

Martin Grove Road Watermain Replacement & Road Safety Improvements on Rathburn Road and Martin Grove Road

Virtual Public Meeting
December 7, 2020



Land Acknowledgement

We acknowledge the land we are standing on is the traditional territory of many nations including the Mississaugas of the Credit, the Anishnabeg, the Chippewa, the Haudenosaunee and the Wendat peoples and is now home to many diverse First Nations, Inuit and Métis peoples.

We also acknowledge that Toronto is covered by Treaty 13 with the Mississaugas of the Credit.

Purpose of this Event



To inform residents about the **watermain replacement** on Martin Grove Road and the options for alignment of the watermain under Mimico Creek



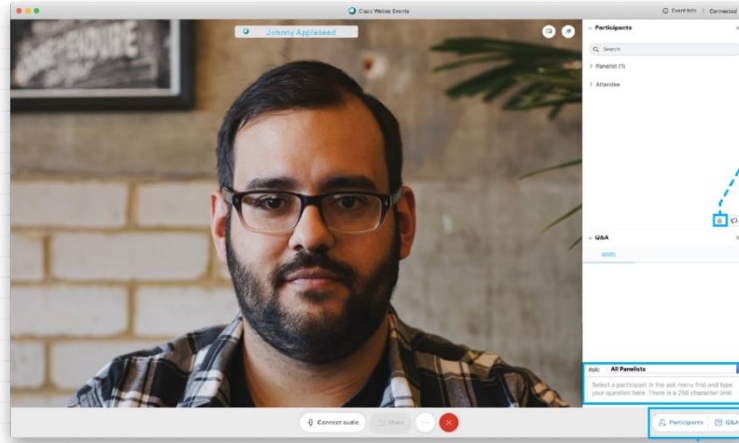
To inform residents about the proposed **road safety improvements** including options for cycling infrastructure on Martin Grove Road and Rathburn Road



To provide an opportunity for the **public to ask questions** and provide comments

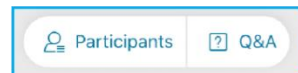
The City is carrying out a combined public consultation process because of the proximity of these infrastructure projects and the anticipated timeline for implementation.

Webex Basics: Laptop/Desktop



Raise your Hand: Submit a Verbal Question

- Press the icon to raise your hand.
- If selected, the Facilitator will say your name and unmute you.
- After your question is asked, the Facilitator will put you back on mute.
- Press the icon again to put down your hand.



Open the Participants and Q&A Panels

- Press to toggle between opening and closing Participants and Q&A Panels
- Opened
- Closed

Ask: **All Panelists**

Select a participant in the ask menu first and type your question here. There is a 256 character limit.

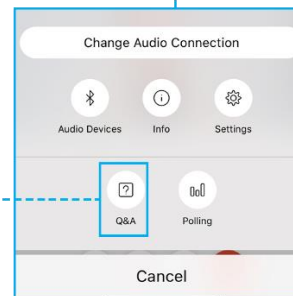
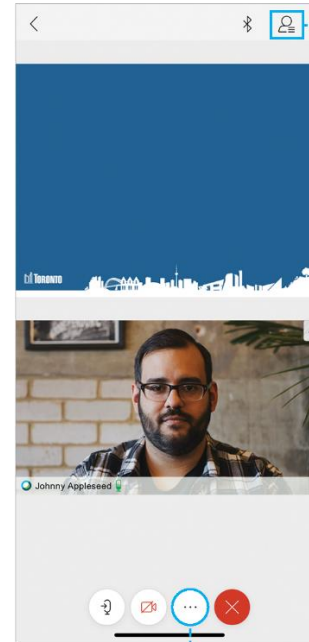
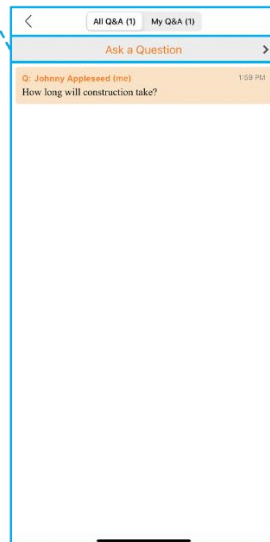
Q & A Box: Submit a Typed Question

- Only staff will be able to see submitted questions.
- Ask questions to All Panelists.
- Your question will be redirected to a Panelist to answer verbally.

Webex Basics: Smart Phone/Tablet

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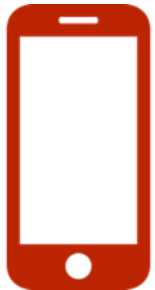
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- Press the icon again to put down your hand.

Webex Basics: Phone



- People who have called in can ask questions verbally.
- To raise your hand virtually, **key in *3**.
- The Moderator will see a hand up beside the last four digits of your phone number, alerting us that you would like to ask a question.
- During the Q&A periods, the Moderator will unmute you and let you know that you can speak.

Code of Conduct

Be patient: Virtual meetings don't always run as smoothly as planned.

Be brief: Limit yourself to one question or comment when you are called on to speak.

Be respectful: The City of Toronto is an inclusive public organization. Discriminatory, prejudicial or hateful comments and questions will not be tolerated and you will be removed from the meeting.



We want to hear from you – all questions are good questions!
Please wait until the end of each presentation to ask your questions.
If we do not address your question, staff will follow up with you after the meeting.

Agenda

Presentation: Road safety improvements	6:40-7:10 p.m.
Road safety Q&A session	7:10-7:30 p.m.
Presentation: Watermain replacement	7:30-8:00 p.m.
Watermain Q&A	8:00-8:20 p.m.
How to provide feedback	8:20 p.m.
Next steps	8:25 p.m.

Introductions

Road Safety Improvements:

Adam Popper, Cycling & Pedestrian Projects

Bill Tsomokos, Vision Zero Projects

Daniel Samson, Cycling & Pedestrian Projects

Becky Katz, Cycling & Pedestrian Projects

Stephanie Gris Bringas, Public Consultation Unit

Watermain Replacement:

Aaron Bell, R.V. Anderson Associates Limited

Ken Wallace, R.V. Anderson Associates Limited

Tomas Ycas, Engineering & Construction Services

Amir Gafoor, Engineering & Construction Services

Kate Kusiak, Public Consultation Unit

Road Safety Improvements

Road Safety Improvements: Background

Background:

- History of speeding and motor vehicle collisions on Martin Grove Rd, south of Rathburn Rd
 - 85 collisions in the last ten years
- 2018: Temporary traffic calming measures installed at the intersection of Martin Grove Rd and Rathburn Rd:
 - Painted bulb out and bollards on southwest corner
 - Painted median with concrete islands on Martin Grove from Rathburn Rd to Donalbert Rd
- 2020: Martin Grove Road speed limit reduced from 50 km/hr to 40 km/hr as part of the Vision Zero Road Safety Plan Speed Management Strategy
- 2020: Painted buffer added to the bike lanes on Rathburn Road from Martin Grove Rd to approximately 100 metres east of The East Mall



Southwest corner of Martin Grove Rd and Rathburn Rd with painted out area and bollards

Road Safety Improvements: Project Goals

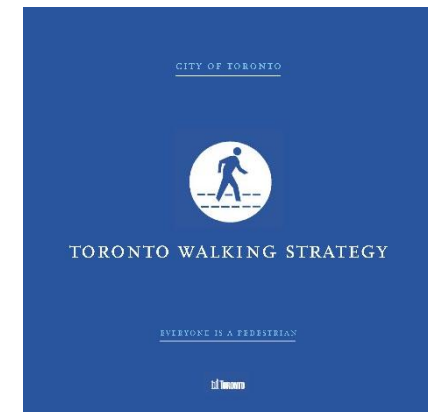
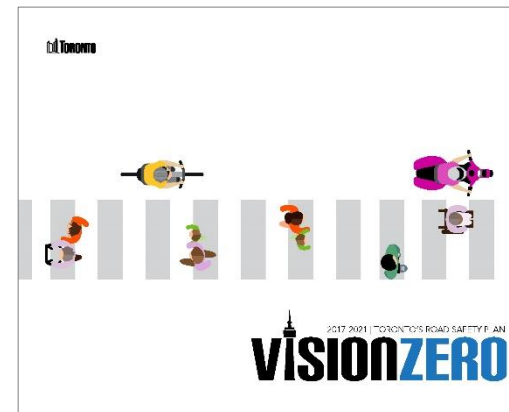
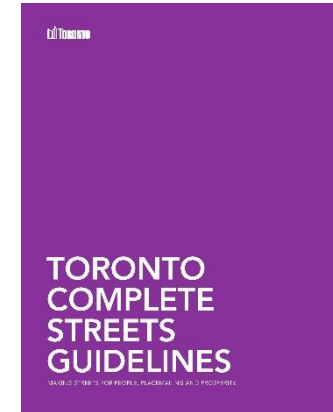
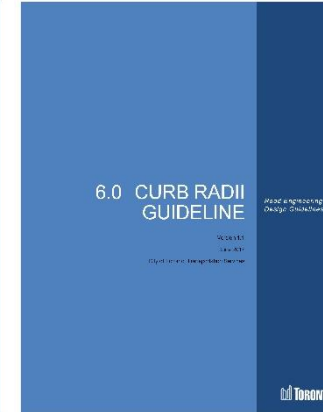
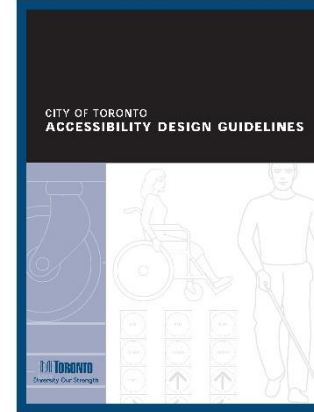
- 1. Improve safety for people walking, cycling, and driving**
 - Reduce motor vehicle speeds
 - Improve visibility and predictability of road users
- 2. Encourage cycling by connecting and improving bikeways**
 - Extend the Martin Grove Rd bikeway southward towards Burnhamthorpe Rd
 - Add separation to the bikeway on Rathburn Rd between The East Mall and Martin Grove Rd
- 3. Maintain City services and access to driveways**
 - Ensure the continued provision of snow clearing, solid waste removal, and TTC bus service
 - Maintain access to driveways

Road Safety: Policies and Guidelines

The City has a number of policies and standards in place to improve the design of streets for all road users.

They focus on:

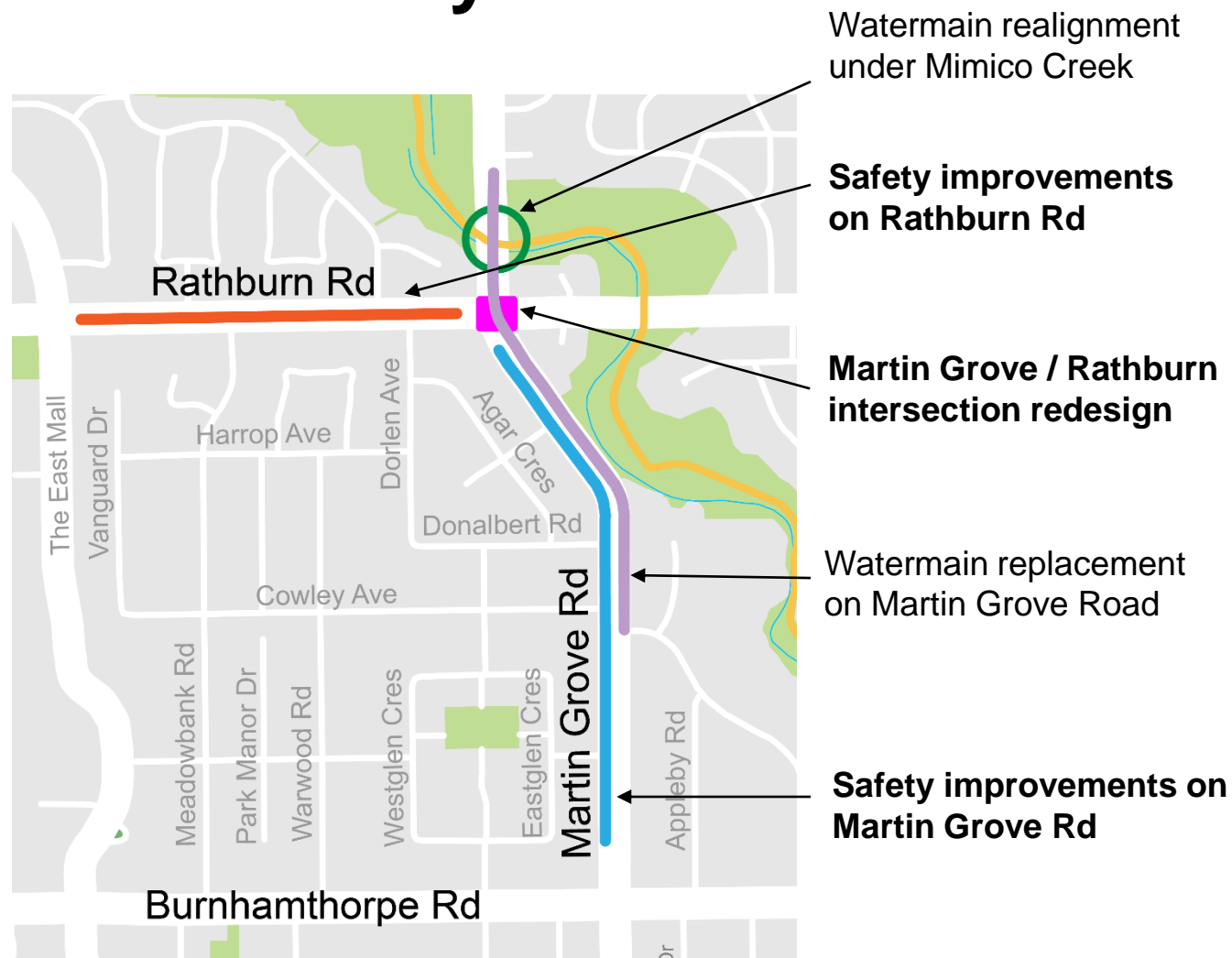
- Safety for all road users, particularly the most vulnerable
- Mobility for all ages
- Accessibility for everyone



Road Safety Improvements: Summary

Planned and proposed improvements:

1. Redesigning and reconstructing the intersection of Martin Grove Rd and Rathburn Rd in 2022
2. Installing separated bike lanes on Martin Grove Rd, south of Rathburn Rd in 2022
3. Adding physical separation in the painted buffer of the existing bike lanes on Rathburn Rd in 2021

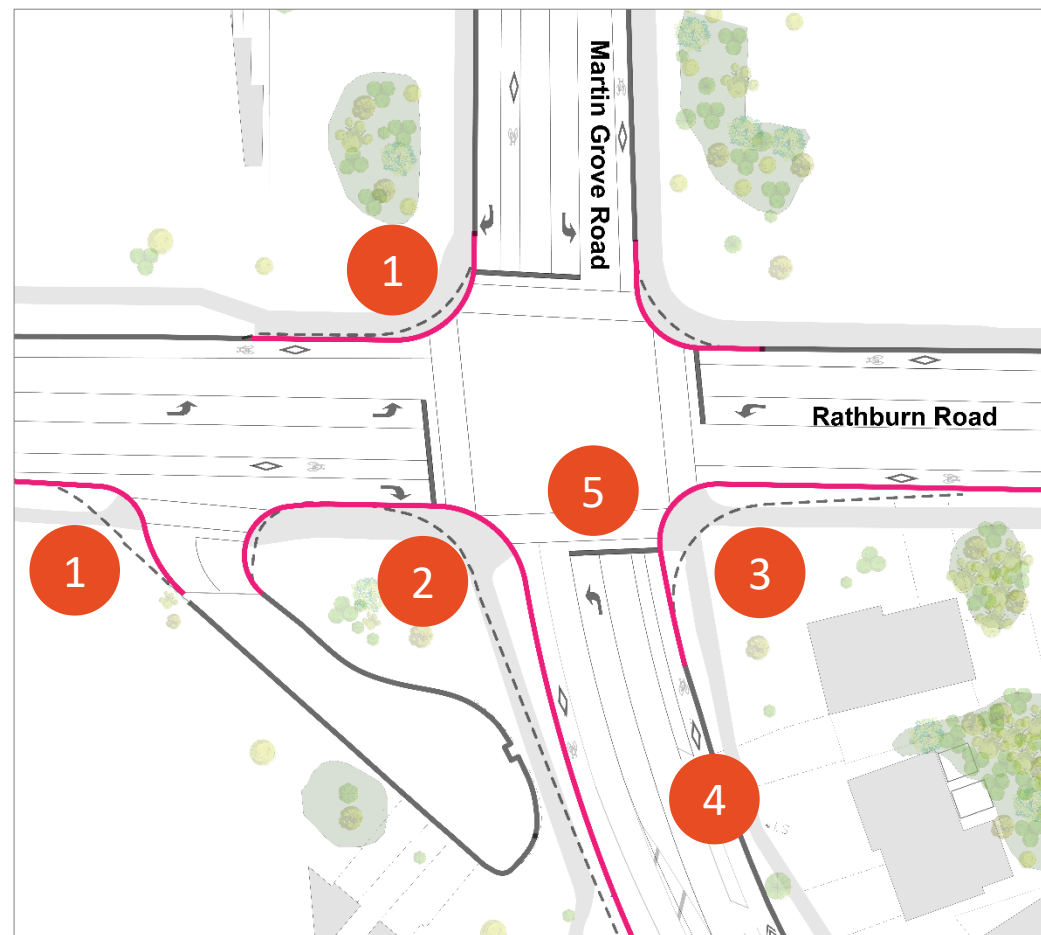


Road Safety Improvements: Intersection Redesign

Key design changes:

1. **Reducing curb radii at all corners**
2. **Building out the curb at the southwest corner** to replace the interim paint and bollards
3. **Relocating signal poles** to reflect the new curbs
4. **Combining through lane and right-turn lane** at the northbound approach
5. **Aligning north-south through lanes and left-turn lanes**

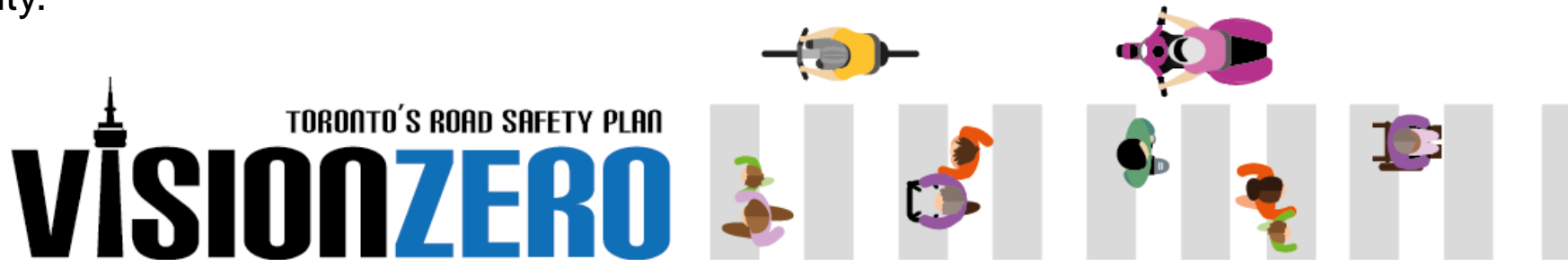
Reconstruction of the intersection is anticipated to begin in Spring 2022, following the completion of the watermain replacement.



Road Safety Improvements: Intersection Redesign

The City's Vision Zero Road Safety Plan is focused on reducing traffic-related fatalities and serious injuries. The Martin Grove Rd and Rathburn Rd intersection reconstruction includes a number of key measures from the Plan:

- **Corner Radii Reductions** - Intersection corners will be extended to create as close to a 90 degree angle as possible in order to a) shorten pedestrian crossing distances, b) improve the visibility of pedestrians, and c) deter drivers from making right-turns at high speeds.
- **Lane Width Reduction** – Reducing vehicle lane widths encourages drivers to travel slower and not exceed the speed limit, resulting in reduced impact speed in the event of a collision. This provides drivers with more reaction time.
- **Pavement Marking Improvements** – Stop bars and crosswalks will be re-installed for greater visibility.



Road Safety Improvements: Martin Grove Separated Bike Lanes

The City is proposing to install **separated bike lanes** on Martin Grove Rd from Rathburn Rd to 100m north of Burnhamthorpe Rd in 2022.

Separated bike lanes would:

- Improve safety and comfort for people cycling
- Provide traffic calming benefits by narrowing vehicle lanes and adding objects in the roadway
- Establish a portion of a proposed future connection between existing bike lanes on Martin Grove Rd and Rathburn Rd and the future Kipling Transit Hub at Dundas St. West.



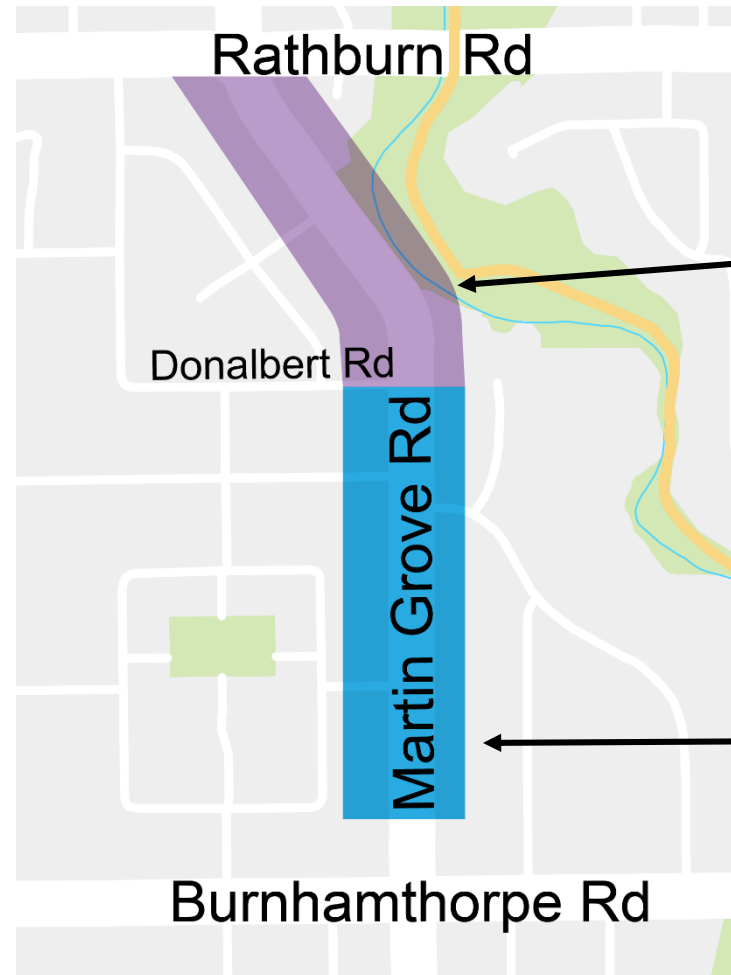
Artist rendering of separated bike lanes on Martin Grove Road with painted buffers and physical separation (cycle tracks).

Martin Grove Rd Safety Improvements: Separated Bike Lanes

The design options for each segment of Martin Grove Road are being considered separately because of differences in the curb-to-curb width of the road.



Martin Grove Rd today, looking north



Segment 1

Rathburn Rd to Donalbert Rd
(~14m to ~10m curb-to-curb)

Segment 2

Donalbert Rd to 100 meters
north of Burnhamthorpe Rd
(~10m curb-to-curb)

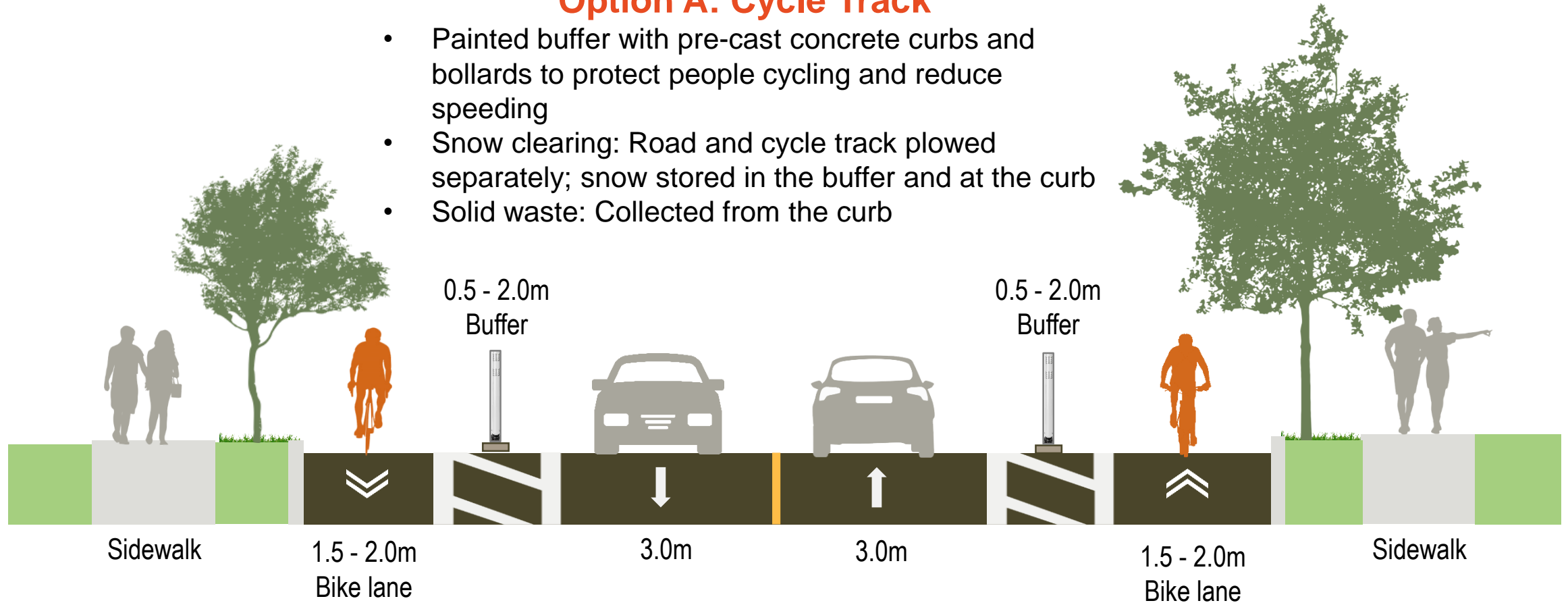
Current Conditions and Design Considerations

Design Considerations	Current Conditions Segment 1: Rathburn Rd to Donalbert Rd	Current Conditions Segment 2: Donalbert Rd to Burnhamthorpe Rd
Available space Curb-to-curb width	~14m tapers to ~10m	~10m curb-to-curb
Safety and motor vehicle speeds: Speed limits, lane widths, objects in the roadway	40 km/hr speed limit; Parking prohibited (both sides) Traffic islands, turn lanes, edge lines	40 km/hr speed limit; Parking prohibited (both sides)
Safety and comfort Physical separation is recommended when traffic exceeds 6,000 vehicles/day	6,000-7,000 vehicles per day	6,000-7,000 vehicles per day
Driveways Separation works best with fewer breaks	Frequent along the roadway	Frequent along the roadway
Solid waste collection	From the curb	From the curb
Snow clearing	Single plow in each direction	Single plow in each direction

Segment 1: Rathburn Rd to Donalbert Rd

Option A: Cycle Track

- Painted buffer with pre-cast concrete curbs and bollards to protect people cycling and reduce speeding
- Snow clearing: Road and cycle track plowed separately; snow stored in the buffer and at the curb
- Solid waste: Collected from the curb

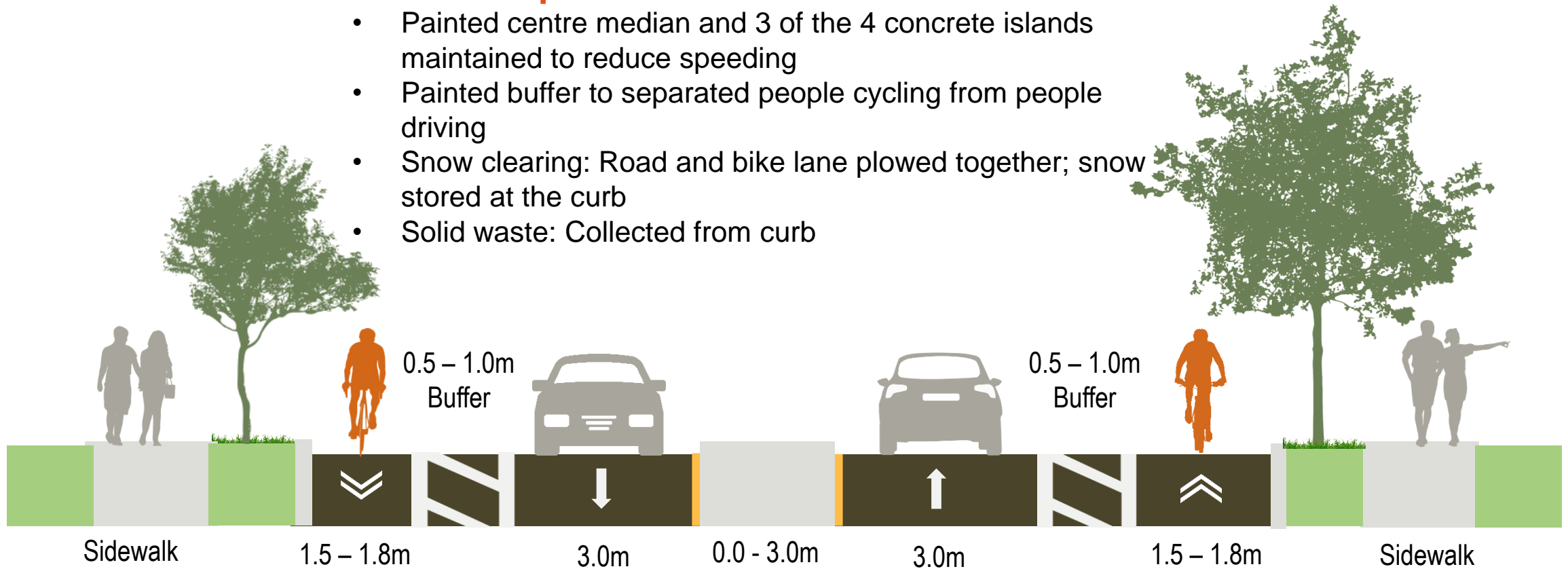


Drawings showing the proposed pavement markings and locations of the pre-cast curbs are posted on the project web page.

Segment 1: Rathburn Rd to Donalbert Rd

Option B: Buffered Bike Lane

- Painted centre median and 3 of the 4 concrete islands maintained to reduce speeding
- Painted buffer to separated people cycling from people driving
- Snow clearing: Road and bike lane plowed together; snow stored at the curb
- Solid waste: Collected from curb

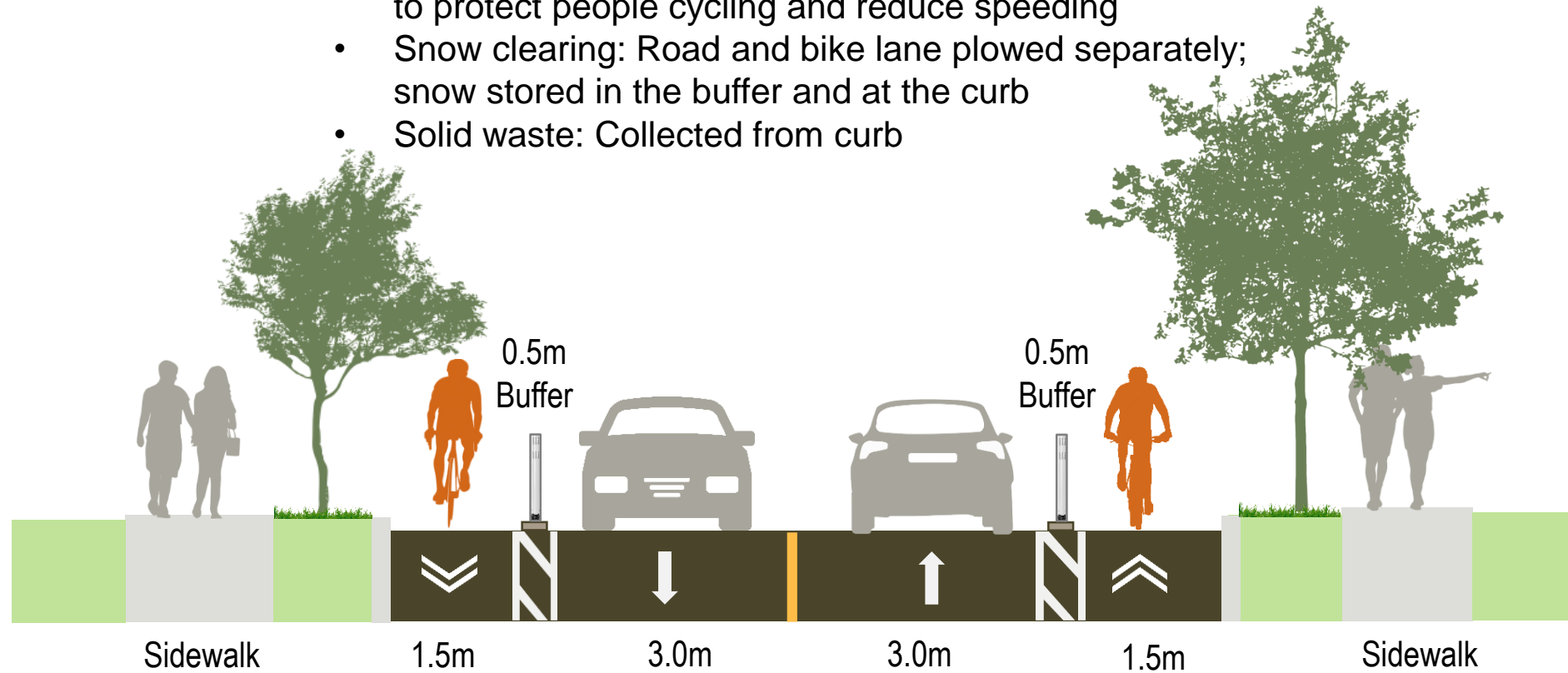


Drawings showing the proposed pavement markings are posted on the project web page.

Segment 2: Donalbert Rd to Burnhamthorpe Rd

Option A: Cycle Track

- Painted buffer with pre-cast concrete curbs and bollards to protect people cycling and reduce speeding
- Snow clearing: Road and bike lane plowed separately; snow stored in the buffer and at the curb
- Solid waste: Collected from curb

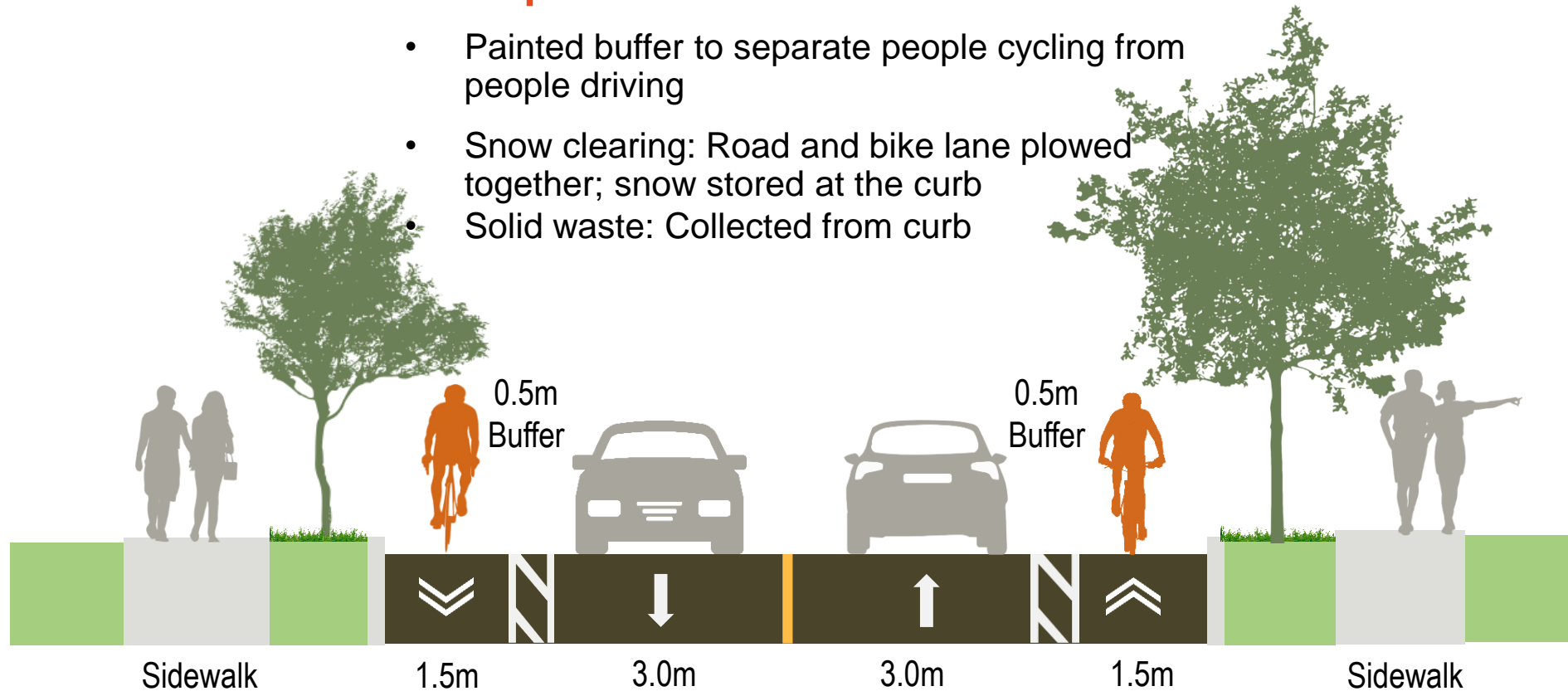


Drawings showing the proposed pavement markings and locations of the pre-cast curbs are posted on the project web page.

Segment 2: Donalbert Rd to Burnhamthorpe Rd

Option B: Buffered Bike Lane

- Painted buffer to separate people cycling from people driving
- Snow clearing: Road and bike lane plowed together; snow stored at the curb
- Solid waste: Collected from curb



Drawings showing the proposed pavement markings are posted on the project web page.

Comparing Options for Martin Grove Rd

Design Options	Anticipated traffic calming effect	Physical protection for people cycling	Adequate buffer width for snow storage
Segment 1			
Option A: Cycle track (Preferred)	Higher	Yes	Yes
Option B: Buffered bike lanes	Moderate	No	N/A
Segment 2			
Option A: Cycle track	Higher	Yes	No
Option B: Buffered bike lanes (Preferred)	Moderate	No	n/a

Road Safety Improvements: Rathburn Road

- Speed limit: 50 km/hr
- 9,000-12,000 vehicles per day
- Painted buffer added to the existing bike lane from Martin Grove Rd to 100 metres east of The East Mall in 2020 as part of road resurfacing
- Buffers are 1.0 metre wide
- The volume and speed of traffic on this section of Rathburn Rd call for physical separation between people cycling and people driving.



Buffered bike lane on Rathburn Rd, facing east towards Martin Grove Rd

Rathburn Rd Safety Improvements: Physical Separation

- The City is proposing to install **physical separation** in the painted buffer of the existing bike lanes on Rathburn Rd from Martin Grove Rd to ~100 metres east of The East Mall.
- **Two design options** are proposed:



Option A: Pre-cast concrete curbs with flexible posts



Option B: Pre-cast concrete low profile barriers with reflectors and hazard bollards

Comparing Options for Rathburn Rd

Design Options	Anticipated reduction of speeding and improved safety for vulnerable road users	Driveway Access	Appearance
Option A: Curbs & Bollards	Yes	Bollards are easy to see when reversing	
Option B: Low Profile Barriers	Yes	Gaps are provided to avoid driveway access issues	Can be covered in art in future years

With both design options:

- The City is proposing to reduce the speed limit from 50 km/hr to 40 km/hr
- Solid waste would continue to be collected from the curb
- The bike lane and road would be plowed separately; snow would be stored in the buffer and at the curb

Detailed drawings showing the planned locations of the curbs and barriers are posted on the project web page.

Providing Feedback

There are several ways to provide feedback as part of the consultation:



Online feedback survey:
Link on the project web page



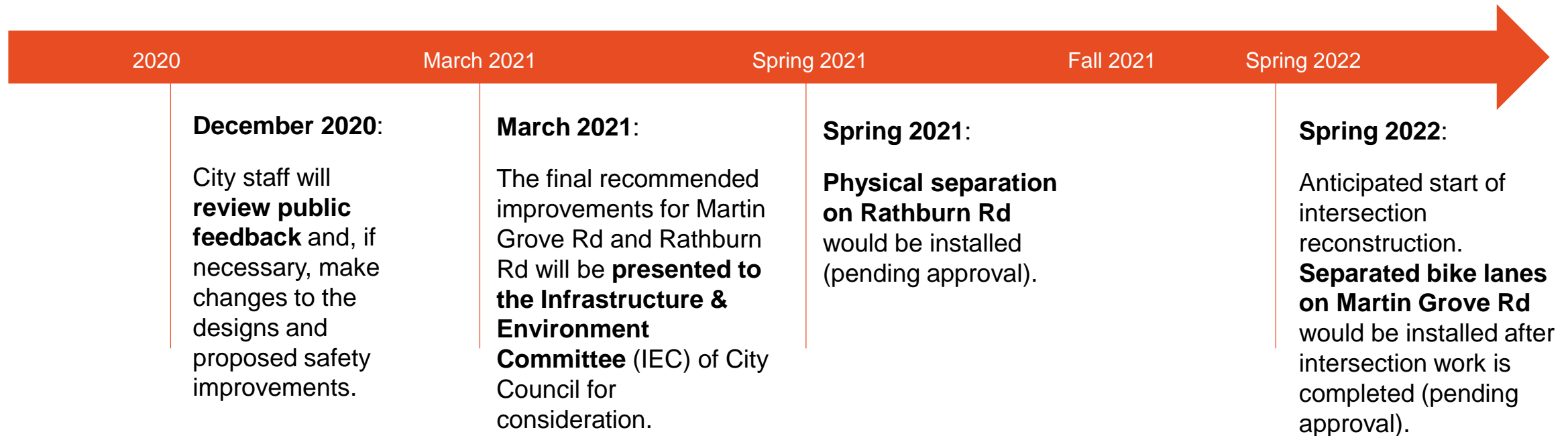
Print-friendly version:
Return by mail or e-mail



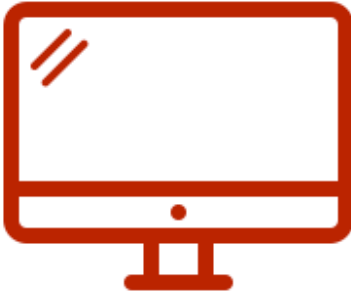
Comments can also be
submitted by phone,
e-mail or mail

The comment period closes **December 21, 2020**.
A summary of the feedback received will be posted on the project web page.

Next Steps: Road Safety Improvements



Questions?



Computer/smart phone/tablet:

- Use Q&A box to type questions OR
- 'Raise hand' function for verbal questions



Phone (call-in) participants:

- Press *3 to raise your hand
- The facilitator will let you know when you are unmuted

Watermain Replacement on Martin Grove Road

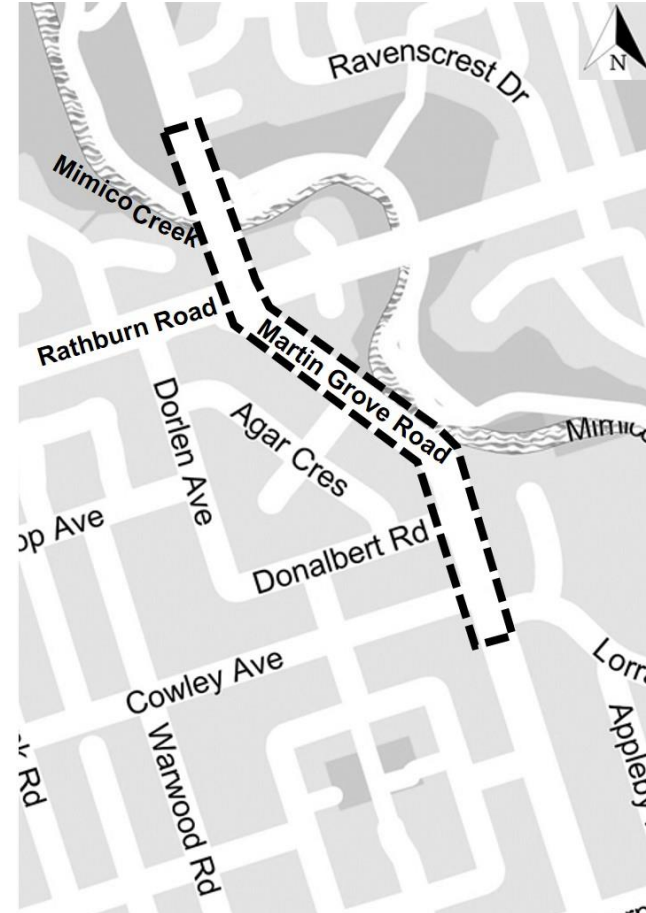
**Environmental Assessment
Study to cross Mimico Creek**

Watermain Replacement

Study Purpose

To replace the existing 88- and 75-year-old watermain on Martin Grove Road south of Savalon Court to Lorraine Gardens. The new watermain will be 300 mm diameter.

- Watermains from Eglinton Avenue to south of Savalon Court were replaced in 2019



Watermain Replacement

- A history of breakages and leaks since 2010:
 - 2010
 - 2011
 - 2015 (2 events)
 - 2016 (2 events)
 - 2018 (3 events)
 - 2019 (2 events)
- Existing watermains are at end of service and require to be brought to a state of good repair

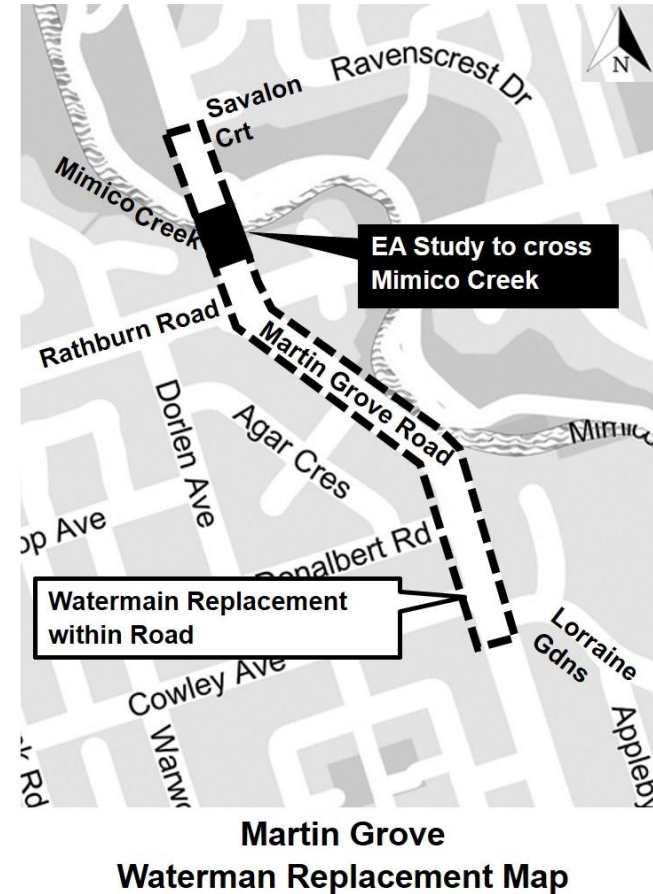


Watermain break on Martin Grove between Saralou Court and Rathburn Road. *"Watermain Break Floods Street In Etobicoke"* July 12, 2015; CTV News Toronto

Environmental Assessment

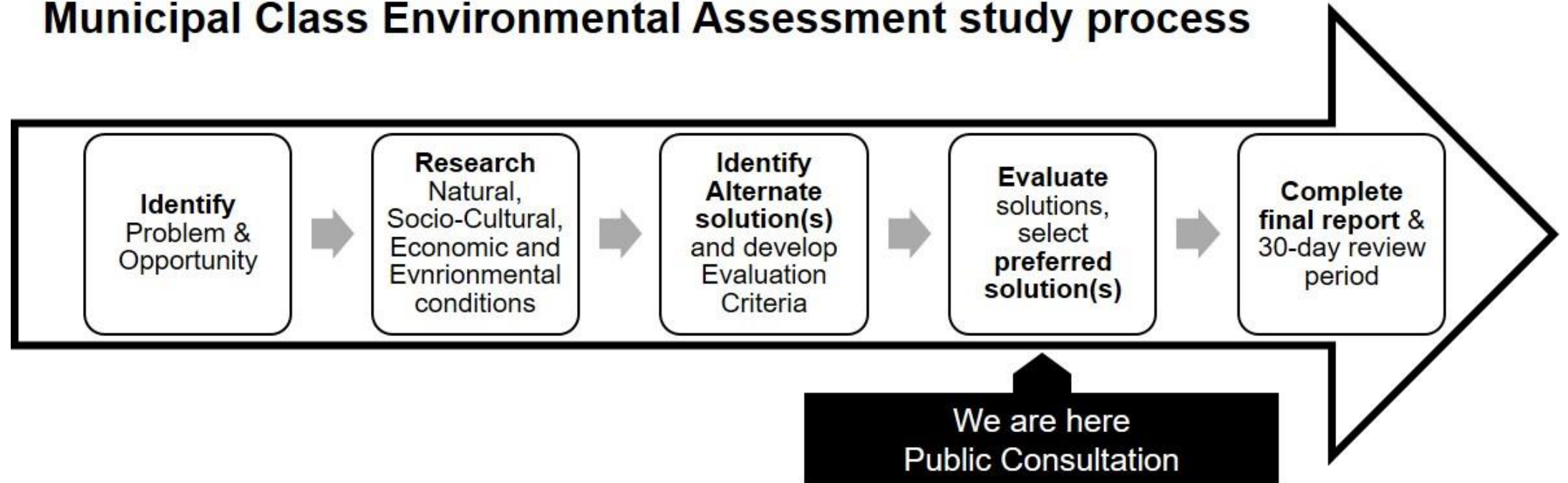
A Municipal Class Environmental Assessment (EA) study is being undertaken to select an alignment for the watermain to cross below Mimico Creek.

The new watermain from Mimico Creek to south of Savalon Court and from 30 m north of Rathburn Road to Lorraine Gardens will be installed within the road right-of-way and does not require an EA study.



Environmental Assessment

Municipal Class Environmental Assessment study process



Existing Conditions

The following environmental conditions are taken into consideration to determine alternative solutions and select the preferred solution.

- Natural and Environmental
 - Infrastructure & Utilities
 - Property
- Archaeological Resources
- Public Use of Park/Ravine
- Economic
 - Costs



Ravencrest Park, facing the Mimico Creek (centre) and Martin Grove Bridge (right)

Existing Conditions

Conditions	Summary
Natural & Environmental	<ul style="list-style-type: none">• Mimico Creek supports warmwater aquatic habitats• A mix of native and non-native trees with some at-risk/significant species (Butternut, Cedar, Oak)• Wildlife highlights includes waterfowl stopover and staging areas in creek; nearby bat habitats and maternity colonies; bird surveys include local nestings under bridge• Subsoils are predominantly sand and sandy silt• Water table is generally at creek level
Infrastructure	<ul style="list-style-type: none">• Martin Grove Road is a 2-lane arterial road with bike lanes• The bridge is concrete structure built in the early 1960's
Property	<ul style="list-style-type: none">• An existing easement west of the bridge contains the following utilities: natural gas (Enbridge) trunk watermain (City of Toronto)• Ravenscrest Park is owned by the Toronto & Region Conservation Authority (TRCA)
Archaeological Resources	<ul style="list-style-type: none">• Archaeological assessment shows low potential due to former pumping station and reservoir
Park Access / Public Use	<ul style="list-style-type: none">• Ravenscrest Park has public access off Martin Grove• West Deane Park has access from Ravenscrest Park

Pre-Screening of Solutions

The project team considered a number of options to replace the watermain:

- **Abandon the watermain & upgrade watermain system elsewhere**
 - This option reduces the redundancy in the watermain network and creates a dead-end, which would create water quality concerns, additional maintenance and does not comply with Toronto Water policies.
- **Attach Watermain to the side of the bridge**
 - This option would require the watermain to be insulated and heat-traced to prevent from freezing which will add maintenance and is not preferred by Toronto Water from an operational perspective. The structural integrity of the bridge would also need to be reviewed.
- **Replace the watermain in the existing alignment**
 - This option would require open trench to replace the watermain pipe in the same alignment which is not preferred due to the significant environmental disturbance this would cause.

These options were not carried forward as they were not feasible.

Pre-Screening of Construction Methods

A variety of construction methods can be used for watermain construction. The project team reviewed the following methods and selected one that best works for the area.

Screened out:

- **Open Trench:** Excavation would require a temporary coffer dam and significant pumping of water to work in the dry and environmental disturbance
- **Micro-tunnel and auger boring:** Tunneling / boring requires deep shafts on either side of the creek. Depths of tunnel and shafts would need to be installed in bedrock shale and below the water table requiring pumping of water to work in the dry.
- **Cement mortar / structural lining:** Trenchless relining of the existing watermain from within the pipe using cement mortar or plastic structural liner is not an option due to bends in the existing watermain crossing Mimico Creek.

Carried forward:

- **Horizontal Directional Drilling:** Standard directional drilling practice is anticipated and involves a drill machine set-up a distance back from the creek and drilling 'horizontally' into the ground surface to get below the bottom of the creek to beyond the other side of the creek.

Evaluation Criteria

The following three criteria will be used to evaluate each alternative solution:

1. **Constructability & Impacts**

- Potential impacts with other underground utilities and bridge structure
- Technical challenges due to ground conditions
- Technology limitations of construction equipment

2. **Natural & Environmental**

- Tree injuries and removals

3. **Socio-Cultural**

- Impacts to park use and access, park features and amenities

Alternative Solution #1: Do Nothing

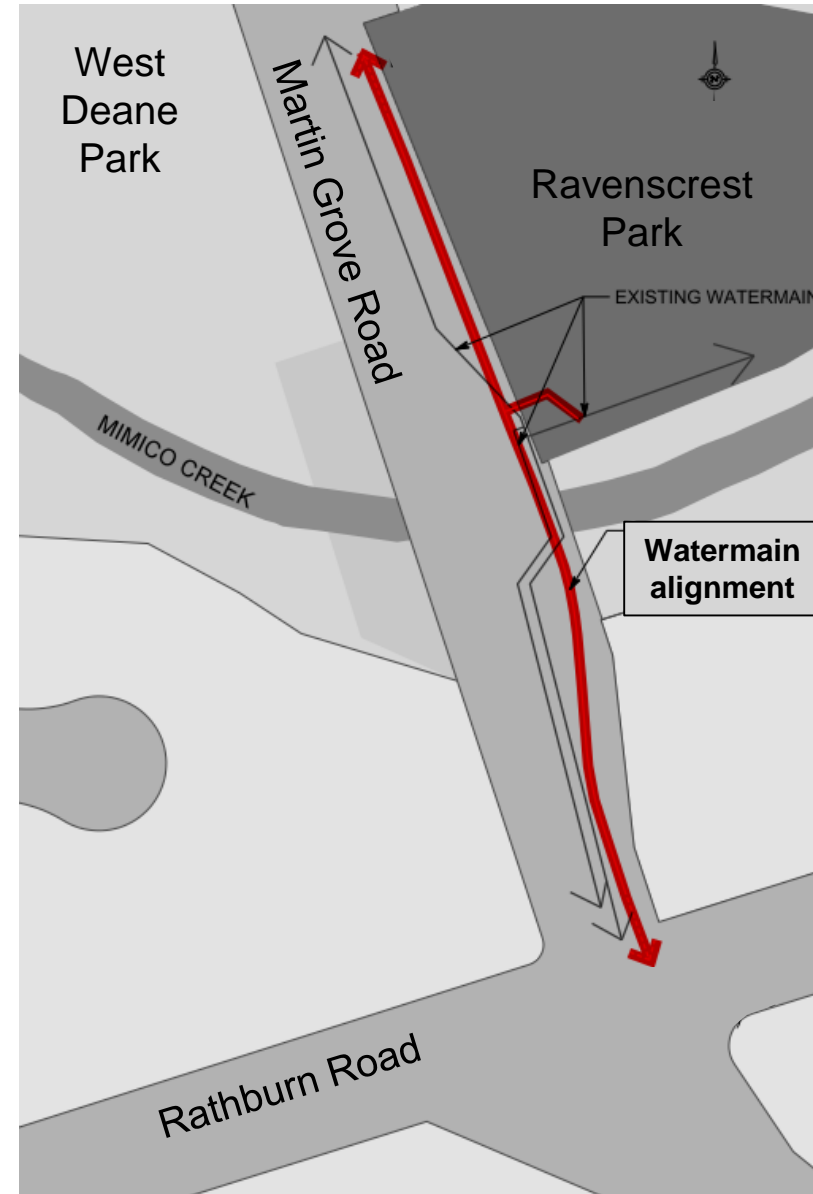
1. No constructability concerns or impacts
2. No tree impacts
3. No impacts on park use

This alternative does not resolve the maintenance and operations issues of breaks and may continue to experience watermain breaks and service disruptions in the future. Therefore, this option is screened out.

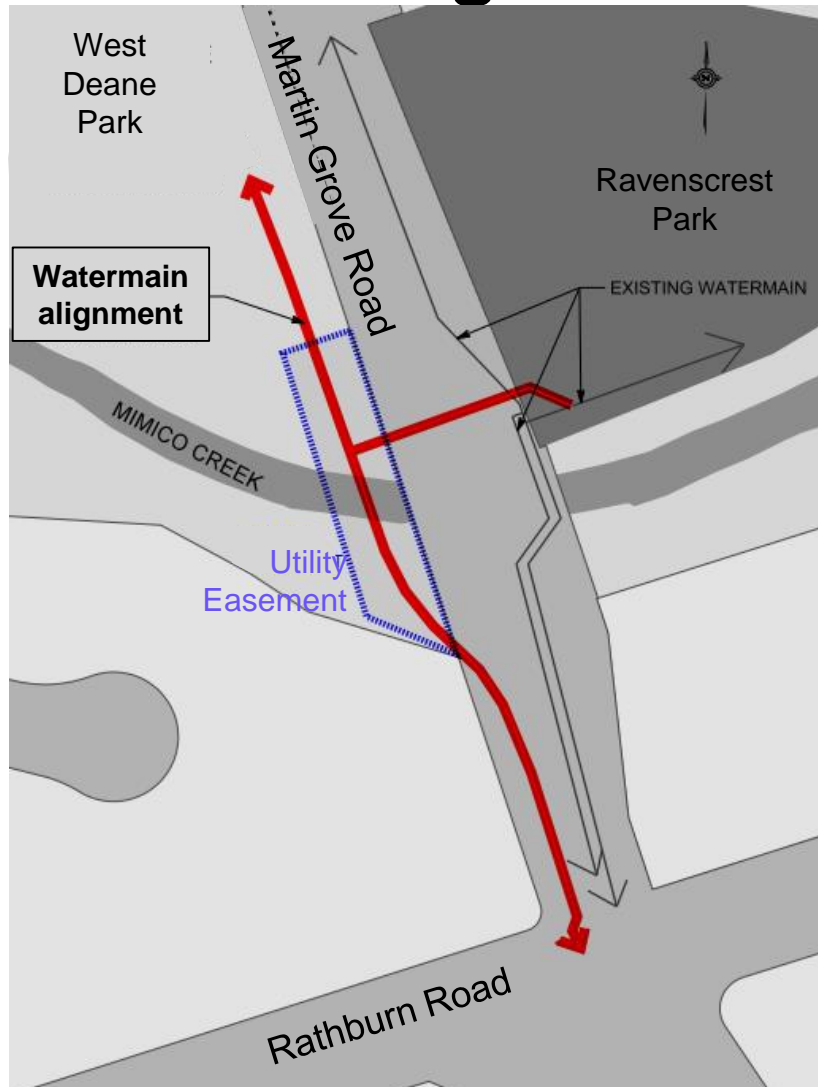
Alternative Solution #2: Watermain aligned Below Bridge & Inside Road Right-Of-Way

1. Complex construction method to extend the drill below the bridge foundation and piles into shale bedrock. Significant risk of drill failure (stuck within bedrock, conflict with piles) will require the equipment to be abandoned.
 - To ensure the bridge and structure is protected from watermain breaks and risks, the watermain must be installed inside a larger sized casing. A larger casing requires a larger drill to reach deeper depths below the piles. The deeper depths require a larger working area at a greater distance back from the creek to avoid severe curves.
2. Up to 10 trees may need to be removed for staging area. Trail entrance off Martin Grove may need to be detoured for construction access and work site.

This alternative solution has an overall high level of complexity and risk of failure.



Alternative Solution #3: Watermain aligned West of Martin Grove Road/Bridge



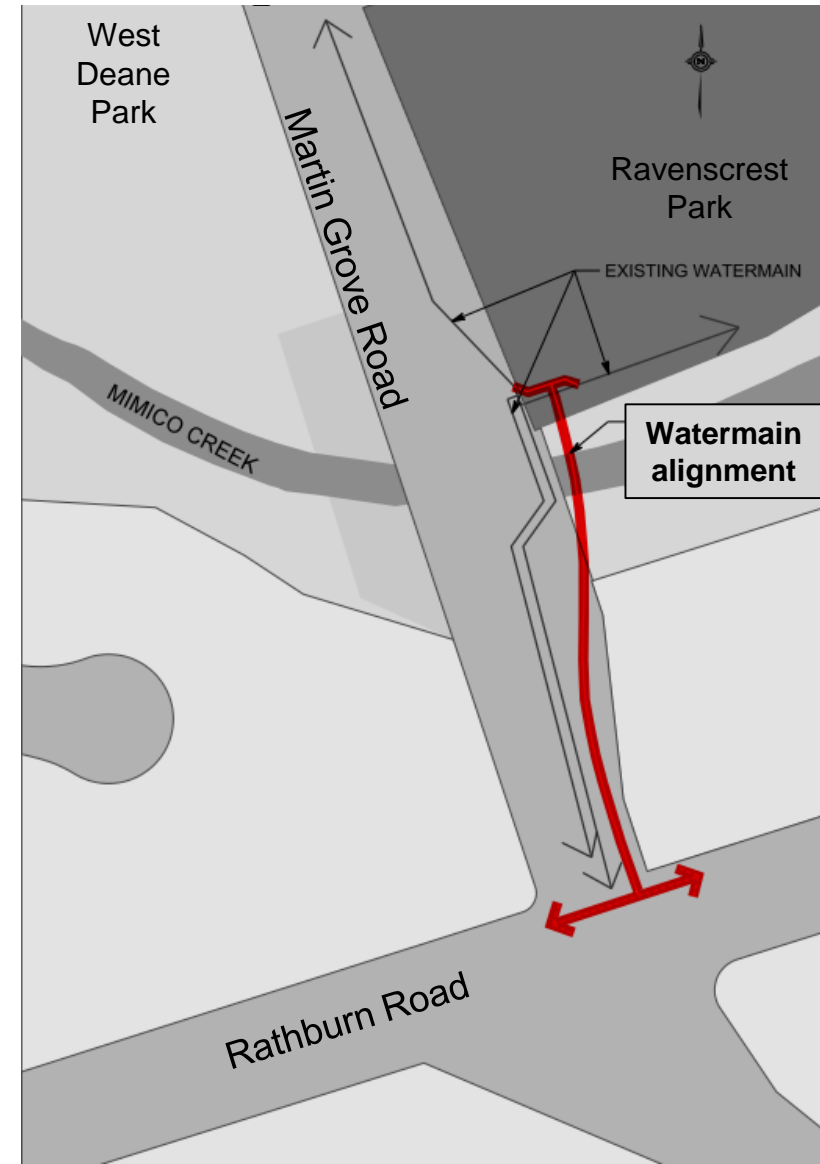
1. Significant conflicts with existing underground utilities:
 - Natural Gas (Enbridge)
 - Trunk Watermain
 - Sharp curves in alignment would exceed the drill manufacturer's recommended use leading to an unacceptable high constructability risk
2. 10 to 20 trees expected to be removed
3. No impacts on park use

This alternative solution has an overall high level of complexity and an unacceptable risk of failure .

Preferred Solution #4: Watermain aligned East Side of Martin Grove Road/Bridge

1. Acceptable construction impacts and alignment:
 - Curves in this alignment are within the drill manufacturer's recommended use
 - No conflicts with bridge structure or maintenance
2. Up to 5 trees may need to be removed for staging area. Tree restoration will be developed as part of the detailed design stage.
3. Trail entrance off Martin Grove may need to be detoured around the construction area

Overall acceptable construction complexity and risks. **This is the preferred solution to construct new replacement watermain.**



Evaluation of Alternative Solutions

Alternative Alignments	Natural & Environmental	Socio-cultural	Technical (Constructability, Alignment & Impacts)	Economic	Summary
#2 Below Bridge & Inside ROW	Moderate impact	Moderate impact	Highest Risk	Highest Cost	Significant potential of equipment failure resulting in additional costs
#3 West of Martin Grove Road Bridge	Greatest impact	Least impact	High Risk	High Cost	Affects the most trees and includes high risk of equipment failure resulting in additional costs
#4 East of Martin Grove Road Bridge	Least impact	Moderate impact	Low Risk	Lowest Cost	Moderate tree and park access impacts. Construction method is capable of constructing this alignment

Tell us what you think

Your Feedback

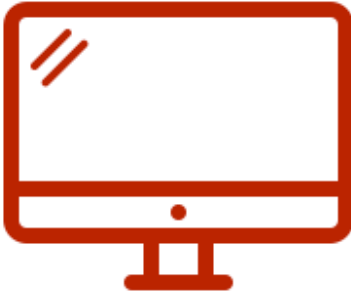
1. Do you have any concerns with the **preferred alignment** (watermain east of Martin Grove Road/Bridge)?
2. Do you have any concerns with the **evaluation**?
3. Do you have any concerns with the **criteria** used?

Submit your feedback by **December 21, 2020**

Online survey link **www.toronto.ca/martingrove**

Email: **martingrove@toronto.ca** Phone: 416-392-1932

Questions?



Computer/smart phone/tablet:

- Use Q&A box to type questions OR
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Phone (call-in) participants:

- Press *3 to raise your hand
- The facilitator will let you know when you are unmuted

Next Steps



Winter 2021:

1. Receive and summarize Community Feedback
2. Issue Notice of Completion and 30-day public comment period on the Project File Report (final report)
3. Complete construction tender



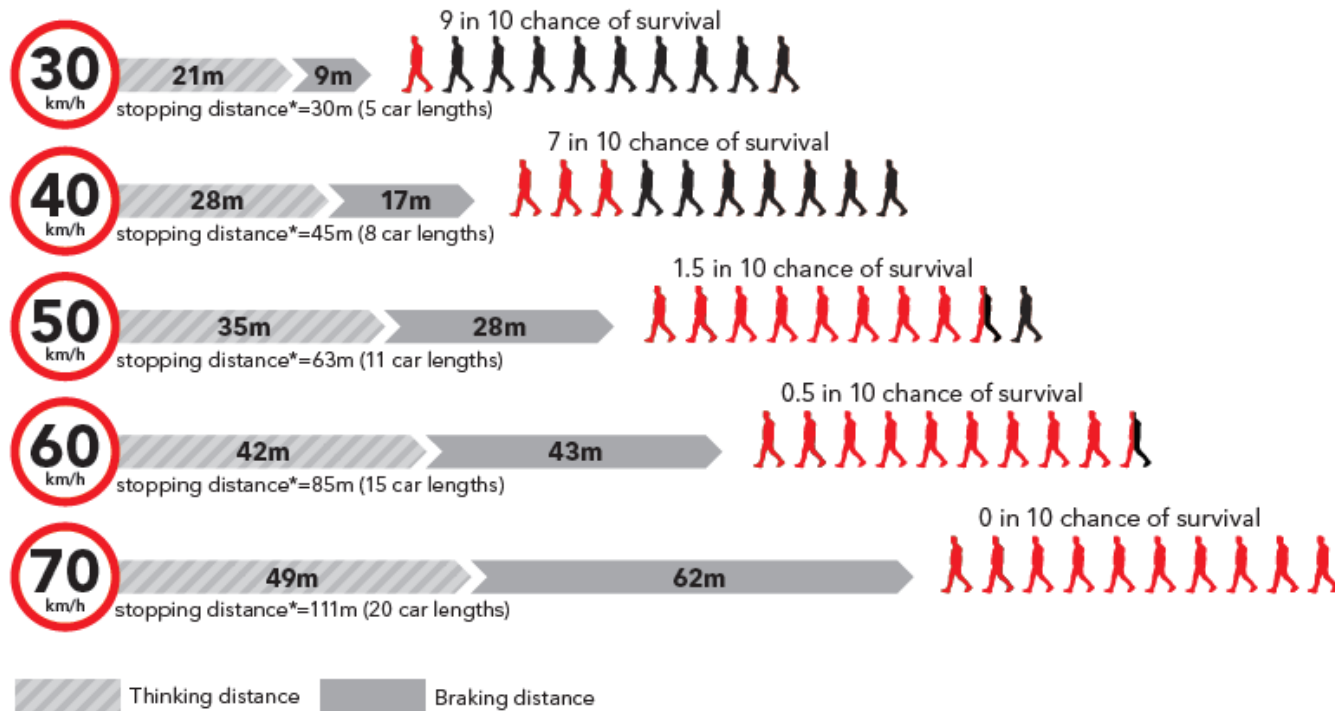
Spring & Summer 2021:

1. Issue and award tender
2. Begin construction late Summer (Notices will be issued to community in advance)
3. Complete construction by December 2021
4. Site Restoration Spring 2022 (Notices will be issued to community in advance)

THANK YOU

Road Safety: Impact of Speed

VEHICLE SPEED, STOPPING DISTANCE, AND CHANCE OF SURVIVAL



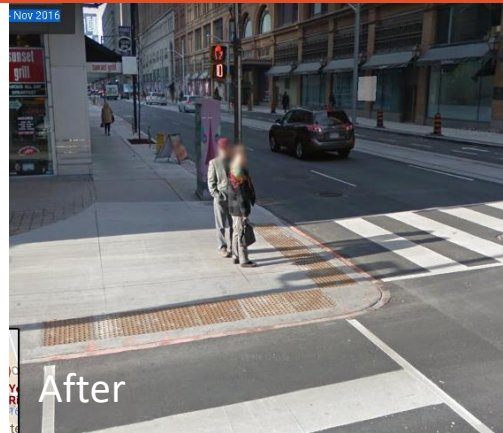
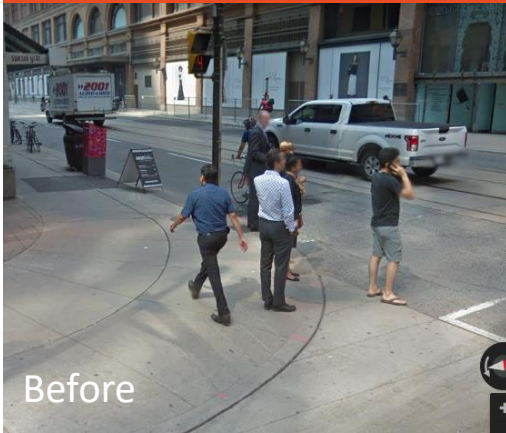
*Stopping distances during wet conditions. Single car length=5.6m. Based on a 2.5s reaction time, representing 90th percentile of drivers.

source: Adapted from World Health Organization, 2008. Speed management: a road safety manual for decision-makers and practitioners. Transportation Association of Canada, 2011. Geometric Design Guide for Canadian Roads Part 1. 1.2.5.2 - 1.2.5.4.

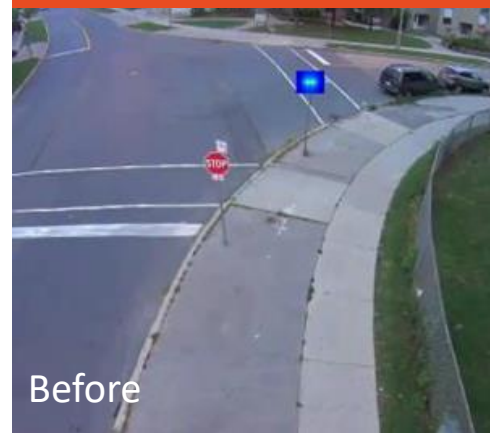
Lowering the speed of motor vehicles increases the safety of vulnerable road users and can save lives.

Road Safety: Curb Radius Reductions

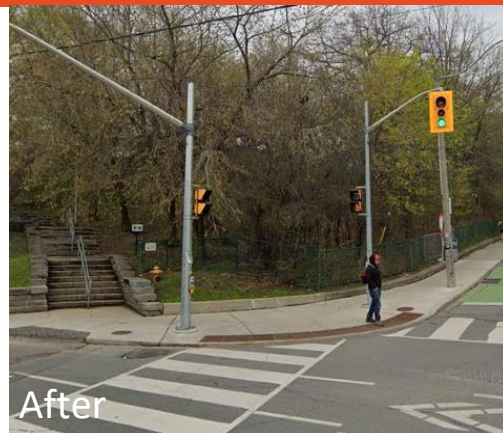
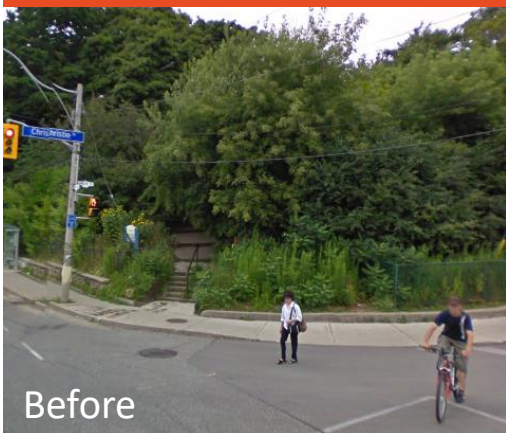
Richmond Street West & Yonge Street



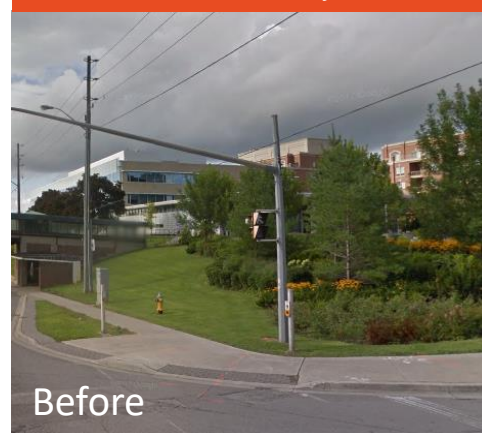
Driftwood Avenue & Yorkwoods Gate



Davenport Road & Christie Street

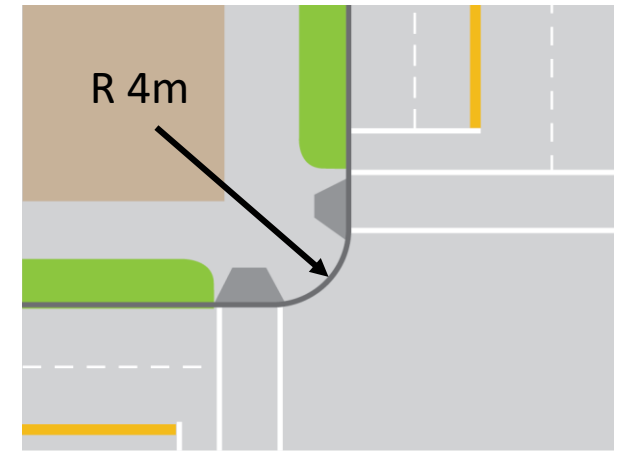
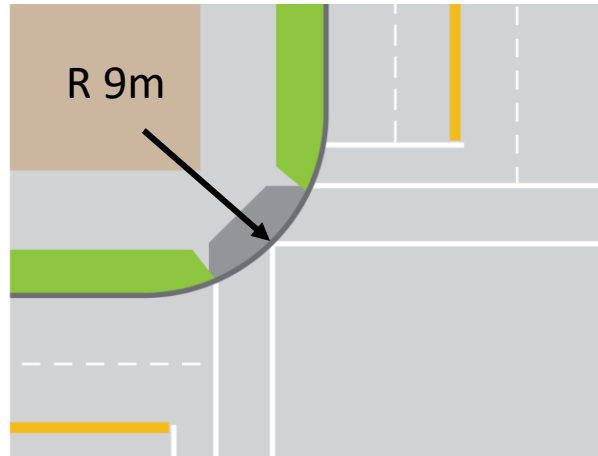
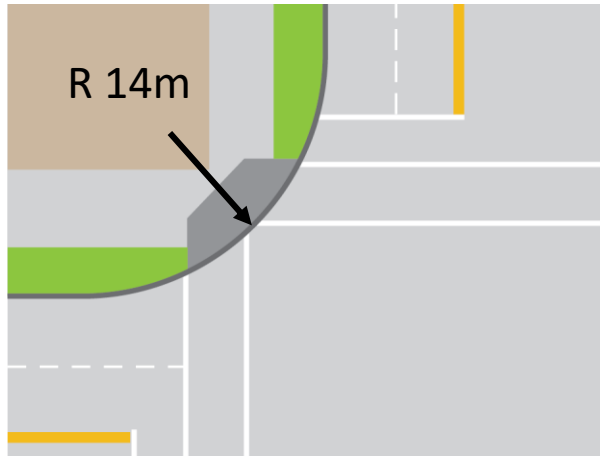


Bayview Avenue & Kilgour Road



Road Safety Improvements: Curb Radius Reductions

- 'Corner radius' refers to the angle of an intersection corner.
- Tighter (smaller) corner radii increase road safety by reducing crossing distances for pedestrians and slowing vehicle turns, which reduces the likelihood of a collision and the impact, should a collision occur.
- Traditionally, curb radii have been designed for the largest possible vehicle to be able to turn from curb lane to curb lane.
- As a result, corner radii are larger than necessary for the majority of vehicles (passenger vehicles), allowing drivers to make turns very quickly. This can be unsafe for people walking and cycling.



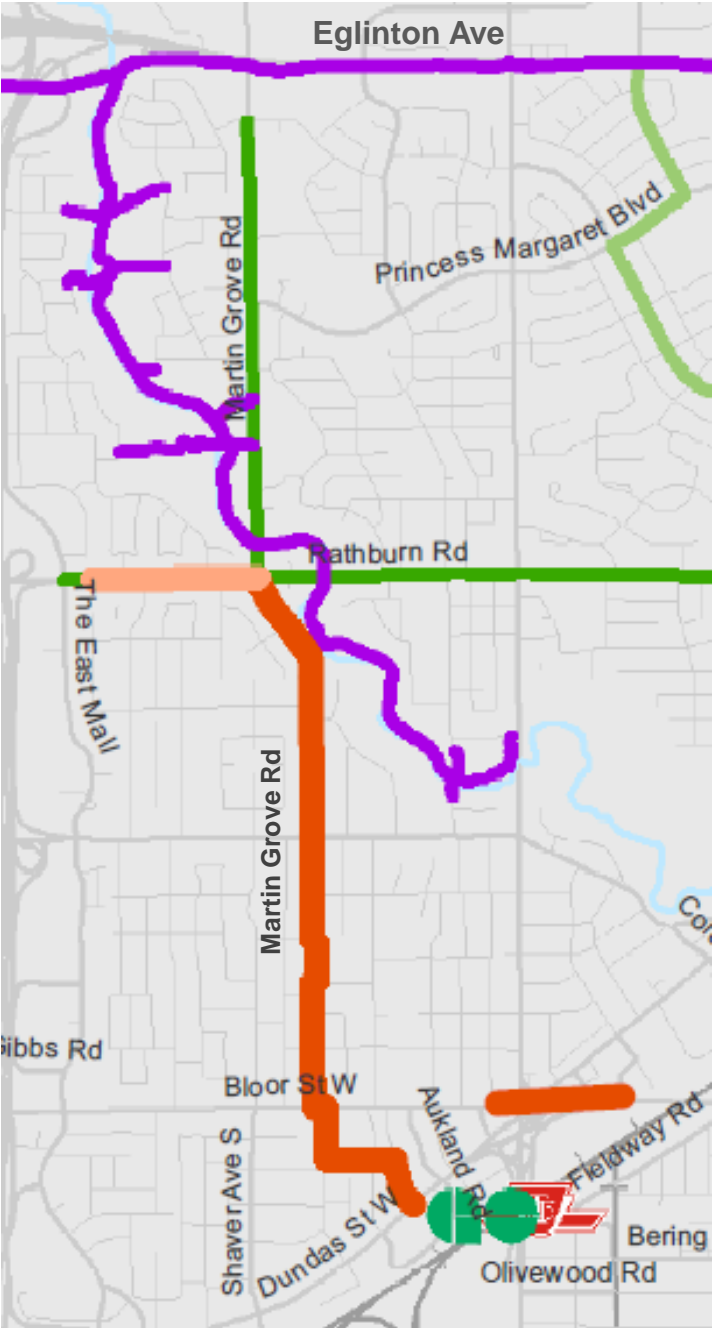
Cycling Network Plan Update

Program Type

- New
- Renew
- Study

Existing Cycling Network

- Trail
- On-Street Cycling Facility
- Signed Route, Arterial Sharrows or Edge Line
- GO
- TTC



Clearing snow from bike lanes



Cycle track with snow in the buffer and curb



Buffered bike lane with snow at the curb

Road Safety Improvements: Martin Grove Separated Bike Lanes

