Centre, St. Peter's Catholic Church, St. Peter's Senior's Residences, St. Clement Catholic Elementary School, San Marco Catholic Elementary School, St. Peter Catholic Elementary School, and St. Angela Merici Catholic Elementary School. The study area is shown in **Figure E- 1**.

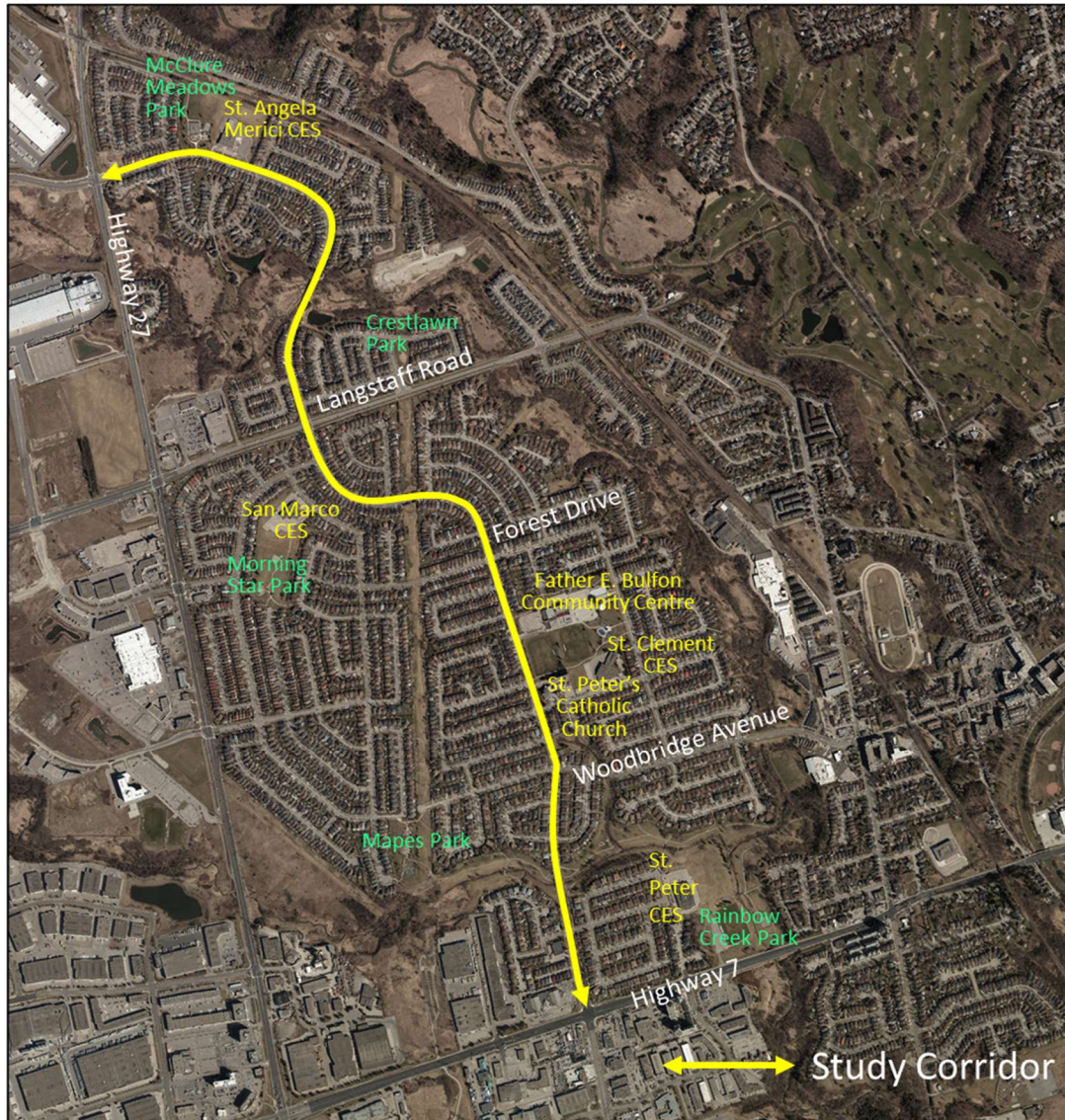


Figure E- 1: Study Area

Between Highway 7 and Highway 27, Martin Grove Road has a four-lane cross-section, with the exception of the segment between the Robinson Creek bridge and Castlepoint Drive / Dolores Crescent, which has a two-lane cross-section. The posted speed limit along Martin Grove Road is currently 40 km/h between Highway 7 and Langstaff Road, 50 km/h between Langstaff Road and Castlepoint Drive / Dolores Crescent, and 40 km/h between Castlepoint Drive / Dolores Crescent and Highway 27. The City will be implementing a 40 km/h posted speed limit along the entire study corridor in the summer of 2025.

The study area includes six signals, one of which is an intersection pedestrian signal, and 18 stop-controlled intersections, as shown in **Figure E- 2**. The intersections at Highway 7 and Highway 27 are both signalized intersections under the Regional Municipality of York. Existing traffic calming measures include speed humps, stop sign beacons, and tiger tails. School crossing guards are also stationed along the corridor at the raised crosswalk in front of St. Angela Merici CES, at Morning Star Drive, and at Claudia Avenue / Bainbridge Avenue. The surrounding area has an older population. Across all three census tracts within the study area, approximately 30% of the population is aged 65 and over.

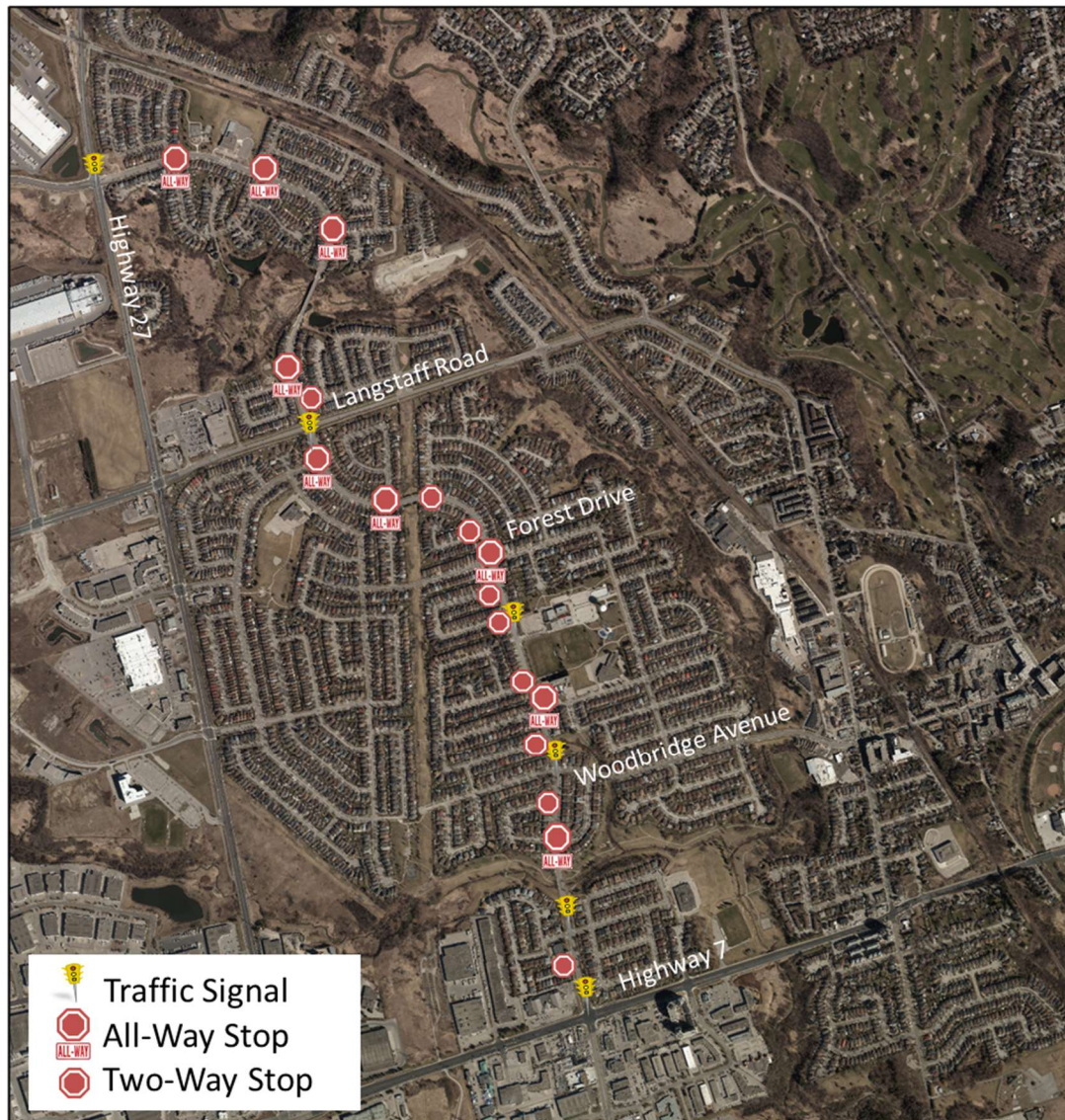


Figure E- 2: Traffic Controls

Sidewalks are provided on both sides of the roadway along the entire length of the study corridor. The Rainbow Creek Park Trail connects Mapes Park on the west side of Martin Grove Road to Rainbow Creek Park on the east side.

In the 2020 *Pedestrian and Bicycle Master Plan*, the City identified Martin Grove Road between Highway 7 and Langstaff Road as a priority segment for implementing a local cycling route. To align with this priority segment, the remainder of the Martin Grove Road corridor from Langstaff Road to Highway 27 is identified for a proposed local cycling route by 2051 through this study. In-boulevard cycle tracks are currently in place along Martin Grove Road between Steeles Avenue and the Rainbow Creek Park Trail, including protected intersections.

Office Review

CIMA+ reviewed background information, 2024 traffic data, future developments within and surrounding the study area, collision history, transit service routes, signal timings, traffic operations and warrants for road safety measures. The following was noted:

- Forest Drive, Claudia Avenue / Bainbridge Avenue, Woodbridge Avenue, and Bellona Street are all in the top 100 prioritized for road safety based on the City's 2024 network screening results.
- Martin Grove Road between Highway 7 and Amalfi Court and between Amalfi Court and Auburn Road / Andrew Park are in the top 100 midblock based on the City's 2024 network screening results.
- Heavy pedestrian volumes were observed throughout the corridor, particularly between Forest Drive and Claudia Avenue / Bainbridge Avenue.
- Vehicular traffic is at least 50% lower north of Langstaff Road;
- Operating speeds exceed the posted speed limit by up to 26 km/h at locations throughout the corridor;
- Parking demand is high near St. Angela Merici CES on weekdays, in front of Father E. Bulfon Community Centre on Saturdays, and in front of Father E. Bulfon Community Centre and St. Peter's Catholic Church on Sundays;
- Decreased stop sign compliance was noted at multiple stop-controlled intersections throughout the corridor, with up to 18% of drivers not stopping at all;
- Future development in the area south of Martin Grove Road & Highway 7 as well as a proposed GO station east of the study area are planned, however, the impact of these developments on the study corridor is anticipated to be limited to south of Andrew Park, as the only school in the study area with a catchment area that extends south of Highway 7 is St. Peter Catholic Elementary School. It is recommended that the City continue to monitor traffic operations along the study corridor as developments are built and occupied;
- Several road segments along the corridor would benefit from additional traffic calming measures;
- No additional intersections meet the warrant for all-way stop control or signalization;
- No locations meet the warrant for pedestrian crossovers;

- A physically separated bikeway is desirable for the corridor given operating speeds and traffic volumes;
- Collisions along the corridor primarily occurred at intersections, with Langstaff Road and Forest Drive representing the highest proportion of intersection collisions;
- York Region Transit (YRT) operates a bus route along the corridor that connects to Rutherford Road in the north and Highway 7 in the south, however, it does not operate on Sundays;
- All-red and Flashing Don't Walk clearance times are to be increased at all signalized intersections along the corridor; and
- Intersection analysis indicated that all intersections operate at an LOS of D or better during all peak hours under existing conditions.

Overall Study Area Observations

The following summarizes the key observations noted during the field investigations conducted between February and April 2024:

- There are opportunities for ongoing improvement pedestrian and cycling infrastructure along the corridor, including installing crosswalk markings and tactile plates, removing curb cuts at uncontrolled locations, and installing pedestrian countdown timers;
- There are various opportunities to enhance signage and sightlines throughout the corridor;
- Flashing Don't Walk (FDW) times to be increased for pedestrians to cross;
- The travel lanes along Martin Grove Road exceed the City's Complete Streets Guidelines, which recommend 3 to 3.3 metres for the through lane and 3.5 metres for the curb lane with transit for a design speed of 40 km/h;
- Aggressive driving was observed, including speeding, rolling through stop signs or stopping past the stop bar, getting too close to pedestrians, and entering the intersection while a vehicle was completing a conflicting movement;
- Pedestrians were observed crossing without right-of-way, as well as cyclists using the road or sidewalk;
- Curb radii at intersections are large;
- There are opportunities to enhance pavement markings and signage, including installing stop bars and standard signage, relocating signs, and removing pavement markings that extend through the intersections;
- The curvature of the road results in reduced sightlines, particularly at Amaretto Court and Zinnia Place;
- There are parking constraints near St. Peter's Catholic Church on Sundays; and
- There are opportunities to enhance pick-up and drop-off operations at St. Angela Merici Catholic Elementary School.

Consultation Summary

Over the course of the project, CIMA+ and the City met with stakeholders and members of the public to provide updates on the project's progress and to gather feedback. This consultation included three agency meetings and three rounds of public engagement, which included two online surveys, one virtual public meeting, and two in-person public meetings. **Table E- 1** summarizes the public and stakeholder engagement events and common themes that were identified.

Table E- 1: Public and Stakeholder Engagement Events and Common Themes

Event	Key Themes and Findings
Agency Meeting #1 - March 12, 2024	<ul style="list-style-type: none"> • Discussion surrounding proposed developments within the study area and impacts to traffic operations along the corridor • Requests for a pedestrian study along the corridor, including classification by age groups • Discussion surrounding impacts to emergency vehicle routes along the corridor • Requests for a review of posted speed limits and heavy vehicle traffic along the corridor • Discussion surrounding the proposed Woodbridge GO station
Virtual Public Meeting #1 - March 21, 2024	<ul style="list-style-type: none"> • Requests for lane reductions, roundabouts, speed cushions, and maintaining flex posts throughout the winter to control travel speeds along the corridor • Requests to improve pick-up and drop-off operations at schools • Requests for cycling facilities along the corridor • Requests for improved education and enforcement • Improving stop sign compliance along the corridor • Accommodating active transportation and vulnerable road users • Improving transit frequency along the corridor
Online Survey #1 - March 1 to March 31, 2024	<ul style="list-style-type: none"> • Priorities included enhancing enforcement, adding traffic calming, ongoing improvement to school drop-off and pick-up facilities, ongoing improvement or adding walking facilities, and providing education for all road users • Vision for the corridor includes safety for pedestrians, cyclists, transit users, and motorists
Agency Meeting #2 - June 27, 2024	<ul style="list-style-type: none"> • Enhancing pedestrian amenities, particularly for seniors • Cycling facilities and intersection improvements • Discussion surrounding future growth in the surrounding area • Discussion surrounding the need for on-street parking • Discussion surrounding pick-up and drop-off operations at St. Angela Merici CES

Event	Key Themes and Findings
In-Person Public Meeting #2 - September 17, 2024	<ul style="list-style-type: none"> • Lack of support for plaza access restrictions, on-street cycling facilities, and three-lane cross-section • Need for school buses to be able to navigate curb radius reductions and left-turn traffic calming • Desire to improve sightlines at Amaretto Court, particularly for drivers looking left to exit the Court, as high southbound vehicular speeds and the horizontal curvature of the road result in reduced gaps and limited sightlines • Desire to address speeding, stop sign compliance, school crossing guard safety, and pedestrian safety • Support for roundabouts, Leading Pedestrian Intervals (LPIs), speed bumps, police enforcement, and automated speed enforcement • Support for signalization of intersections at Claudia Avenue / Bainbridge Avenue and Morning Star Drive
Online Survey #2 - September 3, 2024 to October 1, 2024	<ul style="list-style-type: none"> • Support for stop sign compliance treatments, including installing tiger tails at stop signs along the corridor • Support for speed management treatments, including curb radius reductions, automated speed enforcement, and a uniform posted speed limit of 40 km/h throughout the corridor • Support for edge line and centre line treatments, Senior Safety Zones, and parking stalls
Agency Meeting #3 - November 27, 2024	<ul style="list-style-type: none"> • Requests to consider impact of proposed treatments on transit operations and garbage collection • Requests to re-align the pedestrian crossings at St. Angela Merici Catholic Elementary School and at Jackman Crescent • Requests to formalize the crossing at the trail connection between Zinnia Place and Gold Finch Place • Discussion surrounding cycling and pedestrian facilities at the proposed traffic circle at Forest Drive
In-Person Public Meeting #3 - January 16, 2025	<ul style="list-style-type: none"> • Mixed support for lane reductions at strategic locations, speed bumps, and automated speed enforcement • Support for roundabouts • Requests for flashing beacons and enhanced illumination at Forest Drive, speed bumps, police enforcement, and relocation of the pedestrian signal to the community centre entrance

Identified Feedback and Corresponding Recommendations

Based on the review of the study corridor and its characteristics, the office review, the field assessment, and all of the public consultation findings, the key identified opportunities for traffic safety enhancements and corresponding treatments are summarized below for Martin Grove Road:

- **Improving speed compliance along the corridor** supported by edge line and centre line pavement markings, curb radius reductions, curb extensions, automated speed enforcement, speed cushions, and potentially a traffic circle;
- **Improving pick-up and drop-off operations at St. Angela Merici CES** supported by on-street parking, a pedestrian crossover, and curb radius reductions;
- **Enhancing pedestrian safety along the corridor** supported by LPIs, increased Flashing Don't Walk times, curb radius reductions, curb extensions, a Senior Safety Zone, left-turn traffic calming, and relocating stop bars;
- **Improving stop sign compliance along the corridor** supported by curb radius reductions, tiger tails, and flashing beacons;
- **Improving sightlines at Amaretto Court** supported by curb radius reductions and curb extensions; and
- **Enhancing pedestrian and cycling infrastructure and meeting AODA requirements along the corridor** supported by installing pedestrian countdown timers, crosswalk markings, tactile plates, and other measures.¹

Additional minor treatments were identified throughout the corridor and within the vicinity of the four schools in the neighbourhood. It is recommended that the City implement certain measures as a pilot study, such as temporary measures such as flex posts, with provisions for permanent installations with raised curbs through capital projects in the future.

Implementation Plan

It is recommended that the City implement certain measures as a pilot study with temporary measures such as flex posts, with provisions for permanent installations with raised curbs through capital projects in the future. **Table E- 2** summarizes the proposed short-term treatments, including those that are recommended to be implemented through the pilot study in the summer of 2025. **Table E- 3** summarizes the long-term treatments which should be implemented with permanent installations in 2027 depending on the outcomes of the pilot study, and **Table E- 4** summarizes general treatments which should be implemented throughout the corridor in conjunction with the short- and long-term treatments. The City should conduct before and after studies evaluating traffic volumes and speeds along the study corridor, as well as an additional public survey to collect feedback from residents. The City should also continue to monitor Martin Grove Road in the future for implementation of cycling facilities to align with the *Pedestrian and Bicycle Master Plan*.

¹ Feedback received from the residents throughout the consultation process indicated a lack of support for cycling facilities along the corridor. As such, cycling facilities were not pursued as a recommendation under this study. In the future, as nearby development and the Woodbridge GO result in changes to the area, cycling facilities may be considered for implementation to align with the City's *Pedestrian and Bicycle Master Plan*.

Table E- 2: Short-Term Treatments

Location	Treatment
Andy Crescent / Dolores Crescent	<ul style="list-style-type: none"> • Install tiger tails beneath stop signs (all approaches) • Implement curb radius reductions using pavement markings and flex posts* • Move the Stop Ahead signage closer to the intersection
St. Angela Merici CES	<ul style="list-style-type: none"> • Install edge line pavement markings showing areas where parking is permitted • Install Level 2 Type D pedestrian crossover (in conformance with AODA standards) • Replace non-standard signage to standard Playground Ahead signage
Castlepoint Drive / Dolores Crescent	<ul style="list-style-type: none"> • Install tiger tails beneath stop signs (all approaches) • Implement curb radius reductions using pavement markings and flex posts*
Between Castlepoint Drive / Dolores Crescent and Langstaff Road	<ul style="list-style-type: none"> • Install edge line and centre line pavement markings • Rehabilitate existing speed bumps to meet standards
Milano Avenue	<ul style="list-style-type: none"> • Install tiger tails beneath stop signs (all approaches)
Langstaff Road	<ul style="list-style-type: none"> • Install LPIs • Update all-red and Flashing Don't Walk times
Morning Star Drive	<ul style="list-style-type: none"> • Implement curb radius reductions and curb extensions using pavement markings and flex posts* • Remove the northbound left-turn lane using pavement markings and flex posts* • Install tiger tails beneath stop signs (all approaches) • Remove signage obstructions • Remove lane pavement markings that extend through the intersection
Zinnia Place	<ul style="list-style-type: none"> • Install tiger tails beneath stop signs (all approaches) • Install Stop Sign Ahead signage on approach to the intersection
Amaretto Court	<ul style="list-style-type: none"> • Implement curb radius reductions and curb extensions using pavement markings and flex posts* • Remove or trim trees blocking sightlines for vehicles exiting Amaretto Court
Forest Drive	<ul style="list-style-type: none"> • Install flashing beacons • Install tiger tails beneath stop signs (all approaches) • Evaluate the feasibility of constructing a traffic circle on Martin Grove Road and Forest Drive using pavement markings and flex posts*
Between Forest Drive and Claudia Avenue / Bainbridge Avenue	<ul style="list-style-type: none"> • Install an automated speed enforcement camera in front of Father E. Bulfon Community Centre • Implement a Senior Safety Zone in front of Father E. Bulfon Community Centre

Location	Treatment
	<ul style="list-style-type: none"> Evaluate the feasibility of installing speed cushions Implement curb radius reductions and curb extensions using pavement markings and flex posts*
Jackman Crescent pedestrian signal	<ul style="list-style-type: none"> Update all-red and Flashing Don't Walk times Implement curb extensions using pavement markings and flex posts* Remove lane pavement markings that extend through the intersection Remove obstruction to the pedestrian push button
Claudia Avenue / Bainbridge Avenue	<ul style="list-style-type: none"> Address signage obstructions
Woodbridge Avenue	<ul style="list-style-type: none"> Install left-turn traffic calming Relocate the stop bars for the eastbound and westbound left-turn lanes Implement LPIs Update all-red and Flashing Don't Walk times Implement curb radius reductions using pavement markings and flex posts*
Auburn Road / Andrew Park	<ul style="list-style-type: none"> Install pedestrian countdown timers Update all-red and Flashing Don't Walk times Remove obstructions for sightlines for vehicles making the eastbound right-turn movement
Plaza Access	<ul style="list-style-type: none"> Relocate the utility box that is obstructing sightlines

Note:

*Measures to be implemented using flex posts and pavement markings as part of pilot study. Depending on the outcome of the pilot study, the City will evaluate the feasibility of making the treatments permanent using raised curbs.

Table E- 3: Long-Term Treatments

Location	Treatment
Andy Crescent / Dolores Crescent	<ul style="list-style-type: none"> Implement curb radius reductions using raised curbs
Castlepoint Drive / Dolores Crescent	<ul style="list-style-type: none"> Implement curb radius reductions using raised curbs
Morning Star Drive	<ul style="list-style-type: none"> Implement curb radius reductions and curb extensions using raised curbs Remove the northbound left-turn lane and install a median
Amaretto Court	<ul style="list-style-type: none"> Implement curb radius reductions and curb extensions using raised curbs
Forest Drive	<ul style="list-style-type: none"> Evaluate the feasibility of constructing a traffic circle on Martin Grove Road and Forest Drive using raised curbs

Location	Treatment
Between Forest Drive and Claudia Avenue / Bainbridge Avenue	<ul style="list-style-type: none"> Implement curb radius reductions and curb extensions using raised curbs
Jackman Crescent pedestrian signal	<ul style="list-style-type: none"> Implement curb extensions using raised curbs
Woodbridge Avenue	<ul style="list-style-type: none"> Implement curb radius reductions using raised curbs

Table E- 4: General Treatments

Timeframe	Treatment
Short-Term	<ul style="list-style-type: none"> Install crosswalk markings at all controlled crossings where not provided Install stop bars at all stop-controlled approaches to intersections where not provided Install ladder crosswalk markings at all crosswalks within school zones
Long-Term	<ul style="list-style-type: none"> Install tactile plates at all controlled crossings where not provided Replace highway head style signals with oversized traffic signals where not provided Upgrade pedestrian push buttons at all signalized intersections Remove curb cuts at all uncontrolled crossings